



LEED Rating System
2nd Public Comment Draft
July 2011

INTERIOR DESIGN & CONSTRUCTION

Includes:
Commercial Interior
Retail
Hospitality

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INTEGRATIVE PROCESS (IP)

IP CREDIT: DISCOVERY – INTEGRATIVE ANALYSIS OF POTENTIAL PROJECT SITES

ID&C

2 points

This credit applies to:

- Commercial Interiors (2 points)
- Retail (2 points)
- Hospitality (2 points)

Intent

Encourage project teams to gather data, conduct analyses, and develop an understanding of key issues to be considered before selection of a project site to support integrative approaches aimed at achieving a high level of performance.

Requirements

CI, RETAIL, HOSPITALITY

Prior to site selection, create a document of project goals to aid in the selection of a building that will provide the most opportunities and fewest barriers for the Commercial Interiors project. Goals must include the following considerations:

- Building Site Features: Include location and site design characteristics;
- Base Building Features: Include building envelope, building systems (such as controls, HVAC, and plumbing fixtures), adaptability to future needs, and resilience in the event of disaster or infrastructure failure;
- Occupant Wellbeing Features: Include daylight and views, indoor air quality, and other items controlled by the base building.

AND

Complete an assessment of the tenant occupants' transportation needs for daily commuting to and from the site. Establish criteria for convenient access to alternative transportation most beneficial to the occupants' destinations that can be used to determine preferred tenant location.

Demonstrate that an integrative process with interiors expertise was used to evaluate the suitability of two of more potential tenant spaces relative to the building site features, base building features, occupant well-being features, and daily occupant commuting needs desired by the project team. Provide a building qualification analysis of the potential sites based on all criteria and explain how the selected tenant space addresses the project goals and transportation needs of occupants.

IP CREDIT: IMPLEMENTING SYNERGIES

ID&C

1 point

This credit applies to:

- Commercial Interiors (1 point)
- Retail (1 point)
- Hospitality (1 point)

Intent

Encourage an integrative approach to system design and operations among owner, design team, and tenants, enabling system synergies and healthier and more productive occupants.

REQUIREMENTS

CI, RETAIL, HOSPITALITY

Demonstrate that an integrative team process was used to identify synergies in the design of the tenant space that will achieve project goals and optimize performance. Identify at least five system parameters that are aimed at improving building and/or human performance and provide a comparison of at least three alternative combinations of parameters demonstrating the integrative approaches used. The comparison must include cost, savings, and impacts on occupants including productivity and wellbeing. Indicate the design selected and the rationale.

AND

Commit to the establishment and use of ongoing feedback mechanisms that provide information about tenant space performance and occupant satisfaction. Provide documentation of methods planned to gather feedback on at least energy and water performance (if available), occupant satisfaction and behavior, and ease and efficiency of operation. Commit to participating in any building-wide “green team” or other feedback mechanisms with property manager.

IP CREDIT: LEED ACCREDITED PROFESSIONAL

ID&C

1 point

This credit applies to:

- Commercial Interiors (1 point)
- Retail (1 point)
- Hospitality (1 point)

Intent

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

Requirements

CI, RETAIL CI, HOSPITALITY

At least one (1) principal participant of the project team shall be a LEED Accredited Professional (AP) with a specialty most appropriate for the project.

LOCATION AND TRANSPORTATION (LT)

LT CREDIT: DEVELOPMENT DENSITY AND DIVERSE USES

ID&C

1-11 points

This credit applies to:

- Commercial Interiors (1-11 points)
- Retail (1-11 points)
- Hospitality (1-11 points)

Intent

To conserve land and protect farmland and wildlife habitat by encouraging development in existing areas. To promote livability, walkability, and transportation efficiency, and reduce *vehicle miles traveled* (VMT). To improve public health encouraging daily physical activity.

Requirements

CI, RETAIL, HOSPITALITY

OPTION 1. Development Density (4-8 points)

Construct or renovate a building or space on a previously developed site with an average *density* per acre of *buildable land* within a ¼-mile radius of the project site as indicated in following table.

Residential density (DU/acre)	Non-residential density (FAR)	Points
7	0.5	4
12	0.8	8

DU = dwelling unit; FAR = floor-area ratio

The counted density must be existing density, not zoned density. Both density amounts for a particular threshold must be met to earn the related point value.

For LEED Schools projects: Physical education spaces that are part of the project site, such as playing fields and associated buildings used during sporting events only (e.g., concession stands) and playgrounds with play equipment, are excluded from the development density calculations.

AND/OR

OPTION 2. Diverse Uses (1-2 points)

Construct or renovate a building on a site that meets the following criteria:

- a. The building is located on an *infill* site.
- b. The building's main entrance is within 1/2 mile *walk distance* from the building entrance of the following number of diverse uses that are open to the general public (listed in Appendix 1)

Number of diverse uses	Points
------------------------	--------

4-7	1
8+	2

c. The building has pedestrian access between the building and the diverse uses.

The following restrictions apply to counting diverse uses:

- a. A diverse use may be counted only once (e.g., a retail store may be counted only once even if it sells products in several categories).
- b. Only two diverse uses in a single category group may be counted (e.g. if five restaurants are within walking distance, only two may be counted).
- c. Diverse uses must include at least one use from three separate use category groups, exclusive of the building's primary use.
- d. No more than half of the minimum number of diverse uses can be situated in a single building or in a complex of attached buildings on a single property.
- e. The diverse uses outside the project boundary must be in place upon occupation of the project.

AND/OR

OPTION 3. Dense and Accessible Location (1 point)

A project may earn one additional point for having earned at least 1 point each in Options 1 and 2 and is located in a neighborhood that includes the following features on all routes between the project and the counted diverse uses:

- Continuous sidewalks or equivalent all-weather provisions for walking
- Sidewalks that are at least six feet wide
- Cross-walks or equivalent pedestrian safety measures at every intersection of routes that cross streets
- Routes along residential-only streets with a maximum target speed of 25 MPH
- Routes along commercial-only or mixed use streets with a maximum target speed of 30 MPH

OR (LEED for Schools alternative compliance path only)

- Locate in an area with a funded Safe Routes to School (SRTS) plan, or develop and implement an SRTS plan if one does not already exist.

LT CREDIT: QUALITY TRANSIT AND REDUCED VMT

[This credit is available in the Pilot Credit Library.](#)

ID&C

1-6 points

This credit applies to:

- Commercial Interiors (1-4 points)
- Hospitality (1-4 points)
- Retail (1-6 points)

Intent

To encourage development in locations shown to have multimodal transportation choices or otherwise reduced motor vehicle use, thereby reducing greenhouse gas emissions, air pollution, and other adverse environmental and public health effects associated with motor vehicle use.

Requirements

CI, HOSPITALITY, RETAIL

OPTION 1. Transit-Served Location (1-6 points)

Locate the main building entrance of the project within a $\frac{1}{4}$ -mile *walk distance* of existing or planned bus or streetcar stops, or within a $\frac{1}{2}$ -mile walk distance of existing or planned *bus rapid transit* stops, light or heavy rail stations, or ferry terminals. The transit service at those stops in aggregate must meet the minimums listed in Tables 1 and 2. Planned stops may count if they are sited, funded, and under construction upon project occupancy and are complete within 24 months of project occupancy.

Both weekday and weekend trip minimums must be met.

Count trips as follows:

- Trips in opposite directions are counted separately
- Trips are counted only if they are a part of a route with service in opposite directions
- Trips of a route that stop more than once within the required walk distance may only be counted once.
- Trips that stop beyond the walk distance may count if the average building-to-stop walk distance of that stop and the stop for the opposite direction is no more than the required walk distance.
- Weekend trips must include service on both Saturday and Sunday. To determine weekend trips, average Saturday and Sunday service.

Table 1. Minimum daily transit service for projects with multiple transit types (bus, streetcar, rail, or ferry).

Weekday trips	Weekend trips	Points ID&C (except Retail ID&C)	Points Retail ID&C
60	40	1	1
110	70	2	2
170	110	3	4

260	150	4	6
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Table 2. Minimum daily transit service for projects with commuter rail or ferry service only

Weekday trips	Weekend trips	Points (all projects)
24	6	1
40	8	2
60	12	3

Projects served by two or more transit routes such that no one route provides more than 60% of the prescribed levels may earn one additional point, up to the maximum 4 points.

If *existing* transit service is temporarily rerouted outside the required distances for less than two years, the project may meet the requirements, provided the local transit agency has committed to restoring the routes with service at or above the prior level.

OR

OPTION 2. Metropolitan Planning Organization Location with Low VMT (1-6 points)

Locate the project:

1. within a region served by a *metropolitan planning organization* (MPO;) and
2. within a *traffic analysis zone* (TAZ) where either
 - a. the current annual home-based *vehicle miles traveled* (VMT) per capita (if the TAZ is 100% residential); or
 - b. the annual non-home-based VMT per employee (if the TAZ is 100% non-residential) does not exceed 90% of the average equivalent of the metropolitan region value.

The research must be derived from household or employment transportation surveys conducted by the MPO within 10 years of the date of submission for LEED certification. Additional credit may be awarded for increasing levels of performance, as indicated in Table 3.

Mixed-use TAZs must use whichever VMT is greater, either residential per capita or non-residential per employee.

Table 3. Points for low-VMT location

Percentage of average regional VMT per capita	Points ID&C	Points Retail ID&C
71–90%	1	1
51–70%	2	2
31–50%	3	4
30% or less	4	6
VMT = vehicle miles traveled		

ALL OPTIONS

For all options, provide dedicated walking or bicycling lanes to the transit lines that extend from the school building at least to the end of the school property in two or more directions without any barriers (e.g., fences). School grounds may be enclosed with fences during class hours for security purposes, provided the fences are open before and after class hours for traveling students, faculty, and staff.

LT CREDIT: BICYCLE NETWORK, STORAGE AND SHOWER ROOMS

This credit is available in the Pilot Credit Library.

ID&C

1 point

This credit applies to:

- Commercial Interiors (1 point)
- Hospitality (1 point)
- Retail (1 point)

Intent

To promote bicycling and transportation efficiency and reduce vehicle miles traveled (VMT). To improve public health by encouraging utilitarian and recreational physical activity.

Requirements

CI, HOSPITALITY

Bicycle Network

Locate the space in a building such that the building entrance and/or bicycle storage is within a 200-yard walk distance from at least one of the following:

- a. an *existing bicycle network* of at least 5 continuous miles in length; or
- b. an *existing bicycle network* that connects to at least 10 diverse uses (see Appendix 1) within 3 miles bicycling distance from the project boundary.

If the requirements border the building site boundary, a safe, all-weather route must exist between the bicycle network and the bicycle storage and/or main entrance.

Planned and funded bicycle trails or lanes may be counted if they are funded and designated for completion within the fiscal year that the constructing organization finalizes the plans.

AND

Bicycle Storage and Shower Rooms

Provide secure, enclosed bicycle storage space for 5% of all tenant occupants (measured at peak periods). Provide at least one on-site shower with changing facility for the first 100 full-time equivalent (FTE) occupants and one additional shower for every 200 FTE occupants thereafter.

