Green Building Rating System For Commercial Interiors

Version 2

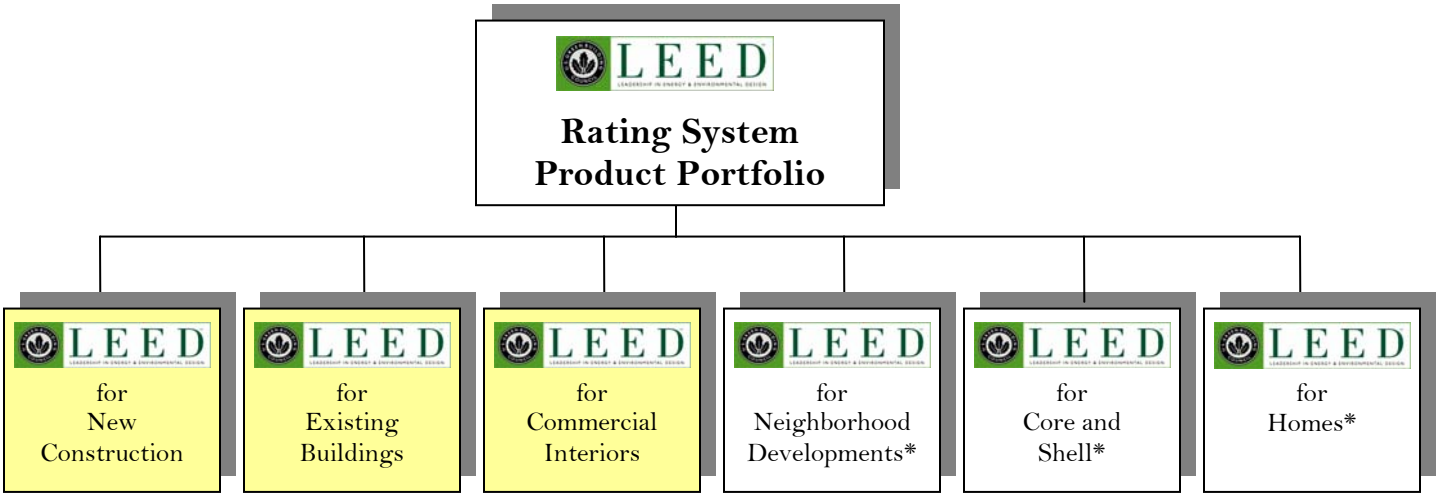
November 2004

Leadership in Energy and Environmental Design (LEED®)

Buildings fundamentally impact people's lives and the health of the planet. In the United States, buildings use one-third of our total energy, two-thirds of our electricity, one-eighth of our water, and transform land that provides valuable ecological resources. Since the LEED Green Building Rating System for New Construction was first published in 1999, it has been helping professionals across the country to improve the quality of our buildings and their impact on the environment.

As the green building sector grows exponentially, more and more building professionals, owners, and operators are seeing the benefits of green building and LEED certification. Green design not only makes a positive impact on public health and the environment, it also reduces operating costs, enhances building and organizational marketability, potentially increases occupant productivity, and helps create a sustainable community. LEED fits into this market by providing rating systems that are voluntary, consensus-based, market-driven, based on accepted energy and environmental principles, and they strike a balance between established practices and emerging concepts.

The LEED rating systems are developed by USGBC committees, in adherence with USGBC policies and procedures guiding the development and maintenance of rating systems. LEED-CI is only possible due to the generous volunteer efforts of many individuals, and has been in development for over 4 years. This rating system was approved by member ballot during October 2004 after considering input from the public during two comment periods. LEED-CI is one of a growing portfolio of rating system products serving specific market sectors.



**Under development as of November 2004*

LEED for Commercial Interiors

The LEED-CI Rating System is applicable to tenant improvements of new or existing office space.

Why Certify?

While LEED Rating Systems can be useful just as tools for building professionals, there are many reasons why LEED project certification can be an asset:

- Be recognized for your commitment to environmental issues in your community, your organization (including stockholders), and your industry;

- Receive third party validation of achievement;
- Qualify for a growing array of state & local government initiatives;
- Receive marketing exposure through USGBC Web site, Greenbuild conference, case studies, and media announcements.

Certification Process

Project teams interested in obtaining LEED certification for their project must first register online. Registration during early phases of the project will ensure maximum potential for certification. The LEED Web site, www.leedbuilding.org, contains important details about the certification review process, schedule and fees. The applicant project must satisfactorily document achievement of all the prerequisites and a minimum number of points. See the LEED-CI project checklist for the number of points required to achieve LEED-CI rating levels.

Additional LEED Resources

Visit the LEED Web site for available tools and support, such as the LEED-CI Reference Package (essential for all LEED-CI project teams), technical support via Credit Interpretations, and training workshops.

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LEED-CI Project Checklist

Sustainable Sites — 7 Possible Points

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	Select a LEED Certified Building (3 points)	
	Or locate the tenant space in a building with the following characteristics:	
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	B. Stormwater Management: Rate and Quantity (½ point)	
	C. Stormwater Management: Treatment (½ point)	
	D. Heat Island Reduction, Non-Roof (½ point)	
	E. Heat Island Reduction, Roof (½ point)	
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Project Totals — 57 Possible Points

Certified	21 – 26 Points
Silver	27 – 31 Points
Gold	32 – 41 Points
Platinum	42 – 57 Points

Site Selection

3 points may be earned for locating the tenant space in a LEED Certified Building, OR up to a total of 3 points may be earned in ½-point increments if the building in which the tenant space is located meets any of the stated requirements. Two ½ points are needed to earn 1 point; no rounding up is permitted. In the case of exceptional performance (for example, exceeding stated thresholds) an additional ½ point may be achieved; however, no single requirement may earn more than 1 point. The requirements below have been gathered from other LEED rating systems, and are elaborated on in the LEED-CI Reference Guide.

Intent

Encourage tenants to select buildings with best practices systems and employed green strategies.

Requirements

- Select a LEED Certified Building

OR

- Locate the tenant space in a building that has in place two or more of the following characteristics at time of submittal:

Option A. Brownfield Redevelopment: (½ point)

A building developed on a site that has been documented (by means of an ASTM E1903-97 Phase II Environmental Site Assessment)

OR

A building on a site that has been classified as a brownfield by a local, state or federal government agency. Effective remediation of site contamination must have been completed.

Option B. Stormwater Management: Rate and Quantity: (½ point)

A building that prior to its development had:
Less than or equal to 50% imperviousness and has implemented a stormwater management plan that equals or is less than the pre-developed 1.5 year, 24 hour rate and quantity discharge.

OR

If greater than 50% imperviousness, has implemented a stormwater management plan that reduced pre-developed 1.5 year, 24 hour rate and quantity discharge by 25% of the annual stormwater load falling on the site. (This is based on actual local rainfall unless the actual exceeds the 10-year annual average local rainfall—then use the 10-year annual average.) This mitigation can be through a variety of measures including perviousness of site, stormwater retention ponds, capture of rainwater for reuse or other measures.

Option C. Stormwater Management: Treatment: (½ point)

A building that has in place site stormwater treatment systems designed to remove 80% of the average annual site area total suspended solids (TSS) and 40% of the average annual site area total phosphorous (TP).

These values are based on the average annual loadings from all storms less than or equal to the 2-year/24-hour storm. The building must implement and maintain Best Management Practices (BMPs) outlined in Chapter 4, Part 2 (Urban Runoff), of the U.S. Environmental Protection Agency'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.

Option D. Heat Island Reduction, Non-Roof: (½ point)

A building that provides shade (or will have within 5 years of landscape installation) and/or uses light-colored/high-albedo materials with a Solar Reflectance Index (SRI) of at least 30, and/or open grid pavement, that individually or in total equals at least 30% of the site's non-roof impervious surfaces, which include parking areas, walkways, plazas, fire lanes, etc.,

OR

Has placed a minimum of 50% of parking spaces underground or covered by structured parking,

OR

Used an open-grid pavement system (less than 50% impervious) for 50% of the parking lot area.

Option E. Heat Island Reduction, Roof: (½ point)

A building with roofing having a Solar Reflectance Index (SRI) greater than or equal to the value in Table 1 for a minimum of 75% of the roof surface;

Table 1.

Roof Type	Slope	SRI
Low-Sloped Roof	**≤ 2:12**	**78**
Steep-Sloped Roof	**> 2:12**	**29**

OR

A building that has installed a "green" (vegetated) roof for at least 50% of the roof area.

