



**Green Building Rating System  
For Core and Shell Development  
(LEED-CS)**

**Unballoted Draft for Pilot Version**  
(Based on LEED-NC v2.1)

**September 2004**



**U.S. GREEN BUILDING COUNCIL**

## **Introduction**

The Leadership in Energy and Environmental Design (LEED™) Green Building Rating System for Core and Shell Development (LEED-CS) is a set of performance standards for the sustainable design and construction of speculative and core and shell buildings. It has been developed as part of the U.S. Green Building Council's ongoing effort to provide a national standard for green building.

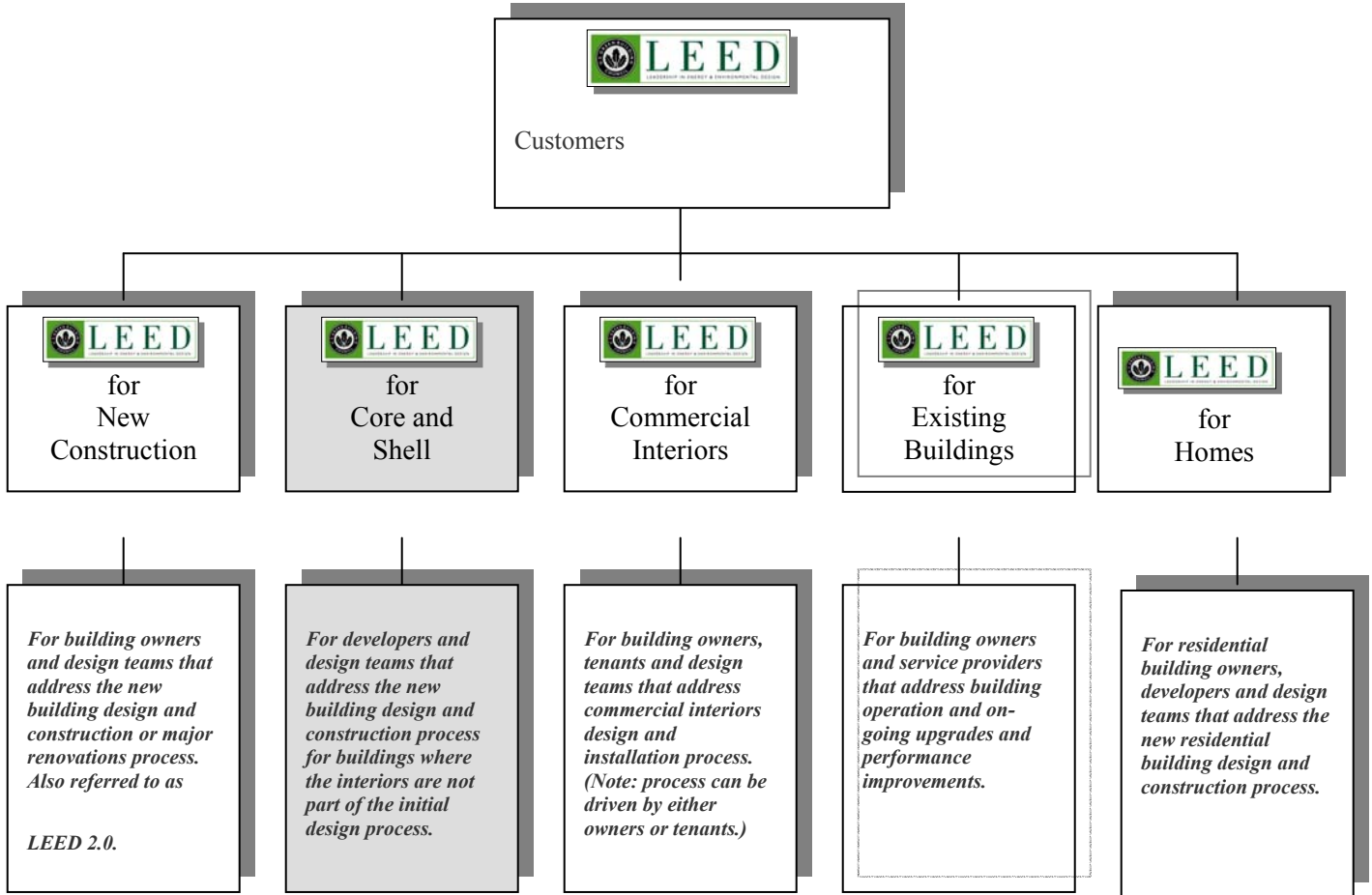
Based on the LEED Green Building Rating System for New Construction and Major Renovation (LEED-NC), LEED-CS has been developed in recognition of the unique nature of core and shell development, especially the lack of developer control over key aspects such as interior finishes, lighting, and HVAC distribution. Thus, the scope of CS is limited to those elements of the project under the direct control of the developer.

LEED-CS addresses:

- Building site selection
- Efficient use of water in base core and shell building systems
- Energy optimization of the base core and shell systems and provisions for fit out of tenant spaces to optimize operational building energy use
- Materials and resource guidelines for construction of building core and shell
- Planning to ensure tenant fit out makes optimal use of indoor environmental quality attributes (daylight and views) as well as prevention of contamination from indoor pollutants.

LEED-CS is designed to complement the LEED for Commercial Interiors Green Building Rating System (LEED-CI) so that a LEED-CS certified building that also incorporates a LEED-CI certified interior fit out will be equivalent to a LEED-NC certified building. The LEED-CI / LEED-CS companion rating systems establish green building criteria for both developer/owners and tenants.

Owners and developers should identify the appropriate application of LEED depending on the type of building under consideration and the sphere of influence the project team exerts over the building. Here is an overview of the LEED customer selection for choosing the right rating system for a given building project:



The USGBC is conducting a pilot for the LEED-CS from September 2003 through October 2004. For information about the pilot or how to participate, please contact USGBC staff via [cs@committees.usgbc.org](mailto:cs@committees.usgbc.org) or by telephone at (202) 828-7422. For additional information about USGBC and the entire suite of LEED Green Building Rating Systems, please visit [www.usgbc.org](http://www.usgbc.org).

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# Project Checklist

## Sustainable Sites

15 Possible Points

Prereq 1	<b>Erosion &amp; Sedimentation Control</b>	Required
Credit 1	<b>Site Selection</b>	1
Credit 2	<b>Development Density</b>	1
Credit 3	<b>Brownfield Redevelopment</b>	1
Credit 4.1	<b>Alternative Transportation</b> , Public Transportation Access	1
Credit 4.2	<b>Alternative Transportation</b> , Bicycle Storage & Changing Rooms	1
Credit 4.3	<b>Alternative Transportation</b> , Alternative Fuel Vehicles	1
Credit 4.4	<b>Alternative Transportation</b> , Parking Capacity	1
Credit 5.1	<b>Reduced Site Disturbance</b> , Protect or Restore Open Space	1
Credit 5.2	<b>Reduced Site Disturbance</b> , Development Footprint	1
Credit 6.1	<b>Stormwater Management</b> , Rate and Quantity	1
Credit 6.2	<b>Stormwater Management</b> , Treatment	1
Credit 7.1	<b>Heat Island Effect</b> , Non-Roof	1
Credit 7.2	<b>Heat Island Effect</b> , Roof	1
Credit 8	<b>Light Pollution Reduction</b>	1
Credit 9	<b>Tenant Design and Construction Guidelines</b>	1

## Water Efficiency

5 Possible Points

Credit 1.1	<b>Water Efficient Landscaping</b> , Reduce by 50%	1
Credit 1.2	<b>Water Efficient Landscaping</b> , No Potable Use or No Irrigation	1
Credit 2	<b>Innovative Wastewater Technologies</b>	1
Credit 3.1	<b>Water Use Reduction</b> , 20% Reduction	1
Credit 3.2	<b>Water Use Reduction</b> , 30% Reduction	1

## Energy & Atmosphere

15 Possible Points

Prereq 1	<b>Fundamental Building Systems Commissioning</b>	Required
Prereq 2	<b>Minimum Energy Performance</b>	Required
Prereq 3	<b>CFC Reduction in HVAC&amp;R Equipment</b>	Required
Credit 1	<b>Optimize Energy Performance</b>	1 – 10
Credit 2.1	<b>Renewable Energy</b> , 1%	1
Credit 2.2	<b>Renewable Energy</b> , 5%	1
Credit 3	<b>Additional Commissioning</b>	1
Credit 4	<b>Ozone Depletion</b>	1
Credit 5	<b>Measurement &amp; Verification</b>	1
Credit 6	<b>Green Power</b>	1

## Materials & Resources

11 Possible Points

Prereq 1	<b>Storage &amp; Collection of Recyclables</b>	Required
Credit 1.1	<b>Building Reuse</b> , Maintain 75% of Existing Shell	1

Credit 1.2	<b>Building Reuse</b> , Maintain 95% of Existing Shell	1
Credit 2.1	<b>Construction Waste Management</b> , Divert 50%	1
Credit 2.2	<b>Construction Waste Management</b> , Divert 75%	1
Credit 3	<b>Resource Reuse</b> , Specify 5%	1
Credit 4.1	<b>Recycled Content</b> , Specify 5% (p.c. + ½ p.i.)	1
Credit 4.2	<b>Recycled Content</b> , Specify 10% (p.c. + ½ p.i.)	1
Credit 5.1	<b>Local/Regional Materials</b> , 20% Manufactured Locally	1
Credit 5.2	<b>Local/Regional Materials</b> , of 20% in MRc5.1, 50% Harvested Locally	1
Credit 6	<b>Rapidly Renewable Materials</b>	1
Credit 7	<b>Certified Wood</b>	1

## Indoor Environmental Quality

13 Possible Points

Prereq 1	<b>Minimum IAQ Performance</b>	Required
Prereq 2	<b>Environmental Tobacco Smoke (ETS) Control</b>	Required
Credit 1	<b>Carbon Dioxide (CO<sub>2</sub>) Monitoring</b>	1
Credit 2	<b>Ventilation Effectiveness</b>	1
Credit 3	<b>Construction IAQ Management Plan</b> , During Construction	1
Credit 4.1	<b>Low-Emitting Materials</b> , Adhesives & Sealants	1 point for 2
Credit 4.2	<b>Low-Emitting Materials</b> , Paints and Coatings	2 points for 3
Credit 4.3	<b>Low-Emitting Materials</b> , Carpet	3 points for 4
Credit 4.4	<b>Low-Emitting Materials</b> , Composite Wood	
Credit 5	<b>Indoor Chemical &amp; Pollutant Source Control</b>	1
Credit 6.1	<b>Controllability of Systems</b> , Perimeter	1
Credit 6.2	<b>Controllability of Systems</b> , Non-Perimeter	1
Credit 7.1	<b>Thermal Comfort</b> , Comply with ASHRAE 55-1992	1
Credit 7.2	<b>Thermal Comfort</b> , Permanent Monitoring System	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

## Innovation & Design Process

5 Possible Points

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

## Project Totals

64 Possible Points

**Certified** 24-29 points   **Silver** 30-35 points   **Gold** 36-47 points   **Platinum** 48-64 points



# Sustainable Sites

## Prerequisite 1 Required

### Erosion & Sedimentation Control

#### Intent

Control erosion to reduce negative impacts on water and air quality.