Bicycle parking and storage must:

1. Be locked, located inside or within 100 feet of a building entry, and easily accessible to employees, residents, and/or visitors.
2. Be safe, clearly visible from a main entry, served with night lighting, and protected from damage by nearby vehicles.
3. Not block the pedestrian path of travel or inhibit universal accessibility.
4. Have the following physical construction qualities:
 - a. Securely anchored to the ground, floor, or wall
 - b. Have a two-point support system for the bicycle
 - c. Allow for the bicycle frame and one wheel to be locked with a U-lock
 - d. Be accessible without moving another bicycle.

Provide informational signage on using the storage facilities.

Bicycle storage capacity may not be double counted; storage that is fully allocated to the occupants of non-project facilities cannot also serve project occupants.

RETAIL

Meet the requirements for Commercial Interiors, providing bicycle storage and changing rooms for the same percentage of retail employees as is provided for all building occupants in Commercial Interiors.

AND

Provide a bicycle maintenance program or route assistance. Any maintenance program must be intended for employees and may include coupons for yearly bicycle tune-ups for those who ride to work or on-site supplies for basic self-repairs (e.g., tire pump, patch kit). Route assistance must be intended for employees and customers and may include a map identifying bicycle routes to the project site, posted on the property in a location that is easily accessible to employees and customers; the map could also be posted online.

FOR PROJECTS THAT ARE PART OF A MASTER PLAN DEVELOPMENT

If bicycle racks or storage has been provided by the development in which the project is located, determine the number of bicycle storage spaces that may be attributed to the project by dividing the square footage of the retail project by the total square footage of the development (buildings only), and multiplying the percentage result by the total number of bicycle storage spaces. If this number does not meet the credit requirement, the project must add additional spaces.

LT CREDIT: REDUCED PARKING FOOTPRINT

This credit is available in the Pilot Credit Library.

ID&C

(1-2 points)

This credit applies to:

- Commercial Interiors (1-2 points)
- Hospitality (1-2 points)
- Retail (1-2 points)

Intent

To minimize the adverse environmental impacts of parking facilities, including automobile dependence, land consumption, and rainwater runoff; to support mixed use and efficient use of resources; and to prioritize habitable space and improve project affordability.

Requirements

CI, HOSPITALITY, RETAIL

Do not exceed minimum local zoning ordinance requirements for parking capacity.

AND

Provide parking capacity that provides a percent reduction from the base ratios recommended by the Parking Consultants Council (PCC), as shown in Tables 18-2 through 18-4 in the Institute of Transportation Engineers' *Transportation Planning Handbook, 3rd Edition*.

CASE 1. Baseline Location

This case is for projects that have not earned points for Development Density and Diverse Uses or Quality Transit and Reduced VMT are awarded according to Table 1.

Percentage reduction	Points
20	1
40	2

CASE 2. Dense and/or Transit-Served Location

This case is for projects earning 1 or more points in either Development Density and Diverse Uses or Quality Transit and Reduced VMT.

Percentage reduction	Points
40	1
60	2

BOTH CASES.

Provide preferred parking for carpools or vanpools for 5% of the total parking spaces after reductions are made from the base ratios.

Mixed-use projects shall determine the percentage reduction by first determining the reductions for each use and then aggregating the spaces provided for each use.

Parking spaces serving fleet and inventory vehicles shall not be counted in parking reduction calculations except where fleet vehicles are regularly used by employees for commuting to/from home as well as business purposes.

APPENDIX 1: DIVERSE USE CATEGORY GROUPS

Food Retail

Supermarket
Other food store with produce

Community-Serving Retail

Clothing store or department store selling clothes
Convenience store
Farmer's market
Hardware store
Pharmacy
Other retail

Services

Bank
Family entertainment venue (theater, sports)
Gym, health club, exercise studio
Hair care
Laundry, dry cleaner
Restaurant, café, diner (excluding *diverse uses* with only drive-throughs)

Civic and Community Facilities

Adult or senior care (licensed)
Child care (licensed)
Community or recreation center
Cultural arts facility (museum, performing arts)
Educational facility (including K–12 school, university, adult education center, vocational school, community college)

Government office that serves public on-site
Place of worship
Medical clinic or office that treats patients
Police or fire station
Post office
Public library
Public park
Social services center

Community Anchor Uses (BD&C and ID&C rating systems only)

Commercial office (100 full-time equivalent jobs or more)
Housing (100 dwelling units or more)

Adapted from Criterion Planners, INDEX neighborhood completeness indicator, 2005.

APPENDIX 2: DEFAULT OCCUPANCY COUNTS

Because of the speculative nature of core and shell construction, a project team may not know the final occupant count during the LEED certification process. Determining and demonstrating compliance with some LEED credits can prove challenging and complex. For projects that do not know the final occupant count, a default table has been developed.

Core & Shell projects that do not have final occupancy counts must utilize the default occupancy counts provided in this appendix. Projects that know the tenant occupancy must use the actual numbers, as long as the gross square foot per employee is not greater than that in the default occupancy count table. If code requirements is required gross square foot per occupant is less than those in the table, this is also acceptable. Default occupancy counts are provided for typical core and shell project types. If the buildings and circumstances are not covered in this appendix, provide documentation for comparable buildings demonstrating average gross square foot per occupant when estimating the core and shell's building occupancy.

Table 1. Default Occupancy Numbers

	Gross Square Feet per Occupant	
	Employees	Transients
General office	250	0
Retail, general	550	130
Retail or service (e.g., financial, auto)	600	130
Restaurant	435	95
Grocery store	550	115
Medical office	225	330
R&D or laboratory	400	0
Warehouse, distribution	2,500	0
Warehouse, storage	20,000	0
Hotel	1,500	700
Educational, daycare	630	105
Educational, K-12	1,300	140
Educational, postsecondary	2,100	150

Sources:

ANSI/ASHRAE/IESNA Standard 90.1-2004 (Atlanta, GA, 2004).
2001 Uniform Plumbing Code (Los Angeles, CA)
California Public Utilities Commission, 2004-2005 Database for Energy Efficiency Resources (DEER) Update Study (2008).
California State University, Capital Planning, Design and Construction Section VI, Standards for Campus Development Programs (Long Beach, CA, 2002).
City of Boulder Planning Department, Projecting Future Employment—How Much Space per Person (Boulder, 2002).
Metro, 1999 Employment Density Study (Portland, OR 1999).
American Hotel and Lodging Association, Lodging Industry Profile Washington, DC, 2008.
LEED for Core & Shell Core Committee, personal communication (2003 - 2006).
LEED for Retail Core Committee, personal communication (2007)
OWP/P, Medical Office Building Project Averages (Chicago, 2008).
OWP/P, University Master Plan Projects (Chicago, 2008).
U.S. General Services Administration, Childcare Center Design Guide (Washington, DC,2003).

The figures above may be used to determine occupancy for the following credits:

- LT Credit: Bicycle Network, Storage and Shower Rooms
- LT Credit: Reduced Parking Footprint
- WE Prerequisite: Minimum Fixture and Fitting Water Use Reduction
- WE Credit: Sustainable Wastewater Management
- WE Credit: Additional Fixture and Fitting Water Use Reduction
- EA Prerequisite: Minimum Energy Performance
- EA Credit: Optimized Energy Performance
- EQ Prerequisite: Minimum Indoor Air Quality Performance
- EQ Credit: Outdoor Air Delivery Monitoring
- EQ Credit: Increased Ventilation
- EQ Credit: Thermal Comfort
- EQ Credit: Daylight
- EQ Credit: Quality Views
- EQ Credit: Interior Lighting

The defaults provided above are based on gross square foot per occupant and not net or leasable square foot per occupant. Gross square footage is defined as the sum of all areas on all floors of a building included within the outside faces of the exterior wall including all floor penetrations that connect one floor to another. This can be determined by taking the building foot print and multiplying it by the number of floors in the building. Projects which contain underground and/or structured parking, may exclude that area from the gross square footage used for the calculation. Other spaces such as common areas, mechanical spaces, and circulation should be included in the gross square footage of the building.

GLOSSARY

attendance boundary used by school districts to determine which students attend what school based on where they live

alley a publicly accessible right-of-way, generally located midblock, that can accommodate slow-speed motor vehicles, as well as bicycles and pedestrians. An alley provides access to the side or rear of abutting properties for loading, parking, and other service functions, minimizing the need for these functions to be located along streets. It may be publicly dedicated or privately owned and deeded in perpetuity for general public use.

bicycle network a continuous network consisting of any combination of

- physically designated on-*street* bicycle lanes at least 5 feet wide
- off-street bicycle paths or trails constructed before 2010 that are at least 8 feet wide for a two-way path and at least 5 feet wide for a one-way path
- off-street bicycle paths or trails constructed in or after 2010 that are at least 10 feet wide for a two-way path and at least 5 feet wide for a one-way path
- residential streets designed for a target speed of 25 miles per hour or slower
- commercial or mixed-use streets designed for a target speed of 30 miles per hour or slower.

block land bounded by the *project boundary*, transportation or utility rights-of-way that may be publicly dedicated or privately owned and deeded in perpetuity for general public use, waterfront, and/or comparable land division features.

brownfield real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or possible presence of a hazardous substance, pollutant, or contaminate.

buildable land the portion of the site where construction can occur, including land voluntarily set aside and not constructed upon. When used in *density* calculations, buildable land excludes public rights-of-way and land excluded from development by codified law or LEED for Neighborhood Development prerequisites. An *applicant* may exclude additional land not exceeding 15% of the buildable land base defined above, provided that condition a and condition b or c is met:

- a. The land is protected from residential and nonresidential construction by easement, deed restriction, or other enforceable legal instrument.
AND
- b. Either 25% or more of the boundary of each parcel proposed for exclusion borders a *water body* or area protected as defined in (a) above,
OR
- c. ownership of, or management authority over, the exclusion area is transferred to a public entity.

bus rapid transit an enhanced bus system that operates on exclusive bus lanes or other transit rights-of-way; it is designed to combine the flexibility of buses with the efficiency of rail.

density the amount of building structures constructed on the *project* site, measured for residential buildings as *dwelling units per acre of buildable land* available for residential uses, and for non-residential buildings as the *floor-area ratio* of buildable land area available for nonresidential uses. In both cases, structured parking is excluded.

development footprint the total land area of a *project* site covered by buildings, streets, parking areas, and other typically impermeable surfaces constructed as part of the project.

diverse use a distinct, officially recognized business, nonprofit, civic, religious, or governmental organization; or a number of dwelling units or commercial-office jobs. Does not include automated facilities such as ATMs, vending machines, and touchscreens.

dwelling unit living quarters intended for long-term occupancy that provide facilities for cooking, sleeping, and sanitation. This does not include hotel rooms.

employment center a nonresidential area of at least 5 acres with a job density of at least 50 employees per net acre.

existing present on the date of submission of LEED certification documents; similarly, an element or condition that **exists** is present on the date that LEED certification documents are submitted.

floor-area ratio (FAR) the *density* of nonresidential land use, exclusive of parking, measured as the total nonresidential building floor area divided by the total *buildable land* area available for nonresidential structures. For example, on a site with 10,000 square feet of buildable land area, an FAR of 1.0 would be 10,000 square feet of building floor area. On the same site, an FAR of 1.5 would be 15,000 square feet of built floor area; an FAR of 2.0 would be 20,000 built square feet and an FAR of 0.5 would be 5,000 built square feet.

