LEED 2009 FOR RETAIL: COMMERCIAL INTERIORS

For Public Use and Display

LEED 2009 for Retail: Commercial Interiors Rating System

USGBC Member Approved March 2010 (Updated April 2012)

PREFACE FROM USGBC

The built environment has a profound impact on our natural environment, economy, health, and productivity. Breakthroughs in building science, technology, and operations are now available to designers, builders, operators, and owners who want to build green and maximize both economic and environmental performance.

Through the LEED® green building certification program, the U.S. Green Building Council (USGBC) is transforming the built environment. The green building movement offers an unprecedented opportunity to respond to the most important challenges of our time, including global climate change, dependence on non sustainable and expensive sources of energy, and threats to human health. The work of innovative building professionals is a fundamental driving force in the green building moment. Such leadership is a critical component to achieving USGBC's mission of a sustainable built environment for all within a generation.

USGBC MEMBERSHIP

USGBC's greatest strength is the diversity of our membership. USGBC is a balanced, consensus based nonprofit with more than 18,000 member companies and organizations representing the entire building industry. Since its inception in 1993, USGBC has played a vital role in providing a leadership forum and a unique, integrating force for the building industry. USGBC's programs have three distinguishing characteristics:

Committee-based

The heart of this effective coalition is our committee structure, in which volunteer members design strategies that are implemented by staff and expert consultants. Our committees provide a forum for members to resolve differences, build alliances, and forge cooperative solutions for influencing change in all sectors of the building industry.

Member-driven

Membership is open and balanced and provides a comprehensive platform for carrying out important programs and activities. We target the issues identified by our members as the highest priority. We conduct an annual review of achievements that allows us to set policy, revise strategies, and devise work plans based on members' needs.

Consensus-focused

We work together to promote green buildings, and in doing so, we help foster greater economic vitality and environmental health at lower costs. We work to bridge ideological gaps between industry segments and develop balanced policies that benefit the entire industry.

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INTRODUCTION

I. WHY MAKE YOUR BUILDING GREEN?

The environmental impact of the building design, construction, and operations industry is enormous. Buildings annually consume more than 30% of the total energy and more than 60% of the electricity used in the United States. In 2006, the commercial building sector produced more than 1 billion metric tons of carbon dioxide, an increase of more than 30% over 1990 levels. Each day 5 billion gallons of potable water are used solely to flush toilets. A typical North American commercial building generates about 1.6 pounds of solid waste per employee per day; in a building with 1,500 employees, that can amount to 300 tons of waste per year. Development alters land from natural, biologically diverse habitats to hardscape that is impervious and devoid of biodiversity. The far-reaching influence of the built environment necessitates action to reduce its impact.

Of the commercial buildings in the United States, retail buildings account for the largest energy costs, totaling nearly $20 billion each year. More than 21,000 new retail facilities are built in the United States every year, including malls, supermarkets, home-supply centers, department stores, big-box stores, apparel boutiques, banks, and beauty salons. Together, they constitute 23% of all new commercial building projects, making retail the single biggest sector of the construction economy in terms of numbers of units.[1] The retail sector also generates airborne pollutants from shoppers' vehicular trips, stormwater runoff from parking facilities, and noise and light pollution.

Green building practices can substantially reduce or eliminate negative environmental impacts through high-performance, market-leading design, construction, and operations practices. As an added benefit, green operations and management reduce operating costs, enhance building marketability, increase workers' productivity, and reduce potential liability resulting from indoor air quality problems.

Examples of the benefits abound. Energy efficiency measures have reduced operating expenses of the Denver Dry Goods building by approximately $75,000 per year. Studies of workers in green buildings reported productivity gains of up to 16%, including less absenteeism and higher work quality, attributable to "people-friendly" green design. Karges Faulconbridge, Inc., renovated a former grocery store for its new headquarters and diverted 88% of the construction waste from landfills through reuse and recycling. In short, green design, construction, and operations have environmental, economic, and social elements that benefit all building stakeholders, including owners, occupants, and the general public.

II. LEED® GREEN BUILDING RATING SYSTEM

Background on LEED®

Following the formation of the U.S. Green Building Council (USGBC) in 1993, the organization's members quickly realized that the sustainable building industry needed a system to define and measure "green buildings." USGBC began to research existing green building metrics and rating systems. Less than a year after formation, the members acted on the initial findings by establishing a committee to focus solely on this topic. The composition of the committee was diverse; it included architects, real estate agents, a building owner, a lawyer, an environmentalist, and industry representatives. This cross section of people and professions added a richness and depth both to the process and to the ultimate product.

1 http://www.capitalmarketspartnership.com/UserFiles/Admin%20Building%20Design%20Construction%202006%20White%20Paper.pdf

The first LEED Pilot Project Program, also referred to as LEED Version 1.0, was launched at the USGBC Membership Summit in August 1998. After extensive modifications, LEED Green Building Rating System Version 2.0 was released in March 2000, with LEED Version 2.1 following in 2002 and LEED Version 2.2 in 2005.

As LEED has evolved and matured, the program has undertaken new initiatives. In addition to a rating system specifically devoted to building operational and maintenance issues (LEED for Existing Buildings: Operations & Maintenance), LEED addresses the different project development and delivery processes of the U.S. building design and construction market through rating systems for specific building types, sectors, and project scopes: LEED for Core & Shell, LEED for New Construction, LEED for Schools, LEED for Neighborhood Development, LEED for Retail, LEED for Healthcare, LEED for Homes, and LEED for Commercial Interiors.

In 2008, USGBC set up the Green Building Certification Institute (GBCI) as a separately incorporated entity to administer credentialing and certification programs related to green building practice. These programs support the application of proven strategies for increasing and measuring the performance of buildings and communities as defined by industry systems such as LEED. Project teams interact with GBCI for project registration and certification.

The green building field is growing and changing daily. New technologies and products are being introduced into the marketplace, and innovative designs and practices are proving their effectiveness. The LEED rating systems and reference guides are evolving as well, and USGBC will highlight new developments on its website, www.usgbc.org. Project teams must comply with the version of the rating system that is current at the time of their registration.

LEED® for Retail

LEED for Retail recognizes the unique nature of the retail environment and addresses the different types of spaces retailers need for their product lines. Compared with other commercial building types, retail has different occupancy characteristics and hours of operation, different parking and transportation considerations, different process water and energy consumption, and in some cases, prototype designs. Retail projects also may be part of a larger multitenant retail complex, in which certain issues are addressed at the site level rather than by the project itself.

In 2001, at the USGBC conference in Tucson, Arizona, a committee was formed to address the unique aspects of retail buildings. The initial group comprised national retailers who were interested in using LEED in as a platform for new construction projects. The committee soon grew to include engineers, consultants, developers, and architects, all working on retail projects. The LEED for Retail Committee and USGBC collaborated to create two application guides to work with the LEED for New Construction (NC) and LEED for Commercial Interiors (CI) rating systems.

In July 2005, the LEED-NC Application Guide for Retail Pilot opened. In February 2007, the scope of this work changed from application guides to the creation of two new rating systems, LEED for Retail: New Construction and LEED for Retail: Commercial Interiors. In April 2007, the LEED for Retail: CI pilot opened. More than 80 pilot project teams provided feedback on applying LEED for New Construction v2.2 and LEED for Commercial Interiors v2.0 to retail spaces to help the development of the retail rating systems. An Energy and Atmosphere Credit 1 working group was formed to develop baselines and a modeling protocol for commercial kitchen equipment, for which there was no established methodology. The Food Service Technology Center in San Ramon, California, and many grocery and restaurant pilot teams were active participants in this group, providing feedback and real project equipment considerations. Pilot teams contributed to discussions about how to apply green building principles in shopping centers and how developers and retailers can work together toward LEED certification.

LEED for Retail: NC went through three rounds of public comment and LEED for Retail: CI went through two rounds of public comment, before going out for member ballot. The current versions of LEED for Retail have been aligned with LEED 2009, where applicable, to maintain consistency across rating systems.

Features of LEED®

The LEED Green Building Rating Systems are voluntary, consensus-based, and market-driven. Based on existing, proven technology, they evaluate environmental performance from a whole-building perspective over a building's life cycle, providing a definitive standard for what constitutes a green building in design, construction, and operation.

The LEED rating systems are designed for rating new and existing commercial, institutional, and residential buildings, as well as entire neighborhood developments. They are based on accepted energy and environmental principles and strike a balance between known, established practices and emerging concepts. Each rating system is organized into 5 environmental categories: Sustainable Sites, Water Efficiency, Energy and Atmosphere, Materials and Resources, and Indoor Environmental Quality. An additional category, Innovation in Design, addresses sustainable building expertise as well as design measures not covered under the 5 environmental categories. Regional bonus points are another feature of LEED and acknowledge the importance of local conditions in determining best environmental design and construction practices.

The LEED Credit Weightings

In LEED 2009, the allocation of points among credits is based on the potential environmental impacts and human benefits of each credit with respect to a set of impact categories. The impacts are defined as the environmental or human effect of the design, construction, operation, and maintenance of the building, such as greenhouse gas emissions, fossil fuel use, toxins and carcinogens, air and water pollutants, and indoor environmental conditions. A combination of approaches, including energy modeling, life-cycle assessment, and transportation analysis, is used to quantify each type of impact. The resulting allocation of points among credits is called credit weighting.

LEED 2009 uses the U.S. Environmental Protection Agency's TRACI environmental impact categories as the basis for weighting each credit. TRACI was developed to assist with impact evaluation for life-cycle assessment, industrial ecology, process design, and pollution prevention.

LEED 2009 also takes into consideration the weightings developed by the National Institute of Standards and Technology (NIST); these compare impact categories with one another and assign a relative weight to each. Together, the 2 approaches provide a solid foundation for determining the point value of each credit in LEED 2009.

The LEED 2009 credit weightings process is based on the following parameters, which maintain consistency and usability across rating systems:

- All LEED credits are worth a minimum of 1 point.
- All LEED credits are positive, whole numbers; there are no fractions or negative values.
- All LEED credits receive a single, static weight in each rating system; there are no individualized scorecards based on project location.
- All LEED rating systems have 100 base points; Innovation in Design (or Operations) and Regional Priority credits provide opportunities for up to 10 bonus points.

Given the above criteria, the LEED 2009 credit weightings process involves 3 steps:

1. A reference building is used to estimate the environmental impacts in 7 categories associated with a typical building pursuing LEED certification.
2. The relative importance of building impacts in each category is set to reflect values based on the NIST weightings.
3. Data that quantify building impacts on environmental and human health are used to assign points to individual credits.

Each credit is allocated points based on the relative importance of the building-related impacts that it addresses. The result is a weighted average that combines building impacts and the relative value of the impact categories. Credits

that most directly address the most important impacts are given the greatest weight, subject to the system design parameters described above. Credit weights also reflect a decision by LEED to recognize the market implications of point allocation. The result is a significant change in allocation of points compared with previous LEED rating systems. Overall, the changes increase the relative emphasis on reducing energy consumption and greenhouse gas emissions associated with building systems, transportation, the embodied energy of water, the embodied energy of materials, and where applicable, solid waste.

The details of the weightings process vary slightly among individual rating systems. For example, LEED for Existing Buildings: Operations & Maintenance includes credits related to solid waste management, but LEED for New Construction does not. This results in a difference in the portion of the environmental footprint addressed by each rating system and the relative allocation of points.

The credit weightings process will be reevaluated over time to incorporate changes in values ascribed to different building impacts and building types, based on both market reality and evolving scientific knowledge related to buildings. The weightings process for each rating system is fully documented in a weightings workbook, and a complete explanation of the LEED credit weightings system is available on the USGBC website, at www.usgbc.org.

III. OVERVIEW AND PROCESS

The LEED Green Building Rating System for Retail is a set of performance standards for certifying the design and construction of retail buildings all sizes. The intent is to promote healthful, durable, affordable, and environmentally sound practices in building (Retail for New Construction) and tenant space (Retail for Commercial Interiors) design and construction.

Prerequisites and credits in the LEED Green Building Rating Systems address 7 topics:

- Sustainable Sites (SS)
- Water Efficiency (WE)
- Energy and Atmosphere (EA)
- Materials and Resources (MR)
- Indoor Environmental Quality (IEQ)
- Innovation in Design (ID)
- Regional Priority (RP)

LEED prerequisites and credits have identical structures; see Section XI of this Introduction.

When to Use LEED for Retail: New Construction

LEED for Retail: New Construction is designed for new retail buildings. All retail buildings, as defined by standard building codes, are eligible for certification as LEED for Retail: New Construction buildings. Examples of retail occupancies include grocery, restaurant, apparel, specialty, and banks, whether national or local chains or independent enterprises.