#### Requirements

Design a sediment and erosion control plan, specific to the site, that conforms to U.S. Environmental Protection Agency (EPA) Document No. EPA 832/R-92-005 (September 1992), *Storm Water Management for Construction Activities*, Chapter 3, OR local erosion and sedimentation control standards and codes, whichever is more stringent. The plan shall meet the following objectives:

- Prevent loss of soil during construction by stormwater runoff and/or wind erosion, including protecting topsoil by stockpiling for reuse.
- Prevent sedimentation of storm sewer or receiving streams.
- Prevent pollution of the air with dust and particulate matter.

#### Potential Technologies & Strategies

Adopt an erosion and sediment control plan for the project site during construction. Consider employing strategies such as temporary and permanent seeding, mulching, earth dikes, silt fencing, sediment traps and sediment basins.

#### Submittals

- Provide the LEED Letter Template, signed by the civil engineer or responsible party, declaring whether the project follows local erosion and sedimentation control standards or the referenced EPA standard. Provide a brief list of the measures implemented. If local standards and codes are followed, describe how they meet or exceed the referenced EPA standard.

## **Credit 1**

### **1 Point**

#### **Site Selection**

##### **Intent**

Avoid development of inappropriate sites and reduce the environmental impact from the location of a building on a site.

##### **Requirements**

Do not develop buildings, roads or parking areas on portions of sites that meet any one of the following criteria:

- Prime farmland as defined by the U.S. Department of Agriculture in the U.S. Code of Federal Regulations, Title 7, Volume 6, Parts 400 to 699, Section 657.5 (citation 7CFR657.5).
- Land whose elevation is lower than 5 feet above the elevation of the 100-year flood as defined by FEMA.
- Land which is specifically identified as habitat for any species on Federal or State threatened or endangered lists.
- Within 100 feet of any water including wetlands as defined by U.S. Code of Federal Regulations 40 CFR, Parts 230-233 and Part 22, and isolated wetlands or areas of special concern identified by state or local rule, OR less than distances given in state or local regulations as defined by local or state rule or law, whichever is more stringent.
- Land which prior to acquisition for the project was public parkland, unless land of equal or greater value as parkland is accepted in trade by the public landowner (Park Authority projects are exempt).

##### **Potential Technologies & Strategies**

During the site selection process, give preference to those sites that do not include sensitive site elements and restrictive land types. Select a suitable building location and design the building with the minimal footprint to minimize site disruption. Strategies include stacking the building program, tuck-under parking, and sharing facilities with neighbors.

##### **Submittals**

- Provide the LEED Letter Template, signed by the civil engineer or responsible party, declaring that the project site meets the credit requirements.

## **Credit 2**

### **1 Point**

#### **Development Density**

##### **Intent**

Channel development to urban areas with existing infrastructure, protect greenfields and preserve habitat and natural resources.

##### **Requirements**

Increase localized density to conform to existing or desired density goals by utilizing sites that are located within an existing minimum development density of 60,000 square feet per acre (two story downtown development).

##### **Potential Technologies & Strategies**

During the site selection process, give preference to urban sites.

##### **Submittals**

- Provide the LEED Letter Template, signed by the civil engineer, architect or other responsible party, declaring that the project has achieved the required development densities. Provide density for the project and for the surrounding area.
- Provide an area plan with the project location highlighted.

## **Credit 3**

### **1 Point**

#### **Brownfield Redevelopment**

##### **Intent**

Rehabilitate damaged sites where development is complicated by real or perceived environmental contamination, reducing pressure on undeveloped land.

##### **Requirements**

Develop on a site documented as contaminated (by means of an ASTM E1903-97 Phase II Environmental Site Assessment) OR on a site classified as a brownfield by a local, state or federal government agency. Effectively remediate site contamination.

##### **Potential Technologies & Strategies**

During the site selection process, give preference to brownfield sites. Identify tax incentives and property cost savings. Develop and implement a site remediation plan using strategies such as pump-and-treat, bioreactors, land farming and in-situ remediation.

##### **Submittals**

- Provide a copy of the pertinent sections of the ASTM E1903-97 Phase II Environmental Site Assessment documenting the site contamination OR provide a letter from a local, state or federal regulatory agency confirming that the site is classified as a brownfield by that agency.
- Provide the LEED Letter Template, signed by the civil engineer or responsible party, declaring the type of damage that existed on the site and describing the remediation performed.

## **Credit 4.1**

### **1 Point**

#### **Alternative Transportation- Public Transportation Access**

##### **Intent**

Reduce pollution and land development impacts from automobile use.

##### **Requirements**

Locate project within 1/2 mile of a commuter rail, light rail or subway station or 1/4 mile of two or more public or campus bus lines usable by building occupants.

##### **Potential Technologies & Strategies**

Perform a transportation survey of future building occupants to identify transportation needs. Site the building near mass transit.

##### **Submittals**

- Provide the LEED Letter Template, signed by an appropriate party, declaring that the project building(s) are located within required proximity to mass transit.
- Provide an area drawing or transit map highlighting the building location and the fixed rail stations and bus lines, and indicate the distances between them. Include a scale bar for distance measurement.

## **Credit 4.2**

### **1 Point**

#### **Alternative Transportation- Bicycle Storage & Changing Rooms**

##### **Intent**

Reduce pollution and land development impacts from automobile use.

##### **Requirements**

For commercial or institutional buildings, provide secure bicycle storage with convenient changing/shower facilities (within 200 yards of the building) for 5% or more of regular building occupants. For residential buildings, provide covered storage facilities for securing bicycles for 15% or more of building occupants in lieu of changing/shower facilities.

##### **Potential Technologies & Strategies**

Design the building with transportation amenities such as bicycle racks and showering/changing facilities.

##### **Submittals**

- For commercial projects: provide the LEED Letter Template, signed by the Architect or responsible party, declaring the distance to bicycle storage and showers from the building entrance and demonstrating that these facilities can accommodate at least 5% of building occupants.

OR

- For residential projects: provide the LEED Letter Template, signed by the architect or responsible party, declaring the design occupancy for the buildings, number of covered bicycle storage facilities for securing bicycles, and demonstrating that these facilities can accommodate at least 15% of building occupants.

## **Credit 4.3**

### **1 Point**

#### **Alternative Transportation- Alternative Fuel Vehicles**

##### **Intent**

Reduce pollution and land development impacts from automobile use.

##### **Requirements**

Install alternative-fuel stations for 3% of the total vehicle parking capacity of the site. Parking for alternative-fuel vehicles, including hybrid vehicles, requiring no on-site fueling shall be of a “preferred” nature and shall be located within the project accordingly. Liquid or gaseous fueling facilities must be separately ventilated or located outdoors and preferred stalls must be provided for vehicles requiring such fueling.

##### **Potential Technologies & Strategies**

Provide transportation amenities such as alternative fuel refueling stations and carpool/vanpool programs. Consider sharing the costs and benefits of refueling stations with neighbors.

##### **Submittals**

- Provide specifications and site drawings highlighting alternative-fuel refueling stations. Provide calculations demonstrating that these facilities accommodate 3% or more of the total vehicle parking capacity. Provide site drawings or parking plan highlighting preferred parking for alternative fuel vehicles including hybrid vehicles.

## **Credit 4.4**

### **1 Point**

#### **Alternative Transportation- Parking Capacity**

##### **Intent**

Reduce pollution and land development impacts from single occupancy vehicle use.

##### **Requirements**

Size parking capacity to meet, but not exceed, minimum local zoning requirements AND provide preferred parking for carpools or vanpools capable of serving 5% of the building occupants; OR add no new parking for rehabilitation projects AND provide preferred parking for carpools or vanpools capable of serving 5% of the building occupants.

##### **Potential Technologies & Strategies**

Minimize parking lot/garage size. Consider sharing parking facilities with adjacent buildings.

##### **Submittals**

- For new projects: provide the LEED Letter Template, signed by the civil engineer or responsible party, stating any relevant minimum zoning requirements and declaring that parking capacity is sized to meet, but not exceed them. State the number of preferred parking spaces for carpools.

OR

- For rehabilitation projects: provide the LEED Letter Template, signed by the civil engineer or responsible party, declaring that no new parking capacity has been added. State the number of preferred parking spaces for carpools.



## **Credit 5.1**

### **1 Point**

#### **Reduced Site Disturbance- Protect or Restore Open Space**

##### **Intent**

Conserve existing natural areas and restore damaged areas to provide habitat and promote biodiversity.

##### **Requirements**

On greenfield sites, limit site disturbance including earthwork and clearing of vegetation to 40 feet beyond the building perimeter, 5 feet beyond primary roadway curbs, walkways and main utility branch trenches, and 25 feet beyond constructed areas with permeable surfaces (such as pervious paving areas, stormwater detention facilities and playing fields) that require additional staging areas in order to limit compaction in the constructed area; OR, on previously developed sites, restore a minimum of 50% of the site area (excluding the building footprint) by replacing impervious surfaces with native or adapted vegetation.