freight village a cluster of freight-related businesses located inside a secure perimeter operated under single management structure. Freight Villages usually offer intermodal transfer options, logistics services, integrative distribution, warehousing capabilities, showrooms, and support services. Such support services might include: security, maintenance, mail, banking, customs and import management assistance, cafeterias, restaurants, office space, conference rooms, hotels, and public or activity-center transportation. (Houston-Galveston Area Council)

functional entry a building opening designed to be used by pedestrians and open during regular business hours. This does not include any door exclusively designated as an emergency exit, or a garage door not designed as a pedestrian entrance.

historic building a building or structure listed or determined to be eligible as a historic structure or building or structure or as a contributing building or structure in a designated historic district, due to its historic, architectural, engineering, archeological, or cultural significance. The building or structure must be designated as historic by a local historic preservation review board or similar body, be listed in a state register of historic places, be listed in the National Register of Historic Places, or have been determined eligible for listing in the National Register.

infill site a site where at least 75% of the land area, exclusive of rights-of-way, within a ½ mile distance from the *project boundary* is previously developed. A *street* or other right-of-way does not constitute *previously developed* land; it is the status of property on the other side or right-of-way of the street that matters.

intermodal facility a venue that includes the movement of goods in one and the same loading unit or road vehicle, using successively two or more modes of transportation without handling the goods themselves in changing modes. (Source: International Union of Railways, <http://www.railfreightportal.com/spip.php?article4>)

Low-emitting and fuel-efficient vehicle vehicles that are either classified as Zero Emission Vehicles (ZEV) by the California Air Resources Board or have achieved a minimum green score of 45 on the American Council for an Energy Efficient Economy (ACEEE) annual vehicle rating guide.

park a publicly accessible area that is permanently maintained in a seminatural condition for human recreation and relaxation; it has soil, grass, water, flora, and/or recreation improvements.

paseo a publicly accessible pedestrian path, at least 4 feet wide and no more than 12 feet wide, that provides shortcuts between buildings and through the block, connecting *street* frontages to rear parking areas, midblock courtyards, *alleys*, or other streets. A paseo may be roofed for up to 50% of its length and may be privately owned or publicly dedicated.

plaza a publicly accessible gathering space that is integrated into the street network and allows vehicular, bicycle, and/or pedestrian travel. A plaza is generally paved, is spatially defined by building fronts paralleling at least two-thirds of its perimeter, and may be privately owned or publicly dedicated.

preferred parking the parking spots that are closest to the main entrance of the project (exclusive of spaces designated for handicapped persons). For employee parking, “preferred parking” refers to the spots that are closest to the entrance used by employees.

previously developed altered by paving, construction, and/or land use that would typically have required regulatory permitting to have been initiated (alterations may exist now or in the past). Previously developed land includes a platted lot on which a building was constructed if the lot is no more than 1 acre; previous development on lots larger than 1 acre is defined as the *development footprint* and land alterations associated with the footprint. Land that is not previously developed and altered landscapes resulting from current or historical clearing or filling, agricultural or forestry use, or preserved natural area use are considered undeveloped land. The date of previous development permit issuance constitutes the date of previous development, but permit issuance in itself does not constitute previous development.

previously developed site a site that, *preproject*, consisted of at least 75% *previously developed* land.

project the land, water, and construction that constitutes the project application. A project *applicant* does not have to own or control all land or water within a *project boundary*, but all the area within the project boundary must comply with prerequisites and attempted credits.

project boundary the platted property line of the *project* defining land and water within it. Projects located on publicly owned campuses that do not have internal property lines must delineate a sphere-of-influence line to be used instead. *Project site* is equivalent to the land and water inside the project boundary. The project must not contain noncontiguous parcels, but parcels can be separated by public rights-of-way. Projects may also have enclaves of nonproject properties that are not subject to the rating system, but such enclaves cannot exceed 2% of the total project area and cannot be described as certified.

school a kindergarten, elementary, or secondary institution for the academic instruction of children.

street a dedicated right-of-way that can accommodate one or more modes of travel, excluding *alleys* and *paseos*. A street is suitable for primary entrances and provides access to the front and/or sides of buildings and lots. A street may be privately owned as long as it is deeded in perpetuity for general public use. A street must be an addressable thoroughfare (for mail purposes) under the standards of the applicable regulating authority.

square (also **green**) a publicly accessible open area for gatherings that is wholly or partially bounded by segments of the *street* network. A square can be landscaped or landscaped and paved, is spatially defined by building fronts paralleling at least 45% of its perimeter, and may be privately owned or publicly dedicated.

traffic analysis zone a statistical entity delineated by state and/or local transportation officials for tabulating traffic-related data (especially journey-to-work and place-of-work statistics) from a decennial census. A TAZ usually consists of one or more census blocks, block groups, or census tracts. (U.S. Census Bureau)

walk distance the distance that a pedestrian must travel between origins and destinations without obstruction, in a safe and comfortable environment on a continuous network of sidewalks, all-weather-surface footpaths, crosswalks, *woonerfs*, or equivalent pedestrian facilities.

water body the surface water of a stream (first-order and higher, including intermittent streams), arroyo, river, canal, lake, estuary, bay, or ocean, excluding irrigation ditches

wetland an area that is inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas, but exclude irrigation ditches unless delineated as part of an adjacent wetland.

vehicle miles traveled (VMT) the number of miles driven by motorists in a specified time period, such as a day or a year, in absolute or per capita terms.

yard jockey a vehicle used primarily on the site to facilitate the movement of truck trailers and other types of large shipping containers from one area of the site to another. Fork lift trucks are not considered a type of yard jockey.

WATER EFFICIENCY

WE PREREQUISITE: MINIMUM FIXTURE AND FITTING WATER USE REDUCTION Required

ID&C

This prerequisite applies to:

- Commercial Interiors
- Retail
- Hospitality

Intent

To reduce the burden on water supply and wastewater systems by increasing the water efficiency of fixtures and fittings.

Requirements

CI, RETAIL, HOSPITALITY

Reduce aggregate water consumption from fixtures and fittings (not including irrigation) by 20% from the baseline calculated for the project scope, while meeting the minimum design performance requirements. Water consumption is calculated using estimated occupant usage and the volumes and flow rates shown in Table 1.¹ Include only the following fixtures and fixture fittings (as applicable to the project scope): toilets (water closets), urinals, lavatory faucets, showers, and kitchen sink faucets². Design performance requirements apply to newly installed fixtures and fittings only.

Table 1. Baseline water consumption and Design Performance Requirements of fixtures and fittings

Fixtures and Fittings	Current Baseline	Design Performance Requirement
Toilets (water closets)	1.6 gpf*	Tank-type toilets: WaterSense Labeled All Toilets: 350 MaP Score or better
Urinals	1.0 gpf	WaterSense Labeled
Public lavatory (restroom) faucets	0.5 gpm at 60 psi** all others except private applications 0.25 gallons per cycle for metering faucets	

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 (EPA) of 1992 and subsequent rulings by the Department of Energy, requirements of the EPA of 2005, and the plumbing code requirements as stated in the 2009 editions of the International Plumbing Code and Uniform Plumbing Code pertaining to fixture performance.

² Projects where fixtures or fixture fittings are not within the tenant spaces are exempt from this prerequisite.

Lavatory faucets for private (non-public) bathrooms in transient lodging facilities (hotels and motels), private bathrooms in hospital, nursing and correctional facilities.	2.2 gpm at 60 psi,	
Hotel or motel guest rooms, hospital patient rooms and correctional facility cells.	2.2 gpm at 60 psi,	
Residential or Dormitory lavatory (bathroom) faucets	2.2 gpm at 60 psi	WaterSense Labeled
Kitchen faucet (excluding faucets used exclusively for filling operations)		
Showerheads	2.5 gpm at 80 (psi) per shower stall****	WaterSense Labeled
<p>* EPA 1992 standard for toilets (water closets) applies to both commercial and residential models.</p> <p>** In addition to EPA requirements, the American Society of Mechanical Engineers ANSI national standard for public lavatory faucets is 0.5 gpm at 60 psi (ASME A112.18.1/CSA B125.1–2005). This maximum has been incorporated into the 2009 editions of the International Plumbing Code and Uniform Plumbing Code.</p> <p>*** EPA 1992 standard for toilets (water closets) applies to both commercial and residential models.</p> <p>**** The total allowable flow rate from all flowing showerheads at any given time, including rain systems, waterfalls, bodysprays, bodyspas, and jets, must be limited to the allowable showerhead flow rate specified above (2.5 gpm) per shower compartment (stall), where the floor area of the shower compartment is less than 1,800 square inches. For each floor area of 1,800 square inches, assume an additional showerhead with total allowable flow rate from all flowing devices equal to or less than the allowable flow rate as specified above. Exception: Showers that emit recirculated nonpotable water originating from within the shower compartment while operating may exceed the maximum, provided the total potable water flow does not exceed the flow rate specified above.</p> <p>gpf = gallons per flush gpm = gallons per minute psi = pounds per square inch</p>		

WE PREREQUISITE: APPLIANCE AND PROCESS WATER USE REDUCTION Required

[This prerequisite is available in the Pilot Credit Library.](#)

ID&C

This prerequisite applies to:

- Commercial Interiors
- Retail
- Hospitality

Intent

To reduce the burden on water supply and wastewater systems by increasing the water efficiency of appliances and water-consuming processes.

Requirements

CI, RETAIL, HOSPITALITY

Newly installed water-consuming appliances, equipment, and processes used within the project scope must meet the prescriptive minimum performance requirements listed in Tables 1 and 2. Appliances and water-consuming processes not listed below are not subject to any additional prescriptive requirements.

Table 1. Minimum performance requirements for water-consuming appliances

Appliance	Minimum Performance Requirement
Residential clothes washers	ENERGY STAR
Commercial clothes washers	CEE Tier 3A
Residential dishwashers (standard and compact)	ENERGY STAR
Prerinse spray valves	≤ 1.6 gpm
Ice Machine*	ENERGY STAR

gpm = gallons per minute

Ice machines must use either air-cooled or closed-loop cooling, such as a chilled or condenser water system.

Processes: Table 2. Minimum performance requirements for water-consuming processes

Process	Minimum Performance Requirement
Heat rejection and cooling	No water use for once-through cooling* for any equipment or appliances that reject heat.

Discharge water temperature tempering	A holding or mixing tank must be provided for mixing hot fluid discharge with cold water. Cold water supply must be controlled by tempering device that limits flow based on temperature of water leaving the appliance, to meet mandated temperature limits.
Venturi-type flow-through vacuum generators or aspirators	No device may be used that generates vacuum by means of water flow through device into drain.

*Once-through cooling, also known as single-pass cooling, is defined as using water from any source to transfer heat from equipment or processes, then discarding the water from the site via the sewer or other discharge. For purposes of this prerequisite, once-through cooling is allowed only when 100% of the cooling water is used to meet another water demand of the project. This water may not be considered an alternative site water source if it originates as a potable or municipally supplied water source.

WE CREDIT: ADDITIONAL FIXTURE AND FITTING WATER USE REDUCTION

ID&C

3-7 points

This credit applies to:

- Commercial Interiors (3-7 points)
- Retail (3-7 points)
- Hospitality (3-7 points)

Intent

To reduce the burden on water supply and wastewater systems by increasing the water efficiency of fixtures and fittings.