OR

A building having in combination high SRI roofs and vegetated roofs that satisfy the following area requirement:

$$\text{Total Roof Area} \leq ((\text{Area of SRI Roof} \times 1.33) + (\text{Area of vegetated roof} \times 2))$$

Option F. Light Pollution Reduction: (½ point)

A building that meets or provides 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). The building must have designed the

exterior lighting such that all exterior luminaires with more than 1,000 initial lamp lumens are shielded and all luminaires with more than 3,500 initial lamp lumens meet the Full Cutoff IESNA Classification. The maximum candela value of all interior 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.

Option G. Water Efficient Irrigation: Reduced Potable Water Consumption: (½ point)

A building that employs high-efficiency irrigation technology, OR uses captured rain or recycled site water to reduce potable water consumption for irrigation by 50% over conventional means.

Option H. Water Efficient Irrigation: No Potable Use or No Irrigation: (½ point in addition to prior requirement)

A building that uses only captured rain or recycled site water to eliminate all potable water use for site irrigation (except for initial watering to establish plants), OR does not have permanent landscaping irrigation systems.

Option I. Innovative Wastewater Technologies: (½ point)

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

Option J. Water Use Reduction: 20% Reduction: (½ point)

A building that meets the 20% reduction in water use requirement for the entire building and has an ongoing plan to require future occupants to comply.

Option K. Onsite Renewable Energy: (up to 1 point)

A building that supplies at least 5% of the building's total energy use (expressed as a fraction of annual energy cost) through the use of on-site renewable energy systems.

Table 2.

On-site Renewable Energy as Percent of Total	Points
5%	½
10%	1

Option L. Other Quantifiable Environmental Performance: (½ point)

A building that had in place at time of selection other quantifiable environmental performance, for which the requirements may be found in other LEED rating systems.

Submittals

- Provide the LEED-CI Letter Template, signed by the architect, interior designer, building owner, engineer or other responsible party, declaring compliance with each claimed requirement based on the applicable standards as defined in the applicable LEED Green Building Rating System.

Potential Technologies & Strategies

During the building selection process, give preference to those properties employing the highest and best green building strategies.

SS	WE	EA	MR	EQ	ID
Credit 2					

Development Density and Community Connectivity

1 point

Intent

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

Requirements

- Select space in a building that is located in an established, walkable community with a minimum density of 60,000 square feet per acre net (two-story downtown development),

OR

- Select space in a building that is located within ½ mile of a residential zone or neighborhood (with an average density of 10 units per acre net),

AND

- The building has pedestrian access to at least 10 of the basic services below within ½ mile:

  1) Bank; 2) Place of Worship; 3) Convenience Grocery; 4) Day Care; 5) Cleaners; 6) Fire Station; 7) Hair Care; 8) Hardware; 9) Laundry; 10) Library; 11) Medical/Dental; 12) Senior Care Facility; 13) Park; 14) Pharmacy; 15) Post Office; 16) Restaurant; 17) School; 18) Supermarket; 19) Commercial Office; 20) Community Center, and other recognized services evaluated on their merit.

Greenfield developments and projects that do not use existing infrastructure are not eligible.

Submittals

- ❑ Provide the LEED-CI Letter Template, signed by the civil engineer, architect or other responsible party, declaring that the project has met the credit requirement.

- ❑ Provide density calculations for the building and surrounding area with an area plan, highlighting the building location.

OR

- ❑ Provide an area plan highlighting the building location, the residential zone or neighborhood, and 10 or more of the basic services located within ½ mile of the project space (inclusive of the building selected).

Potential Technologies & Strategies

During the site selection process, give preference to urban sites with pedestrian access to a variety of services.

Alternative Transportation, Public Transportation Access

1 point

Intent

Reduce pollution and land development impacts from automobile use.

Requirements

- Tenant to select building within ½ mile of a commuter rail, light rail or subway station or ¼ mile of two or more public or campus bus lines usable by tenant occupants.

Submittals

- ❑ Provide the LEED-CI Letter Template, signed by an appropriate party, declaring that the building in which the project is located is 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.

Potential Technologies & Strategies

Perform a transportation survey of potential tenant occupants to identify transportation needs. Choose a building near mass transit.

SS	WE	EA	MR	EQ	ID
Credit 3.2					

Alternative Transportation, Bicycle Storage & Changing Rooms

1 point

Intent

Reduce pollution and land development impacts from automobile use.

Requirements

- Provide secure bicycle storage, with convenient changing/shower facilities (within 200 yards of the building) for 5% or more of tenant occupants.

Submittals

- ❑ Provide the LEED-CI Letter Template, signed by the architect, interior designer or other responsible party, declaring the distance to the cycle storage and showers from the building entrance, showing the number of regular tenant occupants and demonstrating that more than 5% of occupants have provision.

Potential Technologies & Strategies

Select a building with transportation amenities such as bicycle racks and showering /changing facilities or add them as part of the tenant fit-out.

Alternative Transportation, Parking Availability

1 point

Intent

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

Requirements

- For projects occupying less than 75% of gross building square footage:

  Parking spaces provided to tenant shall not exceed minimum number required by local zoning regulations.

  AND

  Priority parking for carpools or van pools will be provided for 5% or more of tenant occupants.

  OR

  No parking will be provided or subsidized for tenant occupants.

- For projects occupying 75% or over of gross building square footage:

  Parking capacity will not exceed minimum local zoning requirements.

  AND

  Priority parking for carpools or vanpools will be provided capable of serving 5% of the building occupants.

  OR

  No new parking will be added for rehabilitation projects.

  AND

  Preferred parking for carpools or vanpools will be provided capable of serving 5% of the building occupants.

Submittals

- ❑ Provide the LEED-CI Letter Template, signed by the architect, interior designer or other responsible party, stating any relevant section of local zoning regulation defining parking requirements for tenant's occupancy group and zone.

- ❑ Provide the LEED-CI Letter Template, signed by the architect, interior designer or other responsible party, showing the section of the tenant's lease that indicates parking guarantees.

Potential Technologies & Strategies

Select a building with minimized car parking capacity and include limited parking inclusions in the lease.

Water Efficiency

SS	WE	EA	MR	EQ	ID
Credit 1.1					

Water Use Reduction, 20% Reduction

1 point

Intent

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

Requirements

- Based on tenant occupancy requirements, employ strategies that in aggregate use 20% less water than the water use baseline calculated for the tenant space (not including irrigation) after meeting Energy Policy Act of 1992 fixture performance requirements.

Submittals

- ❑ Provide the LEED-CI Letter Template, signed by the MEP Engineer or other responsible party, declaring that the project uses 20% less water, based on the tenant occupancy requirements, than the baseline fixture performance requirements of the Energy Policy Act of 1992.

- ❑ Provide the spreadsheet calculation demonstrating that the water-consuming fixtures identified for the stated occupancy and use of the tenant reduce occupancy-based potable water consumption by 20% compared to baseline conditions.

Potential Technologies & Strategies

Estimate the potable water needs for the tenant space. Use high-efficiency fixtures, dry fixtures such as composting toilets and waterless urinals, and occupant sensors to reduce the potable water demand.

SS	WE	EA	MR	EQ	ID
Credit 1.2					

Water Use Reduction, 30% Reduction

1 point in addition to WE 1.1

Intent

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

Requirements

- Based on tenant occupancy requirements, employ strategies that in aggregate use 30% less water than the water use baseline calculated for the tenant space (not including irrigation) after meeting Energy Policy Act of 1992 fixture performance requirements.

Submittals

- ❑ Provide the LEED-CI Letter Template, signed by the MEP Engineer or other responsible party, declaring that the project uses 30% less water, based on the tenant occupancy requirements, than the baseline fixture performance requirements of the Energy Policy Act of 1992.

- ❑ Provide the spreadsheet calculation demonstrating that the water-consuming fixtures identified for the stated occupancy and use of the tenant reduce occupancy-based potable water consumption by 30% compared to baseline conditions.

Potential Technologies & Strategies

Estimate the potable water needs for the tenant space. Use high-efficiency fixtures, dry fixtures such as composting toilets and waterless urinals, and occupant sensors to reduce the potable water demand.

Energy & Atmosphere

SS	WE	EA	MR	EQ	ID
Prerequisite 1					

Fundamental Commissioning

Required

Intent

Verify that the project's energy-related systems are installed, calibrated and perform as intended.

Requirements

The following commissioning process activities shall be completed by the commissioning team:

- Designate an individual as the Commissioning Authority to lead the commissioning process activities. This individual should not be directly responsible for project design or construction management.
- Clearly document the owner's project requirements and the basis of design for the building's energy-related systems. Updates to these documents shall be made during design and construction by the design team.
- Develop and incorporate commissioning requirements into the construction documents.
- Develop and utilize a commissioning plan.
- Verify that the installation and performance of energy consuming systems meet the owner's project requirements and basis of design.
- Complete a commissioning report.