##### **Potential Technologies & Strategies**

Perform a site survey to identify site elements and adopt a master plan for development of the project site. Select a suitable building location and design the building with a minimal footprint to minimize site disruption. Strategies include stacking the building program, tuck-under parking and sharing facilities with neighbors. Establish clearly marked construction boundaries to minimize disturbance of the existing site and restore previously degraded areas to their natural state.

##### **Submittals**

- For greenfield sites: provide the LEED Letter Template, signed by the civil engineer or responsible party, demonstrating and declaring that site disturbance (including earthwork and clearing of vegetation) has been limited to 40 feet beyond the building perimeter, 5 feet beyond primary roadway curbs, walk ways and main utility branch trenches, and 25 feet beyond constructed areas with permeable surfaces. Provide site drawings and specifications highlighting limits of construction disturbance.

OR

- For previously developed sites: provide a LEED Letter Template, signed by the civil engineer or responsible party, declaring and describing restoration of degraded habitat areas. Include highlighted site drawings with area calculations demonstrating that 50% of the site area that does not fall within the building footprint has been restored.

**Credit 5.2****1 Point****Reduced Site Disturbance- Development Footprint****Intent**

Conserve existing natural areas and restore damaged areas to provide habitat and promote biodiversity.

**Requirements**

Reduce the development footprint (defined as entire building footprint, access roads and parking) to exceed the local zoning's open space requirement for the site by 25%. For areas with no local zoning requirements (e.g., some university campuses, military bases), designate open space area adjacent to the building that is equal to the development footprint.

**Potential Technologies & Strategies**

Perform a site survey to identify site elements and adopt a master plan for development of the project site. Select a suitable building location and design the building with a minimal footprint to minimize site disruption. Strategies include stacking the building program, tuck-under parking and sharing facilities with neighbors. Establish clearly marked construction boundaries to minimize disturbance of existing and restore previously degraded areas to their natural state.

**Submittals**

- Provide a copy of the local zoning requirements highlighting the criteria for open space. Provide the LEED Letter Template, signed by the civil engineer or responsible party, demonstrating and declaring that the open space exceeds the local zoning open space requirement for the site by 25%.

OR

- For areas with no local zoning requirements (e.g., some university campuses, military bases), designate open space area adjacent to the building that is equal to the development footprint. Provide a letter from the property owner stating that the open space will be conserved for the life of the building.

## **Credit 6.1**

### **1 Point**

#### **Stormwater Management- Rate and Quantity**

##### **Intent**

Limit disruption and pollution of natural water flows by managing stormwater runoff.

##### **Requirements**

If existing imperviousness is less than or equal to 50%, implement a stormwater management plan that prevents the post-development 1.5 year, 24 hour peak discharge rate from exceeding the pre-development 1.5 year, 24 hour peak discharge rate.

OR

If existing imperviousness is greater than 50%, implement a stormwater management plan that results in a 25% decrease in the rate and quantity of stormwater runoff.

##### **Potential Technologies & Strategies**

Design the project site to maintain natural stormwater flows by promoting infiltration. Specify garden roofs and pervious paving to minimize impervious surfaces. Reuse stormwater volumes generated for non-potable uses such as landscape irrigation, toilet and urinal flushing and custodial uses.

##### **Submittals**

- Provide the LEED Letter Template, signed by the civil engineer or responsible party, declaring that the post-development 1.5 year, 24 hour peak discharge rate does not exceed the pre-development 1.5 year 24 hour peak discharge rate. Include calculations demonstrating that existing site imperviousness is less than or equal to 50%.

OR

- Provide the LEED Letter Template, signed by the civil engineer or responsible party, declaring and demonstrating that the stormwater management strategies result in at least a 25% decrease in the rate and quantity of stormwater runoff. Include calculations demonstrating that existing site imperviousness exceeds 50%.

## **Credit 6.2**

### **1 Point**

#### **Stormwater Management- Treatment**

##### **Intent**

Limit disruption of natural water flows by eliminating stormwater runoff, increasing on-site infiltration and eliminating contaminants.

##### **Requirements**

Construct site stormwater treatment systems designed to remove 80% of the average annual post-development total suspended solids (TSS) and 40% of the average annual post-development total phosphorous (TP) based on the average annual loadings from all storms less than or equal to the 2-year/24-hour storm. Do so by implementing Best Management Practices (BMPs) outlined in Chapter 4, Part 2 (Urban Runoff), of the U.S. Environmental Protection Agency's (EPA's) *Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters*, January 1993 (Document No. EPA 840B92002) or the local government's BMP document (whichever is more stringent).

##### **Potential Technologies & Strategies**

Design mechanical or natural treatment systems such as constructed wetlands, vegetated filter strips and bioswales to treat the site's stormwater.

##### **Submittals**

Provide the LEED Letter Template, signed by the civil engineer or responsible party, declaring that the design complies with or exceeds EPA or local government Best Management Practices (whichever set is more stringent) for removal of total suspended solids and total phosphorous.

**Credit 7.1****1 Point****Heat Island Effect - Non-Roof****Intent**

Reduce heat islands (thermal gradient differences between developed and undeveloped areas) to minimize impact on microclimate and human and wildlife habitat.

**Requirements**

Provide shade (within 5 years) and/or use light-colored/high-albedo materials (reflectance of at least 0.3) and/or open grid pavement for at least 30% of the site's non-roof impervious surfaces, including parking lots, walkways, plazas, etc.; OR place a minimum of 50% of parking spaces underground or covered by structured parking; OR use an open-grid pavement system (less than 50% impervious) for a minimum of 50% of the parking lot area.

**Potential Technologies & Strategies**

Shade constructed surfaces on the site with landscape features and minimize the overall building footprint. Consider replacing constructed surfaces (i.e. roads, sidewalks, etc.) with vegetated surfaces such as open grid paving or specify high-albedo materials to reduce the heat absorption.

**Submittals**

- Provide the LEED Letter Template, signed by the civil engineer or responsible party, referencing the site plan to demonstrate areas of paving, landscaping (list species) and building footprint, and declaring that:
  - A minimum of 30% of non-roof impervious surfaces areas are constructed with high-albedo materials and/or open grid pavement and/or will be shaded within five years  
OR
  - A minimum of 50% of parking spaces have been placed underground or are covered by structured parking  
OR
  - an open-grid pavement system (less than 50% impervious) has been used for a minimum of 50% of the parking lot area.

## **Credit 7.2**

### **1 Point**

#### **Heat Islands Effect - Roof**

##### **Intent**

Reduce heat islands (thermal gradient differences between developed and undeveloped areas) to minimize impact on microclimate and human and wildlife habitat.

##### **Requirements**

Use ENERGY STAR<sup>®</sup> compliant (highly reflective) AND high emissivity roofing (emissivity of at least 0.9 when tested in accordance with ASTM 408) for a minimum of 75% of the roof surface; OR install a “green” (vegetated) roof for at least 50% of the roof area. Combinations of high albedo and vegetated roof can be used providing they collectively cover 75% of the roof area.

##### **Potential Technologies & Strategies**

Visit the ENERGY STAR<sup>®</sup> Web site, [www.energystar.gov](http://www.energystar.gov), to look for compliant products. Consider installing high-albedo and vegetated roofs to reduce heat absorption.

##### **Submittals**

- Provide the LEED Letter Template, signed by the architect, civil engineer or responsible party, referencing the building plan and declaring that the roofing materials comply with the ENERGY STAR<sup>®</sup> Label requirements and have a minimum emissivity of 0.9. Demonstrate that high-albedo and vegetated roof areas combined comprise at least 75% of the total roof area.

OR

- Provide the LEED Letter Template, signed by the architect, civil engineer or responsible party, referencing the building plan and demonstrating that vegetated roof areas comprise at least 50% of the total roof area.

**Credit 8****1 Point****Light Pollution Reduction****Intent**

Eliminate light trespass from the building and site, improve night sky access and reduce development impact on nocturnal environments.

**Requirements**

Meet or provide lower light levels and uniformity ratios than those recommended by the Illuminating Engineering Society of North America (IESNA) *Recommended Practice Manual: Lighting for Exterior Environments* (RP-33-99). Design exterior lighting such that all exterior luminaires with more than 1000 initial lamp lumens are shielded and all luminaires with more than 3500 initial lamp lumens meet the Full Cutoff IESNA Classification. The maximum candela value of all interior lighting shall fall within the building (not out through windows) and the maximum candela value of all exterior lighting shall fall within the property. Any luminaire within a distance of 2.5 times its mounting height from the property boundary shall have shielding such that no light from that luminaire crosses the property boundary.

**Potential Technologies & Strategies**

Adopt site lighting criteria to maintain safe light levels while avoiding off-site lighting and night sky pollution. Minimize site lighting where possible and model the site lighting using a computer model. Technologies to reduce light pollution include full cutoff luminaires, low-reflectance surfaces and low-angle spotlights.

**Submittals**

- Provide the LEED Letter Template, signed by an appropriate party, declaring that the credit requirements have been met.

## **Credit 9**

### **1 Point**

### **Tenant Design & Construction Guidelines**

#### **Intent**

Provide tenants with a descriptive tool that both educates and helps them implement sustainable design and construction features in their tenant improvement build-out.

Tenant Design and Construction Guidelines benefit the Core and Shell certified project for two important reasons: First, the Guidelines will help tenants design and build sustainable interiors and adopt green building practices; second, the Guidelines will help in coordinating LEED-CI and LEED-CS certifications.

#### **Requirements**

Publish an illustrated document that provides tenants with design and construction information that:

- Provides a description of the sustainable design and construction features incorporated in the core and shell project. List the LEED-CS credits that the project has achieved and provide a description of how each credit was earned and a detailed description of why meeting the credit intent contributes to the overall building;
- Enables the tenant to coordinate their space build out with the core and shell's building systems and materials
- Incorporates user friendly recommendations including examples, strategies, products and service suggestion;
- Provides detailed information on the LEED Green Building Rating System for Commercial Interiors
- Provides information on designated smoking rooms. The information provided on smoking rooms must be consistent with Indoor Environmental Quality Prerequisite 1.