Requirements

CI, RETAIL, HOSPITALITY

Employ strategies that in aggregate, use less water than the water use baseline, as calculated for Prerequisite, Fixture and Fitting Water Use Reduction (not including irrigation). Points are awarded according to Table 1. Include fixtures and fittings necessary to meet the needs of the occupants. Some of these fittings and fixtures may be outside the tenant space (CI) or project boundary (NC).

Table 1. Points for percentage reduction in water use

Percentage Reduction	Points
30%	3
40%	5
50%	7

WE CREDIT: SUSTAINABLE WASTEWATER MANAGEMENT

[This credit is available in the Pilot Credit Library.](#)

ID&C

1-2 points

This credit applies to:

- Commercial Interiors (1-2 points)
- Retail (1-2 points)
- Hospitality (1-2 points)

Intent

To increase the efficiency of wastewater reuse by encouraging water reuse, reduction or recovery.

Requirements

CI, RETAIL, HOSPITALITY

OPTION 1. Source Reduction (1-2 points)

Reduce wastewater from toilets and urinals by at least 50% from the baseline calculated in WE Prerequisite Fixture & Fitting Water Use Reduction for toilets and urinals only.

Percent Reduction	Points
50%	1
95%	2

OR

OPTION 2. Reuse (1-2 points)

Reuse building wastewater on site. Reused water must meet the applicable NSF 350 standard or local code, whichever is more stringent, for its intended use (e.g., on-site irrigation, toilet flushing, cooling tower).

Strategy	Points
Implement wastewater reuse	1
Reuse at least 90% of wastewater on site	2

OR

OPTION 3. Resource Recovery (1-2 points)

Implement resource recovery and reuse of one or both of the following for up to 2 points:

Resource Recovery Type	Points
nutrients (nitrogen and/or phosphorous)	1
organic carbon loading from building occupants	2

WE CREDIT: COOLING TOWER MAKEUP WATER

[This credit is available in the Pilot Credit Library.](#)

ID&C

1-2 points

This credit applies to:

- Commercial Interiors (1-2 points)
- Retail (1-2 points)
- Hospitality (1-2 points)

Intent

To conserve water used for cooling tower makeup while controlling microbes, corrosion, and scale in the condenser water system.

Requirements

CI, RETAIL, HOSPITALITY

Conduct a one-time potable water analysis, measuring at least the following five control parameters, in ppm or mg/l:

- calcium (Ca);
- total alkalinity;
- silica (Si);
- chloride (Cl); and
- conductivity

Calculate the number of cooling tower cycles by dividing the amount of each parameter in the condenser water by the amount in the potable makeup water. The maximum acceptable levels of the parameters in the condenser water are shown in Table 1. Limit cooling tower cycles to avoid exceeding maximum values for any of these parameters.

AND

Complete the following:

- Install side-stream filtration system of the condenser water. A system to monitor and control microbiological growth is recommended.
- Control blowdown with a conductivity meter.
- Report monthly results of the amount of potable water used, microbiological levels, blowdown, and corrosion.
- On cooling towers, install drift eliminators that achieve minimum efficiencies of 0.2% for counter-flow systems or 0.5% for cross-flow systems.

Table 1. Maximum concentrations for parameters in condenser water

Parameter	Maximum level
Ca (as CaCO ₃)	1,000 ppm
Total alkalinity	1,000 ppm
SiO ₂	100 ppm

Cl	250 ppm
Conductivity	3,500 μ S/ml

Table 2. Points for cooling tower cycles

Cooling tower cycles	Points
Equal to Maximum number of cycles achieved without exceeding any filtration levels or affecting the operation of the condenser water system (up to a maximum of 10 cycles)	1
Double preceding number by increasing the level of treatment OR If the project has achieved 10 cycles, blend the makeup water with at least 20% recycled non-potable water	2

WE CREDIT: ADDITIONAL APPLIANCE AND PROCESS WATER USE REDUCTION

ID&C

1 point

This credit applies to:

- Commercial Interiors (1 point)
- Retail (1 point)
- Hospitality (1 point)

Intent

To reduce use of process water in building systems.

Requirements

CI, RETAIL, HOSPITALITY

Install water-using equipment within the project scope that meets the minimum standards in at least one of the Tables 1 through 5. One point is awarded for meeting ALL applicable standards within any one of the tables below, as applicable to the project. All equipment in the applicable table must meet the standard; for example, all the project's dishwashers, regardless of type, must be in compliance in order to earn credit.

Healthcare and Retail project can earn a second point for meeting the requirements of a total of two of the tables below.

Table 1. Compliant commercial washing machines

In order to be eligible for this option, the project must process at least 120,000 lbs of laundry per year:

<i>DESCRIPTION</i>	<i>METRIC</i>	
<i>Washing machine</i>	<i>Standard</i>	
On-premise, minimum capacity 2,400 lbs per 8-hour shift	Less than or equal to pound *	Maximum 1.8 gals per

* Based on equal quantities of heavy, medium, and light soil laundry.

Table 2. Compliant commercial kitchen equipment

In order to be eligible for this option, the project must serve at least 100 meals per day of operation. All process and appliance equipment listed in the category of kitchen equipment and present on the project must comply with the metric listed below.

<i>DESCRIPTION</i>	<i>METRIC</i>	
<i>Kitchen equipment</i>	<i>Standard</i>	
Dishwasher	under counter	ENERGY STAR
	Stationary single tank door	ENERGY STAR

	Single tank conveyor	ENERGY STAR
	Multiple tank conveyor	ENERGY STAR
	Flight machine	150 gph and ≤ 1 gal/100 9" dishes
Food steamer	batch	≤ 4 gph per compartment including condensate cooling water
	Cook-to-order	≤ 15 gph per compartment including condensate cooling water
Combination oven, connectionless	Counter top or stand	≤ 15 gph including condensate cooling water
	Roll-in	≤ 20 gph including condensate cooling water
Food waste disposer	grinder	1 gpm, no-load condition; 3–8 gpm, full load condition; 10-minute automatic shutoff
	scrap collector	Maximum 2 gpm makeup water
	pulper	Maximum 2 gpm makeup water
	strainer basket	No additional water usage

gpm = gallons per minute

gph = gallons per hour

Table 3. Compliant laboratory and medical equipment

In order to be eligible under this option the project must be a medical or laboratory facility.

<i>DESCRIPTION</i>	<i>METRIC</i>
<i>Lab equipment</i>	<i>Standard</i>
Reverse osmosis water purifier	75% recovery
Steam sterilizer	For 60 inch sterilizer, 6.3 gal/U.S. tray For 48 inch sterilizer, 7.5 gal/U.S. tray
Sterile process washer	0.35 gals per U.S. tray; 0.20 gals per U.S. tray
X-ray processor, 150 mm or more in any dimension	Film processor water recycling unit
Digital imager, all sizes	No water use

Table 4. Compliant vehicle washing machines

In order to be eligible under this option the project must wash at least 50 vehicles per day.

<i>Vehicle washer</i>	<i>Standard</i>
Conveyor	Recycling system in place and maximum 35 gals per vehicle of potable water
In-bay automatic	Recycling system in place and maximum 35 gals per vehicle of potable water

Table 5. Compliant municipal steam systems*

In order to be eligible for this option the project must be connected to a municipal/district steam system that will not allow the return of steam condensate.

<i>Steam system</i>	<i>Standard</i>
Steam condensate disposal	Cool municipally supplied steam condensate (no return) to drainage system with heat recovery system or reclaimed water
OR	
Reclaim and use steam condensate	100% recovery and reuse

* No condensate return, collection systems.

ENERGY AND ATMOSPHERE

EA PREREQUISITE: MINIMUM ENERGY PERFORMANCE Required

ID&C

This prerequisite applies to:

- Commercial Interiors
- Retail
- Hospitality

Intent

To reduce the environmental and economic impacts of excessive energy use by achieving a minimum level of energy efficiency for the building and its systems.

Requirements

CI, RETAIL, HOSPITALITY

OPTION 1. Tenant-Level Energy Simulation

Portions of the building within the tenant's scope of work must demonstrate a percentage improvement of 6% over ANSI/ASHRAE/IESNA Standard 90.1-2010 (with errata but without addenda³).

Note: The project's total reductions are based on 50% energy cost and source EUI reductions, respectively.

Cost savings.

Demonstrate a percentage improvement in the proposed tenant project performance rating compared with the baseline tenant project performance rating. Calculate the baseline tenant project performance according to ANSI/ASHRAE/IESNA Standard 90.1-2010, Appendix G (with errata but without addenda⁴), using a computer simulation model for all tenant project energy use.

Source energy use intensity (EUI) reduction.

Demonstrate a percentage improvement in the proposed tenant project source energy compared with the baseline building performance. Calculate the tenant project source energy for both cases by converting the energy consumption for each energy type to source energy, using national average source energy conversion factors.

The total percentage improvement is the average of the project's energy cost savings and source EUI reduction.

Appendix G of Standard 90.1-2010 requires that the energy analysis done for the project performance rating method include all the energy costs associated with the project. To achieve points under this credit, the proposed design must meet the following criteria:

⁴ Project teams wishing to use ASHRAE approved addenda for the purposes of this credit may do so at their discretion. Addenda must be applied consistently across all LEED credits.

- compliance with the mandatory provisions of ANSI/ASHRAE/IESNA Standard 90.1-2010 (with errata but without addenda);
- inclusion of all the energy consumption and cost within and associated with the tenant project; and
- comparison against a baseline tenant project that complies with Standard 90.1-2010, Appendix G (with errata but without addenda).

Exception: the baseline project envelope must be modeled according to Table G3.1 (5) (baseline), Sections a-e, and must not be modeled according to Section f.

Document the energy modeling input assumptions for unregulated loads. Unregulated loads should be modeled accurately to reflect the actual expected energy consumption of the tenant project.

Typically, unregulated loads must be identical for both the baseline and the proposed performance ratings. However, project teams may follow the exceptional calculation method (ANSI/ASHRAE/IESNA Standard 90.1-2010, G2.5) to document measures that reduce unregulated loads. Documentation of unregulated load energy savings must include a list of the assumptions made for both the baseline and the proposed design, and theoretical or empirical information supporting these assumptions.

Projects that are connected to district energy systems (DES) must follow LEED's DES requirements and modeling guidelines.

In addition, projects teams using Option 1 must record the source EUI of their proposed and baseline case buildings. The source EUI for both models must be recorded on an efficiency ratio scale where 100 equals the average adjusted source energy consumption and 0 equals net zero source energy consumption.

OPTION 2. ASHRAE Advanced Energy Design Guide Prescriptive Compliance Path

Comply with the mandatory provisions of ANSI/ASHRAE/IESNA Standard 90.1-2010 (with errata but without addenda⁵).

AND

Comply with the HVAC requirements, including equipment efficiency, economizers, ventilation, ducts and dampers, of the ASHRAE 50% Advanced Energy Design Guide applicable to the project and its scope as follows:

Small to Medium Office Buildings

- less than 100,000 square feet

Medium to Large Box Retail

- 40,000 to 100,000 square feet

K-12 Schools

Large Hospitals

OPTION 3. Advanced Buildings™ Core Performance™ Guide Prescriptive Compliance Path

To be eligible for Option 3, the project must be less than 100,000 square feet.