Commissioned Systems:

The energy-related systems to be included in the commissioning process activities include as a minimum:

- Heating, ventilating, air conditioning and refrigeration (HVAC&R) systems (mechanical and passive) and associated controls
- Lighting controls, including day lighting
- Domestic hot water systems
- Renewable energy systems (PV, wind, solar, etc.).

Submittals

- ❑ Provide the LEED-CI Letter Template, signed by the Commissioning Authority and tenant confirming that the commissioning requirements for the project's energy-related systems have been successfully executed or will be provided under existing contract(s).
- ❑ Provide a narrative and diagrams indicating how the HVAC system works, what portions are shared with other tenants in the building, what was included in the project scope of work, and if improvements were made in conjunction with the project by others to any common building systems supplying the tenant area.

SS	WE	EA	MR	EQ	ID
Prerequisite 1					

Potential Technologies & Strategies

Ideally engage a Commissioning Authority prior to the start of design. Determine the owner's program and initial design intent. Develop and maintain a commissioning plan for use during design and construction. Incorporate commissioning requirements in bid documents. Assemble the commissioning team, and prior to occupancy verify the performance of energy-consuming systems. Complete the commissioning reports with recommendations prior to acceptance of the HVAC systems.

Minimum Energy Performance

Required

Intent

Establish the minimum level of energy efficiency for the tenant space systems.

Requirements

Design portions of the building as covered by the tenant's scope of work to comply with ASHRAE/IESNA Standard 90.1-2001(with all addenda)* or the local energy code, whichever is more stringent.

Submittals

- Provide the LEED-CI Letter Template, signed by the licensed professional engineer, architect or other responsible party, stating that the tenant space complies with ASHRAE/IESNA 90.1-2001* or local energy codes, whichever is more stringent. If local energy codes were applied, demonstrate that the local energy code is more stringent than ASHRAE/IESNA 90.1-2001*.

California Title 24 2001 has been deemed to be more stringent than ASHRAE 90.1-2001* for LEED purposes. No demonstration of equivalency is required for project teams implementing Title 24 2001.

*ASHRAE/IESNA 90.1-2004 will become the referenced standard once available.

Potential Technologies & Strategies

Design the systems impacted in the tenant's scope of work 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 as compared to the baseline building.

SS	WE	EA	MR	EQ	ID
Prerequisite 3					

CFC Reduction in HVAC&R Equipment

Required

Intent

Reduce ozone depletion.

Requirements

Zero use of CFC-based refrigerants in tenant HVAC&R systems within the LEED-CI project scope of work.

Submittals

- Provide the LEED-CI Letter Template, signed by a professional engineer or other responsible party, declaring that there are no CFCs in HVAC&R systems that have been installed or renovated within the LEED-CI project scope.

Potential Technologies & Strategies

When reusing existing HVAC systems, conduct an inventory to identify equipment that uses CFC refrigerants and replace or retrofit these systems with non-CFC refrigerants. For new installations, specify new HVAC equipment that uses no CFC refrigerants.

Optimize Energy Performance, Lighting Power

1 – 3 points

Intent

Achieve increasing levels of energy conservation beyond the referenced standard to reduce environmental impacts associated with excessive energy use.

Requirements

Reduce connected lighting power density below that allowed by ASHRAE/IESNA Standard 90.1-2001 (with all addenda)* using either the space-by-space method or by applying the whole building lighting power allowance to the entire tenant space.

Option A. Reduce lighting power density to 15% below the standard (1 point)

OR

Option B. Reduce lighting power density to 25% below the standard, (2 points)

OR

Option C. Reduce lighting power density to 35% below the standard. (3 points)

*ASHRAE/IESNA 90.1-2004 will become the referenced standard once available.

Submittals

- ❑ Provide the LEED-CI Letter Template, signed by the professional engineer or other responsible party, stating that the lighting power density is reduced below ASHRAE requirements consistent with the level of credit being sought.

AND

- ❑ Complete the Lighting Compliance Documentation provided in the ASHRAE/IESNA Standard 90.1 User's Manual. Provide a separate calculation that shows the percentage reduction in lighting power.

Potential Technologies & Strategies

Design the connected lighting power to maximize energy performance. If the project warrants, consider a computer simulation model to assess the performance and identify the most cost-effective energy efficiency measures.

SS	WE	EA	MR	EQ	ID
Credit 1.2					

Optimize Energy Performance, Lighting Controls

1 point

Intent

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

Requirements

Install daylight responsive controls in all regularly occupied spaces within 15 feet of windows and under skylights.

Submittals

- ❑ Provide the LEED-CI Letter Template, signed by the professional engineer or other responsible party, stating that lighting controls were installed consistent with the credit requirement.

AND

- ❑ Provide a narrative describing the lighting controls that have been incorporated in the tenant space design. Include a plan of lighting control zones showing each control device and lighting equipment controlled. Provide a schedule of lighting controls showing model, type and other characteristics.

Potential Technologies & Strategies

Design the lighting controls to maximize energy performance.

Optimize Energy Performance, HVAC

1 – 2 points

Intent

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

Requirement

OPTION 1
Implement one or both of the following strategies:

- Equipment Efficiency: (1 point)
  Install HVAC systems which comply with the efficiency requirements outlined in the New Buildings Institute, Inc.'s publication "Advanced Buildings: Energy Benchmark for High Performance Buildings (E-Benchmark)" prescriptive criteria for mechanical equipment efficiency requirements, sections 2.4 (less ASHRAE standard 55), 2.5, and 2.6.

- Appropriate Zoning and Controls: (1 point)
  Zone tenant fit out of spaces to meet the following requirements:
  - Every Solar Exposure must have a separate control zone
  - Interior spaces must be separately zoned
  - Private offices and specialty occupancies (conference rooms, kitchens, etc.) must have active controls capable of sensing space use and modulating HVAC system in response to space demand

OPTION 2
Reduce design energy cost compared to the energy cost budget for regulated energy components described in the requirements of ASHRAE/IESNA Standard 90.1- 2001(with all addenda)*.

- Demonstrate that HVAC system component performance criteria used for tenant space are 15% better than a system that is in minimum compliance with ASHRAE/IESNA Standard 90.1-2001 (with all addenda)*. (1 point)

OR

- Demonstrate that HVAC system component performance criteria used for tenant space are 30% better than a system that is in minimum compliance with ASHRAE/IESNA Standard 90.1-2001 (with all addenda)*. (2 points)

*ASHRAE/IESNA 90.1-2004 will become the referenced standard once available.

Submittals

- ❑ Provide the LEED-CI Letter Template, signed by the licensed professional engineer or architect, stating that the strategy employed meet the credit requirements.

- ❑ Provide a narrative description of the HVAC system serving the tenant space as well as a description of the building-level system. Plans and specifications should have an HVAC equipment schedule and plans showing the equipment within the space. Demonstrate in the narrative and plans submitted that the installed HVAC systems comply with the requirements of the credit.

OR

- Provide the LEED-CI Letter Template, signed by the licensed professional engineer or architect, stating that the HVAC system energy consumption is 15% or 30% (depending on credit taken) lower than a base case system defined in ASHRAE/IESNA Standard 90.1-2001, Section 11. (ASHRAE/IESNA 90.1-2004 will become the referenced standard once available.)

- Provide a completed copy of the Energy Cost Budget (ECB) Compliance Form. Provide a narrative description of the HVAC system serving the tenant space as well as a description of the building-level system. Plans and specifications should have an HVAC equipment schedule and plans showing the equipment within the space.

Potential Technologies & Strategies

Design the HVAC system components to maximize energy performance. Quantify energy performance as compared to a baseline building.

Optimize Energy Performance, Equipment & Appliances

1 – 2 points

Intent

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

Requirements

For all ENERGYSTAR-eligible equipment and appliances installed in the project, including appliances, office equipment, electronics, and commercial food service equipment (but excluding HVAC, lighting, and building envelope products):

- 70%, by rated-power, of ENERGYSTAR-eligible equipment and appliances shall be ENERGYSTAR-rated (1 point);

OR

- 90%, by rated-power, of ENERGYSTAR-eligible equipment and appliances shall be ENERGYSTAR-rated (2 points).

Submittals

- ❑ Provide the LEED-CI Letter Template, signed by the responsible party, declaring that ENERGYSTAR-eligible equipment and appliances are ENERGYSTAR-rated and yield the indicated percentage of the total, determined by rated-power.

- ❑ Provide a narrative describing the equipment and appliances that will be installed in the project. Complete the schedule of equipment listing the types and quantity of equipment and appliances to be installed in the project along with the rated-power (or rated fuel input for commercial cooking equipment) of each type of EnergyStar eligible equipment and appliance. Indicate which equipment and appliances are ENERGYSTAR-rated. Indicate the overall percentage of equipment and appliances, based on rated electrical power (as well as rated fuel input for commercial cooking equipment), that is ENERGYSTAR-rated.