This rating system addresses design and construction activities for both new buildings and major renovations of existing buildings. A major renovation involves major HVAC renovation, significant envelope modifications, and major interior rehabilitation. If the project scope does not involve significant design and construction activities and focuses more on the operations and maintenance activities of a working building, LEED for Existing Buildings: Operations & Maintenance is more appropriate.

Some projects are designed and constructed to be partially occupied by the owner or developer and partially occupied by other tenants. In such projects, the owner or developer has direct influence over the portion of the work that he

or she will occupy. For such a project to pursue LEED for Retail: New Construction certification, the owner or tenant must occupy more than 50% of the building's leasable square footage. Projects in which 50% or less of the building's leasable square footage is occupied by an owner should pursue LEED for Core & Shell certification.

When to Use LEED for Retail: Commercial Interiors

LEED for Retail: Commercial Interiors addresses tenant spaces in retail buildings.

This rating system is designed to work hand-in-hand with the LEED for Core & Shell certification system. LEED for Core & Shell is used by developers to certify the core and shell of a project; it prepares the building for environmentally conscious tenants.

Many projects clearly fit the defined scope of only one LEED rating system; others may be eligible for two or more. The project is a viable candidate for LEED certification if it can meet all prerequisites and achieve the minimum points required in a given rating system. If more than 1 rating system applies, the project team can decide which to pursue. For assistance in choosing the most appropriate LEED rating system, please e-mail leedinfo@usgbc.org.

Minimum Program Requirements

A project must adhere to LEED's minimum program requirements (MPRs), or have certain minimum characteristics to be eligible for certification under LEED 2009. These requirements define the categories of buildings that the LEED rating systems were designed to evaluate, and taken together serve three goals: (1) give clear guidance to customers, (2) protect the integrity of the LEED program, and (3) reduce challenges that occur during the LEED certification process. The MPRs will evolve over time in tandem with the LEED rating systems. To be eligible for certification under any LEED 2009 rating system, projects must comply with each associated MPR. The MPRs can be found in the LEED 2009 rating systems. In addition, definitions and more extensive guidance on certain issues are provided in a separate document, titled Supplemental Guidance, available on the USGBC website.

The Green Building Certification Institute (GBCI) reserves the right to revoke LEED certification from any LEED 2009 project upon gaining knowledge of noncompliance with any applicable MPRs. In such a circumstance, no registration or certification fees paid to GBCI will be refunded.

Exceptions to all the MPRs will be considered on a case-by-case basis. Direction on the nature of allowable exceptions is given in the Supplemental Guidance Document.

Registration

Project teams interested in earning LEED certification for their buildings must first register the project with GBCI. Projects can be registered on the GBCI website, www.gbci.org. The website also has information on registration costs for USGBC national members as well as nonmembers. Registration establishes contact with GBCI and provides access to software tools, errata, critical communications, and other essential information.

LEED Online

LEED Online is the primary resource for managing the LEED documentation process. From LEED Online, project teams can manage project details, complete documentation requirements for LEED credits and prerequisites, upload supporting files, submit applications for review, receive reviewer feedback, and ultimately earn LEED certification. LEED Online provides a common space where members of a project team can work together to document compliance with the LEED rating system.

All project teams pursuing LEED certification are required to use LEED Online and its submittal documentation paths. LEED submittals are instrumental in demonstrating credit compliance because they contain all the documentation requirements for each LEED credit. Additionally, LEED Online contains embedded calculators and tables to ensure that the submittal package delivered to GBCI is complete and accurate.

LEED Online also features several support capabilities. It enables team members to view and submit credit interpretation requests, contact customer service, generate project-specific reports, and consult supplementary LEED resources, such as FAQs, tutorials, offline calculators, and sample documentation. Applicants with multiple projects have access to reporting tools that use data from projects across their entire LEED portfolio. LEED certificates for successful projects are also issued through LEED Online.

Credit Interpretation Requests and Rulings

In some cases, a LEED project team may encounter challenges when interpreting the requirements of a prerequisite or credit for their project, perhaps because the reference guide does not sufficiently address a specific issue or a conflict requires resolution. To address such issues, a credit interpretation ruling process has been established for each LEED rating system. See the GBCI website for more information, at www.gbci.org.

Credit interpretation requests must be submitted online. Provide a brief but clear description of the challenge encountered, referring to the prerequisite or credit information found in the rating system and reference guide. If possible, the project team should offer potential solutions to the problem or a proposed interpretation, with emphasis on the intent of the requirement. Follow the detailed instructions in LEED Online.

Communications related to credit interpretation requests are in electronic format.

Review and Certification

To earn LEED certification, the applicant project must satisfy all the prerequisites and credits worth the minimum number of points to warrant the desired project rating under LEED for Retail. Projects must comply with the version of the rating system that is current in LEED Online at the time of project registration.

Appeals

Appeals may be filed after the design phase review, the construction phase review, or the full application review. Please see Section V, below, on design phase applications, and see the GBCI website for more information on appeals.

Fees

Information on certification fees can be found on the GBCI website. GBCI will acknowledge receipt of the application and proceed with application review when all project documentation and payments have been received and processed. Registration fees, appeal review fees, and any additional fees required to expedite LEED certification are not refundable.

Updates and Addenda

This is the first edition of the LEED Retail Reference Guide Supplement, 2009. As building science and technology continue to improve and evolve, updates and addenda will be made available. USGBC cannot be held liable for any criteria set forth herein that may not be applicable to later versions of LEED rating systems, and GBCI reserves the right to modify its policies from time to time. Updates and addenda will be accumulated between revisions and will be formally incorporated in major revisions. Between major revisions, USGBC may issue updates or addenda to clarify criteria. The prerequisites, credits, amendments, and addenda current at the time of project registration will continue to guide the project throughout its certification process.

Project teams are subject to Rating System addenda requirements based on registration date. It is strongly recommended that project teams adhere to the Reference Guide and Reference Guide addenda based on registration date. Rating System and Reference Guide addenda can be found on the USGBC's LEED Resources & Tools website, www. usgbc.org/projecttools.

Information Privacy and Policy Guidelines

For more information on the privacy policy of the U.S. Green Building Council, Inc., refer to the Policies and Guidelines section of the USGBC website, at www.usgbc.org. With the support of its members, volunteers, and other stakeholders, USGBC is the developer of the LEED rating systems.

The Green Building Certification Institute, Inc., implements the LEED rating systems and carries out credentialing programs relating to LEED. For more information on the privacy policy of GBCI, including the privacy policy on documentation submitted through LEED Online, refer to the Policies and Guidelines section of the GBCI website, at www.gbci.org. Projects whose information should be treated as confidential may select this option during registration; project confidentiality status may be changed at any time through LEED Online. Please review the GBCI privacy policy for further details.

IV. LEED ONLINE DOCUMENTATION REQUIREMENTS

All LEED for Retail, Commercial Interiors certification applications must include the required LEED Online documentation: general documentation requirements, documentation requirements for all prerequisites, and documentation requirements for all pursued credits.

General Requirements

LEED certification application requires the submission of an overall project narrative with the completed LEED Online documentation requirements. The project narrative describes the applicant's organization, building, site, and team. This narrative helps the LEED review team understand the major elements of the project and building performance, and it also aids in highlighting projects in future communications efforts. General documentation also requires the basic details pertaining to project site conditions, construction scope and timeline, occupant and usage data, and project team identification. Project teams must address all the elements in the general documentation requirements, providing details and clarifications where appropriate, and they may include any optional elements that are helpful in describing the project.

Credit Substitution

The LEED 2009 rating systems do not allow credit substitution using another version. Currently registered LEED projects that want to use LEED 2009 credits need to switch to the new version in its entirety. USGBC expects that most projects will find this switch feasible and advantageous.

V. CERTIFICATION APPLICATION

To earn LEED certification, the applicant project must satisfy all the prerequisites and qualify for a minimum number of points to attain the established project ratings as listed below. Having satisfied the basic prerequisites of the program, applicant projects are then rated according to their degree of compliance within the rating system.

After registration, the project design team should begin to collect information and perform calculations to satisfy the prerequisite and credit documentation requirements. Because documentation should be gathered throughout design and construction, it is helpful to designate a LEED team leader who will be responsible for managing its compilation.

LEED for Retail provides the option of splitting a certification application into two phases: design and construction. Documentation for design phase credits, identified in LEED Online, can be submitted for review at the end of the design phase; the submittals for these credits can be fully evaluated based on documentation available during this phase of the project. For example, if a project site meets the requirements of LEED for Commercial Interiors SS Credit 1, Brownfield redevelopment, the likelihood of credit achievement can be assessed before construction is complete. The LEED credit itself, however, is not awarded at the design review stage.

Design Phase Review

Each project is allotted a design phase review that consists of a preliminary design phase review and a final design phase review. GBCI formally rules on the design phase application by designating each attempted credit as either anticipated or denied. Participating in a design phase review does not guarantee award of any credit and will not result in LEED certification. This process enables project teams to assess the likelihood of credit achievement and requires follow-through to ensure the design is executed in the construction phase according to design specifications.

Construction Phase Review

At the completion of construction, the project team submits all attempted credits for review, including any newly attempted design credits. If the project team has had a design phase review and any of the design phase anticipated credits have since changed, additional documentation must be submitted to substantiate continued compliance with credit requirements. Upon receipt of the full certification application and fee, a final review will be conducted. All applicant-verified design phase credits that were designated as anticipated and have not changed since the design phase review will be declared as awarded. All other credits will be designated as either awarded or denied.

Project teams should refer to LEED Online and the rating system scorecards to get information on credits that can be submitted for design phase review and credits that must be submitted for construction phase review.

LEED for Retail certifications are awarded according to the following scale:

Certified	40–49 points
Silver	50–59 points
Gold	60–79 points
Platinum	80 points and above

GBCI recognizes a building that achieves certification at any rating level with a formal letter of certification.

VI. CERTIFICATION STRATEGY

Timeline and Project Design Phases

Project teams should study the principles and objectives of LEED as early in the site selection and design process as possible. The project design phases mentioned throughout this reference guide correspond to the architectural design and planning steps commonly used in the construction industry:

1. Predesign entails gathering information, recognizing stakeholder needs, and establishing project goals.
2. Schematic design explores several design options and alternatives, with the intent to establish an agreed-upon project layout and scope of work.
3. Design development begins the process of spatial refinement and usually involves the first design of a project's energy systems.
4. Construction documents carry the design into the level of details for all spaces and systems and materials so that construction can take place.
5. Construction.
6. Substantial completion is a contractual benchmark that usually corresponds to the point at which a client could occupy a nearly completed space.
7. Final completion.
8. Certificate of occupancy is the official recognition by a local building department that a building conforms to applicable building and safety codes.

Related Credits

When pursuing LEED certification, it is important to consider how credits are interconnected and how their synergies and trade-offs will ultimately affect both the project and the other credits the team may consider pursuing. Consult the Related Credits section of each prerequisite and credit to help inform design and construction decisions leading to certification.

Consistent Documentation across Credits

Several kinds of project information are required for consistent LEED documentation across various credits. Pay special attention to overlapping project data; doing so will help the application and review process go smoothly.

Operations and Maintenance in LEED for Retail, New Construction, Core & Shell, and Schools Certified Buildings

The LEED Reference Guide for Green Building Design and Construction contains information on operations and maintenance to help project teams streamline green O&M practices once the LEED design and construction project has been completed. Although not required as part of the LEED certification process, upfront planning for green operations and maintenance can help building owners, operators, and maintenance staff ensure that the building continues to operate in a sustainable manner.

VII. EXEMPLARY PERFORMANCE STRATEGIES

Exemplary performance strategies result in performance that greatly exceeds the performance level or expands the scope required by an existing LEED for Commercial Interiors credit. To earn exemplary performance credits, teams must meet the performance level defined by the next step in the threshold progression. For credits with more than 1 compliance path, an Innovation in Design point can be earned by satisfying more than 1 compliance path if their benefits are additive. See the Innovation in Design credit section for further details.

The credits for which exemplary performance points are available through expanded performance are noted in LEED Online.

VIII. REGIONAL PRIORITY

To provide incentive to address geographically specific environmental issues, USGBC regional councils and chapters have identified 6 credits per rating system that are of particular importance to specific areas. Upon project registration, LEED Online automatically determines a project's Regional Priority credits based on its zip code. Each Regional Priority credit is worth an additional 1 point, and a total of 4 additional points may be earned by achieving Regional Priority credits. If the project achieves more than 4 Regional Priority credits, the team can choose the credits for which these points will apply. The USGBC website contains a searchable database of Regional Priority credits.