#### **Potential Technologies & Strategies**

Prior to Leasing, provide a copy of the Tenant Design and Construction Guideline to potential tenants.

#### **Submittals**

- Provide the LEED Letter Template, signed by the architect, general contractor or responsible party, describing the Tenant Design and Construction Guideline
- OR
- Provide a copy of the Tenant Design and Construction Guideline.



## **Water Efficiency**

### **Credit 1.1**

#### **1 Point**

### **Water Efficient Landscaping- Reduce by 50%**

#### **Intent**

Limit or eliminate the use of potable water for landscape irrigation.

#### **Requirements**

Use high-efficiency irrigation technology OR use captured rain or recycled site water to reduce potable water consumption for irrigation by 50% over conventional means.

#### **Potential Technologies & Strategies**

Perform a soil/climate analysis to determine appropriate landscape types and design the landscape with indigenous plants to reduce or eliminate irrigation requirements. Use high-efficiency irrigation systems and consider using stormwater and/or greywater for irrigation.

#### **Submittals**

- Provide the LEED Letter Template, signed by the architect, engineer or responsible party, declaring that potable water consumption for site irrigation has been reduced by 50%. Include a brief narrative of the equipment used and/or the use of drought-tolerant or native plants.

## **Credit 1.2**

### **1 Point in addition to WE 1.1**

#### **Water Efficient Landscaping- No Potable Use or No Irrigation**

##### **Intent**

Limit or eliminate the use of potable water for landscape irrigation.

##### **Requirements**

Use only captured rain or recycled site water to eliminate all potable water use for site irrigation (except for initial watering to establish plants), OR do not install permanent landscape irrigation systems.

##### **Potential Technologies & Strategies**

Perform a soil/climate analysis to determine appropriate landscape types and design the landscape with indigenous plants to reduce or eliminate irrigation requirements. Consider using stormwater and/or greywater for irrigation.

##### **Submittals**

- Provide the LEED Letter Template, signed by the responsible architect and/or engineer, declaring that the project site will not use potable water for irrigation. Include a narrative describing the captured rain system, the recycled site water system, and their holding capacity. List all the plant species used. Include calculations demonstrating that irrigation requirements can be met from captured rain or recycled site water.

OR

- Provide the LEED Letter Template, signed by the landscape architect or responsible party, declaring that the project site does not have a permanent landscape irrigation system. Include a narrative describing how the landscape design allows for this.

**Credit 2**  
**1 Point**

**Innovative Wastewater Technologies**

**Intent**

Reduce generation of wastewater and potable water demand, while increasing the local aquifer recharge.

**Requirements**

Reduce the use of municipally provided potable water for building sewage conveyance by a minimum of 50%, OR treat 100% of wastewater on site to tertiary standards.

**Potential Technologies & Strategies**

Specify high-efficiency fixtures and dry fixtures such as composting toilets and waterless urinals to reduce wastewater volumes. Consider reusing stormwater or greywater for sewage conveyance or on-site wastewater treatment systems (mechanical and/or natural).

**Submittals**

- Provide the LEED Letter Template, signed by the architect, MEPengineer or responsible party, declaring that water for building sewage conveyance will be reduced by at least 50%. Include the spreadsheet calculation and a narrative demonstrating the measures used to reduce wastewater by at least 50% from baseline conditions.

OR

- Provide the LEED Letter Template, signed by the civil engineer or responsible party, declaring that 100% of wastewater will be treated to tertiary standards on site. Include a narrative describing the on-site wastewater treatment system.

## **Credit 3.1**

### **1 Point**

#### **Water Use Reduction- 20% Reduction**

##### **Intent**

Maximize water efficiency within buildings to reduce the burden on municipal water supply and wastewater systems.

##### **Requirements**

Employ strategies that in aggregate use 20% less water than the water use baseline calculated for the building (not including irrigation) after meeting the Energy Policy Act of 1992 fixture performance requirements.

##### **Potential Technologies & Strategies**

Estimate the potable and non-potable water needs for the building. Use high-efficiency fixtures, dry fixtures such as composting toilets and waterless urinals, and occupant sensors to reduce the potable water demand. Consider reuse of stormwater and greywater for non-potable applications such as toilet and urinal flushing, mechanical systems and custodial uses.

##### **Submittals**

- Provide the LEED Letter Template, signed by the MEP engineer or responsible party, declaring that the project uses 20% less water than the baseline fixture performance requirements of the Energy Policy Act of 1992.
- Provide the spreadsheet calculation demonstrating that water-consuming fixtures specified for the stated occupancy and use of the building reduce occupancy-based potable water consumption by 20% compared to baseline conditions

**Credit 3.2****1 Point in addition to WE 3.1****Water Use Reduction- 30% Reduction****Intent**

Maximize water efficiency within buildings to reduce the burden on municipal water supply and wastewater systems.

**Requirements**

Employ strategies that in aggregate use 30% less water than the water use baseline calculated for the building (not including irrigation) after meeting the Energy Policy Act of 1992 fixture performance requirements.

**Potential Technologies & Strategies**

Estimate the potable and non-potable water needs for the building. Use high-efficiency fixtures, dry fixtures such as composting toilets and waterless urinals, and occupant sensors to reduce the potable water demand. Consider reuse of stormwater and greywater for non-potable applications such as toilet and urinal flushing, mechanical systems and custodial uses.

**Submittals**

- Provide the LEED Letter Template, signed by the MEP engineer or responsible party, declaring that the project uses 30% less water than the baseline fixture performance requirements of the Energy Policy Act of 1992.
- Provide the spreadsheet calculation demonstrating that water-consuming fixtures specified for the stated occupancy and use of the building reduce occupancy-based potable water consumption by 30% compared to baseline conditions.

# Energy & Atmosphere

## Prerequisite 1 Required

### Fundamental Building Systems Commissioning

#### Intent

Verify and ensure that fundamental core and shell building elements and systems are designed, installed and calibrated to operate as intended.

#### Requirements

Implement or have a contract in place to implement the following fundamental best practice commissioning procedures.

- Engage a commissioning team that does not include individuals directly responsible for project design or construction management.
- Review the design intent and the basis of design documentation.
- Incorporate commissioning requirements into the construction documents.
- Develop and utilize a commissioning plan.
- Verify installation, functional performance, training, operation and maintenance documentation for core and shell systems and equipment.
- Complete a commissioning report.

#### Potential Technologies & Strategies:

Engage a commissioning authority and adopt a commissioning plan. Include commissioning requirements in bid documents and task the commissioning agent to produce a commissioning report once commissioning activities are completed.

#### Submittals

- Provide the LEED Letter Template, signed by the owner or commissioning agent(s), confirming that the fundamental commissioning requirements have been successfully executed or will be provided under existing contract(s).

## **Prerequisite 2 Required**

### **Minimum Energy Performance**

#### **Intent**

Establish the minimum level of energy efficiency for the core and shell base building and systems.

#### **Requirements**

Design the core and shell building to comply with ASHRAE/IESNA Standard 90.1-1999 (without amendments) or the local energy code, whichever is more stringent.

#### **Potential Technologies & Strategies:**

Design the building envelope and systems to maximize energy performance. Use a computer simulation model to assess the energy performance and identify the most cost effective energy measures. Quantify energy performance compared to the baseline building.

#### **Submittals**

- Provide a LEED Letter Template, signed by a licensed professional engineer or architect, stating that the core and shell building complies with ASHRAE/IESNA 90.1-1999 or local energy codes. If local energy codes were applied, demonstrate that the local code is equivalent to, or more stringent than, ASHRAE/IESNA 90.1-1999 (without amendments).

## **Prerequisite 3 Required**

### **CFC Reduction in HVAC&R Equipment**

#### **Intent**

Reduce ozone depletion.

#### **Requirements**

Zero use of CFC-based refrigerants in new base building core and shell HVAC&R systems. When reusing existing base building HVAC equipment, complete a comprehensive CFC phase-out conversion.

#### **Potential Technologies & Strategies:**

When reusing existing HVAC systems, conduct an inventory to identify equipment that uses CFC refrigerants and adopt a replacement schedule for these refrigerants. For new buildings, specify new core and shell HVAC equipment that uses no CFC refrigerants.

#### **Submittals**

- Provide a LEED Letter Template, signed by a licensed professional engineer or architect, declaring that the building's core and shell HVAC&R systems do not use CFC-based refrigerants.



## Credit 1

### 1-10 Points

### Optimize Energy Performance

#### Intent

Achieve increasing levels of energy performance above the prerequisite standard to reduce environmental impacts associated with excessive energy use.

#### Requirements

Reduce design energy cost compared to the energy cost budget for energy systems regulated by ASHRAE/IESNA Standard 90.1-1999 (without amendments), as demonstrated by a building core and shell simulation using the Energy Cost Budget Method described in Section 11 of the Standard using the calculation methodology found in the LEED-CS Supplemental Reference Guide.

New Bldgs.	Existing Bldgs.	Points
15%	5%	1
20%	10%	2
25%	15%	3
30%	20%	4
35%	25%	5
40%	30%	6
45%	35%	7
50%	40%	8
55%	45%	9
60%	50%	10

Regulated energy systems include HVAC (heating, cooling, fans and pumps), service hot water and interior lighting. Non-regulated systems include plug loads, exterior lighting, garage ventilation and elevators (vertical transportation). Two methods may be used to separate energy consumption for regulated systems. The energy consumption for each fuel may be prorated according to the fraction of energy used by regulated and non-regulated energy. Alternatively, separate meters (accounting) may be created in the energy simulation program for regulated and non-regulated energy uses.

If an analysis has been made comparing the proposed design to local energy standards and a defensible equivalency (at minimum) to ASHRAE/IESNA Standard 90.1-1999 has been established, then the comparison against the local code may be used in lieu of the ASHRAE Standard.

Project teams are encouraged to apply for innovation credits if the energy consumption of non-regulated systems is also reduced.