Potential Technologies & Strategies

Select energy-efficient equipment and appliances, as qualified by the EPA ENERGYSTAR Program (www.energystar.gov).

SS	WE	EA	MR	EQ	ID
Credit 2					

Enhanced Commissioning

1 point

Intent

Verify that the project's energy-related systems are installed, calibrated and perform as intended.

Requirements

In addition to the Fundamental Commissioning prerequisite, implement or have a contract in place to implement the following additional commissioning process activities:

1. Designate an individual as the Commissioning Authority, independent of the firms represented on the design and construction team, to lead the commissioning design review activities prior to the end of Design Development.
2. Conduct a review of the tenant space's energy-related systems contractor submittals.
3. Develop a single manual that contains the information required for re-commissioning the tenant space's energy related systems.
4. Verify that the requirements for training operating personnel and tenant space occupants are completed. Have a contract in place to review tenant space operation with O&M staff and occupants including a plan for resolution of outstanding commissioning-related issues 8 to 10 months after final acceptance.

Submittals

- Provide the LEED-CI Letter Template, signed by the owner and independent Commissioning Authority, confirming that the required enhanced commissioning process requirements 1 and 2 have been successfully executed and that a contract for completing requirements 3 and 4 is in place.

Potential Technologies & Strategies

Ideally engage a Commissioning Authority prior to the start of design. Determine the tenant's program and initial design intent. Develop and maintain a commissioning plan for use during design and construction. Incorporate commissioning requirements in bid documents. Assemble the commissioning team, and prior to occupancy verify the performance of energy-consuming systems. Complete the commissioning reports with recommendations prior to acceptance of the HVAC systems.

Energy Use, Measurement & Payment Accountability

2 points

Intent

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

Requirements

- For those projects with an area that constitute less than 75% of the total building area:
    - Install sub-metering equipment to measure and record energy uses within the tenant space. (1 point.)
    - Negotiate a lease where energy costs are paid by the tenant and not included in the base rent. (1 point)

OR

- For those projects with an area that constitutes 75% or more of the total building area, install continuous metering equipment for the following end-uses: (2 points)
    - 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 riser and outdoor irrigation systems

Develop a Measurement & 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.*

Submittals

- ❑ For projects with an area that constitutes less than 75% of the total building area, provide the LEED-CI Letter Template, signed by a licensed engineer or other responsible party, describing the metering equipment installed for each end use, and/or indicating that energy costs are paid by the tenant and not included in the base rent, which must be confirmed by providing a copy of the applicable portion of the lease.

OR

- ❑ For projects with an area that constitutes 75% or more of the total building area, provide the LEED-CI Letter Template, signed by a licensed engineer or other responsible party, indicating that metering

equipment has been installed for each end-use and declaring the option to be followed under IPMVP, 2001 version, plus provide a copy of the M&V plan following IPMVP, 2001 version, including an executive summary.

Potential Technologies & Strategies

For projects with an area that constitutes less than 75% of the total building area, tenant space is sub-metered and has a direct pay clause in their lease for energy actually used instead of on a square foot basis. For projects with an area that constitutes 75% or more of the total building area, model the energy and water systems to predict savings. Design the project with equipment to measure energy and water performance. Draft a Measurement & Verification Plan to apply during building operations that compares predicted savings to those actually achieved in the field.

Green Power

1 point

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 tenant's 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 Tradable Renewable Certificates.

Submittals

- Provide the LEED-CI Letter Template, signed by the owner or other responsible party, documenting that the supplied power is equal to 50% of the project's 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.

Potential Technologies & Strategies

Estimate the energy needs of the tenant space 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. Green power may be procured from a Green-e certified power marketer, a Green-e accredited utility program, through Green-e certified Tradable Renewable Certificates, or from a supply that meets the Green-e renewable power definition. Visit www.green-e.org for details about the Green-e program.

Storage and Collection of Recyclables

Required

Intent

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

Requirements

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

Submittals

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

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, card board and organic wastes. Instruct occupants on building recycling procedures. Instruct occupants on the recycling procedures. Consider employing cardboard balers, aluminum can crushers, recycling chutes and other waste management technologies to further enhance the recycling program.

SS	WE	EA	MR	EQ	ID
Credit 1.1					

Tenant Space, Long-Term Commitment

1 point

Intent

Encourage choices that will conserve resources, reduce waste and reduce the environmental impacts of tenancy as they relate to materials, manufacturing and transport.

Requirements

Occupant commits to remain in the same location for not less than 10 years.

Submittals

- Provide the LEED-CI Letter Template, signed by the building owner or other responsible party, declaring that the building occupant either owns its space or has signed a lease for at least 10 years.

Potential Technologies & Strategies

Suggest negotiations resulting in longer leases or ownership.

Building Reuse, Maintain 40% of Interior Non-Structural Components

1 point

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 40% by area of the existing non-shell, non-structure components (walls, doors, flooring and ceilings).

Submittals

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

Potential Technologies & Strategies

Identify during the selection and design of the tenant space the potential to maintain as many of the existing interior elements as possible. Remove elements that pose contamination risk to occupants and update outdated components. Quantify the extent of reuse.

Building Reuse, Maintain 60% of Interior Non-Structural Components

1 point in addition to MR 1.2

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 60% by area of the existing non-shell, non-structure components (walls, doors, flooring and ceiling systems).

Submittals

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

Potential Technologies & Strategies

Identify during the selection and design of the tenant space the potential to maintain as many of the existing interior elements as possible. Remove elements that pose contamination risk to occupants and update outdated components. Quantify the extent of reuse.

Construction Waste Management, Divert 50% From Landfill

1 point

Intent

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

Requirements

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

Submittals

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

Potential Technologies & Strategies

Establish goals for diversion from disposal in landfills and incinerators and adopt a construction waste management plan to achieve these goals. Consider recycling cardboard, metal, brick, concrete, plastic, clean wood, glass, gypsum wallboard, carpet and insulation. Designate a specific area(s) on the construction site for segregated or commingled collection of recyclable materials, and track recycling efforts throughout the construction process. Identify construction haulers and recyclers to handle the designated materials, and seek verification that the diverted materials are recycled or salvaged, as intended. Note that diversion may include donation of materials to charitable organizations such as Habitat for Humanity.

SS	WE	EA	MR	EQ	ID
Credit 2.2					

Construction Waste Management, Divert 75% From Landfill

1 point in addition to MR 2.1

Intent

Divert construction, demolition, and packaging 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 75% of construction, demolition and packaging debris. Calculation may be done by weight or volume, but must be consistent throughout.

Submittals

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

Potential Technologies & Strategies

Establish goals for landfill diversion and adopt a construction waste management plan to achieve these goals. Consider recycling 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.

Resource Reuse, 5%

1 point

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 for at least 5% of building (construction) materials, excluding furniture and furnishings.

Submittals

- Provide the LEED-CI Letter Template, signed by the architect, interior designer, 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 all materials for the project.

Potential Technologies & Strategies

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

SS	WE	EA	MR	EQ	ID
Credit 3.2					

Resource Reuse, 10%

1 point in addition to MR 3.1

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 for at least 10% of building (construction) materials, excluding furniture and furnishings.

Submittals

- Provide the LEED-CI Letter Template, signed by the architect, interior designer, 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.

Potential Technologies & Strategies

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

Resource Reuse, 30% Furniture and Furnishings

1 point

Intent

Reuse building products and materials in order to reduce demand for virgin materials and reduce waste, thereby reducing impacts associated with the extraction and processing of virgin resources.

Requirements

Use salvaged, refurbished or used furniture and furnishings for 30% of the total furniture and furnishings budget.

Submittals

- Provide the LEED-CI Letter Template, signed by the architect, interior designer, owner or other responsible party, declaring that the credit requirements have been met.
- Provide a listing of the reused furniture and furnishings with their replacement value and documentation for the value of the balance of new furniture and furnishings.

Potential Technologies & Strategies

Identify opportunities to salvage and reuse furniture into project design and research potential material suppliers. Consider salvaging and reusing systems furniture and furnishings such as case pieces, seating, filing systems, decorative lighting and accessories.

SS	WE	EA	MR	EQ	ID
Credit 4.1					

Recycled Content, 10% (post-consumer + 1/2 pre-consumer)

1 point

Intent

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

Requirements

- Use materials, including Division 12 (Furniture and Furnishings), 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 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.

Submittals

- ❑ Provide the LEED-CI Letter Template, signed by the architect, owner or other responsible party, declaring that the above 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.

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.

Recycled Content, 20% (post-consumer + 1/2 pre-consumer)

1 point in addition to MR 4.1

Intent

Increase demand for building products that have incorporated recycled content material, thereby reducing the impacts resulting from extraction and processing of virgin materials.