IX. TOOLS FOR REGISTERED PROJECTS

LEED offers additional resources for LEED project teams on the USGBC website, at www.usgbc.org/projecttools. The Registered Project Tools website provides resources for starting the project, including rating system errata, documentation requirements, and referenced industry standards. Also consult the website for definitions of declarants—that is, the team members who are required to sign off on certain documentation requirements—and a list of the prerequisites and credits for which each team member is responsible. The required declarant is also noted in the corresponding credit documentation section of LEED Online. Definitions of other terms are also available on the Registered Project Tools website.

Licensed Professional Exemptions (LPEs) can be used by a project team's registered professional engineer, registered architect, registered interior designer, or registered landscape architect as a streamlined path for documenting certain credits, or bypassing otherwise-required submittals. License information and an Exemption Signature in LEED Online are required to document each exemption the project team wishes to claim. Licensed Professional Exemptions are noted in the corresponding credit documentation section of LEED Online.

SUSTAINABLE SITES

SS Credit 1: Site Selection

1-5 points

Intent

To encourage tenants to select buildings that employ best practices systems and employ green strategies.

Requirements

OPTION 1

Select a LEED certified building (5 points).

OR

OPTION 2

Locate the tenant space in a building or development that has in place 1 or more of the following characteristics at time of submittal (1–5 points). Each of the following options may be met by satisfying the requirements of the corresponding LEED for Retail for New Construction credit.

PATH 1. Brownfield Redevelopment (1 point)

A building developed on a site documented as contaminated (by an ASTM E1903–97 Phase II Environmental Site Assessment or a local voluntary cleanup program).

OR

A building on a site classified as a brownfield by a local, state, or federal government agency.

Effective remediation of site contamination must have been completed.

PATH 2. Stormwater Design—Quantity Control (1 point)

A building that prior to its development had less than or equal to 50% imperviousness and has implemented a stormwater management plan that is equal to or less than the predevelopment 1-1/2 year, 24-hour rate and quantity discharge.

OR

A building that prior to its development had more than 50% imperviousness and has implemented a stormwater management plan that reduced predevelopment 1-1/2 year, 24-hour rate and quantity discharge by 25% of the annual on-site stormwater. This mitigation can be achieved through a variety of measures such as perviousness of site, stormwater retention ponds, and harvesting of rainwater for reuse.

Stormwater values are based on actual local rainfall unless the actual exceeds the 10-year annual average local rainfall, in which case the 10-year annual average should be used.

PATH 3. Stormwater Design—Quality Control (1 point)

A building that has in place site stormwater treatment systems designed to remove at least 80% of the average annual site area's total suspended solids (TSS) and 40% of the average annual site area's total phosphorus (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 EPA Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters, January 1993 (EPA 840-B-92-002) or the local government's BMP document, whichever is more stringent.

PATH 4. Heat Island Effect—Nonroof (1 point)

A building that provides shade (or will provide shade within 5 years of landscape installation), and/or uses light-colored or high-albedo materials with a solar reflectance index (SRI)[1] of at least 29, and/or has open-grid pavement areas that individually or in total equal at least 30% of the site's nonroof impervious surfaces, such as parking areas, walkways, plazas, and fire lanes.

OR

A building that has placed a minimum of 50% of parking spaces underground or covered by structured parking.

OR

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

PATH 5. Heat Island Effect—Roof (1 point)

A building whose roofing has a solar reflectance index (SRI) of the following minimum values for at least 75% of the roof surface:

Roof Type	Slope	SRI
Low-sloped roof	≤ 2:12	78
Steep-sloped roof	> 2:12	29

OR

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

OR

A building that has both high-SRI roofs and vegetated roofs that satisfy the following area requirement:

$$\text{Total Roof Area} \leq \left[(\text{Area of SRI Roof} \times 1.33) + (\text{Area of Vegetated Roof} \times 2) \right]$$

1 The solar reflectance index (SRI) is a measure of the constructed surface's ability to reflect solar heat, as shown by a small temperature rise. It is defined so that a standard black surface (reflectance 0.05, emittance 0.90) is 0 and a standard white surface (reflectance 0.80, emittance 0.90) is 100. To calculate the SRI for a given material, obtain the reflectance value and emittance value for the material. SRI is calculated according to ASTM E 1980. Reflectance is measured according to ASTM E 903, ASTM E 1918 or ASTM C 1549. Emittance is measured according to ASTM E 408 or ASTM C 1371.

PATH 6. Light Pollution Reduction (1 point)

A building whose nonemergency interior luminaires with a direct line of sight to any openings in the envelope (translucent or transparent) must have their input power reduced (by automatic device) by at least 50% during nonbusiness hours. After-hours override may be provided by a manual or occupant-sensing device, provided the override lasts no more than 60 minutes.

OR

A building whose openings in the envelope (translucent or transparent) with a direct line of sight to any nonemergency luminaires must have shielding (with transmittance of less than 10%) that is controlled or closed by automatic device during nonbusiness hours.

PATH 7. Water-Efficient Landscaping—Reduce by 50% (2 points)

A building that employs high-efficiency irrigation technology OR uses harvested rainwater or recycled site water to reduce potable water consumption for irrigation by at least 50% over conventional means.

PATH 8. Water-Efficient Landscaping—No Potable Use or No Irrigation (2 points in addition to Path 7)

A building that uses only harvested rainwater 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.

PATH 9. Innovative Wastewater Technologies (2 points)

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

PATH 10. Water Use Reduction—30% Reduction (1 point)

A building that meets the 30% reduction in water use requirement for the entire building and has an ongoing plan to require future occupants to comply.

PATH 11. On-site Renewable Energy (1–2 points)

A building that supplies at least 2.5% (1 point) or 5% (2 points) of the building's total energy use (expressed as a fraction of annual energy cost) from on-site renewable energy systems.

PATH 12. Other Quantifiable Environmental Performance (1 point)

A building that has in place at the time of selection other quantifiable environmental benefits.

SS Credit 2: Development Density and Community Connectivity

6 points

Intent

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

Requirements

OPTION 1. Development Density

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. The density calculation is based on a typical 2-story downtown development and must include the area of the project being built.

OR

OPTION 2. Community Connectivity

Select space in a building on a site that meets the following criteria:

- Is located within 1/2-mile of a residential area or neighborhood with an average density of 10 units per acre net.
- Is within 1/2-mile of at least 10 basic services.
- Has pedestrian access between the building and the services.

For mixed-use projects, no more than 1 service within the project boundary may be counted as 1 of the 10 basic services, provided it is open to the public. No more than 2 of the 10 services required may be anticipated (i.e., at least 8 must be existing and operational). In addition, the anticipated services must be documented appropriately to demonstrate that they will be operational in the locations indicated within 1 year of occupation of the applicant's project.

Examples of basic services include the following:

- Bank
- Place of Worship
- Convenience Grocery
- Day Care Center
- Cleaners
- Fire Station
- Beauty Salon
- Hardware
- Laundry
- Library
- Medical or Dental Office
- Senior Care Facility
- Park
- Pharmacy
- Post Office
- Restaurant
- School
- Supermarket
- Theater
- Community Center
- Fitness Center
- Museum

Proximity is determined by drawing a 1/2-mile radius around a main building entrance on a site map and counting the services within that radius.

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

SS Credit 3: Alternative Transportation

1-10 points

Intent

To reduce pollution and land development impacts from automobile use.

Requirements

OPTION 1. Public Transportation Access (6 points)

PATH 1. Rail Station Proximity

Locate the project within 1/2-mile walking distance (measured from a main building entrance) of an existing (or planned and funded) commuter rail, light rail, or subway station.

OR

PATH 2. Bus Stop Proximity

Locate the project within 1/4-mile walking distance (measured from a main building entrance) of 1 or more stops for 2 or more public, campus, or private bus lines usable by tenant space occupants.

OPTION 2. Bicycle Commuting (1 point)

Provide secure bicycle racks (within 200 yards of a building entrance) according to the following guidelines based on project square footage:

- Up to 5,000 sf, 2 or more bicycle racks
- 5,001–20,000 sf, 3 or more bicycle racks
- 20,001–50,000 sf, 6 or more bicycle racks
- More than 50,000 sf, 10 or more bicycle racks

AND

Institute 1 of the following: lockable changing areas, showers, bicycle maintenance program, or bicycle route assistance.

FOR PROJECTS THAT ARE PART OF A MULTITENANT COMPLEX

A multitenant complex is a master-planned development of stores, restaurants, and other businesses; retailers may share one or more services and/or common areas.

If bicycle racks have been provided by the development in which the project is located, the number that may be attributed to the project is determined by dividing the square footage of the retail project by the total square footage of the development (buildings only). Multiply the resulting percentage by the total number of bicycle racks. If this number does not meet the credit requirement, the project should add additional spaces.

OPTION 3. Low-Emitting and Fuel-Efficient Vehicles[1] (1 point)

PATH 1

Provide low-emitting and fuel-efficient vehicles[1] for 3% of the full-time equivalent shift (FTE) occupants.

Provide preferred parking[2] for these vehicles.

OR

PATH 2

Provide preferred parking[2] for low-emitting and fuel-efficient vehicles[1] for 5% of the total employee parking and 5% of customer parking provided for the project.

OR

PATH 3

Install alternative-fuel refueling stations for 3% of the total vehicle parking capacity of the site Liquid or gaseous fueling facilities must be separately ventilated or located outdoors.

OR

PATH 4

Provide building occupants access to a low-emitting or fuel-efficient vehicle-sharing program. The following requirements must be met:

- One low-emitting or fuel-efficient vehicle must be provided for a minimum 3% of employee FTE occupants. Assuming that 1 shared vehicle can carry 8 persons, 1 vehicle per 267 employee FTE occupants is required. For buildings with fewer than 267 employee FTE occupants, at least 1 low-emitting or fuel-efficient vehicle must be provided.
- A vehicle-sharing contract must be provided that has an agreement of at least 2 years.
- The estimated number of riders served per vehicle must be supported by documentation.
- A narrative explaining the vehicle-sharing program and its administration must be submitted.
- Parking for low-emitting and fuel-efficient vehicles[1] must be located in the nearest available spaces in the nearest available parking area. Provide a site plan or area map clearly highlighting the walking path from the parking area to the project site and noting the distance.

1 For the purposes of this credit, low-emitting vehicles are defined as vehicles that are classified as Zero Emission Vehicles (ZEV) by the California Air Resources Board. Fuel-efficient vehicles are defined as vehicles that have achieved a minimum green score of 40 on the American Council for an Energy Efficient Economy (ACEEE) annual vehicle rating guide.

2 For customer parking, preferred parking refers to the parking spots that are closest to the main entrance of the project (exclusive of spaces designated for handicapped) or parking passes provided at a discounted price. For employee parking, preferred parking refers to the spots that are closest to the entrance used by employees or parking passes provided at a discounted price.
To establish a meaningful incentive in all potential markets, the parking rate must be discounted at least 20%. The discounted rate must be available to all eligible customers (i.e. not limited to the number of customers equal to 5% of the vehicle parking capacity), publicly posted at the entrance of the parking area, and available for a minimum of 2 years.
For projects that are part of a development for which there is no "assigned" parking, the number of parking spaces to be used in calculations under SS Credit 4 is determined by dividing the square footage of the retail project by the total square footage of the development (buildings only, excluding common areas). This percentage is the percentage of total parking spaces to be used in calculations.

OPTION 4. Parking Availability (3 points)

CASE 1. Projects with an area less than 75% of the Total Building Area

PATH 1

Parking spaces provided to tenant must meet but not exceed minimum number required by local zoning regulations.

Preferred parking[3] must be provided for carpools or vanpools capable of serving 5% or more of tenant employees.

OR

PATH 2

No parking will be provided or subsidized for tenant employees.

CASE 2. Projects with an area 75% or more of the Total Building Area

Preferred parking[3] must be provided for carpools or vanpools, capable of serving 5% of the building employees.

AND

PATH 1

Parking capacity must meet but not exceed minimum local zoning requirements.

Preferred parking[3] must be provided for carpools or vanpools, capable of serving 5% of the building employees.

OR

PATH 2

No new parking will be added for rehabilitation projects.

OPTION 5. Delivery Service (1 point)

Provide a delivery service for purchases made from the retail establishment.

It is not required that the delivery service be free of charge, but the cost should not be prohibitive.

OPTION 6. Incentives (1 point)

Provide a comprehensive incentives program for employees who carpool or use alternative transportation to get to work. Three incentives must be provided for all staff upon hire.

3 For employee parking, preferred parking refers to the spots that are closest to the entrance used by employees. For projects that are part of a development for which there is no assigned parking, determine the number of parking spaces to be used in calculations by dividing the square footage of the retail project by the total square footage of the development (buildings only, excluding common areas).