## **Optimize Energy Performance**

(continued)

### **Potential Technologies & Strategies**

Design the building envelope and building systems to maximize energy performance. Use a computer simulation model to assess the energy performance and identify the most cost-effective energy efficiency measures. Quantify energy performance as compared to a baseline building.

### **Submittals**

- Complete the LEED Letter Template incorporating a quantitative summary table showing the energy saving strategies incorporated in the building design.
- Demonstrate via summary printout from energy simulation software that the design energy cost is less than the energy cost budget as defined in ASHRAE/IESNA 90.1-1999, Section 11.

## **Credit 2.1**

### **1 Point**

#### **Renewable Energy- 1%**

##### **Intent**

Encourage and recognize increasing levels of on-site renewable energy self-supply in order to reduce environmental impacts associated with fossil fuel energy use.

##### **Requirements**

Supply at least 1% of the building's core and shell energy use (as expressed as a fraction of annual energy cost) through the use of on-site renewable energy systems.

##### **Potential Technologies & Strategies**

Assess the project for non-polluting and renewable energy potential including solar, wind, geothermal, low-impact hydro, biomass and bio-gas strategies. When applying these strategies, take advantage of net metering with the local utility.

##### **Submittals**

- Provide the LEED Letter Template, signed by the architect, owner or responsible party, declaring that at least 1% of the building's core and shell energy is provided by on-site renewable energy. Include a narrative describing on-site renewable energy systems installed in the building and calculations demonstrating that at least 1% of total core and shell energy costs are supplied by the renewable energy system(s).

## **Credit 2.2**

### **1 Point in addition to EA 2.1**

#### **Renewable Energy- 5%**

##### **Intent**

Encourage and recognize increasing levels of self-supply through renewable technologies to reduce environmental impacts associated with fossil fuel energy use.

##### **Requirements**

Supply at least 5% of the building's core and shell energy use (as expressed as a fraction of annual energy cost) through the use of on-site renewable energy systems.

##### **Potential Technologies & Strategies**

Assess the project for non-polluting renewable energy potential including solar, wind, geothermal, low-impact hydro, biomass and bio-gas strategies. When applying these strategies, take advantage of net metering with the local utility.

##### **Submittals**

- Provide the LEED Letter Template, signed by the architect, owner or responsible party, declaring that at least 5% of the building's core and shell energy is provided by on-site renewable energy. Include a narrative describing on-site renewable energy systems installed in the building and calculations demonstrating that at least 5% of total core and shell energy costs are supplied by the renewable energy system(s).

## **Credit 3**

### **1 Point**

#### **Additional Commissioning**

##### **Intent**

Verify and ensure that the entire building is designed, constructed and calibrated to operate as intended.

##### **Requirements**

In addition to the Fundamental Building Commissioning prerequisite, implement or have a contract in place to implement the following additional commissioning tasks for the building core and shell systems:

1. A commissioning authority independent of the design team shall conduct a review of the design prior to the construction documents phase.
2. An independent commissioning authority shall conduct a review of the construction documents near completion of the construction document development and prior to issuing the contract documents for construction.
3. An independent commissioning authority shall review the contractor submittals relative to systems being commissioned.
4. Provide the owner with a single manual that contains the information required for re-commissioning building systems.
5. Have a contract in place to review building operation with O&M staff, including a plan for resolution of outstanding commissioning-related issues within one year after construction completion date.

##### **Potential Technologies & Strategies**

Engage the commissioning authority early in the design phases.

##### **Submittals**

- Provide the LEED Letter Template, signed by the owner or independent commissioning agent(s) as appropriate, confirming that the required additional commissioning tasks have been successfully executed for the building core and shell systems or will be provided under existing contract(s).

**Credit 4**  
**1 Point**

**Ozone Protection**

**Intent**

Reduce ozone depletion and support early compliance with the Montreal Protocol.

**Requirements**

Install base building level core and shell HVAC and refrigeration equipment and fire suppression systems that do not contain HCFCs or Halons.

**Potential Technologies & Strategies**

When reusing buildings, inventory existing building systems using refrigerants and fire suppression chemicals and replace those that contain HCFCs or Halons. For new buildings, specify refrigeration and fire suppression systems that use no HCFCs or Halons.

**Submittals**

- Provide the LEED Letter Template, signed by the architect or engineer, stating that building core and shell HVAC&R systems as-built are free of HCFCs and Halons.

## Credit 5

### 1 Point

#### Measurement and Verification

##### Intent:

Provide for the ongoing accountability and optimization of building energy and water consumption performance over time.

##### Requirement:

Install continuous metering equipment for the following end-uses included in the building core and shell:

- Lighting systems and controls
- Constant and variable motor loads
- Variable frequency drive (VFD) operation
- Chiller efficiency at variable loads (kW/ton)
- Cooling load
- Air and water economizer and heat recovery cycles
- Air distribution static pressures and ventilation air volumes
- Boiler efficiencies
- Building-related process energy systems and equipment
- Indoor water risers and outdoor irrigation systems

Develop a Measurement and Verification plan that incorporates the monitoring information from the above end-uses and is consistent with Option B, C or D of the 2001 *International Performance Measurement & Verification Protocol (IPMVP) Volume I: Concepts and Options for Determining Energy and Water Savings*.

##### Potential Technologies & Strategies

Model the energy and water systems to predict savings. Design the building with equipment to measure energy and water performance. Draft a Measurement & Verification Plan to apply during building operation that compares predicted savings to those actually achieved in the field.

##### Submittals

- Provide the LEED Letter Template, signed by the licensed engineer or other responsible party, indicating that metering equipment has been installed for each end-use included in the building core and shell and declaring the option to be followed under IPMVP version 2001.
- Provide a copy of the M&V plan following IPMVP, 2001 version, including an executive summary.

## **Credit 6**

### **1 Point**

## **Green Power**

### **Intent**

Encourage the development and use of grid-source, renewable energy technologies on a net zero pollution basis.

### **Requirements**

Provide at least 50% of the building's core and shell electricity from renewable sources by engaging in at least a two-year renewable energy contract. Renewable sources are as defined by the Center for Resource Solutions (CRS) Green-e products certification requirements. Green power may be procured from a Green-e certified power marketer, a Green-e accredited utility program, or through Green-e certified Tradable Renewable Certificates.

### **Potential Technologies & Strategies**

Determine the energy needs of the building and investigate opportunities to engage in a green power contract with the local utility. Green power is derived from solar, wind, geothermal, biomass or low-impact hydro sources. Visit [www.green-e.org](http://www.green-e.org) for details about the Green-e program.

### **Submittals**

- Provide the LEED Letter Template, signed by the owner or other responsible party, documenting that the supplied renewable power is equal to 50% of the project's core and shell energy consumption and the sources meet the Green-e definition of renewable energy.
- Provide a copy of the two-year electric utility purchase contract for power generated from renewable sources.



# Materials & Resources

## **Prerequisite 1 Required**

### **Storage & Collection of Recyclables**

#### **Intent**

Facilitate the reduction of waste generated by building occupants that is hauled to and disposed of in landfills.

#### **Requirements**

Provide an easily accessible area that serves the entire building and is dedicated to the separation, collection and storage of materials for recycling including (at a minimum) paper, corrugated cardboard, glass, plastics and metals.

#### **Potential Technologies & Strategies**

Designate an area for recyclable collection and storage that is appropriately sized and located in a convenient area. Identify local waste handlers and buyers for glass, plastic, office paper, newspaper, cardboard and organic wastes. Instruct occupants on building recycling procedures. Consider employing cardboard balers, aluminum can crushers, recycling chutes and other waste management technologies to further enhance the recycling program.

#### **Submittals**

- Provide the LEED Letter Template, signed by the architect or owner, declaring that the area dedicated to recycling is easily accessible and accommodates the building's recycling needs.
- Provide a plan showing the area(s) dedicated to recycled material collection and storage.

## **Credit 1.1**

### **1 Point**

#### **Building Reuse- Maintain 75% of Existing Shell**

##### **Intent**

Extend the life cycle of existing building stock, conserve resources, retain cultural resources, reduce waste and reduce environmental impacts of new buildings as they relate to materials manufacturing and transport.

##### **Requirements**

Maintain at least 75% of existing building structure and shell (exterior skin and framing, excluding window assemblies and non-structural roofing material).

##### **Potential Technologies & Strategies**

Consider reuse of existing buildings, including structure, shell and non-shell elements. Remove elements that pose contamination risk to building occupants and upgrade outdated components such as windows, mechanical systems and plumbing fixtures. Quantify the extent of building reuse.

##### **Submittals**

- Provide the LEED Letter Template, signed by the architect, owner or other responsible party, listing the retained elements and declaring that the credit requirements have been met.

## **Credit 1.2**

### **1 Point in addition to MR 1.1**

#### **Building Reuse-Maintain 95% of Existing Shell**

##### **Intent**

Extend the life cycle of existing building stock, conserve resources, retain cultural resources, reduce waste and reduce environmental impacts of new buildings as they relate to materials manufacturing and transport.

##### **Requirements**

Maintain an additional 20% (95% total) of existing building structure and shell (exterior skin and framing, excluding window assemblies and non-structural roofing material).

##### **Potential Technologies & Strategies**

Consider reuse of existing buildings, including structure, shell and non-shell elements. Remove elements that pose contamination risk to building occupants and upgrade outdated components such as windows, mechanical systems and plumbing fixtures. Quantify the extent of building reuse.

##### **Submittals**

- Provide the LEED Letter Template, signed by the architect, owner or other responsible party, demonstrating the retained elements and declaring that the credit requirements have been met.

## Credit 2.1

### 1 Point

#### **Construction Waste Management- Divert 50% From Landfill**

##### **Intent**

Divert construction, demolition and land clearing debris from landfill disposal. Redirect recyclable recovered resources back to the manufacturing process. Redirect reusable materials to appropriate sites.

##### **Requirements**

Develop and implement a waste management plan, quantifying material diversion goals. Recycle and/or salvage at least 50% of construction, demolition and land clearing waste. Calculations can be done by weight or volume, but must be consistent throughout.