Requirements

- Use materials, including Division 12 (Furniture and Furnishings), with recycled content such that the sum of post-consumer recycled content plus one-half of the pre-consumer (post-industrial) content constitutes at least 20% of the total value of the materials in the project.
- The value of the recycled content portion of a material 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.

Submittals

- ❑ Provide the LEED-CI Letter Template, signed by the architect, owner or other responsible party, declaring that the above 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 pre-consumer content, and the total cost of all materials for the project.

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.

Regional Materials, 20% Manufactured Regionally

1 point

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 the combined value of construction and Division 12 (Furniture and Furnishings) 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.

Submittals

- Provide the LEED-CI Letter Template, signed by the architect, interior designer, owner or other 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.

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.

Regional Materials, 10% Extracted and Manufactured Regionally

1 Point

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

In addition to the requirements of MR 5.1, use a minimum of 10% of the combined value of construction and Division 12 (Furniture and Furnishings) materials and products extracted, harvested or recovered, as well as manufactured, within 500 miles of the project.

Submittals

- ❑ Provide the LEED Letter Template, signed by the architect, interior designer, owner or other responsible party, declaring that the credit requirements have been met. Include calculations demonstrating that the project incorporates the required percentage of regionally extracted and manufactured materials/products and showing their cost, percentage of regional components, distance from project to the points of extraction and manufacture, and the total cost of all materials for the project.

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.

Rapidly Renewable Materials

1 point

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 construction and Division 12 (Furniture and Furnishings) materials and products, made from plants that are typically harvested within a 10-year or shorter cycle, for 5% of the total value of all materials and products used in the project

Submittals

- Provide the LEED-CI Letter Template, signed by the architect, interior designer, owner or other 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.

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, sun flower seed board, wheatgrass cabinetry and others. During construction, ensure that the specified rapidly renewable materials are installed.

Certified Wood

1 point

Intent

Encourage environmentally responsible forest management.

Requirements

When using new wood-based products and materials, use a minimum of 50% that are certified in accordance with the Forest Stewardship Council's Principles and Criteria. Division 12 (Furnishings & Furniture) material value is included in the determination of the certified wood content.

Submittals

- Provide the LEED-CI Letter Template, signed by the architect, interior designer, owner or other 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.

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.

Minimum IAQ Performance

Required

Intent

Establish minimum indoor air quality (IAQ) performance to enhance indoor air quality in the occupant space, thus contributing to the comfort and well-being of the occupants.

Requirements

- Meet the minimum requirements of the voluntary consensus standard ASHRAE 62-2001*, Ventilation for Acceptable Indoor Air Quality, and Addenda approved at the time the project HVAC equipment was permitted.
- Mechanical ventilation systems shall perform according to the Ventilation Rate Procedure.
- Naturally ventilated buildings must comply with ASHRAE 62-2001* Section 5.1.
- Modify or maintain existing building outside-air (OA) ventilation distribution system to supply at least the outdoor air ventilation rate required by ASHRAE Standard 62-2001*, including addenda published through 2003.
- If the project cannot meet the outside air requirements of ASHRAE 62* (all other requirements must be met), it must document the space and system constraints that make it not possible, and complete an engineering assessment of the system's maximum cubic feet per minute (CFM) capability towards meeting the requirements of ASHRAE 62*, and achieve those levels, with an absolute minimum of 10 CFM per person.

*ASHRAE 62-2004 will become the referenced standard once available.

Submittals

- ❑ Provide the LEED-CI Letter Template, signed by the responsible design professional, declaring that the project is fully compliant with Sections 4, 5, 6 and 7 of ASHRAE 62-2001* and all accepted Addenda. Provide a summary of calculations used to determine outdoor air ventilation rates, documenting all assumptions including occupancy type, occupant density, multiple zone analysis and ventilation system efficiency.
- ❑ For existing buildings that can not meet the ASHRAE 62-2001* minimum requirements, the engineer must certify in a letter that they have in hand and will deliver to the client: photographs/specs or cut-sheet of mechanical equipment as-built Mechanical plans; or single line drawings as-builts of all space constrained aspects in system (e.g., vertical riser/horizontal chase space).

*ASHRAE 62-2004 will become the referenced standard once available.

Potential Technologies & Strategies

Design the HVAC system to meet the ventilation requirements of Sections 4, 5, 6 and 7 of the referenced standard. Identify potential IAQ problems on the site.

Environmental Tobacco Smoke (ETS) Control

Required

Intent

Prevent or minimize exposure of tenant space occupants, indoor surfaces and systems to Environmental Tobacco Smoke (ETS).

Requirements

Minimize exposure of non-smokers to ETS by

- Option A: Locating tenant space in a building that prohibits smoking by all occupants and users and maintains any exterior designated smoking areas at least 25 feet away from entries, outdoor air intakes and operable windows,

OR

- Option B: In buildings where smoking is permitted, confirming that smoking is prohibited in the portions of the tenant space not designated as a smoking space, and the common areas used by tenant's occupants, and that there is no migration of ETS by either mechanical or natural ventilation from other areas of the building.

  AND

  If the tenant's occupants are permitted to smoke, providing one or more designated smoking rooms designed to effectively contain, capture and remove ETS from the building. At a minimum, each smoking room must be directly exhausted to the outdoors with no recirculation of ETS-containing air to the nonsmoking area of a building, enclosed with impermeable deck-to-deck partitions and operated at a negative pressure compared to surrounding spaces of at least an average of 5 PA (0.02 inches of water gauge) and with a minimum of 1 PA (0.004 inches of water gauge) when the doors to the smoking room are closed.

  Performance of the smoking rooms differential air pressure shall be verified by conducting 15 minutes of measurement, with a minimum of one measurement every 10 seconds, of the differential pressure in the smoking room with respect to each adjacent area and in each adjacent vertical chase with the doors to the smoking rooms closed. The testing will be conducted with each space configured for worst case conditions of transport of air from the smoking rooms to adjacent spaces.

OR

- Option C: For multi-unit residential buildings, minimize uncontrolled pathways for ETS transfer between individual residential units by sealing penetrations in walls, ceilings, and floors in the residential units, and by sealing vertical chases adjacent to the units. In addition, all doors in the residential units leading to common hallways shall be weather-stripped to minimize air leakage into the hallway. Acceptable sealing of residential units shall be demonstrated by a blower door test conducted in accordance with ANSI/ASTM-779-99, Standard Test Method for Determining Air Leakage Rate By Fan Pressurization,

  AND

  Use the progressive sampling methodology defined in Chapter 7 (Home Energy Rating Systems (HERS) Required Verification And Diagnostic Testing) of the California Low Rise Residential

Alternative Calculation Method Approval Manual, found at (http://www.energy.ca.gov/title24/residential_manual/res_manual_chapter4.PDF**)**. Residential units must demonstrate less than 1.25 square inches leakage area per 100 square feet of enclosure area (i.e., sum of all wall, ceiling and floor areas).

Submittals

- ❑ Option A: Provide the LEED-CI Letter Template, signed by the tenant or responsible party, declaring that the building will be operated under a policy prohibiting smoking, and the exterior designated smoking areas are at least 25 feet away from entries and operable windows.

OR

- ❑ Option B: Provide the LEED-CI Letter Template, signed by the tenant or responsible party, declaring and demonstrating that smoking is prohibited in that portion of the tenant space not designated as a smoking space and all other areas of the building serviced by the same HVAC system, plus common areas used by tenant occupants. If the tenant's occupants are permitted to smoke, declare and demonstrate that designated smoking rooms met the design criteria described in the credit requirements and performance has been verified using the method described in the credit requirements.

OR

- ❑ Option C: Provide the LEED-CI Letter Template, signed by the tenant or responsible party, declaring and demonstrating that the credit requirements for ETS transfer between individual residential units have been satisfied.

Potential Technologies & Strategies

Prohibit smoking in the building or provide negative pressure smoking rooms. For residential buildings, a third option is to provide very tight construction to minimize ETS transfer among dwelling units.

SS	WE	EA	MR	EQ	ID
Credit 1					

Outdoor Air Delivery Monitoring

1 point

Intent

Provide capacity for ventilation system monitoring to help sustain long-term occupant comfort and well-being.

Requirements

Install permanent monitoring and alarm systems that provide feedback on ventilation system performance to ensure that ventilation systems maintain design minimum ventilation requirements in a form that affords operational adjustments:

- For mechanical ventilation systems that predominantly serve densely occupied spaces (those with a design occupant density greater than or equal to 25 people per 1000 ft^2), install a CO_2 sensor within each densely occupied space.

- For all other mechanical ventilation systems, provide an outdoor airflow measurement device capable of measuring the minimum outdoor airflow rate at all expected system operating conditions within 15% of the design minimum outdoor air rate.