⁵ Project teams wishing to use ASHRAE approved addenda for the purposes of this credit may do so at their discretion. Addenda must be applied consistently across all LEED credits.

Comply with Section 1: Design Process Strategies, and Section 2: Core Performance Requirements.

EA PREREQUISITE: FUNDAMENTAL REFRIGERANT MANAGEMENT Required

ID&C

This prerequisite applies to:

- Commercial Interiors
- Retail
- Hospitality

Intent

To reduce stratospheric ozone depletion.

Requirements

CI, RETAIL, HOSPITALITY

Zero use of chlorofluorocarbon (CFC)-based refrigerants in new base building heating, ventilating, air conditioning and refrigeration (HVAC&R) systems. When reusing existing base building HVAC equipment, complete a comprehensive CFC phase-out conversion prior to project completion. Phase-out plans extending beyond the project completion date will be considered on their merits.

Existing small HVAC units (defined as containing less than 0.5 pounds of refrigerant) and other equipment, such as standard refrigerators, small water coolers and any other equipment that contains less than 0.5 pounds of refrigerant, are not considered part of the base building system and are not subject to the requirements of this prerequisite.

EA CREDIT: OPTIMIZE ENERGY PERFORMANCE

ID&C

1-26 points

This credit applies to:

- Commercial Interiors (1-26 Points)
- Retail (1-26 Points)
- Hospitality(1-26 Points)

Intent

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

Requirements

CI, RETAIL, HOSPITALITY

Establish an energy performance target no later than the schematic design phase. The target must be established as kBtu per square foot-year of source energy use. This target must be mapped on the same scale as the baseline and proposed buildings, if the project follows Option 1.

AND select one of the options below:

OPTION 1. Tenant-Level Energy Simulation (1–26 points)

Analyze a minimum of at least nine efficiency measures during the design process and account for the results in design decision-making. Analysis can include energy simulation of efficiency opportunities, application of past energy simulation analyses for similar projects to the project, or application of published data from energy analyses performed for similar projects to the project (such as AEDGs).

A minimum of six energy efficiency measures focused on load reduction strategies appropriate for the facility must be analyzed. This analysis must be performed during the schematic design phase.

A minimum of three energy efficiency measures focused on HVAC related strategies must be analyzed (passive measures are acceptable). This analysis must be performed before the conclusion of the design development phase.

Follow the criteria detailed in EA Prerequisite: Minimum Energy Performance to demonstrate a percentage improvement in the proposed tenant project performance rating compared with the baseline tenant project performance rating.

Interior Construction	Points
8%	2
10%	4
12%	6
14%	8
16%	10

18%	12
20%	14
22%	16
24%	18
26%	20
28%	22
30%	24
32%	26

Note:

The total percentage improvement is the average of the project's energy cost savings and source EUI reduction.

OPTION 2. Prescriptive Compliance Path (1 – 20 points)

Meet any combination of the strategies listed, in any or all of the categories below:

Base Building Systems (2 – 4 points)

Base building systems that serve the project, as well as any applicable improvements that are part of the Project, must comply with some or all of the recommended measures of the ASHRAE 50% Advanced Energy Design Guide or the Advanced Buildings™ Core Performance™ Guide appropriate to the project, as outlined in EA Prerequisite: Minimum Energy Performance and below, subject to the stated scope of each of the guides. Healthcare, warehouse or laboratory spaces are excluded from using the Advanced Buildings™ Core Performance™ Guide.

Document base building and project compliance with all applicable recommendations and standards contained in “Chapter 4: Design Strategies and Recommendations by Climate Zone” for the appropriate ASHRAE Advanced Energy Design Guide or “Section 2: Core Performance Requirements” of the Advanced Buildings™ Core Performance™ Guide and for the climate zone in which the building is located:

- **Building Envelope, Opaque:** Roofs, Walls, Floors, Slabs, and Doors (2 points)
- **Building Envelope, Glazing:** Vertical Fenestration and Skylights (2 points)

HVAC Systems (4-8 points)

- **HVAC Equipment Efficiency** (4 points)
Base building HVAC systems that serve the project and any HVAC systems installed as part of the Project must comply with either the recommendations of the ASHRAE Advanced Energy Design Guide applicable to the project or the efficiency requirements outlined in Advanced Buildings™ Core Performance™ Guide sections 1.4, 2.9 & 3.10
- **HVAC Zoning and Controls** (4 points)
Project fit out of spaces to meet the following requirements:
Every Solar Exposure must have a separate control zone, interior spaces must be separately zoned, and private offices and other enclosed occupancies (eg conference

rooms, classrooms) must have controls capable of sensing space conditions and modulating HVAC system in response to space demand.

Interior Lighting Power (1-6 points)

- **Lighting Power Density (1-4 points)**
Reduce connected lighting power density below that allowed by ASHRAE/IESNA Standard 90.1-2010 using either the Space-by-Space Method or by applying the whole building lighting power allowance to the entire tenant space.

Project LPD Percent below Standard LPD	Points
10%	1
15%	2
20%	3
25%	4

Interior Lighting Controls (1-2 points)

- **Daylighting Controls (1 point)**
Install daylight responsive controls in all regularly occupied daylit spaces within 15 feet of windows and under skylights and not less than 25% of the connected lighting load. Daylight controls must switch or dim electric lights in response to the presence or absence of daylight illumination in the space.
- **Occupancy Sensor Lighting Controls (1 point)**
Install occupancy sensors for at least 75% of the connected lighting load.

Equipment And Appliances (1-2 points)

- **ENERGY STAR Equipment and Appliances (1 - 2 points)**
For all ENERGY STAR® eligible equipment and appliances installed in the project:

Percent of Total Eligible Equipment, by rated power, that is ENERY STAR Complaint	Points
70%	1
90%	2

*Includes appliances, office equipment, electronics, and commercial food service equipment. Excludes HVAC, lighting, and building envelope products

EA CREDIT: RENEWABLE ENERGY PRODUCTION

ID&C

1-3 points

This credit applies to:

- Commercial Interiors (1-3 points)
- Retail (1-3 points)
- Hospitality (1-3 points)

Intent

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

Requirements

CI, RETAIL, HOSPITALITY

Use tenant renewable energy systems to offset project energy cost. Calculate project performance by expressing the equivalent cost of the usable 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 annual energy cost calculated in EA Credit: Optimize Energy Performance, or use the Department of Energy's Commercial Buildings Energy Consumption Survey (CBECS) database to determine the estimated energy use and cost.

The use of "solar gardens" or Community renewable energy systems is allowed if the following requirements are met:

- Actual ownership in the system , with an intent to retain ownership for at least 15 years.
- The system must be located with the same Utility Service Area as the facility claiming the use.
- The percentage of credit will be determined as a percentage of ownership; if a project owns 10%, 10% of the output can be claimed.
- Must meet requirements applicable to all other onsite renewable energy systems.

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

Percentage Renewable Energy – CI, Retail CI, Hospitality	Points
1%	1
3%	2
5%	3

Projects that are connected to district energy systems (DES) must follow LEED's DES requirements.

EA CREDIT: ENHANCED REFRIGERANT MANAGEMENT

ID&C

1 point

This credit applies to:

- Commercial Interiors (1 point)
- Retail (1 point)
- Hospitality (1 point)

Intent

To reduce ozone depletion and support early compliance with the Montreal Protocol while minimizing direct contributions to climate change.

Requirements

CI, HOSPITALITY

OPTION 1. (1 point)

Do not use refrigerants or use only refrigerants, naturally-occurring or synthetic, that have ODP = 0 and GWP < 50.

OR

OPTION 2. (1 point)

Select refrigerants that are used in heating, ventilation, air conditioning and refrigeration (HVAC&R) equipment to minimize or eliminate the emission of compounds that contribute to ozone depletion and climate change. The combination of all new and existing base building and tenant HVAC&R equipment that serve the project must comply with the following formula. The formula sets a maximum threshold for the combined contributions to ozone depletion and global warming potential:

$$\text{LCGWP} + \text{LCODP} \times 10^5 \leq 100$$

Calculation definitions for $\text{LCGWP} + \text{LCODP} \times 10^5 \leq 100$

$$\text{LCODP} = [\text{ODPr} \times (\text{Lr} \times \text{Life} + \text{Mr}) \times \text{Rc}] / \text{Life}$$

$$\text{LCGWP} = [\text{GWPr} \times (\text{Lr} \times \text{Life} + \text{Mr}) \times \text{Rc}] / \text{Life}$$

LCODP: Lifecycle Ozone Depletion Potential (lb CFC 11/Ton-Year)

LCGWP: Lifecycle Direct Global Warming Potential (lb CO₂/Ton-Year)

GWPr: Global Warming Potential of Refrigerant (0 to 12,000 lb CO₂/lbr)

ODPr: Ozone Depletion Potential of Refrigerant (0 to 0.2 lb CFC 11/lbr)

Lr: Refrigerant Leakage Rate (2.0%)
Mr: End-of-life Refrigerant Loss (10%)
Rc: Refrigerant Charge (0.5 to 5.0 lbs of refrigerant per ton of gross ARI rated cooling capacity)
Life: Equipment Life (10 years; default based on equipment type, unless otherwise demonstrated)

For multiple types of equipment, a weighted average of all base building HVAC&R equipment must be calculated using the following formula:

$$\frac{\sum (LCGWP + LCODP \times 10^5) \times Q_{unit}}{Q_{total}} \leq 100$$

Calculation definitions for $[\sum (LCGWP + LCODP \times 10^5) \times Q_{unit}] / Q_{total} \leq 100$
Qunit = Gross ARI rated cooling capacity of an individual HVAC or refrigeration unit (Tons)
Qtotal = Total gross ARI rated cooling capacity of all HVAC or refrigeration

RETAIL

Meet Option 1 or 2 for the base building HVAC systems.

AND

Achieve U.S. EPA GreenChill's Gold-Level Store Certification for Fully Operational Food Retail Stores.

All Options: Projects that are connected to district energy systems (DES) must follow LEED's DES requirements.

EA CREDIT: GREEN POWER AND CARBON OFFSETS

ID&C

1-2 points

This credit applies to:

- Commercial Interiors (1-2 points)
- Retail (1-2 points)
- Hospitality (1-2 points)

Intent

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

Requirements

CI, RETAIL, HOSPITALITY

Engage in a contract for qualified resources that came online after January 1, 2005, for a minimum of 5 years, to be delivered annually or more frequently. The contract must specify the provision of at least 50% or 100% of the project's energy from renewable sources.

Green power may be procured from a Green-e Energy-certified power marketer or a Green-e Energy-accredited utility program, or through Green-e Energy-certified tradable renewable energy certificates (RECs) or the equivalent. Only RECs can be used to mitigate the impacts of Scope 2, electricity use.

Only Carbon offsets that are Gold Standard certified or Green-e climate approved may be used to mitigate Scope 1 emissions. For US based buildings, the offsets must be from projects from within the United States, retired in a third party registry like the California Climate Action Registry. International projects should use CDM approved offsets.

All purchases of green power or offsets shall be based on the quantity of energy consumed, not the cost.

Percent of total energy from renewable sources and/or offset	Possible Points
50%	1
100%	2

Projects that are connected to district energy systems (DES) must follow LEED's DES requirements.