Potential incentives may include but are not limited to the following:

- Transit pass subsidies.
- Purchase of public transportation passes on a pretax basis.
- Preferred scheduling for carpoolers. While shifts cannot be guaranteed, a reasonable effort will be made to accommodate carpooling employees' schedules.
- An "emergency ride home" program for carpoolers and vanpoolers who must leave work unexpectedly.
- Preferred parking[3] for carpools or vanpools.
- Discounts on bicycle accessories and maintenance at local shops.

OPTION 7. Alternative Transportation Education (1 point)

Provide a board or computer display in the retail project, accessible to both employees and customers, that provides the following information:

- Information on carpooling programs.
- Transit trip planning assistance.
- Transit maps.
- Maps of bicycle routes and the locations of secure bicycle parking, lockers, and showers, if provided.
- Summary of the company transportation management plan.
- Contacts for more information.

WATER EFFICIENCY

WE Prerequisite 1: Water Use Reduction

Required

Intent

To increase water efficiency within the tenant space to reduce the burden on municipal water supply and wastewater systems.

Requirements

Employ strategies that in aggregate use 20% less water than the water use baseline calculated for the tenant space (not including irrigation).

BUILDING WATER USE

Calculate the baseline according to the commercial baselines outlined below.[1] Calculations are based on estimated occupant usage. Include only the following fixtures and fixture fittings (as applicable): water closets, urinals, lavatory faucets, showers, kitchen sink faucets, and pre-rinse spray valves.

Commercial Fixtures, Fittings, and Appliances	Current Baseline
Commercial Toilets	1.6 gallons per flush (gpf)* Except blow-out fixtures: 3.5 (gpf)
Commercial Urinals	1.0 (gpf)
Commercial Lavatory (restroom) Faucets	2.2 gallons per minute (gpm) at 60 pounds per square inch (psi), private applications only (hotel or motel guest rooms, hospital patient rooms) 0.5 (gpm) at 60 (psi)** all others except private applications 0.25 gallons per cycle for metering faucets
Shower	2.5 (gpm) at 80 (psi) per shower stall
Kitchen Faucet	2.2 (gpm) at 60 (psi)
Commercial Pre-rinse Spray Valves (for food service applications)	Flow rate ≤ 1.6 (gpm) (no pressure specified; no performance requirement)

* EPAct 1992 standard for toilets applies to both commercial and residential models.

** In addition to EPAct requirements, the American Society of Mechanical Engineers standard for public lavatory faucets is 0.5 gpm at 60 psi (ASME A112.18.1–2005). This maximum has been incorporated into the national Uniform Plumbing Code and the International Plumbing Code.

AND

COMMERCIAL PROCESS WATER USE

Employ strategies that in aggregate use 20% less water than the water use baseline calculated for commercial equipment performance requirements as listed in the following table. Base the calculations on estimated occupant usage. Include only the following fixtures (as applicable): clothes washers, dishwashers, ice machines, food steamers, and combination ovens.

1 Tables adapted from information developed and summarized by the U.S. Environmental Protection Agency (EPA) Office of Water based on requirements of the Energy Policy Act (EPAct) of 1992 and subsequent rulings by the Department of Energy, requirements of the EPAct of 2005, and the plumbing code requirements as stated in the 2006 editions of the Uniform Plumbing Code or International Plumbing Code pertaining to fixture performance.

Exemptions from calculations:

- Appliances and equipment that use water for human consumption may be excluded. Examples: bread misters, produce misters, soda machines, coffee-making machines, and fixtures used to fill sinks for washing produce.
- Equipment, appliances, fixtures, and fittings not covered by the Energy Policy Act of 1992 (EPAct 1992), do not contribute toward the retail process, and are not commercially rated may also be excluded. Example: a residential dishwasher in an employee break room.
- Fixtures whose flow rates are regulated by health codes may be excluded. Example: fixtures used for filling dishwashing sinks in which water must be maintained at a certain temperature.

Commercial Equipment	Baseline
Commercial clothes washer, less than 80 lbs	9 gallons/cf/cycle
Commercial dishwasher	
Under counter, high temperature	1.98 gallons/rack
Under counter, low temperature	1.95 gallons/rack
Door type, high temperature	1.44 gallons/rack
Door type, low temperature	1.85 gallons/rack
Single tank rack conveyor, high temperature	1.13 gallons/rack
Single tank rack conveyor, low temperature	1.23 gallons/rack
Multi- tank rack conveyor, high temperature	1.1 gallons/rack
Multi- tank rack conveyor, low temperature	0.99 gallon/rack
Flight type	180 gph
Commercial ice machines	
Ice machine, IMH (ice-making head) H < 450 lbs/day	< 25 gal/100 lbs ice
Ice machine, IMH (ice-making head) H > 450 lbs/day	< 25 gal/100 lbs ice
Ice machine, RCU (no remote compressor) H < 1,000 lbs/day	< 25 gal/100 lbs ice
Ice machine, RCU (no remote compressor) H > 1,000 lbs/day	< 25 gal/100 lbs ice
Ice machine, RCU (remote compressor) H < 934 lbs/day	< 25 gal/100 lbs ice
Ice machine, RCU (remote compressor) H > 934 lbs/day	< 25 gal/100 lbs ice
Ice machine, SCU (self-contained unit)	< 35 gal/100 lbs ice
Ice machine, water-cooled	Must be on chilled loop
Ice machine, once-through water-cooled	Banned
Food steamer	
Steam cooker, batch cooking	815 gph/pan
Steam cooker, high production or cook to order	84 gph/pan
Combination oven	
Countertop or stand mounted	40 gph
Roll-in	60 gph
Other equipment	Based on industry standards
Notes: gph = gallons per hour; cf = cubic feet; H = ice production.	

For equipment not listed in the above tables, the project team may propose performance baseline requirements, with documentation supporting the proposed benchmark.

WE Credit 1: Water Use Reduction

6-11 points

Intent

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

Requirements

Employ strategies that in aggregate use less water than the water use baseline calculated for the tenant spaces (not including irrigation). The minimum water savings percentage for each point threshold is as follows:

Building Use Reduction		Process Use Reduction	Points
30%	AND	30%	6
35%	AND	35%	8
40%	AND	40%	11

BUILDING WATER USE

Calculate the baseline according to the commercial baselines outlined below.[1] Calculations are based on estimated occupant usage. Include only the following fixtures and fixture fittings (as applicable): water closets, urinals, lavatory faucets, showers, kitchen sink faucets, and pre-rinse spray valves.

Fixtures, Fittings, and Appliances	Current Baseline
Commercial Toilets	1.6 gallons per flush (gpf) * Except blow-out fixtures: 3.5 (gpf)
Commercial Urinals	1.0 (gpf)
Commercial Lavatory (restroom) Faucets	2.2 gallons per minute (gpm) at 60 pounds per square inch (psi),private applications only (hotel or motel guest rooms, hospital patient rooms) 0.5 (gpm) at 60 (psi)**all others except private applications 0.25 gallons per cycle for metering faucets
Shower	2.5 (gpm) at 80 (psi) per shower stall
Kitchen Faucet	2.2 (gpm) at 60 (psi)
Commercial Pre-rinse Spray Valves (for food service applications)	Flow rate ≤ 1.6 (gpm) (no pressure specified; no performance requirement)

* EPAct 1992 standard for toilets applies to both commercial and residential models.

** In addition to EPAct requirements, the American Society of Mechanical Engineers standard for public lavatory faucets is 0.5 gpm at 60 psi (ASME A112.18.1–2005). This maximum has been incorporated into the national Uniform Plumbing Code and the International Plumbing Code.

AND

COMMERCIAL PROCESS WATER USE

Employ strategies that in aggregate use less water than the water use baseline calculated for commercial equipment performance requirements as listed in the following table. Base the calculations on estimated occupant usage. Include only the following fixtures (as applicable): clothes washers, dishwashers, ice machines, food steamers, and combination ovens.

1 Tables adapted from information developed and summarized by the U.S. Environmental Protection Agency (EPA) Office of Water based on requirements of the Energy Policy Act (EPAct) of 1992 and subsequent rulings by the Department of Energy, requirements of the EPAct of 2005, and the plumbing code requirements as stated in the 2006 editions of the Uniform Plumbing Code or International Plumbing Code pertaining to fixture performance.

Exemptions from calculations:

- Appliances and equipment that use water for human consumption may be excluded. Examples: bread misters, produce misters, soda machines, coffee-making machines, and fixtures used to fill sinks for washing produce.
- Equipment, appliances, fixtures, and fittings that are not covered by the Energy Policy Act of 1992 (EPAct 1992), do not contribute toward the retail process, and are not commercially rated may be excluded. Example: a residential dishwasher in an employee break room.
- Fixtures whose flow rates are regulated by health codes may be excluded. Example: fixtures used for filling dishwashing sinks in which water must be maintained at a certain temperature.

Commercial Equipment	Baseline
Commercial clothes washer, less than 80 lbs	9 gallons/cf/cycle
Commercial dishwasher	
Under counter, high temperature	1.98 gallons/rack
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Single tank rack conveyor, high temperature	1.13 gallons/rack
Single tank rack conveyor, low temperature	1.23 gallons/rack
Multi- tank rack conveyor, high temperature	1.1 gallons/rack
Multi- tank rack conveyor, low temperature	0.99 gallon/rack
Flight type	180 gph
Commercial ice machines	
Ice machine, IMH (ice-making head) H < 450 lbs/day	< 25 gal/100 lbs ice
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Ice machine, RCU (no remote compressor) H > 1,000 lbs/day	< 25 gal/100 lbs ice
Ice machine, RCU (remote compressor) H < 934 lbs/day	< 25 gal/100 lbs ice
Ice machine, RCU (remote compressor) H > 934 lbs/day	< 25 gal/100 lbs ice
Ice machine, SCU (self-contained unit)	< 35 gal/100 lbs ice
Ice machine, water-cooled	Must be on chilled loop
Ice machine, once-through water-cooled	Banned
Food steamer	
Steam cooker, batch cooking	815 gph/pan
Steam cooker, high production or cook to order	84 gph/pan
Combination oven	
Countertop or stand mounted	40 gph
Roll-in	60 gph
Other equipment	Based on industry standards
Notes: gph = gallons per hour; cf = cubic feet; H = ice production.	

For equipment not listed in the above tables, the project team may propose performance baseline requirements, with documentation supporting the proposed benchmark.

ENERGY AND ATMOSPHERE

EA Prerequisite 1: Fundamental Commissioning of Building Energy Systems

Required

Intent

To verify that the project's energy-related systems are installed and calibrated to perform according to the owner's project requirements, basis of design, and construction documents.

Benefits of commissioning include reduced energy use, lower operating costs, fewer contractor callbacks, better building documentation, improved occupant productivity, and verification that the systems perform in accordance with the owner's project requirements.

Requirements

The following commissioning process activities must be completed by the project team:

- Designate an individual as the commissioning authority (CxA) to lead, review, and oversee the completion of the commissioning process activities.
  - The CxA must have documented commissioning authority experience in at least 2 building projects.
  - The individual serving as the CxA must be independent of the project's design and construction management, though the CxA may be an employee of any firms providing those services. The CxA may be a qualified employee or consultant of the owner.
  - The CxA must report results, findings and recommendations directly to the owner.
  - For projects smaller than 50,000 gross square feet, the CxA may be a qualified person on the design or construction teams who has the required experience.
- The owner must document the owner's project requirements. The design team must develop the basis of design. The CxA must review these documents for clarity and completeness. The owner and design team must be responsible for updates to their respective documents.
- Develop and incorporate commissioning requirements into the construction documents.
- Develop and implement a commissioning plan.
- Verify the installation and performance of the systems to be commissioned.
- Complete a summary commissioning report.

Commissioned Systems

Commissioning process activities must be completed for the following energy-related systems at a minimum:

- Heating, ventilating, air-conditioning, and refrigeration (HVAC&R) systems (mechanical and passive) and associated controls.
- Lighting and daylighting controls.
- Domestic hot water systems.
- Renewable energy systems (e.g., photovoltaic, wind, solar).

EA Prerequisite 2: Minimum Energy Performance

Required

Intent

To establish the minimum level of energy efficiency for the tenant space systems to reduce environmental and economic impacts associated with excessive energy use.