- For natural ventilation systems, install a CO_2 sensor within each naturally ventilated space.

Submittals

- ❑ Provide the LEED-CI Letter Template, signed by the responsible design professional, declaring and summarizing the installation, operational design and controls/zones for the carbon dioxide or outdoor airflow monitoring system.

Potential Technologies & Strategies

To ensure that sensors can reliably indicate that ventilation systems are operating as designed:

- CO_2 sensors shall be located within the breathing zone of the room as defined in Standard 62.1.
- CO_2 sensors shall be certified by the manufacturer to have an accuracy of no less than 75 ppm, factory calibrated or calibrated at start-up, and certified by the manufacturer to require calibration no more frequently than once every 5 years.
- Required CO_2 sensors and outdoor airflow monitors shall be configured to generate an alarm if the indicated outdoor airflow rate drops more than 15% below the minimum outdoor air rate required by Standard 62.1 (see EQ Prerequisite 1) in one of the following ways:
    - A building automation system alarm visible to the system operator/engineer
    - An alarm that is clearly visible to or audible by occupants.
    - CO_2 sensors may also be used for demand controlled ventilation provided the control strategy complies with Standard 62.1 (see EQ Prerequisite 1), including maintaining the area-based component of the design ventilation rate.
- Space CO_2 alarms and demand controlled ventilation setpoints shall be based on the differential corresponding to the ventilation rates prescribed in Standard 62.1 plus the outdoor air CO_2 concentration, which shall be determined by one of the following:
    - Outdoor CO_2 concentration shall be assumed to be 400 ppm without any direct measurement; or
    - Outdoor CO_2 concentration shall be dynamically measured using a CO_2 sensor located near the position of the outdoor air intake.

Increased Ventilation

1 point

Intent

Provide additional air ventilation to improve indoor air quality for improved occupant comfort, well-being and productivity.

Requirements

- For mechanically ventilated spaces:

  Increase breathing zone outdoor air ventilation rates to all occupied spaces by at least 30% above the minimum rates required by ASHRAE 62.1-2004 as determined by EQ Prerequisite 1.

- For naturally ventilated spaces:

  Design natural ventilation systems for occupied spaces to meet the recommendations set forth in the CIBSE (The Chartered Institution of Building Services Engineers) "Good Practice Guide 237" [1998]. Determine that natural ventilation is an effective strategy for the project by following the flow diagram process shown in Figure 1.18 of the CIBSE "Applications Manual 10: 1997, Natural ventilation in non-domestic buildings."

  And either of the following;

  Use diagrams and calculations to show that the design of the natural ventilation systems meets the recommendations set forth in the CIBSE "Applications Manual 10: 1997, Natural ventilation in non-domestic buildings."

  OR

  Use a macroscopic, multi-zone, analytic model to predict that room-by-room airflows will effectively naturally ventilate at least 90% of occupied spaces.

Submittals

- ❑ For mechanical ventilation systems, provide the LEED-CI Letter Templates, signed by the mechanical engineer or other responsible party, declaring that the outdoor air ventilation rates at the breathing zone of all occupied spaces are at least 30% above the minimum rates required by ASHRAE 62.1-2004, and provide the calculations demonstrating that design breathing zone ventilation rates exceed the minimum rates required by Standard 62.1 by at least 30%.

- ❑ For natural ventilation systems, provide the LEED-CI Letter Templates, signed by the mechanical engineer or other responsible party, declaring that the project meets the natural ventilation requirements of the credit. Provide documentation that natural ventilation is an effective strategy for the project and follows the design recommendations established by CIBSE. Provide either of the following: diagrams and calculations based on CIBSE Applications Manual 10, or diagrams and calculations based on results provided by a multi-zone analytical model.

Potential Technologies & Strategies

SS	WE	EA	MR	EQ	ID
Credit 2					

For Mechanically Ventilated Spaces: Design ventilation systems to provide breathing zone ventilation rates at least 30% larger than the minimum rates prescribed by the referenced standard.

For Naturally Ventilated Spaces: Follow the eight design steps described in CIBSE "Good Practice Guide 237"—1) Develop design requirements, 2) Plan airflow paths, 3) Identify building uses and features that might require special attention, 4) Determine ventilation requirements, 5) Estimate external driving pressures, 6) Select types of ventilation devices, 7) Size ventilation devices, 8) Analyze the design. Use public domain software such as NIST's CONTAM, Multizone Modeling Software, along with LoopDA, Natural Ventilation Sizing Tool, to analytically predict room-by-room airflows.

Construction IAQ Management Plan, During Construction

1 point

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 tenant space 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 and 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. Coordinate with EQ Credits 3.2 and 5, installing only a single set of final filtration media.

Submittals

- ❑ Provide the LEED-CI 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 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 listing of some of the important design approaches employed.

Potential Technologies & Strategies

Adopt an IAQ management plan that minimizes the exposure of absorptive materials to moisture and airborne contaminants and that protects the HVAC system during construction. Sequence the installation of absorptive materials, such as insulation, carpeting, ceiling tile and gypsum wall board, to avoid contamination.

Construction IAQ Management Plan, Before Occupancy

1 point

Intent

Reduce indoor air quality problems resulting from the construction/renovation process, to sustain long-term worker and occupant comfort and well-being.

Requirement

Develop and implement an Indoor Air Quality (IAQ) Management Plan for the preoccupancy phases as follows:

- Flush-out procedure:

  After construction ends and with all interior finishes installed, as described in the Reference Guide, install new filtration media and flush-out the building by supplying a total air volume of 14,000 ft^3 of outdoor air per ft^2 of floor area while maintaining an internal temperature of at least 60 ^oF and, where mechanical cooling is operated, relative humidity no higher than 60%.

  The space may only be occupied following delivery of a minimum of 3,500 ft^3 of outdoor air per ft^2 of floor area to the space, and provided the space is ventilated at minimum rate of 0.30 cfm/ft^2 of outside air or the design minimum outside air rate, whichever is greater, a minimum of three hours prior to occupancy and during occupancy, until the total of 14,000 ft^3/ft^2 of outside air has been delivered to the space.

OR

- IAQ test procedure:

  Conduct baseline IAQ testing, after construction ends and prior to occupancy, using testing protocols consistent with the U.S. Environmental Protection Agency "Compendium of Methods for the Determination of Air Pollutants in Indoor Air" and as additionally detailed in the CI Reference Guide.

Demonstrate that the contaminants' concentration levels listed below are not exceeded:

Contaminate	**Maximum Concentration**
Formaldehyde	**50 parts per billion**
Particulates (PM10)	**50 micrograms per cubic meter**
Total Volatile Organic Compounds (TVOC)	**500 micrograms per cubic meter**
*** 4-Phenylcyclohexene (4-PCH)**	**6.5 micrograms per cubic meter**
Carbon Monoxide (CO)	**9 part per million and no greater than 2 parts per million above outdoor levels**

* This test is only required only if carpets and fabrics with Styrene Butadiene (SB) latex backing material are installed as part of the base building systems.

For each sampling point where the maximum concentration limits are exceeded, conduct additional flush-out with outside air and retest the specific parameter(s) that were exceeded to indicate the requirements are achieved. Repeat procedure until all requirements have been met. When retesting non-complying building areas, take samples from the same locations as in the first test.

The air sample testing shall be conducted as follows:

- All measurements shall be conducted prior to occupancy, but during normal occupied hours, and with the building ventilation system starting at the normal daily start time and operated at the minimum outside air flow rate for the occupied mode throughout the duration of the air testing

- The building shall have all interior finishes installed, including but not limited to millwork, doors, paint, carpet and acoustic tiles. Non-fixed furnishings such as workstations and partitions are required to be in place for the testing.
- The number of sampling locations will vary depending upon the size of the building and number of ventilation systems. For each portion of the building served by a separate ventilation system, the number of sampling points shall not be less than one per 25,000 ft^2, or for each contiguous floor area, whichever is larger, and include areas with the least ventilation and greatest presumed source strength.
- Air samples shall be collected between 4 feet and 7 feet from the floor to represent the breathing zone of occupants and over a minimum 4 hour period.

Submittals

- ❑ Provide the LEED-CI Letter Template, signed by the architect, interior designer or engineer, describing flush-out procedures and dates. Provide calculations to demonstrate that the required total air volumes and minimum ventilation volumes and rates have been delivered.

OR

- ❑ Provide the LEED-CI Letter Template, signed by the environmental consusltant or other responsible party, indicating that the air quality testing procedure has been conducted and that all areas tested do not exceed the maximum allowable concentration limits.

- ❑ Provide a copy of the IAQ testing results that includes documentation of the results and identifying the EPA testing method used. If alternative testing protocols are used, provide documentation and rationale justifying that the measured results meet the intent of the EPA testing methods.