MATERIALS AND RESOURCES

MR PREREQUISITE: STORAGE AND COLLECTION OF RECYCLABLES Required

ID&C

This prerequisite applies to:

- Commercial Interiors
- Retail
- Hospitality

Intent

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

Requirements

CI, HOSPITALITY

Provide dedicated areas accessible to waste haulers and building occupants for the collection and storage of recyclable materials for the entire building. Collection and storage areas may be separate locations. Recyclable materials must include, at a minimum: mixed paper⁶, corrugated cardboard, glass, plastics, metals, batteries, and mercury containing lamps.

RETAIL

Conduct a waste stream study to identify the retail project's 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 the operations will produce and data from similar operations. Retailers with existing stores of similar size and function can use historical information from their other locations.

Provide dedicated areas accessible to waste haulers and building occupants for the separation, collection and storage of recyclable materials for at least the top 3 recyclable waste streams identified by the waste study. Locate the collection and storage bins close the source of recyclable waste. 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.

⁶ **Mixed papers:** Includes white and colored papers, envelopes, forms, file folders, tablets, junk mail, cereal boxes, wrapping paper, catalogs, magazines and phone books and photos but not "instant" film (eg. Polaroids).

MR PREREQUISITE: CONSTRUCTION AND DEMOLITION DEBRIS MANAGEMENT PLANNING Required

ID&C

This prerequisite applies to:

- Commercial Interiors
- Retail
- Hospitality

Intent

To reduce construction, renovation, and demolition waste; divert debris from disposal in landfills and incineration facilities; and recover and recycle reusable materials.

Requirements

CI, RETAIL, HOSPITALITY

Develop and implement a Construction and Demolition Debris Management Plan that, at a minimum,

- Establishes contractual requirements with responsible waste and recycling haulers, including waste reporting requirements for involved parties.
- Targets materials to be diverted from disposal and diversion strategies being implemented on-site. The targeted materials for diversion should account for 20% of total construction waste.
- Specifies a process waste/recyclers will utilize including where debris will be taken and the strategies the recycling facility will employ to sort and process the debris.

Provide waste data for all major waste categories including diversion rates,

ADC (Alternative Daily Cover) does not qualify as material diverted from disposal. Land clearing debris is not considered construction, demolition, or renovation waste contributing to waste diversion but may be included in the Waste Management Plan at project team's discretion.

MR CREDIT: TENANT SPACE—LONG-TERM COMMITMENT

ID&C

1 point

This credit applies to:

- Commercial Interiors (1 point)
- Retail (1 point)
- Hospitality (1 point)

Intent

To encourage choices that will conserve resources, reduce environmental harm from materials manufacturing and transport for tenants' relocation.

Requirements

CI, RETAIL, HOSPITALITY

The occupant or tenant must commit to remain in the same location for at least 10 years.

MR CREDIT: BUILDING REUSE—MAINTAIN INTERIOR NONSTRUCTURAL ELEMENTS

ID&C

2 points

This credit applies to:

- Commercial Interiors (2 points)
- Retail (2 points)
- Hospitality (2 points)

Intent

To extend the lifecycle of existing buildings, conserve resources, retain cultural resources, reduce waste and reduce environmental harm from materials manufacturing and transport for new buildings.

Requirements

CI, RETAIL, HOSPITALITY

Use existing interior nonstructural elements (e.g., interior walls, doors, floor coverings and ceiling systems) in at least 50% (by area) of the completed building, including additions. Hazardous materials that are remediated as a part of the project must be excluded from the calculation of the percentage maintained.

MR CREDIT: CONSTRUCTION AND DEMOLITION DEBRIS MANAGEMENT

ID&C

1-2 points

This credit applies to:

- Commercial Interiors (1-2 points)
- Retail (1-2 points)
- Hospitality (1-2 points)

Intent

To divert construction, renovation and demolition debris from disposal in landfills and incinerators and recover recyclable and reusable materials.

Requirements

CI, RETAIL, HOSPITALITY

Recycle or salvage the specified percentages of nonhazardous construction, renovation and demolition debris. Calculations can be done by weight or volume, but must be consistent throughout.

Excavated soil, land-clearing debris, Alternative Daily Cover (ADC), materials counted under MR Credit: Building Reuse – Maintain Interior Nonstructural Elements and materials counted as Material Reuse under MR Credit: Environmentally Preferable Products and Materials do not qualify for this credit.

OPTION 1. Waste Diversion (1-2 points)

CASE 1. Project Scope Includes Demolition in Project Space

If the scope of the project includes demolition, large portions of the total debris may be heavy materials (asphalt, masonry, steel, concrete). Reused or recycled heavy materials can account for a maximum of 50% of the diverted total. Points for recycling or salvaging debris are awarded according to Table 3.

Table 3.

Recycled or Salvaged	Points
50%	1
75%	2

CASE 2. Project Scope is Exclusively Construction in Project Space

If no debris is generated by demolition, reused or recycled heavy materials (asphalt, masonry, steel, and concrete) can be counted without a cap. Points are awarded according to Table 4.

Recycled or Salvaged	Points
40%	1
60%	2

OR

OPTION 2. Reduction of Total Debris (2 points)

Do not generate more than 2.5 pounds per square foot of total waste from the project.

MR CREDIT: ENVIRONMENTALLY PREFERABLE NON-STRUCTURAL PRODUCTS AND MATERIALS – PRESCRIPTIVE ATTRIBUTES

ID&C

1 point

This credit applies to:

- Commercial Interiors (1 point)
- Retail (1 point)
- Hospitality (1 point)

Intent

To increase the use of products and materials with life cycles, ingredients, and attributes that improve overall environmental, economic and social performance.

Requirements

CI, RETAIL, HOSPITALITY

Meet the requirements of the credit below, however, furniture and furnishings that are within project's scope of work must be include in credit calculations.

Use non structural building products for a minimum of 50%, based on cost, of the total non-structural building product value containing at least one attribute specified below. Materials meeting more than one attribute criteria will receive credit for each attribute met. If only a fraction of a product or material meets the criteria, then only that percentage (by weight) can contribute to the compliant value.

Products and materials contributing towards this credit must also meet the requirements of Indoor Environment Quality Credit: Low Emitting Interiors

Include only materials permanently installed in the project. Furniture as well as piping, pipe insulation, ducts, duct insulation, conduit, plumbing fixtures, faucets, and shower heads, and lamp housing may be included if they are included consistently within the credit. Wood products purchased for temporary use on the project (e.g. formwork, bracing, scaffolding, sidewalk protection, and guardrails) may not be included in the calculation.

Materials Reuse

Use salvaged, refurbished or reused nonstructural materials in the project. Value of salvaged, refurbished and reused materials is based on actual cost or replacement value, whichever is higher. Materials contributing toward this credit may not contribute toward MR Credit: Environmentally Preferable Structure and Enclosure Option 1: Case 2, Option 2 or Option 3.

OR

Recycled Content

Use non structural materials with recycled content⁷. Recycled content is the sum of postconsumer⁸ recycled content plus 1/2 of the preconsumer⁹ (post-industrial) recycled content based on cost. The recycled content value of a material assembly is determined by weight.

²⁹ Recycled content 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)

³⁰ Postconsumer material is defined as 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.

³¹ Preconsumer (post industrial) material is defined as material diverted from the waste stream during the manufacturing process. Reutilization of materials (i.e. rework, regrind or scrap generated in a process and capable of being reclaimed within the same

OR

Extended Producer Responsibility

Demonstrate that materials meeting the Recycled Content requirements are purchased from a manufacturer (aka producer) that has a closed-loop product recycling program¹⁰ for the purchased product. Value of the material is the same as the value of the Recycled Content.

OR

Support Local Economy

Use non-structural building materials and products that are manufactured and purchased, within the Core Based Statistical Area as defined by the U.S. Office of Management and Budget¹¹ statistical area definition updated December 1 2009¹² the project is located in. For projects located outside a prescribed CBSA materials and products shall be purchased within the projects county. If only a fraction of a product or material was regionally manufactured count only that percentage (by weight). Products and materials compliant with the Local Economy attribute are credited at 200% of their value in the calculation of credit achievement.

OR

Bio-Based Materials

Use structure and enclosure materials with bio-based content. The bio-based content of a material assembly is determined by weight. Multiply the bio-based fraction of the assembly by the cost of assembly to calculate the bio-based content value. Bio-based materials are those that meet the following criteria:

- Derived from organic carbon from modern carbon sources (not fossil sources), as identified by ASTM Test Method D6866.
- From designated countries, as defined in the Federal Acquisition Regulation section 25.003.
- Documented in the US Department of Agriculture’s Biopreferred database.
- Harvested in a legal manner.

Acceptable animal-based products are those whose harvesting does not kill, abuse, or cause harm to the animals.

| process that generated it) is excluded.

¹⁰ Closed loop programs are those of product producer or manufactures that accept either its products or the products or other manufacturers in order to process materials at the end of their useful life to be recycled back into a similar product category. Programs must be available to a substantial majority of communities notionally.

¹¹ The OMB defines a **Core Based Statistical Area** as one or more adjacent counties or county equivalents that have at least one urban core area of at least 10,000 population, plus adjacent territory that has a high degree of social and economic integration with the core as measured by commuting ties. The 942 Core Based Statistical Areas currently defined by the OMB include the 366 Metropolitan Statistical Areas (MSAs), which have an urban core population of at least 50,000, and the 576 Micropolitan Statistical Areas (μSAs), which have an urban core population of at least 10,000 but less than 50,000.

¹² <http://www.whitehouse.gov/sites/default/files/omb/assets/bulletins/b10-02.pdf>

MR CREDIT: RESPONSIBLE SOURCING OF RAW MATERIALS

ID&C

1 point

This credit applies to:

- Commercial Interiors (1 point)
- Retail (1 point)
- Hospitality (1 point)

Intent

To protect ecosystems, respect cultural and community values, and improve land use through responsible sourcing of raw materials used for building products.

Requirements

CI, RETAIL, HOSPITALITY

Meet the requirements of the credit below, however, furniture and furnishings that are within project's scope of work must be included in credit calculations.

Of the building products and materials listed below installed in the project, provide a minimum of 10%, by cost, that comply with the following:

Materials acquired from manufacturers and their raw material suppliers that meet both the disclosure and responsible sourcing requirements below. For composite materials/assemblies (assembly), the compliant content value of the material is determined by weight. The compliant fraction of the assembly is then multiplied by the cost of the assembly to determine the compliant content value.

Mined or Quarried	Extracted	Bio Based
Concrete	Plastics (petrochemicals)	Agrifiber
Glass	Minerals	Bamboo
Gypsum Wallboard		Wood
Masonry (brick, CMU)		
Virgin Metals		
Stone		

Raw Material Sourcing Disclosure:

Manufacturers and their raw materials suppliers must annually report data to a publically available database maintained by a third party.

Data to be reported by the Manufacturer

- Governance
- Environmental Energy, Water, Waste, Materials, Biodiversity, Air Quality)
- Labor Practices
- Financial reporting
- Product responsibility

AND

Responsible Sourcing of Raw Material

Bio Based

Wood certified by Forest Stewardship Council as FSC Pure

Mined or Quarried

Manufacturers and their raw material suppliers (mines, quarries) who each have a signed commitment letter by the owner of their company, stating the following, meet the responsible sourcing requirements.