##### **Potential Technologies & Strategies**

Establish goals for landfill diversion and adopt a construction waste management plan to achieve these goals. Consider recycling land clearing debris, cardboard, metal, brick, concrete, plastic, clean wood, glass, gypsum wallboard, carpet and insulation. Designate a specific area on the construction site for recycling and track recycling efforts throughout the construction process. Identify construction haulers and recyclers to handle the designated materials. Note that salvage may include donation of materials to charitable organizations such as Habitat for Humanity.

##### **Submittals**

- Provide the LEED Letter Template, signed by the architect, owner or other responsible party, tabulating the total waste material, quantities diverted and the means by which diverted, and declaring that the credit requirements have been met.

**Credit 2.2****1 Point in addition to MR 2.1****Construction Waste Management- Divert 75% From Landfill****Intent**

Divert construction, demolition and land clearing debris from landfill disposal. Redirect recyclable recovered resources back to the manufacturing process. Redirect reusable materials to appropriate sites.

**Requirements**

Develop and implement a waste management plan, quantifying material diversion goals. Recycle and/or salvage an additional 25% (75% total) of construction, demolition and land clearing waste. Calculations can be done by weight or volume, but must be consistent throughout.

**Potential Technologies & Strategies**

Establish goals for landfill diversion and adopt a construction waste management plan to achieve these goals. Consider recycling land clearing debris, cardboard, metal, brick, concrete, plastic, clean wood, glass, gypsum wallboard, carpet and insulation. Designate a specific area on the construction site for recycling and track recycling efforts throughout the construction process. Identify construction haulers and recyclers to handle the designated materials. Note that salvage may include donation of materials to charitable organizations such as Habitat for Humanity.

**Submittals**

- Provide the LEED Letter Template, signed by the architect, owner or other responsible party, tabulating the total waste material, quantities diverted and the means by which diverted, and declaring that the credit requirements have been met.

## **Credit 3**

### **1 Point**

#### **Resource Reuse- 5%**

##### **Intent**

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.

##### **Requirements**

Use salvaged, refurbished or reused materials, products and furnishings for at least 5% of building materials.

##### **Potential Technologies & Strategies**

Identify opportunities to incorporate salvaged materials into building design and research potential material suppliers. Consider salvaged materials such as beams and posts, flooring, paneling, doors and frames, cabinetry and furniture, brick and decorative items.

##### **Submittals**

- Provide the LEED Letter Template, signed by the architect, owner or other responsible party, declaring that the credit requirements have been met and listing each material or product used to meet the credit. Include details demonstrating that the project incorporates the required percentage of reused materials and products and showing their costs and the total cost of materials for the project.

**Credit 4.1****1 Point****Recycled Content: 5% (post-consumer + ½ post-industrial)****Intent**

Increase demand for building products that incorporate recycled content materials, therefore reducing impacts resulting from extraction and processing of new virgin materials.

**Requirements**

Use materials with recycled content such that the sum of post-consumer recycled content plus one-half of the post-industrial content constitutes at least 5% of the total value of the materials in the project.

The value of the recycled content portion of a material or furnishing shall be determined by dividing the weight of recycled content in the item by the total weight of all material in the item, then multiplying the resulting percentage by the total value of the item.

Mechanical and electrical components shall not be included in this calculation. Recycled content materials shall be defined in accordance with the Federal Trade Commission document, *Guides for the Use of Environmental Marketing Claims, 16 CFR 260.7 (e)*, available at [www.ftc.gov/bcp/grnrule/guides980427.htm](http://www.ftc.gov/bcp/grnrule/guides980427.htm).

**Potential Technologies & Strategies**

Establish a project goal for recycled content materials and identify material suppliers that can achieve this goal. During construction, ensure that the specified recycled content materials are installed and quantify the total percentage of recycled content materials installed.

**Submittals**

- Provide the LEED Letter Template, signed by the architect, owner or other responsible party, declaring that the credit requirements have been met and listing the recycled content products used. Include details demonstrating that the project incorporates the required percentage of recycled content materials and products and showing their cost and percentage(s) of post-consumer and/or post-industrial content, and the total cost of all materials for the project.

**Credit 4.2****1 Point in addition to MR 4.1****Recycled Content: 10% (post-consumer + ½ post-industrial)****Intent**

Increase demand for building products that incorporate recycled content materials, therefore reducing the impacts resulting from extraction and processing of new virgin materials.

**Requirements**

Use materials with recycled content such that the sum of post-consumer recycled content plus one-half of the post-industrial content constitutes at least 10% of the total value of the materials in the project.

The value of the recycled content portion of a material or furnishing shall be determined by dividing the weight of recycled content in the item by the total weight of all material in the item, then multiplying the resulting percentage by the total value of the item.

Mechanical and electrical components shall not be included in this calculation. Recycled content materials shall be defined in accordance with the Federal Trade Commission document, *Guides for the Use of Environmental Marketing Claims, 16 CFR 260.7 (e)*, available at [www.ftc.gov/bcp/grnrule/guides980427.htm](http://www.ftc.gov/bcp/grnrule/guides980427.htm).

**Potential Technologies & Strategies**

Establish a project goal for recycled content materials and identify material suppliers that can achieve this goal. During construction, ensure that the specified recycled content materials are installed and quantify the total percentage of recycled content materials installed.

**Submittals**

- Provide the LEED Letter Template, signed by the architect, owner or other responsible party, declaring that the credit requirements have been met and listing the recycled content products used. Include details demonstrating that the project incorporates the required percentage of recycled content materials and products and showing their cost and percentage(s) of post-consumer and/or post-industrial content, and the total cost of all materials for the project.



## **Credit 5.1**

### **1 Point**

#### **Regional Materials- 20% Manufactured Locally**

##### **Intent**

Increase demand for building materials and products that are extracted and manufactured within the region, thereby supporting the regional economy and reducing the environmental impacts resulting from transportation .

##### **Requirements**

Use a minimum of 20% of building materials and products that are manufactured\* regionally within a radius of 500 miles.

\* Manufacturing refers to the final assembly of components into the building product that is furnished and installed by the tradesmen. For example, if the hardware comes from Dallas, Texas, the lumber from Vancouver, British Columbia, and the joist is assembled in Kent, Washington; then the location of the final assembly is Kent, Washington.

##### **Potential Technologies & Strategies**

Establish a project goal for locally sourced materials and identify materials and material suppliers that can achieve this goal. During construction, ensure that the specified local materials are installed and quantify the total percentage of local materials installed.

##### **Submittals**

- Provide the LEED Letter Template, signed by the architect or responsible party, declaring that the credit requirements have been met. Include calculations demonstrating that the project incorporates the required percentage of regional materials/products and showing their cost, percentage of regional components, distance from project to manufacturer, and the total cost of all materials for the project.

**Credit 5.2****1 Point in addition to MR 5.1****Regional Materials- 50% Harvested Locally****Intent**

Increase demand for building materials and products that are extracted and manufactured within the region, thereby supporting the regional economy and reducing the environmental impacts resulting from transportation.

**Requirements**

Of the regionally manufactured materials documented for MR Credit 5.1, use a minimum of 50% of building materials and products that are extracted, harvested or recovered (as well as manufactured) within 500 miles of the project site.

**Potential Technologies & Strategies**

Establish a project goal for locally sourced materials and identify materials and material suppliers that can achieve this goal. During construction, ensure that the specified local materials are installed and quantify the total percentage of local materials installed.

**Submittals**

- Provide the LEED Letter Template, signed by the architect or responsible party, declaring that the credit requirements have been met. Include calculations demonstrating that the project incorporates the required percentage of regional materials/products and showing their cost, percentage of regional components, distance from project to manufacturer, and the total cost of all materials for the project.

## **Credit 6**

### **1 Point**

#### **Rapidly Renewable Materials**

##### **Intent**

Reduce the use and depletion of finite raw materials and long-cycle renewable materials by replacing them with rapidly renewable materials.

##### **Requirements**

Use rapidly renewable building materials and products (made from plants that are typically harvested within a ten-year cycle or shorter) for 5% of the total value of all building materials and products used in the project.

##### **Potential Technologies & Strategies**

Establish a project goal for rapidly renewable materials and identify materials and suppliers that can achieve this goal. Consider materials such as bamboo flooring, wool carpets, straw board, cotton batt insulation, linoleum flooring, poplar OSB, sunflower seed board, wheatgrass cabinetry and others. During construction, ensure that the specified rapidly renewable materials are installed.

##### **Submittals**

- Provide the LEED Letter Template, signed by the architect or responsible party, declaring that the credit requirements have been met. Include calculations demonstrating that the project incorporates the required percentage of rapidly renewable products. Show their cost and percentage of rapidly renewable components, and the total cost of all materials for the project.

## **Credit 7**

### **1 Point**

#### **Certified Wood**

##### **Intent**

Encourage environmentally responsible forest management.

##### **Requirements**

Use a minimum of 50% of wood-based materials and products, certified in accordance with the Forest Stewardship Council's Principles and Criteria, for wood building components including, but not limited to, structural framing and general dimensional framing, flooring, finishes, furnishings, and non-rented temporary construction applications such as bracing, concrete form work and pedestrian barriers.

##### **Potential Technologies & Strategies**

Establish a project goal for FSC-certified wood products and identify suppliers that can achieve this goal. During construction, ensure that the FSC-certified wood products are installed and quantify the total percentage of FSC-certified wood products installed.

##### **Submittals**

- Provide the LEED Letter Template, signed by the architect, owner or responsible party, declaring that the credit requirements have been met and listing the FSC-certified materials and products used. Include calculations demonstrating that the project incorporates the required percentage of FSC-certified materials/products and their cost together with the total cost of all materials for the project. For each material/product used to meet these requirements, provide the vendor's or manufacturer's Forest Stewardship Council chain-of-custody certificate number.

# Indoor Environmental Quality

## Prerequisite 1 Required

### Minimum IAQ Performance

#### Intent

Establish minimum indoor air quality (IAQ) performance to prevent the development of indoor air quality problems in buildings, thus contributing to the comfort and well-being of the occupants.