Requirements

Design portions of the building as covered by the tenant's scope of work to comply with ANSI/ASHRAE/IESNA Standard 90.1–2007 (with errata but without addenda[1]) and complete the following:

- Compliance with the mandatory provisions (Sections 5.4, 6.4, 7.4, 8.4, 9.4, and 10.4) of ANSI/ASHRAE/IESNA Standard 90.1–2007 (with errata but without addenda1).
- Achieve the prescriptive requirements (Sections 5.5 or 5.6, 6.5, 7.5 and 9.5) or performance requirements (Section 11) of ANSI/ASHRAE/IESNA Standard 90.1–2007 (with errata but without addenda[1]).
- Reduce connected lighting power density 10% below that allowed by ANSI/ASHRAE/IESNA Standard 90.1–2007 (with errata but without addenda[1]) using either the Space-by-Space Method or by applying the whole building lighting power allowance to the entire tenant space.
- Install ENERGY STAR®–qualified equipment for 50% (by rated power) of ENERGY STAR–eligible equipment installed as part of the tenant's scope of work. This requirement includes appliances, office equipment, electronics, and commercial food service equipment. Excluded are heating, ventilating, and air-conditioning (HVAC), lighting, and building envelope products.

Projects in California may use Title 24–2005, Part 6, in place of ANSI/ASHRAE/IESNA Standard 90.1–2007.

1 Project teams wishing to use addenda approved by ASHRAE for the purposes of this prerequisite may do so at their discretion. Addenda must be applied consistently across all LEED credits.

EA Prerequisite 3: Fundamental Refrigerant Management

Required

Intent

To reduce stratospheric ozone depletion.

Requirements

Zero use of chlorofluorocarbon (CFC)-based refrigerants in tenant heating, ventilating, air-conditioning, and refrigeration (HVAC&R) systems used within the LEED project scope of work.

EA Credit 1.1: Optimize Energy Performance—Lighting Power

1-5 points

Intent

To achieve increasing levels of energy conservation beyond the referenced standard to reduce environmental and economic impacts associated with excessive energy use.

Requirements

Reduce connected lighting power density below that allowed by ANSI/ASHRAE/IESNA Standard 90.1–2007 (with errata but without addenda[1]) either by using the space-by-space method or by applying the whole building lighting power allowance to the entire tenant space.

The points earned for reducing lighting power density below the standard are as follows:

Lighting Power Density Reduction below Standard	Points
15%	1
20%	2
25%	3
30%	4
35%	5

Project teams in California may use Title 24–2005, Part 6, in place of ANSI/ASHRAE/IESNA Standard 90.1–2007.

1 Project teams wishing to use addenda approved by ASHRAE for the purposes of this credit may do so at their discretion. Addenda must be applied consistently across all LEED credits.

EA Credit 1.2: Optimize Energy Performance—Lighting Controls

1-3 points

Intent

To achieve increasing levels of energy conservation beyond the prerequisite standard to reduce environmental and economic impacts associated with excessive energy use.

Requirements

Design the project to include 1 or more of the following independent strategies:

- Daylight controls for daylit areas: (1 point)

  Install daylight-responsive controls in all regularly occupied daylit spaces within 15 feet of windows and under skylights. Daylight controls must switch or dim electric lights in response to the presence or absence of daylight illumination in the space.[1]

- Daylight controls for 50% of the lighting load: (1 point)

  Install daylight-responsive controls for 50% or more of the connected lighting load and demonstrate that 50% of the connected lighting load is daylight responsive. Daylight controls must switch or dim electric lights in response to the presence or absence of daylight illumination in the space.[1]

- Occupancy sensors: (1 point)

  Install occupancy sensors for 75% of the connected lighting load.

1 ANSI/ASHRAE/IESNA Standard 90.1–2007 User's Manual (American Society of Heating, Refrigerating, and Air-Conditioning Engineers, 2008), pp. 9–31.

EA Credit 1.3: Optimize Energy Performance—HVAC

5-10 points

Intent

To achieve increasing levels of energy conservation beyond the prerequisite standard to reduce environmental and economic impacts associated with excessive energy use.

Requirements

OPTION 1

Implement 1 or both of the following strategies:

- Equipment Efficiency: (5 points)
- Install heating, ventilation, and air-conditioning (HVAC) systems that comply with the efficiency requirements outlined in the New Buildings Institute's Advanced Buildings™ Core Performance™ Guide Sections 1.4: Mechanical System Design, 2.9: Mechanical Equipment Efficiency and 3.10: Variable Speed Control.
- Appropriate Zoning and Controls: (5 points)
- 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 special occupancies (conference rooms, kitchens, etc.) must have active controls capable of sensing space use and modulating the HVAC system in response to space demand.

OR

OPTION 2

Reduce design energy cost compared with the energy cost budget for regulated energy components described in the requirements of ANSI/ASHRAE/IESNA Standard 90.1–2007 (with errata but without addenda[1]).

AND

PATH 1 (5 points)

Demonstrate that HVAC system component performance criteria used for tenant space are 15% better than a system in minimum compliance with ANSI/ASHRAE/IESNA Standard 90.1–2007 (with errata but without addenda[1]).

OR

PATH 2 (10 points)

Demonstrate that HVAC system component performance criteria used for tenant space are 30% better than a system that is in minimum compliance with ANSI/ASHRAE/IESNA Standard 90.1–2007 (with errata but without addenda[1]).

1 Project teams wishing to use addenda approved by ASHRAE for the purposes of this credit may do so at their discretion. Addenda must be applied consistently across all LEED credits.

EA Credit 1.4: Optimize Energy Performance—Equipment and Appliances

1-4 points

Intent

To achieve increasing levels of energy conservation beyond the prerequisite standard to reduce environmental and economic impacts associated with excessive energy use.

Requirements

For all Energy Star®–eligible equipment and appliances installed as part of the tenant's scope of work, achieve 1 of the following percentages (by rated power):

Percent Installed ENERGY STAR Qualified Equipment of ENERGY STAR Eligible Equipment	Points
70%	1
77%	2
84%	3
90%	4

This requirement applies to appliances, office equipment, electronics, and commercial food service equipment. Excluded are HVAC, lighting, and building envelope products.

EA Credit 1.5: Optimize Energy Performance—BUILDING Envelope

1 point

Intent

To achieve increasing levels of energy conservation beyond the prerequisite standard to reduce environmental and economic impacts associated with excessive energy use.

Requirements

OPTION 1. PERFORMANCE COMPLIANCE PATH

Demonstrate a 15% reduction in the heat loss and heat gain of the proposed building envelope compared with the baseline building performance rating per ANSI/ASHRAE/IESNA Standard 90.1–2007 (with errata but without addenda[1]) for the building envelope components such as glazing, insulation, roofing, and slab using a modeling protocol or overall UA (U factor **X** Area) calculation.

OR

OPTION 2. PRESCRIPTIVE COMPLIANCE PATH

Comply with the prescriptive measures for building envelopes of ASHRAE Advanced Energy Design Guide for Small Retail Buildings 2006. The building must meet the following requirements:

- The building in which project is located must be less than 20,000 square feet.
- The building must be retail occupancy.
- The project must fully comply with all applicable criteria as established in the Advanced Energy Design Guide for the climate zone in which the building is located.

1 Project teams wishing to use addenda approved by ASHRAE for the purposes of this credit may do so at their discretion. Addenda must be applied consistently across all LEED credits.

EA Credit 2: Enhanced Commissioning

5 points

Intent

To verify and ensure that the tenant space is designed, constructed, and calibrated to operate as intended.

Requirements

Implement, or have a contract in place to implement, the following additional commissioning process activities in addition to the requirements of EA Prerequisite 1, Fundamental Commissioning of Building Energy Systems:

- Prior to the start of the construction documents phase, designate an independent commissioning authority (CxA) to lead, review, and oversee the completion of all commissioning process activities.
  - The CxA must have documented commissioning authority experience in at least 2 building projects.
  - The individual serving as the CxA:
    - Must be independent of the work of design and construction;
    - Must not be an employee of the design firm, though he or she may be contracted through them;
    - Must not be an employee of, or contracted through, a contractor or construction manager holding construction contracts;
    - May be a qualified employee or consultant of the owner.
  - The CxA must report results, findings, and recommendations directly to the owner.
- The CxA must conduct, at a minimum, 1 commissioning design review of the owner's project requirements, basis of design, and design documents prior to the mid-construction documents phase and back-check the review comments in the subsequent design submission.
- The CxA must review contractor submittals applicable to systems being commissioned for compliance with the owner's project requirements and basis of design. This review must be concurrent with the reviews of the architect or engineer of record and submitted to the design team and the owner.
- The CxA or other project team members must develop a systems manual that gives future operating staff the information needed to understand and optimally operate the project's commissioned systems.
- The CxA or other project team members must verify the requirements for training operating personnel and building occupants have been completed.
- The CxA must be involved in reviewing the operation of the tenant space with operations and maintenance (O&M) staff and occupants within 8 to 10 months after substantial completion. A plan for resolving outstanding commissioning-related issues must be included.

EA Credit 3: Measurement and Verification

2-5 points

Intent

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

Requirements

CASE 1. Projects Less Than 75% of the Total Building Area

Complete 1 or more of the following:

- Install submetering equipment to measure and record energy use within the tenant space. (2 points)
- Negotiate a lease whereby energy costs are paid by the tenant and not included in the base rent. (3 points)

OR

CASE 2. Projects 75% or More of the Total Building Area

OPTION 1

Develop and implement a measurement and verification (M&V) plan consistent with Option D: Calibrated Simulation (Savings Estimation Method 2) as specified in the International Performance Measurement & Verification Protocol (IPMVP) Volume III: Concepts and Options for Determining Energy Savings in New Construction, April 2003.

The M&V period must cover at least 1 year of post-construction occupancy.

Provide a process for corrective action if the results of the M&V plan indicate that energy savings are not being achieved.

OR

OPTION 2

Develop and implement a measurement and verification (M&V) plan consistent with Option B: Energy Conservation Measure Isolation, as specified in the International Performance Measurement & Verification Protocol (IPMVP) Volume III: Concepts and Options for Determining Energy Savings in New Construction, April 2003.

The M&V period must cover at least 1 year of post-construction occupancy.

Provide a process for corrective action if the results of the M&V plan indicate that energy savings are not being achieved.

EA Credit 4: Green Power

2 points

Intent

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

Requirements

OPTION 1

Engage in at least a 2-year renewable energy contract to provide at least 50% of the building's electricity from renewable sources, as defined by the Center for Resource Solutions' Green-e energy product certification requirements.

All purchases of green power must be based on the quantity of energy consumed, not the cost, as determined by the annual electricity consumption results of EA Credit 1.3, Option 2, Optimize Energy Performance.

OR

OPTION 2

Engage in at least a 2-year renewable energy contract to purchase at least 8 kilowatt hours per square foot per year from renewable electricity sources as defined by the Center for Resource Solutions Green-e Energy's product certification requirements.

Green power can be purchased on a centralized basis and credit attributed to a certain retail project. However, the same power cannot be credited to another LEED project.

EA Credit 5: On-Site Renewable Energy

1-2 points

Intent

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

Requirements

Use tenant on-site renewable energy systems to offset project energy cost. Calculate project performance by expressing the energy produced by the renewable systems as a percentage of the building annual energy cost and using the table below to determine the number of points achieved.

Use the project's annual energy cost calculated in EA Credit 1, Optimize Energy Performance, or use the Department of Energy's Commercial Buildings Energy Consumption Survey (CBECS) database to determine the estimated electricity use.

The table below describes the minimum percentage of renewable energy for each point threshold:

Percentage Renewable Energy	Points
1%	1
3%	2

MATERIALS AND RESOURCES

MR Prerequisite 1: Storage and Collection of Recyclables

Required

Intent

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

Requirements

Conduct a waste stream study to identify the top 5 recyclable waste streams by either weight or volume. The waste study shall categorize all waste streams consistently by either weight or volume, identify which waste streams are recyclable, and list the top 3 waste streams for which collection and storage space will be provided. If no information is available on typical waste streams for the project, projects should make projections based on the types of waste their operations will produce and similar operations. For those retailers with existing stores of similar size and function, historical information from these locations can be used.

Provide an easily accessible dedicated area or areas that serve the retail project and are dedicated to the separation, collection, and storage of materials for a minimum of the top 3 recyclable waste streams as identified by the waste study. The location of the collection and storage bins should be located in convenient proximity to the source of recyclable waste in the front or back of house. Examples of potential recyclable waste streams include plastic film, plastics, hanger metals, paper, cardboard, food waste, glass, or special waste as defined by local code.

MR Credit 1.1: Tenant Space—Long-Term Commitment

1 point

Intent

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

Requirements

The occupant or tenant must commit to remain in the same location for a minimum of 10 years.