- Reviewed and understood the Framework for Responsible Mining
- Publicly declared commitment to advancing responsible mining

Other Materials

For raw materials that do not have a compliance path listed above, qualifying material of products are those whose extraction and manufacture meet all applicable laws, including human rights laws (and the LACEY Act as appropriate). These materials must also meet the requirements of a third party certification or listing program that evaluates their performance in the following areas, at a minimum, and publically posts the evaluation.

- Commitment to long-term ecologically responsible land use
- Reduced environmental impact of extraction and/or manufacturing processes
- Economic and social support of adjacent communities
- Commitment to meeting applicable voluntary codes that address responsible sourcing criteria

MR CREDIT: AVOIDANCE OF CHEMICALS OF CONCERN IN BUILDING MATERIALS

ID&C

1 point

This credit applies to:

- Commercial Interiors (1 point)
- Retail (1 point)
- Hospitality (1 point)

Intent

To increase the use of products and materials that disclose chemical ingredient data and reduce the concentrations of chemical contaminants that can damage air quality, human health, productivity, and the environment.

Requirements

CI, RETAIL, HOSPITALITY

Meet the requirements of the credit below, however, furniture and furnishings that are within project's scope of work must be include in credit calculations.

For 20% of all building products and materials, by cost, purchase building products and materials meeting the Ingredient Reporting and Chemical Avoidance criteria below.

Ingredient Reporting

Products and materials must have either manufacturer-produced self-declared or a third party verified publicly available list of ingredients.

AND

Chemical Avoidance

Products and materials must not contain any substances listed in the State of California's Proposition 65 Safe Drinking Water and Toxic Enforcement Act of 1986, Chemicals Known to the State to Cause Cancer or Reproductive Toxicity published May 20, 2011 found at http://oehha.ca.gov/prop65/prop65_list/files/P65single052011.pdf.

INDOOR ENVIRONMENTAL QUALITY

EQ PREREQUISITE: MINIMUM INDOOR AIR QUALITY PERFORMANCE Required

ID&C

This prerequisite applies to:

- Commercial Interiors
- Retail
- Hospitality

Intent

To contribute to the comfort and well-being of building occupants by establishing minimum standards for indoor air quality (IAQ).

Requirements

CI, RETAIL, HOSPITALITY

Meet the minimum requirements of Section 4 through 7 of ASHRAE Standard 62.1-2010, Ventilation for Acceptable Indoor Air Quality (with errata but without addenda³).

Use the Ventilation Rate Procedure, the Natural Ventilation Procedure, a combination of the two, or the applicable local code, whichever is more stringent. The Indoor Air Quality Procedure as defined in ASHRAE Standard 62.1-2010 shall not be used to comply with this prerequisite.

If the project team cannot meet the outdoor air requirements of ASHRAE Standard 62.1-2010 (with errata but without addenda³) document the space and system constraints which prevent compliance, and complete an engineering assessment of the system's maximum outdoor air delivery rate in cubic feet per minute (cfm). Projects must supply the maximum possible outdoor air given documented space and system constraints but must supply a minimum of 10 cfm of outdoor air per person. All other requirements must be met.

Mechanically Ventilated Spaces or Mixed-Mode Systems When Mechanical Ventilation Is Activated

Monitor outdoor air intake flow, as follows:

- For variable air volume systems with an outdoor air intake included in the tenant scope of work, provide a direct outdoor airflow measurement device (air flow measuring station) capable of measuring the minimum outdoor air intake flow with an accuracy of +/- 10% of the design minimum outdoor airflow rate, as defined by ASHRAE Standard 62.1-2010 (with errata but without addenda³). An alarm condition shall be indicated when the outdoor airflow value varies by 15% or more from the outdoor airflow setpoint.
- For constant volume systems included in the tenant scope of work, outdoor airflow shall be balanced to the design minimum outdoor air flow rate, as defined by ASHRAE Standard 62.1-2010 (with errata but without addenda) or higher, during construction. A current transducer on the supply fan, air flow switch, or similar monitoring device shall be provided for the ventilation system.

Naturally Ventilated Spaces or Mixed-Mode Systems When Mechanical Ventilation Is Inactivated

At a minimum, comply with the following:

- Monitor carbon dioxide (CO₂) concentrations within each thermal zone. CO₂ monitors must be between 3 and 6 feet above the floor and within the ventilation zone. CO₂ sensors may be mounted on the wall. Each thermal zone shall have its own CO₂ sensor.

EQ PREREQUISITE: ENVIRONMENTAL TOBACCO SMOKE CONTROL Required

ID&C

This prerequisite applies to:

- Commercial Interiors
- Retail
- Hospitality

Intent

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

Requirements

CI, RETAIL, HOSPITALITY

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

If outdoor space, public or private, is used for business purposes, including zero lot line, this space must follow the no smoking regulation outlined in this credit. Examples of such space include sidewalk seating, patios or decks, and/or stands for purchasing goods.

All projects must install signage within 10 feet of all building entrances indicating the no smoking policy.

EQ PREREQUISITE: CONSTRUCTION INDOOR AIR QUALITY MANAGEMENT PLAN

Required

ID&C

This prerequisite applies to:

- Commercial Interiors
- Retail
- Hospitality

Intent

To promote the comfort and well-being of construction workers and building occupants by minimizing indoor air quality (IAQ) problems associated with construction and renovation.

Requirements

CI, RETAIL, HOSPITALITY

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

During construction, meet or exceed all applicable 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.

Prohibit operation of permanently-installed air handling equipment during construction.

Exception: if permanently installed air handling equipment operates during construction, filtration media with a minimum efficiency reporting value (MERV) of 8, as determined by ASHRAE 52.2-2007 (with errata but without addenda¹³), must be installed at each return air grille and return or transfer duct inlet opening such that there is no bypass around the filtration media. Additionally, the permanently-installed air handling equipment shall have its intended final design filtration media installed in accordance with the manufacturer's recommendations. Replace all filtration media within the permanently-installed air handling equipment immediately before occupancy and remove all temporary construction filtration

¹³ Project teams wishing to use ASHRAE approved addenda for the purposes of this credit may do so at their discretion. Addenda must be applied consistently across all LEED credits.

EQ CREDIT: ENHANCED INDOOR AIR QUALITY STRATEGIES

ID&C

1-2 points

This credit applies to:

- Commercial Interiors (1-2 points)
- Retail (1-2 points)
- Hospitality (1-2 points)

Intent

To promote occupants' comfort, well-being and productivity by improving indoor air quality (IAQ).

Requirements

CI, RETAIL, HOSPITALITY

OPTION 1. (1 point)

Meet all of the following requirements:

Install permanent entryway systems at least 10 feet long in the primary direction of travel to capture dirt and particulates entering the building at regularly used exterior entrances. Acceptable entryway systems include permanently installed grates, grills and slotted systems that allow for cleaning underneath. Maintain all on a weekly basis. For Warehouse & Distribution Center projects, buildings with loading docks or garage facilities are not required to provide entryway systems at doors leading from the exterior to the loading dock/garage, but must provide them between these spaces and adjacent office areas.

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 average¹⁴ and at least 1 Pa (0.004 inches of water) when the doors to the rooms are closed.

Mechanically Ventilated Spaces or Mixed-Mode Systems When Mechanical Ventilation Is Activated:

Each ventilation system that supplies outdoor air must have particle filters or air cleaning devices to filter the outdoor air before it reaches occupied spaces. These filters or devices must have a Minimum Efficiency Reporting Value (MERV) of 13 or higher, in accordance with ASHRAE Standard 52.2-2007. Clean air filtration media shall be installed in all air systems after completion of construction and before occupancy. For Data Center projects, MERV 13 filtration is required for ventilation systems serving regularly occupied areas.

Naturally Ventilated Spaces or Mixed-Mode Systems When Mechanical Ventilation Is Inactivated

Determine that natural ventilation is an effective strategy for the project by following the flow diagram process shown in Figure 2.8 of the CIBSE Applications Manual AM10, March 2005, Natural Ventilation in Non-domestic Buildings.

For natural ventilation systems, demonstrate the system design for occupied spaces is in accordance with the strategies and design calculations set forth in the Chartered Institution of

¹⁴ **On average** is the average of the differentials of the room to each surrounding space, but no less than 1 Pa for each individual differential.

Building Services Engineers (CIBSE) Applications Manual AM10, March 2005, Natural Ventilation in NonDomestic Buildings.

For mixed mode ventilation systems, demonstrate the system design for occupied spaces is in accordance with the strategies set forth in CIBSE Applications Manual 13:2000, Mixed Mode Ventilation.

OPTION 2. (2 points)

Meet Option 1

AND

Choose at least one of the following:

Ensure, through the results of mathematical modeling [e.g. Computational Fluid Dynamics (CFD), Gaussian Dispersion Analyses] and/or physical modeling (e.g. wind tunnel, tracer gas) that the air contaminant concentrations at outdoor air intakes are less than the thresholds established for the project under worst case meteorological conditions. Demonstrate that outdoor air intake concentrations pollutants meet the limits in the following table OR demonstrate by calculations that indoor concentrations shall not exceed 2.5% of the exposure limits listed in the table¹⁵.

Pollutants	Maximum Outdoor Air Intake Concentrations	Standard
Regulated by National Ambient Air Quality Standard (NAAQS)	Allowable Annual average OR 8-hour or 24-hour average where an annual standard does not exist OR Rolling 3 month average	National Ambient Air Quality Standard (NAAQS)
Other air contaminants	2.5% of 8-hour and short term/ceiling limits	Most stringent of the following: Occupational Safety and Health Administration (OSHA) – Permissible Exposure Limits (PELs) American Council of Governmental Industrial Hygienists (ACGIH) – Threshold Limit Values (TLVs) National Institute of Occupational Health and Safety (NIOSH) – Recommended Exposure Limits (RELS)

Increase breathing zone outdoor air ventilation rates to all occupied spaces by at least 30% above the minimum rates required by ASHRAE Standard 62.1-2010 (with errata but without addenda¹⁶) as determined by EQ Prerequisite : Minimum Indoor Air Quality Performance.

Evaluate potential sources of additional air contaminants other than CO2. Install sensors to monitor the highest air contaminant.

Follow Section 4: Design Calculation in CIBSE AM10 to predict that room-by-room airflows will provide effective natural ventilation, defined as the minimum ventilation rates required by ASHRAE 62.1-2010 Chapter 6 (with errata but without addenda¹⁷).

¹⁵ Projects outside of the U.S. must follow the EPA guideline or a local equivalent, whichever is more stringent.

¹⁶ Project teams wishing to use ASHRAE approved addenda for the purposes of this credit may do so at their discretion. Addenda must be applied consistently across all LEED credits.

¹⁷ Project teams wishing to use ASHRAE approved addenda for the purposes of this credit may do so at their discretion. Addenda must be applied consistently across all LEED credits.

Mechanically Ventilated Spaces or Mixed-Mode Systems When Mechanical Ventilation Is Activated:

Monitor CO₂ concentrations within all densely occupied spaces. CO₂ monitors must be between 3 and 6 feet above the floor.