Potential Technologies & Strategies

Prior to occupancy, perform two-week flush-out or test for contaminant levels in the tenant space.

For IAQ testing, consider using a recognized measurement protocol such as the EPA "Compendium of Methods for the Determination of Air Pollutants in Indoor Air." If alternative testing protocols are used, provide justification that the measured test results meet the intent of the EPA testing methods.
Copies of the IAQ testing results should describe the contaminant sampling and analytical methods, the locations and duration of contaminant samples, the field sampling log sheets and laboratory analytical data, and the methods and results utilized to determine that the ventilation system was started at the normal daily start time and operated at the minimum outside air flow rate for the occupied mode through the duration of the air testing.

Low-Emitting Materials, Adhesives and Sealants

1 point

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

All materials listed below that are used inside the exterior weatherproofing system must not exceed the following requirements:

- Adhesives, Sealants and Sealant Primers: South Coast Air Quality Management District (SCAQMD) Rule #1168 requirements in effect on January 1, 2003 and rule amendment dated October 3, 2003.

- Aerosol Adhesives: Green Seal Standard GS-36 requirements in effect on October 19, 2000.

Submittals

- ❑ Provide the LEED-CI Letter Template, signed by the architect, interior designer or other responsible party, listing the adhesives, sealants, sealant primers and aerosol adhesives used in the building and declaring that they meet the noted requirements. For each product in the listing, state the VOC level, the applicable standard, the classification of material and the VOC limit.

Potential Technologies & Strategies

Specify Low-VOC materials in construction documents. Ensure that VOC limits are clearly stated in each section of the specifications where adhesives and sealants are addressed. Review product cut sheets, MSD sheets, signed attestations or other official literature from the manufacturer clearly identifying the emissions limits.

Low-Emitting Materials, Paints and Coatings

1 point

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

Interior paints and coating applied on-site must meet the limitations and restrictions concerning chemical components set by the following standards:

- Topcoat Paints: Green Seal Standard GS-11, Paints, First Edition, May 20, 1993.
- Anti-Corrosive and Anti-Rust Paints: Green Seal Standard GC-03, Anti-Corrosive Paints, Second Edition, January 7, 1997. For applications on ferrous metal substrates.
- All other Architectural Coatings, Primers and Undercoats: South Coast Air Quality Management District (SCAQMD) Rule 1113, Architectural Coatings, rules in effect on January 1, 2004.

Submittals

- ❑ Provide the LEED-CI Letter Template, signed by the architect, interior designer or other responsible party, listing all the interior paints and coatings used in the building that are addressed by the referenced standards. State that they comply with the current VOC and chemical component limits and the chemical component restrictions of each standard. For each product in the listing, state the VOC level, the applicable standard, the classification of material and the VOC limit.

Potential Technologies & Strategies

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

Low-Emitting Materials, Carpet Systems

1 point

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 must meet or exceed the Carpet and Rug Institute's Green Label Plus testing and product requirements.

Submittals

- Provide the LEED-CI Letter Template, signed by the architect, interior designer or other responsible party, listing all the carpet systems used in the tenant space and stating that they meet or exceed the Carpet and Rug Institute's Green Label Plus testing and product requirements.

Potential Technologies & Strategies

Specify Low-VOC carpet products and systems in construction documents. Provide product cut sheets, MSD sheets, signed attestations or other official literature from the manufacturer clearly identifying the affected products meet these requirements. Ensure that requirements are clearly stated in each section of the specifications where these materials are addressed.

Low-Emitting Materials, Composite Wood and Laminate Adhesives

1 point

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, including core materials, must contain no added urea-formaldehyde resins. Adhesives used to fabricate in field and shop applied assemblies containing these products must contain no urea-formaldehyde. Products covered by EQ Credit 4.5, Low-Emitting Materials, System Furniture and Seating shall be excluded from these requirements.

Submittals

- Provide the LEED-CI Letter Template, signed by the architect, interior designer or responsible party, listing all the composite wood products used in the tenant space and stating that they contain no added urea-formaldehyde resins and listing all the laminating adhesives used in the tenant space and stating that they contain no urea-formaldehyde.

- Provide documentation that all core and adhesive products used on the project contained no added urea-formaldehyde.

Potential Technologies & Strategies

Specify wood and agrifiber products that contain no added urea-formaldehyde resins. Specify laminating adhesives for field and shop applied assemblies, including adhesives and veneers that contain no urea-formaldehyde. Review product cut sheets, MSD sheets, signed attestations or other official literature from the manufacturer.

Low-Emitting Materials, Systems Furniture and Seating

1 point

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

All systems furniture and seating* introduced into the project space that has been manufactured, refurbished or refinished within one year prior to occupancy must meet one of the requirements below.

- Option A: Greenguard Indoor Air Quality Certified

OR

- Option B: Calculated indoor air concentrations that are less than or equal to those established in Table 1 for furniture systems and seating determined by a procedure based on the U.S. Environmental Protection Agency's Environmental Technology Verification (ETV) Large Chamber Test Protocol for Measuring Emissions of VOCs and Aldehydes (September 1999) testing protocol conducted in an independent air quality testing laboratory.

Table 1. Indoor Air Concentrations

Chemical Contaminant	Emission Limits Systems Furniture	Emission Limits Seating
TVOC	**0.5 mg/m^3**	**0.25 mg/m^3**
Formaldehyde	**50 parts per billion**	**25 parts per billion**
Total Aldehydes	**100 parts per billion**	**50 parts per billion**
4 – Phenylcyclohexene (4-PCH)	**0.0065 mg/m^3**	**0.00325 mg/m^3**

*Systems furniture is defined as either a panel-based workstation comprised of modular interconnecting panels, hang-on components and drawer/filing components or a freestanding grouping of furniture items and their components that have been designed to work in concert.

Seating is defined as task and guest chairs used with systems furniture.

Furniture other than as described above is defined as occasional furniture and is excluded from the credit requirements.

Salvaged and used furniture that is more than one year old at time of occupancy is excluded from the credit requirements.

Submittals

- ❑ Provide the LEED-CI Letter Template, signed by the architect, interior designer or other responsible party, declaring that all systems furniture and seating covered by this credit is included in a listing that states the manufacturer and product line, item description, period of manufacture, form of compliance and either the period for which the item is Greenguard Air Quality Certified, or the date of the testing using the Environmental Technology Protocol for Emissions of VOCs and Aldehydes from Commercial Furniture.

- For Greenguard Air Quality Certified systems furniture and seating, provide a copy of the product certification, complete with the start and end dates of certification. The period covered must have begun before and extend through the actual manufacturing dates of the product used on the project.

- For systems furniture and seating tested using a procedure based on the USEPA ETV protocol, provide details of the procedure, and the emission factors from the large-chamber testing of the systems furniture, showing the calculations used in determining the emission limits, complete with the air exchange rate, demonstrating that emissions limits have not exceeded those shown in Table 1. Test results and supporting calculations must be dated and signed by an officer of the independent laboratory where the testing was conducted. Test results must represent the manufacturing practices employed for the product used on the project and must have been completed before the start of manufacturing but no earlier than 24 months prior to the last manufacturing date.

Potential Technologies & Strategies

Specify Low-VOC materials in construction documents. Ensure that VOC limits are clearly stated in each section where furniture assemblies are addressed.

SS	WE	EA	MR	EQ	ID
Credit 5					

Indoor Chemical and Pollutant Source Control

1 point

Intent

Minimize exposure of building occupants to potentially hazardous particulates, biological contaminants and chemical pollutants that adversely impact air and water quality.

Requirements

Design to minimize and control pollutant or biological contaminant entry into the tenant space and later cross-contamination of regularly occupied areas:

- Employ permanent entryway systems (such as grills or grates) to capture dirt, particulates, etc. from entering the building at all high-volume exterior entryways within the tenant area.

AND

- Where hazardous gasses or chemicals may be present or used (including housekeeping and laundry areas and copying and printing rooms), provide segregated areas with deck-to-deck partitions with separate outside exhausting at a rate of at least 0.5 cubic feet per minute per square foot, no air recirculation and operated at a negative pressure compared with the surrounding spaces of at least an average of 5 PA (0.02 inches of water gauge) and with a minimum of 1 PA (0.004 inches of water gauge) when the doors to the rooms are closed.

AND

- Provide containment drains plumbed for appropriate disposal of hazardous liquid wastes in spaces where water and chemical concentrate mixing occurs for maintenance, or laboratory purposes.

AND

- Provide regularly occupied areas of the tenant space with new air filtration media prior to occupancy that provides a Minimum Efficiency Reporting Value (MERV) of 13 or better.

Submittals

- ❑ Provide the LEED-CI Letter Template, signed by the architect, interior designer or other responsible party, declaring that:

    - Permanent entryway systems (such as grilles or grates) to capture dirt, particulates, etc. are provided at all high-volume exterior entryways within the tenant area.