MR Credit 1.2: Building Reuse—Maintain Interior Nonstructural Components

1-2 points

Intent

To 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% or 60% (by area) of the existing nonshell, nonstructural components (e.g., walls, flooring, and ceiling systems). The minimum percentage interior component reuse for each point threshold is as follows:

Interior Reuse	Points
40%	1
60%	2

MR Credit 2: Construction Waste Management

1-2 points

Intent

To divert construction and demolition debris from disposal in landfills and incineration facilities. Redirect recyclable recovered resources back to the manufacturing process and reusable materials to appropriate sites.

Requirements

Recycle and/or salvage nonhazardous construction and demolition debris. Develop and implement a construction waste management plan that, at a minimum, identifies the materials to be diverted from disposal and whether the materials will be sorted on-site or comingled. Excavated soil and land-clearing debris do not contribute to this credit. Calculations can be done by weight or volume but must be consistent throughout. The minimum percentage debris to be recycled or salvaged for each point threshold is as follows:

Recycled or Salvaged	Points
50%	1
75%	2

MR Credit 3.1: Materials Reuse

1-2 points

Intent

To reuse building materials and products to reduce demand for virgin materials and to reduce waste, thereby lessening impacts associated with the extraction and processing of virgin resources.

Requirements

Use salvaged, refurbished, or reused materials, the sum of which constitutes at least 5% or 10%, based on cost, of building (construction) materials, excluding furniture and furnishings. The minimum percentage materials reused for each point threshold is as follows:

Reused Materials	Points
5%	1
10%	2

Please note that casework and built-in millwork items must be included in the base building calculations.

MR Credit 3.2: Materials Reuse—Furniture and Furnishings

1 point

Intent

To reuse building materials and products 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 reused furniture and furnishings for 30% of the total furniture and furnishings budget.

MR Credit 4: Recycled Content

1-2 points

Intent

To 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 furniture and furnishings, with recycled content[1] such that the sum of postconsumer[2] recycled content plus 1/2 of the preconsumer[3] content constitutes at least 10% or 20%, based on cost, of the total value of the materials in the project. The minimum percentage materials recycled for each point threshold is as follows:

Recycled Content	Points
10%	1
20%	2

The recycled content value of a material or furnishing is determined by weight. The recycled fraction of the assembly is then multiplied by the cost of assembly to determine the recycled content value.

Mechanical, electrical, and plumbing components cannot be included in this calculation.

1 Recycled is defined in accordance with the International Organization of Standards document, ISO 14021—Environmental labels and declarations—Self-declared environmental claims (Type II environmental labeling).
2 Postconsumer material is waste material generated by households or by commercial, industrial, and institutional facilities in their role as end users of the product, which can no longer be used for its intended purpose.
3 Preconsumer material is material diverted from the waste stream during the manufacturing process. Excluded is reutilization of materials such as rework, regrind, or scrap generated in a process and capable of being reclaimed within the same process that generated it.

MR Credit 5: Regional Materials

1-2 points

Intent

To 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

OPTION 1 (1 point)

Use a minimum of 20% of the combined value of construction and Division 12 (Furniture and Furnishings) materials and products that are manufactured[1] regionally within a radius of 500 miles.

OR

OPTION 2 (2 points)

Meet the requirements for Option 1.

AND

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.

1 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, the lumber from Vancouver, and the joist is assembled in Kent, Washington, then the location of the final assembly is Kent, Washington.

MR Credit 6: Rapidly Renewable Materials

1 point

Intent

To 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 for 5% of the total value of all materials and products used in the project, based on cost. Rapidly renewable building materials and products are made from agricultural products that are typically harvested within a 10-year or shorter cycle.

Please note that casework and built-in millwork items must be included in the base building calculations.

MR Credit 7: Certified Wood

1 point

Intent

To 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 (Furniture and Furnishings) material value is included in the determination of the certified wood content.

Please note that casework and built-in millwork items must be included in the base building calculations.

IEQ Prerequisite 1: Minimum Indoor Air Quality Performance

Required

Intent

To establish minimum indoor air quality (IAQ) performance to enhance indoor air quality in buildings, thus contributing to the comfort and well-being of the occupants.

Requirements

Meet the minimum requirements of Sections 4 through 7 of ASHRAE 62.1–2007, Ventilation for Acceptable Indoor Air Quality (with errata but without addenda[1]).

AND

CASE 1. Mechanically Ventilated Spaces

Modify or maintain the existing outside air ventilation distribution system to supply at least the outdoor air ventilation rate required by ASHRAE 62.1–2007 (with errata but without addenda[1]).

If the project team cannot meet the outside air requirements of ASHRAE 62.1–2007 (with errata but without addenda[1]), document the space and system constraints that make it not possible, complete an engineering assessment of the system's maximum cubic feet per minute (cfm) capability toward meeting the requirements of ASHRAE 62.1–2007 (with errata but without addenda[1]), and achieve those levels, with a minimum of 10 cfm per person. All other requirements must be met.

OR

CASE 2. Naturally Ventilated Spaces

Naturally ventilated buildings must comply with ASHRAE Standard 62–2007, Section 5.1 (with errata but without addenda[1]).

Modify or maintain the existing outside air ventilation distribution system to supply at least the outdoor air ventilation rate required by ASHRAE Standard 62.1–2007 (with errata but without addenda[1]). If the project team cannot meet the outside air requirements of ASHRAE 62.1–2007 (with errata but without addenda[1]), document the space and system constraints that make it not possible, complete an engineering assessment of the system's maximum cubic feet per minute (cfm) capability toward meeting the requirements of ASHRAE 62.1–2007 (with errata but without addenda[1]), and achieve those levels, with a minimum of 10 cfm per person. All other requirements must be met.

1 Project teams wishing to use addenda approved by ASHRAE for the purposes of this prerequisite may do so at their discretion. Addenda must be applied consistently across all LEED credits

IEQ Prerequisite 2: Environmental Tobacco Smoke (ETS) Control

Required

Intent

To prevent or minimize exposure of building occupants, indoor surfaces, and ventilation air distribution systems to environmental tobacco smoke (ETS).

Requirements

OPTION 1

Locate tenant space in a building that prohibits smoking by all occupants and users within 25 feet of entries, outdoor air intakes, and operable windows.

Prohibit on-property smoking within 25 feet of entries, outdoor air intakes, and operable windows. Provide signage to allow smoking in designated areas, prohibit smoking in designated areas, or prohibit smoking on the entire property. If the 25-foot requirement cannot be followed due to code or landlord rules, provide documentation that proves such regulations are in place.

If outdoor space, public or private, is used for business purposes, regardless of zero lot line, this space needs to follow the no-smoking regulation outlined in this credit. Examples of such spaces include sidewalk seating, patios or decks, and/or stands for purchasing goods whereas smoking must be prohibited within 25 feet of such spaces.

OR

OPTION 2

CASE 1. Non-Residential Projects

Confirm that smoking is prohibited in the portions of the tenant space not designated as a smoking space, all other building areas served by the same HVAC system, and the common areas used by occupants. Ensure that ETS cannot migrate by either mechanical or natural ventilation from other areas of the building.

If the occupants are permitted to smoke, provide designated smoking rooms designed to 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 nonsmoking areas, enclosed with impermeable deck-to-deck partitions, and operated at a negative pressure compared with surrounding spaces of at least an average of 5 Pascals (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 rooms are closed.

Verify performance of the smoking rooms' differential air pressure by conducting 15 minutes of measurement, with a minimum of 1 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. Conduct the testing with each space configured for worst-case conditions of transport of air from the smoking rooms (with doors closed) to adjacent spaces.

CASE 2. 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.

Weather-strip all doors in the residential units leading to common hallways to minimize air leakage into the hallway[1].

Demonstrate acceptable sealing of residential units by conducting a blower door test in accordance with ANSI/ASTM–779–99, Standard Test Method for Determining Air Leakage Rate by Fan Pressurization.

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_1998_standards/residential_acm/CHAPTER07.pdf. Residential units must demonstrate less than 1.25 square inches of leakage area per 100 square feet of enclosure area (i.e., sum of all wall, ceiling, and floor areas).

1 If the common hallways are pressurized with respect to the residential units then doors in the residential units leading to the common hallways need not be weather-stripped provided that the positive differential pressure is demonstrated as in Option 2, Case 1 above, considering the residential unit as the smoking room.

IEQ Credit 1: Outdoor Air Delivery Monitoring

1 point

Intent

To provide capacity for ventilation system monitoring to help promote occupants' comfort and well-being.

Requirements

Install permanent monitoring systems to ensure that ventilation systems maintain design minimum requirements. Configure all monitoring equipment to generate an alarm when the airflow values or carbon dioxide (CO_2) levels vary by 10% or more from the design values, via either a building automation system alarm to the building operator or a visual or audible alert to the building occupants.

AND

CASE 1. Mechanically Ventilated Spaces

Monitor CO_2 concentrations within all densely occupied spaces (those with a design occupant density of 25 people or more per 1,000 square feet). CO_2 monitors must be between 3 and 6 feet above the floor.

Provide a direct outdoor airflow measurement device capable of measuring the minimum outdoor air intake flow with an accuracy of plus or minus 15% of the design minimum outdoor air rate, as defined by ASHRAE 62.1–2007 (with errata but without addenda[1]) for mechanical ventilation systems where 20% or more of the design supply airflow serves nondensely occupied spaces.

CASE 2. Naturally Ventilated Spaces

Monitor CO_2 concentrations within all naturally ventilated spaces. CO_2 monitors must be between 3 and 6 feet above the floor. One CO_2 sensor may be used to monitor multiple nondensely occupied spaces if the natural ventilation design uses passive stacks or other means to induce airflow through those spaces equally and simultaneously without intervention by building occupants.

1 Project teams wishing to use addenda approved by ASHRAE for the purposes of this credit may do so at their discretion. Addenda must be applied consistently across all LEED credits.

IEQ Credit 2: Increased Ventilation

1 point

Intent

To provide additional outdoor air ventilation to improve indoor air quality (IAQ) for improved occupant comfort, well-being and productivity.

Requirements

CASE 1. 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 Standard 62.1–2007 (with errata but without addenda[1]) as determined by IEQ Prerequisite 1, Minimum Indoor Air Quality Performance.

CASE 2. Naturally Ventilated Spaces

Determine that natural ventilation is an effective strategy for the project by following the flow diagram process shown in Figure 2.8 of the Chartered Institution of Building Services Engineers (CIBSE) Applications Manual 10: 2005, Natural Ventilation in Non-Domestic Buildings.

AND

OPTION 1

Show that the natural ventilation systems design meets the recommendations set forth in the CIBSE manuals appropriate to the project space.

PATH 1. CIBSE Applications Manual 10: 2005, Natural Ventilation in Non-domestic Buildings.

PATH 2. CIBSE AM 13:2000, Mixed Mode Ventilation

OR

OPTION 2

Use a macroscopic, multizone, analytic model to predict that room-by-room airflows will effectively naturally ventilate, defined as providing the minimum ventilation rates required by ASHRAE 62.1–2007, Chapter 6 (with errata but without addenda[1]), for at least 90% of occupied spaces.

1 Project teams wishing to use addenda approved by ASHRAE for the purposes of this credit may to do so at their discretion. Addenda must be applied consistently across all LEED credits.

IEQ Credit 3.1: Construction Indoor Air Quality Management Plan—During Construction

1 point

Intent

To reduce indoor air quality (IAQ) problems resulting from the construction or renovation and promote the comfort and well-being of construction workers and building occupants.

Requirements

Develop and implement an IAQ management plan for the construction and preoccupancy phases of the building as follows:

- During construction, meet or exceed the recommended control measures of the Sheet Metal and Air Conditioning National Contractors Association (SMACNA) IAQ Guidelines for Occupied Buildings under Construction, 2nd Edition, 2007, ANSI/SMACNA 008–2008 (Chapter 3).
- Protect stored on-site and installed absorptive materials from moisture damage.
- If permanently installed air handlers are used during construction, filtration media with a minimum efficiency reporting value (MERV) of 8 must be used at each return air grille, as determined by ASHRAE 52.2–1999 (with errata but without addenda[1]). Replace all filtration media immediately prior to occupancy.

1 Project teams wishing to use addenda approved by ASHRAE for the purposes of this credit may to do so at their discretion. Addenda must be applied consistently across all LEED credits.

IEQ Credit 3.2: Construction Indoor Air Quality Management Plan—Before Occupancy

1 point

Intent

To reduce indoor air quality (IAQ) problems resulting from the construction or renovation to promote the comfort and well-being of construction workers and building occupants.

Requirements

Develop an IAQ management plan and implement it after all finishes have been installed and the building has been completely cleaned before occupancy.