#### Requirements

Meet the minimum requirements of voluntary consensus standard ASHRAE 62-1999, Ventilation for Acceptable Indoor Air Quality, and approved Addenda (see ASHRAE 62-2001, Appendix H, for a complete compilation of Addenda) using the Ventilation Rate Procedure.

#### Potential Technologies & Strategies

Design the HVAC system to meet the ventilation requirements of the referenced standard. Identify potential IAQ problems on the site and locate air intakes away from contaminant sources.

#### Submittals

- Provide the LEED Letter Template, signed by the mechanical engineer or responsible party, declaring that the project is fully compliant with ASHRAE 62-1999 and all published Addenda and describing the procedure employed in the IAQ analysis (Ventilation Rate Procedure).

## **Prerequisite 2 Required**

### **Environmental Tobacco Smoke (ETS) Control**

#### **Intent**

Prevent exposure of building occupants and systems to Environmental Tobacco Smoke (ETS).

#### **Requirements**

Zero exposure of non-smokers to ETS by EITHER:

prohibiting smoking in the public areas of the building and locating any exterior designated smoking areas away from entries and operable windows. Demising walls shall be constructed as impermeable deck-to-deck partitions. The developer is required to provide sealed electrical boxes and switches installed in all demising partitions provided as part of the building core and shell.

OR

providing a designated smoking room designed to effectively contain, capture and remove ETS from the building. At a minimum, the smoking room must be directly exhausted to the outdoors with no recirculation of ETS-containing air to the non-smoking area of the building, enclosed with impermeable deck-to-deck partitions and operated at a negative pressure compared with the surrounding spaces of at least 7 PA (0.03 inches of water gauge).

Performance of the smoking rooms shall be verified by using tracer gas testing methods as described in the ASHRAE Standard 129-1997. Acceptable exposure in non-smoking areas is defined as less than 1% of the tracer gas concentration in the smoking room detectable in the adjoining non-smoking areas. Smoking room testing as described in ASHRAE Standard 129-1997, Section 8, is required in the contract documents and critical smoking facility systems testing results must be included in the building commissioning plan and report or as a separate document.

#### **Potential Technologies & Strategies**

Prohibit smoking in the building or provide separate smoking rooms with isolated ventilation systems.

#### **Submittals**

- Provide the LEED Letter Template, signed by the building owner or responsible party, declaring that the public areas of the building will be operated under a policy prohibiting smoking.

OR

- Provide the LEED Letter Template, signed by the mechanical engineer or responsible party, declaring and demonstrating that designated smoking rooms are exhausted to the outdoors with no recirculation of ETS-containing air to the non-smoking area of the building, enclosed with impermeable deck-to-deck partitions, operated at a negative pressure compared with the surrounding spaces of at least 7 PA (0.03 inches of water gauge), and performance has been verified using the method described in the credit requirements.

**Credit 1**  
**1 Point**

**Carbon Dioxide (CO<sub>2</sub>) Monitoring**

**Intent**

Provide capacity for indoor air quality (IAQ) monitoring to help sustain long-term occupant comfort and well-being.

**Requirements**

At all locations that ventilation air is provided to each floor, install a permanent carbon dioxide (CO<sub>2</sub>) monitoring system that provides feedback on space ventilation performance in a form that affords operational adjustments. Refer to the CO<sub>2</sub> differential for all types of occupancy in accordance with ASHRAE 62-2001, Appendix D.

**Potential Technologies & Strategies**

Design the HVAC system with carbon dioxide monitoring sensors and integrate these sensors with the building automation system (BAS).

**Submittals**

- Provide the LEED Letter Template, signed by the mechanical engineer or responsible party, declaring and summarizing the installation, operational design and controls/zones for the carbon dioxide monitoring system. For mixed-use buildings, calculate CO<sub>2</sub> levels for each separate activity level and use.

## Credit 2

### 1 Point

#### Ventilation Effectiveness

##### Intent

Provide for the effective delivery and mixing of fresh air to support the safety, comfort and well-being of building occupants.

##### Requirements

For mechanically ventilated buildings, design ventilation systems that result in an air change effectiveness ( $\epsilon_{ac}$ ) greater than or equal to 0.9 as determined by ASHRAE 129-1997. For naturally ventilated spaces demonstrate a distribution and laminar flow pattern that involves not less than 90% of the room or zone area in the direction of air flow for at least 95% of hours of occupancy.

##### Potential Technologies & Strategies

Design the HVAC system and building envelope to optimize air change effectiveness. Air change effectiveness can be optimized using a variety of ventilation strategies including displacement ventilation, low-velocity ventilation, plug-flow ventilation such as under floor or near floor delivery, and operable windows. Test the air change effectiveness of the building after construction.

##### Submittals

- For mechanically ventilated spaces: provide the LEED Letter Template, signed by the mechanical engineer or responsible party, declaring that the design achieves an air change effectiveness ( $\epsilon_{ac}$ ) of 0.9 or greater in each ventilated zone. Complete the table summarizing the air change effectiveness achieved for each zone.

OR

- For mechanically ventilated spaces: provide the LEED Letter Template, signed by the mechanical engineer or responsible party, declaring that the design complies with the recommended design approaches in ASHRAE 2001 Fundamentals Chapter 32, Space Air Diffusion.

OR

- For naturally ventilated spaces: provide the LEED Letter Template, signed by the mechanical engineer or responsible party, declaring that the design provides effective ventilation in at least 90% of each room or zone area in the direction of airflow for at least 95% of hours of occupancy. Include a table summarizing the airflow simulation results for each zone. Include sketches indicating the airflow pattern for each zone.



## **Credit 3**

### **1 Point**

#### **Construction IAQ Management Plan- During Construction**

##### **Intent**

Prevent indoor air quality problems resulting from the construction/renovation process in order to help sustain the comfort and well-being of construction workers and building occupants.

##### **Requirements**

Develop and implement an Indoor Air Quality (IAQ) Management Plan for the construction and pre-occupancy phases of the building as follows:

- During construction meet or exceed the recommended Design Approaches of the Sheet Metal and Air Conditioning National Contractors Association (SMACNA) IAQ Guideline for Occupied Buildings under Construction, 1995, Chapter 3.
- Protect stored on-site or installed absorptive materials from moisture damage.
- If air handlers must be used during construction, filtration media with a Minimum Efficiency Reporting Value (MERV) of 8 must be used at each return air grill, as determined by ASHRAE 52.2-1999.
- Replace all filtration media immediately prior to occupancy. Filtration media shall have a Minimum Efficiency Reporting Value (MERV) of 13, as determined by ASHRAE 52.2-1999 for media installed at the end of construction.

##### **Submittals**

- Provide the LEED Letter Template, signed by the general contractor or responsible party, declaring that a Construction IAQ Management Plan has been developed and implemented, and listing each air filter used during construction and at the end of construction. Include the MERV value, manufacturer name and model number.

##### **AND EITHER**

- Provide 18 photographs—six photographs taken on three different occasions during construction—along with identification of the SMACNA approach featured by each photograph, in order to show consistent adherence to the credit requirements

##### **OR**

- Declare the five Design Approaches of SMACNA IAQ Guideline for Occupied Buildings under Construction, 1995, Chapter 3, which were used during building construction. Include a brief description of some of the important design approaches employed

##### **Potential Technologies & Strategies**

Adopt an IAQ management plan to protect the HVAC system during construction, control pollutant sources and interrupt contamination pathways. Sequence the installation of materials to avoid contamination of absorptive materials such as insulation, carpeting, ceiling tile and gypsum wall board.

## **Credit 4.1**

### **1 Point for Achievement of 2 (4.1, 4.2, 4.3 or 4.4)**

#### **Low-Emitting Materials- Adhesives & Sealants**

##### **Intent**

Reduce the quantity of indoor air contaminants that are odorous, potentially irritating and/or harmful to the comfort and well-being of installers and occupants.

##### **Requirements**

The VOC content of adhesives and sealants used on the building core and shell must be less than the current VOC content limits of South Coast Air Quality Management District (SCAQMD) Rule #1168, AND all sealants used as fillers must meet or exceed the requirements of the Bay Area Air Quality Management District Regulation 8, Rule 51.

##### **Potential Technologies & Strategies**

Specify Low-VOC materials in construction documents. Ensure that VOC limits are clearly stated in each section where adhesives and sealants are addressed.

##### **Submittals**

- Provide the LEED Letter Template, signed by the architect or responsible party, listing the adhesives and sealants used in the building and declaring that they meet the noted requirements.

## **Credit 4.2**

### **1 Point for Achievement of 2 (4.1, 4.2, 4.3 or 4.4)**

#### **Low-Emitting Materials- Paints and Coatings**

##### **Intent**

Reduce the quantity of indoor air contaminants that are odorous, potentially irritating and/or harmful to the comfort and well-being of installers and occupants.

##### **Requirements**

VOC emissions from interior paints and coatings used on the building core and shell must not exceed the VOC and chemical component limits of Green Seal's Standard GS-11 requirements.

##### **Potential Technologies & Strategies**

Specify Low-VOC paints and coatings in construction documents. Ensure that VOC limits are clearly stated in each section where paints are addressed

##### **Submittals**

- Provide the LEED Letter Template, signed by the architect or responsible party, listing all the interior paints and coatings used in the building and stating that they comply with the current VOC and chemical component limits of Green Seal's Standard GS-11 requirements.

## **Credit 4.3**

### **1 Point for Achievement of 2 (4.1, 4.2, 4.3 or 4.4)**

#### **Low-Emitting Materials- Carpet**

##### **Intent**

Reduce the quantity of indoor air contaminants that are odorous, potentially irritating and/or harmful to the comfort and well-being of installers and occupants.

##### **Requirements**

Carpet systems used in the building core and shell must meet or exceed the requirements of the Carpet and Rug Institute's Green Label Indoor Air Quality Test Program.

##### **Potential Technologies & Strategies**

Specify Low-VOC carpet products and systems in construction documents. Ensure that VOC limits are clearly stated where carpet systems are addressed.

##### **Submittals**

- Provide the LEED Letter Template, signed by the architect or responsible party, listing all the carpet systems used in the building and stating that they comply with the current VOC limits of the Carpet and Rug Institute's Green Label Indoor Air Quality Test Program.