    - Chemical use areas and copy rooms have been physically separated with deck-to-deck partitions; independent exhaust ventilation has been installed at the required exhaust rate and negative pressure differential.

    - Drains in facility cleaning and maintenance areas within the tenant space are plumbed for environmentally appropriate disposal of hazardous liquid wastes.

- Filters used meet the MERV requirements with new media installed prior to occupancy. Provide a listing of each filter installed including the MERV value, manufacturer name and model number.

Potential Technologies & Strategies

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

SS	WE	EA	MR	EQ	ID
Credit 6.1					

Controllability of Systems, Lighting

1 point

Intent

Provide a high level of lighting system control for individual occupants, and specific groups in multi-occupant spaces (e.g., classrooms and conference areas), to promote the productivity, comfort and well-being of building occupants.

Requirements

Provide lighting controls for:

- At least 90% of occupants, enabling adjustments to suit individual task needs and preferences,

AND

- All shared multi-occupant spaces where transient groups must share lighting controls.

Submittals

- ❑ Provide the LEED-CI Letter Template, signed by the architect or other responsible party, demonstrating and declaring that the required lighting controls are provided.

Potential Technologies & Strategies

Design the tenant space with occupant controls for lighting. Strategies to consider include lighting controls and task lighting.

Controllability of Systems, Temperature and Ventilation

1 point

Intent

Provide a high level of thermal and ventilation control for individual occupants, and specific groups in multi-occupant spaces (e.g., classrooms and conference areas), to promote the productivity, comfort and well-being of building occupants.

Requirements

Provide thermal and ventilation controls for:

- At least 50% of the space occupants that enable adjustment to suit individual needs and preferences,

AND

- All shared-multi-occupant spaces where transient groups must share controls.

Operable windows may be used in lieu of individual controls for occupants near windows (20 feet inside of and 10 feet to either side of the operable part of the window), and where the operable windows meet the requirements of ASHRAE Standard 62-2001* Section 5.1 Natural Ventilation.

*ASHRAE 62-2004 will become the referenced standard once available.

Submittals

- ❑ Provide the LEED-CI Letter Template, signed by the architect or other responsible party, demonstrating and declaring that the required ventilation and temperature controls are provided.

Potential Technologies & Strategies

Design the tenant space with occupant controls for airflow and temperature. Naturally ventilated spaces must include strategies for control of temperature and ventilation.

SS	WE	EA	MR	EQ	ID
Credit 7.1					

Thermal Comfort, Compliance

1 point

Intent

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

Requirements

Comply with ASHRAE Standard 55-2004, Thermal Comfort Conditions for Human Occupancy.

Submittals

- Provide the LEED-CI Letter Template, signed by the engineer or responsible party, declaring that the project complies with ASHRAE Standard 55-2004. Include documentation of compliance according to ASHRAE Standard 55-2004, Section 6.1.1, Documentation.

Potential Technologies & Strategies

Establish comfort criteria per the standard, and design the tenant space envelope and HVAC system to maintain these comfort ranges.

Thermal Comfort, Monitoring

1 point in addition to EQ 7.1

Intent

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

Requirements

Provide a permanent monitoring system and process for corrective action to ensure performance to the desired comfort criteria as determined by EQ Credit 7.1, Thermal Comfort, Compliance.

Submittals

- ❑ Provide the LEED-CI Letter Template, signed by the engineer or other responsible party, that identifies the comfort criteria, strategy for ensuring performance to the comfort criteria, description of the permanent monitoring system implemented, and process for corrective action.

Potential Technologies & Strategies

ASHRAE Standard 55-2004 Paragraph 7 Evaluation of the Thermal Environment provides guidance on measurement of building performance parameters and two methods for validating performance: (a) Survey Occupants and (b) Analyze Environment Variables. The permanent monitoring system required here may apply either approach—survey or technical system—where the process or system is integrated into the standard operating processes of the building.

SS	WE	EA	MR	EQ	ID
Credit 8.1					

Daylight and Views, Daylight 75% of Spaces

1 point

Intent

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

Requirements

- For at least 75% of all regularly occupied areas:

  Achieve a minimum Daylight Factor of 2% (excluding all direct sunlight penetrations)

  OR

  Using a computer simulation model, achieve at least 25 footcandles.

AND

- Provide daylight redirection and/or glare control devices to ensure daylight effectiveness.

Exceptions for areas where tasks would be hindered by the use of daylight will be considered on their merits.

Submittals

- ❑ Provide the LEED-CI Letter Template, signed by the responsible party, indicating the required daylighting is accomplished in at least 75% of the regularly occupied areas.

- ❑ Provide area calculations that define the daylight zones and provide a summary of daylight factor prediction calculations through manual methods or a summary of computer simulations illustrating that the footcandle levels have been achieved.

Potential Technologies & Strategies

Design the space to maximize interior daylighting and view opportunities. Strategies to consider include lower partition heights, interior shading devices, interior glazing and photo-integrated light sensors. Predict daylight factors via manual calculations or model daylighting strategies with a physical or computer model to assess footcandle levels and daylight factors achieved. Modeling must demonstrate 25 horizontal footcandles under clear sky conditions, at noon, on the equinox, at 30 inches above the floor. Any portion of a room achieving the requirements can qualify for this credit.

Daylight and Views, Daylight 90% of Spaces

1 point

Intent

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

Requirements

- For at least 90% of all regularly occupied areas:

  Achieve a minimum Daylight Factor of 2% (excluding all direct sunlight penetrations)

  OR

  Using a computer simulation model, achieve at least 25 footcandles.

AND

- Provide daylight redirection and/or glare control devices to ensure daylight effectiveness.

Exceptions for areas where tasks would be hindered by the use of daylight will be considered on their merits.

Submittals

- ❑ Provide the LEED-CI Letter Template, signed by the responsible party, indicating the required daylighting is accomplished in at least 90% of the regularly occupied areas.

- ❑ Provide area calculations that define the daylight zones and provide a summary of daylight factor prediction calculations through manual methods or a summary of computer simulations illustrating that the footcandle levels have been achieved.

Potential Technologies & Strategies

Design the space to maximize interior daylighting and view opportunities. Strategies to consider include lower partition heights, interior shading devices, interior glazing and photo-integrated light sensors. Predict daylight factors via manual calculations or model daylighting strategies with a physical or computer model to assess footcandle levels and daylight factors achieved. Modeling must demonstrate 25 horizontal footcandles under clear sky conditions, at noon, on the equinox, at 30 inches above the floor. Any portion of a room achieving the requirements can qualify for this credit.

SS	WE	EA	MR	EQ	ID
Credit 8.3					

Daylight and Views, Views for 90% of Seated Spaces

1 point

Intent

Provide the occupants with a connection between indoor spaces and the outdoor environment through the introduction of daylight and views into the regularly occupied areas of the tenant space.

Requirements

Achieve direct line of sight to vision glazing for building occupants in 90% of all regularly occupied areas:

- Areas directly connected to perimeter windows must have a glazing-to-floor area ratio of at least 0.07. Parts of the floor area with horizontal view angles of less than 10 degrees at 42 inches above the floor (must include partition base and glazing frame if appropriate) can not be included in this calculation.
- Areas not directly connected to perimeter windows must have a horizontal view angle of not less than 10 degrees at 42 inches above the floor (must include partition base and glazing frame if appropriate) involving 50% or more of the floor area. If a room meets these requirements, then the entire room area is considered to meet the view requirement. Exceptions will be considered on their merits.

Submittals

- ❑ Provide the LEED-CI Letter Template and calculations signed by the architect, interior designer or other responsible party describing, demonstrating and declaring that the building occupants in 90% of regularly occupied areas will have direct lines of site to perimeter glazing and noting the actual glazing-to-floor area ratios for perimeter windows.

- ❑ Provide drawings highlighting direct line of sight zones and the critical horizontal view angles.

Potential Technologies & Strategies

Design the space to maximize view opportunities. Strategies to consider include lower partition heights and interior glazing.

Innovation & Design Process

SS	WE	EA	MR	EQ	ID
Credit 1.1 – 1.4					

Innovation in Design

1 – 4 points

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) Identify the **intent** of the proposed innovation credit, the proposed **requirements** 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

Submittals

- ❑ Provide the proposal(s) within the LEED-CI Letter template (including intent, requirements, submittals and possible strategies) and relevant evidence of performance achieved.

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.

SS	WE	EA	MR	EQ	ID
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

Include at least one principal participant in the project team who has successfully completed the LEED Accredited Professional exam.

Submittals

- Provide the LEED-CI Letter Template stating the LEED Accredited Professional's name, title, company and contact information. Include a copy of this person's LEED Accredited Professional Certificate.

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.