OPTION 1. Flush-Out[1]

PATH 1

After construction ends, prior to or within 14 days following occupancy and with all interior finishes installed, install new filtration media and flush out the building by supplying a total air volume of 14,000 cubic feet of outdoor air per square foot of floor area while maintaining an internal temperature of at least 60°F and, where mechanical cooling is operated, relative humidity no higher than 60%.

OR

PATH 2

If occupancy is desired prior to completion of the flush-out, the space may be occupied following delivery of a minimum of 3,500 cubic feet of outdoor air per square foot of floor area. Once the space is occupied, it must be ventilated at a minimum rate of 0.30 cubic feet per minute (cfm) per square foot of outside air or the design minimum outside air rate determined in IEQ Prerequisite 1, Minimum IAQ Performance, whichever is greater. During each day of the flush-out period, ventilation must begin a minimum of 3 hours prior to occupancy and continue during occupancy. These conditions must be maintained until a total of 14,000 cubic feet per square foot of outside air has been delivered to the space.

OR

OPTION 2. Air Testing

Conduct baseline IAQ testing after construction ends and prior to occupancy using testing protocols consistent with the EPA Compendium of Methods for the Determination of Air Pollutants in Indoor Air or the ISO method listed in the table below. Testing must be done in accordance with one standard; project teams may not mix requirements from the EPA Compendium of Methods with ISO.

1 All finishes must be installed prior to flush-out.

Demonstrate that the contaminant maximum concentration levels listed below are not exceeded:

Contaminant	Maximum Concentration	EPA Compendium method	ISO method
Formaldehyde	27 parts per billion	IP-6	ISO 16000-3
Particulates (PM10)	50 micrograms per cubic meter	IP-10	ISO 7708
Total volatile organic compounds (TVOCs)	500 micrograms per cubic meter	IP-1	ISO 16000-6
4-Phenylcyclohexene (4-PCH) *	6.5 micrograms per cubic meter	IP-1	ISO 16000-6
Carbon monoxide (CO)	9 parts per million and no greater than 2 parts per million above outdoor levels	IP-3	ISO 4224
*This test is required only if carpets and fabrics with styrene butadiene rubber (SBR) latex backing are installed as part of the base building systems.			

For each sampling point where the maximum concentration limits are exceeded, conduct an additional flush-out with outside air and retest the noncompliant concentrations. Repeat until all requirements are met. When retesting noncompliant building areas, take samples from the same locations as in the first test, although it is not required.

Conduct the air sample testing as follows:

- All measurements must be conducted prior to occupancy, but during normal occupied hours with the building ventilation system started at the normal daily start time and operated at the minimum outside air flow rate for the occupied mode throughout the test.
- All interior finishes must be installed, including but not limited to millwork, doors, paint, carpet and acoustic tiles. Movable furnishings such as workstations and partitions should be in place for the testing, although it is not required.
- The number of sampling locations will depend on the size of the building and number of ventilation systems. The number of sampling locations must include the entire building and all representative situations. Include areas with the least ventilation and greatest presumed source strength.
- Air samples must be collected between 3 and 6 feet from the floor to represent the breathing zone of occupants, and over a minimum 4-hour period.

IEQ Credit 4.1: Low-Emitting Materials—Adhesives and Sealants

1 point

Intent

To 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 adhesives and sealants used on the interior of the building (i.e., inside the weatherproofing system and applied on-site) must comply with the following requirements as applicable to the project scope[1]:

- Adhesives, Sealants, and Sealant Primers must comply with South Coast Air Quality Management District (SCAQMD) Rule #1168. Volatile organic compound (VOC) limits listed in the table below correspond to an effective date of July 1, 2005, and rule amendment date of January 7, 2005.

Architectural Applications	VOC Limit [g/L less water]	Specialty Applications	VOC Limit [g/L less water]
Indoor carpet adhesives	50	PVC welding	510
Carpet pad adhesives	50	CPVC welding	490
Wood flooring adhesives	100	ABS welding	325
Rubber floor adhesives	60	Plastic cement welding	250
Subfloor adhesives	50	Adhesive primer for plastic	550
Ceramic tile adhesives	65	Contact adhesive	80
VCT and asphalt adhesives	50	Special purpose contact adhesive	250
Drywall and panel adhesives	50	Structural wood member adhesive	140
Cove base adhesives	50	Sheet applied rubber lining operations	850
Multipurpose construction adhesives	70	Top and trim adhesive	250
Structural glazing adhesives	100		
Substrate Specific Applications	**VOC Limit [g/L less water]**	**Sealants**	**VOC Limit [g/L less water]**
Metal to metal	30	Architectural	250
Plastic foams	50	Nonmembrane roof	300
Porous material (except wood)	50	Roadway	250
Wood	30	Single-ply roof membrane	450
Fiberglass	80	Other	420
Sealant Primers	**VOC Limit [g/L less water]**		
Architectural nonporous	250		
Architectural porous	775		
Other	750		

- Aerosol Adhesives must comply with Green Seal Standard for Commercial Adhesives GS-36 requirements in effect on October 19, 2000.

Aerosol Adhesives	VOC weight (g/L minus water)
General purpose mist spray	65% VOCs by weight
General purpose web spray	55% VOCs by weight
Special purpose aerosol adhesives (all types)	70% VOCs by weight

1 The use of a VOC budget is permissible for compliance with this credit.

IEQ Credit 4.2: Low-Emitting Materials—Paints and Coatings

1 point

Intent

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

Requirements

Paints and coatings used on the interior of the building (i.e., inside the weatherproofing system and applied on-site) must comply with the following criteria as applicable to the project scope[1]:

- Architectural paints, coatings, and primers applied to interior walls and ceilings must not exceed the volatile organic compound (VOC) content limits established in Green Seal Standard GS-11, Paints, 1st Edition, May 20, 1993.
- Anticorrosive and antirust paints applied to interior ferrous metal substrates must not exceed the VOC content limit of 250 g/L established in Green Seal Standard GC-03, Anti-Corrosive Paints, 2nd Edition, January 7, 1997.
- Clear wood finishes, floor coatings, stains, and shellacs applied to interior elements must not exceed the VOC content limits established in South Coast Air Quality Management District (SCAQMD) Rule 1113, Architectural Coatings, rules in effect January 1, 2004.

1 The use of a VOC budget is permissible for compliance with this credit.

IEQ Credit 4.3: Low-Emitting Materials—Flooring SYSTEMS

1 point

Intent

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

Requirements

OPTION 1

All flooring must comply with the following as applicable to the project scope:

- All carpet installed in the building interior must meet the testing and product requirements of the Carpet and Rug Institute Green Label Plus[1] program.
- All carpet cushion installed in the building interior must meet the requirements of the Carpet and Rug Institute Green Label program.
- All carpet adhesive must have less than 50 g/L VOC.
- All hard surface flooring must be certified as compliant with the FloorScore[2] standard (current as of the date of this rating system, or more stringent version) by an independent third party. Flooring products covered by FloorScore include vinyl, linoleum, laminate flooring, wood flooring, ceramic flooring, rubber flooring, wall base, and associated sundries.
- Concrete, wood, bamboo, and cork floor finishes such as sealer, stain, and finish must meet the requirements of South Coast Air Quality Management District (SCAQMD) Rule 1113, Architectural Coatings, effective January 1, 2004.
- Tile setting adhesives and grout must meet South Coast Air Quality Management District (SCAQMD) Rule 1168. VOC limits correspond to an effective date of July 1, 2005, and rule amendment date of January 7, 2005.

OR

OPTION 2

All flooring products must meet the testing and product requirements of the California Department of Health Services Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers, including 2004 Addenda.

1 The Green Label Plus program for carpets and its associated VOC emissions criteria in micrograms per square meter per hour, along with information on testing method and sample collection developed by the Carpet and Rug Institute (CRI) in coordination with California's Sustainable Building Task Force and the California Department of Public Health, are described in Section 9, Acceptable Emissions Testing for Carpet, DHS Standard Practice CA/DHS/EHLB/R-174, dated 07/15/04. This document is available at http://www.dhs.ca.gov/ps/deodc/ehlb/iaq/VOCS/Section01350_7_15_2004_FINAL_PLUS_ADDENDUM-2004-01.pdf (also published as Section 01350 Section 9 [dated 2004] by the Collaborative for High Performance Schools [http://www.chps.net]).

2 FloorScore is a voluntary, independent certification program that tests and certifies hard surface flooring and associated products for compliance with criteria adopted in California for indoor air emissions of VOCs with potential health effects. The program uses a small-scale chamber test protocol and incorporates VOC emissions criteria, which are widely known as Section 1350, developed by the California Department of Health Services.

Mineral-based finish flooring products such as tile, masonry, terrazzo, and cut stone without integral organic-based coatings and sealants and unfinished/untreated solid wood flooring qualify for credit without any IAQ testing requirements. However, associated site-applied adhesives, grouts, finishes and sealers must be compliant for a mineral-based or unfinished/untreated solid wood flooring system to qualify for credit.

IEQ Credit 4.4: Low-Emitting Materials—Composite Wood and Agrifiber Products

1 point

Intent

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

Requirements

Composite wood and agrifiber products used on the interior of the building (i.e., inside the weatherproofing system) must contain no added urea-formaldehyde resins. Laminate adhesives used to fabricate on-site and shop-applied composite wood and agrifiber assemblies must not contain added urea-formaldehyde resins.

Please note that built-in casework and built-in millwork items must be included in the base building calculations.

Products covered by IEQ Credit 4.5, Low-Emitting Materials—Furniture, shall be excluded from these requirements.

IEQ Credit 4.5: Low-Emitting Materials—Furniture

1 point

Intent

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

Requirements

Custom-manufactured furniture components of furniture and their assembly must meet the requirements of IEQ Credit 4.1, Low-Emitting Materials—Adhesives and Sealants; IEQ Credit 4.2, Low-Emitting Materials—Paints and Coatings; and IEQ Credit 4.4, Low-Emitting Materials—Composite Wood and Agrifiber Products.

Please note that built-in casework and built-in millwork items are considered part of the base building.

AND

All systems furniture[1] and seating[2] introduced into the project space that have been manufactured, refurbished, or refinished within 1 year prior[3] to occupancy must meet 1 of the requirements below.

OPTION 1

Greenguard Indoor Air Quality Certified

OR

OPTION 2

Calculated indoor air concentrations that are less than or equal to those listed in Table 1 for furniture systems and seating determined by a procedure based on the EPA 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.

OR

OPTION 3

Calculated indoor air concentrations that are less than or equal to those listed in Table 1 for furniture systems and seating determined by a procedure based on ANSI/BIFMA M7.1–2007 and ANSI/BIFMA X7.1–2007 testing protocol conducted in an independent third-party air quality testing laboratory.

The requirement in ANSI/BIFMA X7.1–2007, Section 5, is waived for LEED purposes. Section 5 requires that laboratories used to perform the emissions testing and/or provide analytical results must be independently accredited to ISO/IEC 17025, "General requirements for the competence of testing and calibration laboratories."

1 Systems furniture includes panel-based workstations comprising modular interconnecting panels, hang-on components, and drawer and filing components or a freestanding grouping of furniture items designed to work in concert.
2 Seating consists of task and guest chairs used with systems furniture.
3 Salvaged and used furniture that is more than 1 year old at time of occupancy is excluded from the credit requirements.

Table 1. Maximum 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

IEQ Credit 4.6: Low-Emitting Materials—Ceiling and Wall Systems

1 point

Intent

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

Requirements

All gypsum board, insulation, acoustical ceiling systems, and wall coverings installed in the building interior shall meet the testing and product requirements of the California Department of Health Services Standard Practice for The Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers, including 2004 Addenda.

IEQ Credit 5: Indoor Chemical and Pollutant Source Control

1 point

Intent

To minimize building occupants' exposure to potentially hazardous particulates, biological contaminants and chemical pollutants that degrade air and water quality.

Requirements

Design to minimize and control the entry of pollutants into the tenant space and later cross-contamination of regularly occupied areas through the following strategies:

- Employ permanent entryway systems at least 10 feet long in the primary direction of travel to capture dirt and particulates entering the building at all high-volume exterior entryways or in spaces where there is a transition into conditioned space, such as a loading dock.
- Sufficiently exhaust each space where hazardous gases or chemicals may be present or used (e.g., garages, housekeeping and laundry areas, copying and printing rooms) to create negative pressure with respect to adjacent spaces when the doors to the room are closed. For each of these spaces, provide self-closing doors and deck-to-deck partitions or a hard-lid ceiling. The exhaust rate must be at least 0.50 cubic feet per minute (cfm) per square foot, with no air recirculation. The pressure differential with the surrounding spaces must be at least 5 Pascals (Pa) (0.02 inches of water gauge) on average and 1 Pa (0.004 inches of water) at a minimum when the doors to the rooms are closed.
- In mechanically ventilated buildings, install new air filtration media in regularly occupied areas prior to occupancy; these filters must provide a minimum efficiency reporting value (MERV) of 13 or better. Filtration should be applied to process both return and outside air that is delivered as supply air.
- Provide containment drains plumbed for appropriate disposal of hazardous liquid wastes in spaces where water and chemical concentrate mixing occurs (e.g., housekeeping, janitorial laboratories) for maintenance, or laboratory purposes.