## **Credit 4.4**

### **1 Point for Achievement of 2 (4.1, 4.2, 4.3 or 4.4)**

#### **Low-Emitting Materials- Composite Wood**

##### **Intent**

Reduce the quantity of indoor air contaminants that are odorous, potentially irritating and/or harmful to the comfort and well-being of installers and occupants.

##### **Requirements**

Composite wood and agrifiber products used on the building core and shell must contain no added urea-formaldehyde resins.

##### **Potential Technologies & Strategies**

Specify wood and agrifiber products that contain no added urea-formaldehyde resins.

##### **Submittals**

- Provide the LEED Letter Template, signed by the architect or responsible party, listing all the composite wood products used in the building and stating that they contain no added urea-formaldehyde resins.

## **Credit 5**

### **1 Point**

## **Indoor Chemical & Pollutant Source Control**

### **Intent**

Avoid exposure of building occupants to potentially hazardous chemicals that adversely impact air quality.

### **Requirements**

Design to minimize pollutant cross-contamination of regularly occupied areas:

- Employ permanent entryway systems (grills, grates, etc.) to capture dirt, particulates, etc. from entering the building at all high volume entryways.
- Where chemical use occurs (including housekeeping areas and copying/printing rooms), provide segregated areas with deck to deck partitions with separate outside exhaust at a rate of at least 0.50 cubic feet per minute per square foot, no air re-circulation and maintaining a negative pressure of at least 7 PA (0.03 inches of water gauge).
- Provide drains plumbed for appropriate disposal of liquid waste in spaces where water and chemical concentrate mixing occurs.

### **Potential Technologies & Strategies**

Design separate exhaust and plumbing systems for rooms with contaminants to achieve physical isolation from the rest of the building. Install permanent architectural entryway systems such as grills or grates to prevent occupant-borne contaminants from entering the building.

### **Submittals**

- Provide the LEED Letter Template, signed by the architect or responsible party, declaring that:
  - Permanent entryway systems (grilles, grates, etc.) to capture dirt, particulates, etc. are provided at all high volume entryways.
  - Chemical use areas and copy rooms have been physically separated with deck-to-deck partitions; independent exhaust ventilation has been installed at 0.50 cfm/square foot and that a negative pressure differential of 7 Pa has been achieved.
  - In spaces where water and chemical concentrate mixing occurs, drains are plumbed for environmentally appropriate disposal of liquid waste.

## **Credit 6.1**

### **1 Point**

#### **Controllability of Systems- Perimeter Spaces**

##### **Intent**

Provide a high level of thermal and ventilation system control by individual occupants or specific groups in multi-occupant spaces to promote the health, productivity, comfort and well-being of building occupants.

##### **Requirements**

Provide at least an average of one operable window per 200 square feet for all regularly occupied areas within 15 feet of the perimeter wall.

##### **Potential Technologies & Strategies**

Design the building with operable windows.

##### **Submittals**

- Provide the LEED Letter Template, signed by the architect or responsible party, demonstrating and declaring that for regularly occupied perimeter areas of the building, a minimum of one operable window is provided per 200 square feet on average.

## **Credit 6.2**

### **1 Point**

#### **Controllability of Systems- Non-Perimeter Spaces**

##### **Intent**

Provide a high level of thermal and ventilation system control by individual occupants or specific groups in multi-occupant spaces to promote the health, productivity, comfort and well-being of building occupants.

##### **Requirements**

Provide controls for each individual for airflow and temperature of the occupied space, and for at least 50% of the occupants in non-perimeter, regularly occupied areas.

##### **Potential Technologies & Strategies**

Design the building core and shell with occupant controls for airflow and temperature of the occupied space. Strategies to consider include underfloor HVAC systems with individual diffusers.

##### **Submittals**

- Provide the LEED Letter Template, signed by the architect or responsible party, demonstrating and declaring that controls for individual airflow and temperature of the occupied space are provided for at least 50% of the occupants in non-perimeter, regularly occupied areas.



## **Credit 7.1**

### **1 Point**

#### **Thermal Comfort- Compliance with ASHRAE 55-1992**

##### **Intent**

Provide a thermally comfortable environment that supports the productivity and well-being of building occupants.

##### **Requirements**

Comply with ASHRAE Standard 55-1992, Addenda 1995, for thermal comfort standards including humidity control within established ranges per climate zone. For naturally ventilated buildings, utilize the adaptive comfort temperature boundaries, using the 90% acceptability limits as defined in the California High Performance Schools (CHPS) Best Practices Manual, Appendix C – A Field Based Thermal Comfort Standard for Naturally Ventilated Buildings, Figure 2.

##### **Potential Technologies & Strategies**

Establish temperature and humidity comfort ranges and design the building envelope and HVAC system to maintain these comfort ranges.

##### **Submittals**

- For mechanically ventilated spaces: provide the LEED Letter Template, signed by the engineer or responsible party, declaring that the project complies with ASHRAE Standard 55-1992, Addenda 1995. Include a table that identifies each thermally controlled zone, and that summarizes for each zone the temperature and humidity control ranges and the method of control used.

OR

- For naturally ventilated spaces: provide the LEED Letter Template, signed by the engineer or responsible party declaring that the project complies with the 90% acceptability limits of the adaptive comfort temperature boundaries in the California High Performance Schools (CHPS) Best Practices Manual Appendix C – A Field Based Thermal Comfort Standard for Naturally Ventilated Buildings, Figure 2.

**Credit 7.2****1 Point****Thermal Comfort- Permanent Monitoring System****Intent**

Provide a thermally comfortable environment that supports the productivity and well-being of building occupants.

**Requirements**

Install a permanent temperature and humidity monitoring system configured to provide operators control over thermal comfort performance and the effectiveness of humidification and/or dehumidification systems in the building.

**Potential Technologies & Strategies**

Establish temperature and humidity comfort ranges and design the building envelope and HVAC system to maintain these comfort ranges. Install and maintain a temperature and humidity monitoring system in the building to automatically adjust building conditions as appropriate.

**Submittals**

- Provide the LEED Letter Template, signed by the engineer or responsible party, declaring that a permanent temperature and humidity monitoring system will operate throughout all seasons to permit control of the building zones within the seasonal thermal comfort ranges defined in ASHRAE 55-1992, Addenda 1995. Confirm that the temperature and humidity controls were (or will be) tested as part of the scope of work for Energy and Atmosphere Prerequisite 1, Fundamental Building Systems Commissioning. Include the document name and section number where the commissioning work is listed.

**Credit 8.1****1 Point****Daylight and Views- Daylight 75% of Spaces****Intent**

Provide for the building occupants a connection between indoor spaces and the outdoors through the introduction of daylight and views into the regularly occupied areas of the building.

**Requirements**

Achieve a minimum Daylight Factor of 2% (excluding all direct sunlight penetration) in 75% of all space occupied for critical visual tasks. Spaces excluded from this requirement include copy rooms, storage areas, mechanical plant rooms, laundry and other low occupancy support areas. Other exceptions for spaces where tasks would be hindered by the use of daylight will be considered on their merits.

**Potential Technologies & Strategies**

Design the building to maximize interior daylighting. Strategies to consider include building orientation, shallow floor plates, increased building perimeter, exterior and interior permanent shading devices, high performance glazing and photo-integrated light sensors. Predict daylighting via calculations or model daylighting strategies with a physical or computer model to assess footcandle levels and daylight factors achieved.

**Submittals**

- Provide the LEED Letter Template signed by the architect or responsible party. Provide area calculations that define the daylight zone and provide prediction calculations or daylight simulation.

## **Credit 8.2**

### **1 Point**

#### **Daylight and Views- Views for 90% of Spaces**

##### **Intent**

Provide for the building occupants a connection between indoor spaces and the outdoors through the introduction of daylight and views into the regularly occupied areas of the building.

##### **Requirements**

Achieve direct line of sight to vision glazing for building occupants in 90% of all regularly occupied spaces. Examples of exceptions include copy rooms, storage areas, mechanical, laundry and other low occupancy support areas. Other exceptions will be considered on their merits.

##### **Potential Technologies & Strategies**

Design the building to maximize view opportunities.

##### **Submittals**

- Provide the LEED Letter Template and calculations describing, demonstrating and declaring that the building occupants in 90% of regularly occupied spaces will have direct lines of site to perimeter glazing. Provide drawings highlighting the direct line of sight zones.

# Innovation & Design Process

## Credit 1

### 1-4 Points

#### Innovation in Design

##### Intent

To provide design teams and projects the opportunity to be awarded points for exceptional performance above the requirements set by the LEED Green Building Rating System and/or innovative performance in Green Building categories not specifically addressed by the LEED Green Building Rating System.

##### Requirements

Credit 1.1 (1 point) In writing, identify the intent of the proposed innovation credit, the proposed requirement for compliance, the proposed submittals to demonstrate compliance, and the design approach (strategies) that might be used to meet the requirements.

Credit 1.2 (1 point) Same as Credit 1.1

Credit 1.3 (1 point) Same as Credit 1.1

Credit 1.4 (1 point) Same as Credit 1.1

##### Potential Technologies & Strategies

Substantially exceed a LEED performance credit such as energy performance or water efficiency. Apply strategies or measures that are not covered by LEED such as acoustic performance, education of occupants, community development or lifecycle analysis of material choices.

##### Submittals

- Provide the proposal(s) within the LEED Letter Template (including intent, requirement, submittals and possible strategies) and relevant evidence of performance achieved.

## **Credit 2**

### **LEED Accredited Professional 1 Point**

#### **Intent**

To support and encourage the design integration required by a LEED Green Building project and to streamline the application and certification process.

#### **Requirement**

At least one principal participant of the project team that has successfully completed the LEED Accredited Professional exam

#### **Potential Technologies & Strategies**

Attending a LEED Accredited Professional Training Workshop is recommended but not required. Study the LEED Reference Guide. Successfully pass the LEED accreditation exam.

#### **Submittals**

- Provide the LEED Letter Template stating the LEED Accredited Professional's name, title, company and contact information.