IEQ Credit 6: Controllability of Systems—Lighting and Thermal Comfort

1 point

Intent

To provide a high level of lighting system and thermal comfort control[1] for retail individual workstations to promote the productivity, comfort, and well-being of tenant occupants.

Requirements

Provide individual lighting controls for 90% (minimum) of retail employees in office and administrative spaces, enabling adjustments to suit individual task needs and preferences.

AND

Provide individual thermal comfort controls for 50% (minimum) of retail employees in office and administrative spaces to enable adjustments to suit individual task needs and preferences. Operable windows may be used in lieu of individual controls for occupants located 20 feet inside and 10 feet to either side of the operable part of the window. The areas of operable window must meet the requirements of ASHRAE Standard 62.1–2007, paragraph 5.1, Natural Ventilation (with errata but without addenda[2]).

1 Thermal comfort control is the ability to alter at least 1 of these primary factors in the occupant's local environment: air temperature, radiant temperature, air speed, and humidity.

2 Project teams wishing to use addenda approved by ASHRAE for the purposes of this credit may do so at their discretion. Addenda must be applied consistently across all LEED credits.

IEQ Credit 7.1: Thermal Comfort—Design

1 point

Intent

To provide a comfortable thermal environment that promotes occupant productivity and well-being.

Requirements

Design heating, ventilating, and air-conditioning (HVAC) systems to meet the requirements of ASHRAE Standard 55–2004, Thermal Comfort Conditions for Human Occupancy (with errata but without addenda[1]). Demonstrate design compliance in accordance with the Section 6.1.1 documentation.

1 Project teams wishing to use addenda approved by ASHRAE for the purposes of this credit may do so at their discretion. Addenda must be applied consistently across all LEED credits.

IEQ Credit 7.2: Thermal Comfort—Employee Verification

1 point*

*1 point in addition to IEQ Credit 7.1

Intent

To provide for the assessment of occupants' thermal comfort over time.

Requirements

Achieve IEQ Credit 7.1, Thermal Comfort—Design

AND

Provide a permanent monitoring system and process for corrective action to ensure that building performance meets the desired comfort criteria as determined by IEQ Credit 7.1, Thermal Comfort—Design.

Agree to conduct a thermal comfort survey of tenant space employees within 6 to 18 months after occupancy. This survey should collect anonymous responses about thermal comfort in the tenant space including an assessment of overall satisfaction with thermal performance and identification of thermal comfort problems. Agree to develop a plan for corrective action if the survey results indicate that more than 20% of occupants are dissatisfied with thermal comfort in the tenant space. This plan should include measurement of relevant environmental variables in problem areas in accordance with ASHRAE Standard 55ff2004 (with errata but without addenda[1]).

1 Project teams wishing to use addenda approved by ASHRAE for the purposes of this credit may to do so at their discretion. Addenda must be applied consistently across all LEED credits.

IEQ Credit 8.1: Daylight and Views—Daylight

1-2 points

Intent

To provide occupants with a connection between indoor spaces and the outdoors through the introduction of daylight and views into the regularly occupied areas[1] of the tenant space.

Requirements

Through 1 of the 4 options, achieve daylighting in at least the following spaces[2]:

Regularly Occupied Spaces	Points
75%	1
90%	2

OPTION 1. Simulation

Demonstrate through computer simulations that the applicable spaces achieve daylight illuminance levels of a minimum of 10 footcandles (fc) and a maximum of 500 fc in a clear sky condition on September 21 at 9 a.m. and 3 p.m.

Provide glare control devices to avoid high-contrast situations that could impede visual tasks. However, designs that incorporate view-preserving automated shades for glare control may demonstrate compliance for only the minimum 10 fc illuminance level.

OR

OPTION 2. Prescriptive

For side-lighting zones:

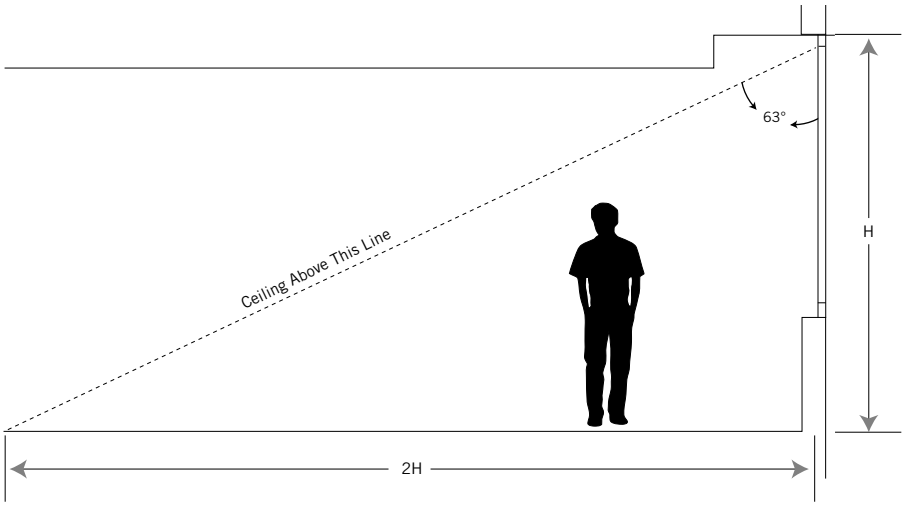
- Achieve a value, calculated as the product of the visible light transmittance (VLT) and window-to-floor area ratio (WFR) between 0.150 and 0.180.

$$0.150 < VLT \times WFR < 0.180$$

- The window area included in the calculation must be at least 30 inches above the floor.
- In section, the ceiling must not obstruct a line that extends from the window-head to a point on the floor that is located twice the height of the window-head from the exterior wall as measured perpendicular to the glass (see diagram on next page).

1 Nonoccupied spaces include all rooms used by maintenance personnel that are not open for use by occupants. Examples are closets and janitorial, storage, and equipment rooms. Regularly occupied spaces are areas where workers are seated or standing as they work inside a building.

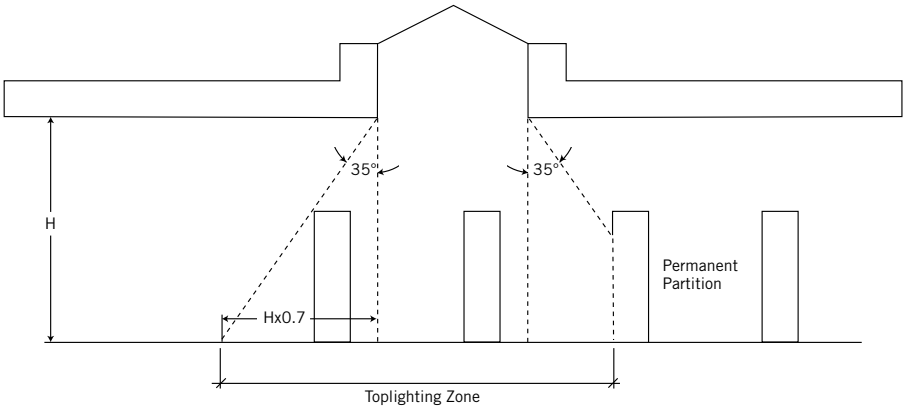
2 Exceptions for areas where tasks would be hindered by the use of daylight will be considered on their merits.



- Provide glare control devices to avoid high-contrast situations that could impede visual tasks. However, designs that incorporate view-preserving automated shades for glare control may demonstrate compliance for only the minimum 0.150 value.

For top-lighting zones:

- The top-lighting daylighted zone under a skylight is the outline of the opening beneath the skylight, plus in each direction the lesser of (see diagram below):
  - 70% of the ceiling height
  - 1/2 the distance to the edge of the nearest skylight
  - The distance to any permanent partition that is closer than 70% of the distance between the top of the partition and the ceiling.



- Achieve a skylight coverage for the applicable space (containing the top-lighting zone) between 3% and 6% of the total floor area.
- The skylights must have a with a minimum 0.5 VLT.
- A skylight diffuser, if used, must have a measured haze value of greater than 90% when tested according to ASTM D1003.

OR

OPTION 3. Measurement

Demonstrate, through records of indoor light measurements that a minimum daylight illumination level of 10 fc and a maximum of 500 fc has been achieved in the applicable spaces. Measurements must be taken on a 10-foot grid for all occupied spaces and recorded on building floor plans.

Provide glare control devices to avoid high contrast situations that could impede visual tasks. However, designs that incorporate view-preserving automated shades for glare control may demonstrate compliance for only the minimum 10 fc illuminance level.

OR

OPTION 4. Combination

Any of the above calculation methods may be combined to document the minimum daylight illumination in the applicable spaces.

IEQ Credit 8.2: Daylight and Views—Views

1 point

Intent

To provide the building occupants a connection to the outdoors through the introduction of daylight and views into the regularly occupied areas[1] of the tenant space.

Requirements

Achieve a direct line of sight to the outdoor environment via vision glazing between 30 inches and 90 inches above the finish floor for building occupants in 90% of all areas regularly occupied by stationary retail staff and/or customers. Determine the area with a direct line of sight by totaling the regularly occupied square footage that meets the following criteria:

- In plan view, the area is within sight lines drawn from perimeter vision glazing.
- In section view, a direct sight line can be drawn from a point 42 inches above the floor (typical seated eye height) to perimeter vision glazing.

The line of sight may be drawn through interior glazing. For private offices, the entire square footage of the office may be counted if 75% or more of the area has a direct line of sight to perimeter vision glazing. If less than 75% of the area has a direct line of sight, only the area with the direct line of sight counts toward meeting the credit requirement. For multioccupant spaces, the actual square footage with a direct line of sight to perimeter vision glazing is counted.

1 Examples of regularly occupied retail stations and areas include restaurant seating, service desks, transaction counters, workstations, food-prep areas, cooking areas, individual staff offices, and shared offices.

INNOVATION IN DESIGN

ID Credit 1: Innovation in Design

1-5 points

Intent

To provide design teams and projects the opportunity to achieve 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 can be achieved through any combination of the Innovation in Design and Exemplary Performance paths as described below:

PATH 1. Innovation in Design (1-5 points)

Achieve significant, measurable environmental performance using a strategy not addressed in the LEED 2009 for New Construction and Major Renovations Rating System.

One point is awarded for each innovation achieved. No more than 5 points under IDc1 may be earned through PATH 1—Innovation in Design.

Identify the following in writing:

- The intent of the proposed innovation credit.
- The proposed requirement for compliance.
- The proposed submittals to demonstrate compliance.
- The design approach (strategies) used to meet the requirements.

PATH 2. Exemplary Performance (1-3 points)

Achieve exemplary performance in an existing LEED 2009 for Commercial Interiors prerequisite or credit that allows exemplary performance as specified in the LEED Reference Guide for Green Building Interior Design, 2009 Edition. An exemplary performance point may be earned for achieving double the credit requirements and/or achieving the next incremental percentage threshold of an existing credit in LEED.

One point is awarded for each exemplary performance achieved. No more than 3 points under IDc1 may be earned through PATH 2— Exemplary Performance.

PATH 3. Pilot Credit (1 point)

Attempt a pilot credit available in the Pilot Credit Library at www.usgbc.org/pilotcreditlibrary. Register as a pilot credit participant and complete the required documentation. Projects may pursue more than 1 pilot credit; however, a maximum of 1 point will be awarded.

ID Credit 2: LEED® Accredited Professional

1 point

Intent

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

Requirements

At least 1 principal participant of the project team shall be a LEED Accredited Professional (AP).

REGIONAL PRIORITY

RP Credit 1: Regional Priority

1-4 points

Intent

To provide an incentive for the achievement of credits that address geographically-specific environmental priorities.

Requirements

Earn 1-4 of the 6 Regional Priority credits identified by the USGBC regional councils and chapters as having environmental importance for a project's region. A database of Regional Priority credits and their geographic applicability is available on the USGBC website, http://www.usgbc.org.

One point is awarded for each Regional Priority credit achieved; no more than 4 credits identified as Regional Priority credits may be earned. Projects outside of the U.S. are not eligible for Regional Priority credits.

Potential Technologies & Strategies

Determine and pursue the prioritized credits for the project location.