EQ CREDIT: LOW-EMITTING INTERIORS

This credit is available in the Pilot Credit Library

ID&C

1-3 points

This credit applies to:

- Commercial Interiors (1-3 points)
- Retail (1-3 points)
- Hospitality (1-3 points)

Intent

To reduce concentrations of chemical contaminants that can damage air quality, human health, productivity, and the environment.

Requirements

CI, RETAIL, HOSPITALITY

Total % Compliant	Points
≥50% and <70%	1
≥70% and <90%	2
≥90%	3

This credit uses a systems approach to minimizing chemical concentrations in indoor air. The building interior¹⁸ is organized into five systems: flooring, ceilings, walls, thermal and acoustic insulation, and furniture¹⁹. If furniture is included in the scope of the work, include furniture in the credit calculations.

For walls, ceilings, and flooring, each layer of the assembly must be evaluated for compliance, without insulation. Insulation is tracked separately.

Calculations:

For projects without furniture:

Total % Compliant = [(% compliant walls + % compliant ceilings + % compliant flooring + % compliant insulation) / 4]

For projects that include furniture:

Total % Compliant = [(% compliant walls + % compliant ceilings + % compliant flooring + % compliant insulation) + (% compliant furniture)] / 5

For Flooring, Walls, Ceilings²⁰, Insulation:

¹⁸ The building interior is defined as everything within the waterproofing membrane

¹⁹ The furniture and furnishings category is comprised of all the stand-alone furniture items purchased for the project including: individual and group seating; open-plan and private-office workstations; desks of all types, tables of all types; storage units, credenzas, bookshelves, filing cabinets and other case goods; wall-mounted, visual display products (e.g., markerboards and tackboards, excluding electronic display products); and miscellaneous items such as easels, mobile carts, freestanding screens, and movable partitions. Movable partitions include office furniture system cubicle panels that are typically integrated with work surfaces, desks, and storage furniture. Hospitality furniture is included as applicable to the project. Office accessories, such as desk top blotters, trays, tape dispensers, waste baskets, and all electrical items such as lighting and small appliances are excluded from the scope of this credit.

²⁰ For areas with multiple plane ceilings, all planes must be calculated.

Percent compliant = [(compliant surface area of layer 1 + compliant surface area of layer 2 + compliant surface area of layer 3 + ...) / (total surface area of layer 1 + total surface area of layer 2 + total surface area of layer 3 + ...)] x 100

Surface area shall be calculated based upon manufacturer's documentation for how to apply products.

For Furniture:

Percent compliant = [(0.5 x the cost of furniture compliant with §7.6.1 of ANSI/BIFMA e3-2010] + (the cost of furniture compliant with §7.6.2 of ANSI/BIFMA e3-2010) / total furniture cost] x 100²¹

If 90% of a system (floors, walls, ceilings, insulation, and furniture) meets the criteria, the system shall count as 100% compliant. If less than 50% of a system meets the criteria, the system shall count as 0% compliant.

To demonstrate compliance, a product or layer must meet the following requirements:

General Emissions Testing

Building products (excluding built-in cabinetry, architectural millwork and furniture) shall be tested and determined compliant in accordance with California Department of Public Health (CDPH) Standard Method V1.1-2010 using the applicable exposure scenario. The default scenario shall be the private office scenario. Classroom furniture may use the school classroom scenario.

Manufacturers stating compliance with the above requirements must also state which range of TVOCs the product falls under after 14 days (336 hours), measured as specified in the CDPH Standard Method v1.1:

- less than or equal to 0.5 mg/m³
- between 0.5 and 5.0 mg/m³
- greater than or equal to 5.0 mg/m³

For LEED projects outside North America, testing and evaluation with either the CDPH standard method or the German AgBB Testing and Evaluation Scheme (2010)²² together with ISO 16000-11 will be accepted²³. U.S. projects must follow the CDPH standard method.

A manufacturer or third-party certification claiming compliance of a product with any of the accepted standards stated above shall state the exposure scenario used to determine compliance. For wet-applied products (e.g., paints, coatings, adhesives, etc.) the claim of compliance shall state what thicknesses are included and, if applicable, what tints are included within the claim.

Built-In Cabinetry and Architectural Millwork²⁴

Built-in cabinetry and architectural millwork applied to walls are considered components of the wall category.

For built-in cabinetry and architectural millwork, compliance is determined based on the following criteria intended to limit the sources of indoor VOC contaminants:

²¹ Products meeting both criteria may be counted for each, but the total % compliant for furniture may not exceed 100%.

²² AGBB, Ausschuss zur gesundheitlichen Bewertung von Bauprodukten, Evaluation Procedure for VOCs from Building Products, Committee for Health-related Evaluation of Building Products –May 2010. www.umweltbundesamt.de/produkte-e/bauprodukte/agbb.htm and www.agbb-nik.de/index_en.php.

²³ The formaldehyde limit value of 10 µg/m³ at 28 days must also be met when using the AGBB alternative, as specified for class A+ in French compulsory VOC emissions class labeling. See the Décret no 2011-321 du 23 mars 2011 relatif à l'étiquetage des produits de construction ou de revêtement de mur ou de sol et des peintures et vernis sur leurs émissions de polluants volatils http://www.developpement-durable.gouv.fr/IMG/pdf/joe_20110325_0016.pdf, and the Arrêté relatif à l'étiquetage des produits de construction ou de revêtement de mur ou de sol et des peintures et vernis sur leurs émissions de polluants volatils.,

Composite woods constituting all or a portion of a product (e.g., countertops, and cabinetry with composite wood cores and internal components) must be constructed with materials documented to have low formaldehyde emissions that:

- Meet the California Air Resources Board ATCM for formaldehyde requirements for Ultra-Low-Emitting Formaldehyde (ULEF) resins or No-Added Formaldehyde based resins
- Steady-state concentrations obtained by European standard EN 717-1 can be used for showing compliance after multiplication with a correction factor of 1.63, as defined in a method comparison by CARB, see Appendix H, Section D at www.arb.ca.gov/regact/2007/compwood07/apph.pdf.”

Salvaged and re-used architectural millwork more than one-year old at the time of occupancy is considered compliant provided it meets the requirements for any site-applied paints, coatings, adhesives, and sealants.

Furniture

New furniture and furnishing items shall be tested following ANSI/BIFMA Standard Method M7.1-2011 . Comply with BIFMA e3-2010 Furniture Sustainability Standard, Sections 7.6.1 and 7.6.2 using either the concentration modeling approach or the emission factor approach. Model the test results using the open plan, private office, or seating scenario in ANSI/BIFMA M7.1 as appropriate. For classroom furniture, use the standard school classroom model in CDPH Standard Method v1.1. Documentation submitted for furniture shall state which modeling scenarios were used to determine compliance. Salvaged and re-used furniture more than one-year old at the time of use is considered compliant provided they meet the requirements for any site-applied paints, coatings, adhesives, and sealants.

Inherently non-emitting sources

Products that are inherently non-emitting sources of VOCs, specifically stone and ceramic, powder-coated, plated or anodized metals, glass without integral organic-based surface coatings, binders, or sealants, concrete without sealers or coatings, and clay brick are considered fully compliant without any VOC emissions testing.

Manufacturers' claims

Both first-party and third-party claims regarding product compliance shall follow the guidelines in CDPH SM V1.1-2010, Section 8. Organizations certifying manufacturers' claims regarding product compliance with the tests specified within this credit shall be ISO Guide 65 accredited.

Laboratory requirements

Laboratories conducting the tests specified within this credit shall be ISO/IEC 17025 accredited with relevant test methods included in their scopes of accreditation.

Healthcare projects only:

In addition to the requirements above, products must meet the following:

Adhesives and Sealants

Content: All site-applied adhesives and sealants shall contain no carcinogen or reproductive toxicant components present at more than 1% of total mass of the product as defined in the California Office of Environmental Health Hazard Assessment's (OEHHA) list entitled "Chemicals Known to the State to Cause Cancer" or the Reproductive Toxicity, Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65).

Insulation

Batt insulation products shall contain no added formaldehyde, including urea formaldehyde, phenol formaldehyde, and urea-extended phenol formaldehyde.

Exterior²⁵ Applied Products

Content: Adhesives, sealants, coatings, roofing and waterproofing materials applied on-site shall meet the VOC limits of California Air Resources Board (CARB) 2007 Suggested Control Measure (SCM) for Architectural Coatings and South Coast Air Quality Management District (SCAQMD) Rule 1168 effective July 1, 2005.

For any waterproofing, asphalt roofing needing repair, parking lot sealing or other high VOC emissions outdoor construction process, create a plan to manage fumes and avoid infiltration to occupied spaces. Comply with procedures established by NIOSH's Asphalt Fume Exposures During the Application of Hot Asphalt to Roofs (Publication No. 2003-112).

The following are prohibited and do not count toward total % compliant:

Projects shall not use hot-mopped asphalt installation techniques for roofing. Parking lots and other paved surfaces shall not use coal tar sealants.

Calculations:

For projects without furniture:

Total % Compliant = [(% compliant walls + % compliant ceilings + % compliant flooring + % compliant insulation + % compliant exterior applied products) / 5

For projects that include furniture:

Total % Compliant = [(% compliant walls + % compliant ceilings + % compliant flooring + % compliant insulation + % compliant exterior applied products + % compliant furniture) / 6

²⁵ The building exterior is defined as everything outside the waterproofing membrane.

EQ CREDIT: INDOOR AIR QUALITY ASSESSMENT

ID&C

1-2 points

This credit applies to:

- Commercial Interiors (1-2 points)
- Retail (1-2 points)
- Hospitality (1-2 points)

Intent

To promote the comfort and well-being of construction workers and building occupants by minimizing the indoor air quality (IAQ) problems associated with construction and renovation.

Requirements

CI, RETAIL, HOSPITALITY

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-Out²⁶ (1 point)

PATH 1. Pre-Occupancy

After construction ends, before occupancy and with all interior finishes installed, install new filtration media and perform a building flush-out 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 no higher than 80° F and relative humidity no higher than 60%.

OR

PATH 2. During Occupancy

If occupancy is desired before the flush-out is completed, the space may be occupied only after 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 outdoor air or the design minimum outdoor air rate determined in IEQ Prerequisite: Minimum Indoor Air Quality Performance, whichever is greater. During each day of the flush-out period, ventilation must begin at least 3 hours before occupancy and continue during occupancy. These conditions must be maintained until a total of 14,000 cubic feet per square foot of outdoor air has been delivered to the space.

OR

OPTION 2. Air Testing (2 points)

After construction ends and before occupancy, but under ventilation conditions typical for occupancy, conduct baseline IAQ testing using protocols consistent with the methods in the table below. Project teams must choose to follow either the EPA Compendium of Methods or ISO and cannot use a combination of the two. Retail projects may conduct the testing within 14 days of occupancy.

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

²⁶ All interior finishes, such as millwork, doors, paint, carpet, acoustic tiles, and movable furnishing such as workstations and partitions must be installed. Major VOC-related punch list items must be finished prior to flush-out.

Contaminant	Maximum Concentration	Maximum Concentration (Healthcare only)	EPA Compendium Method	ISO Method
Formaldehyde	27 parts per billion	20 micrograms per cubic meter	IP-6	ISO 16000-3
Particulates (PM10 for all buildings; PM 2.5 for buildings in EPA non-attainment areas ²⁷)	PM10 - 50 micrograms per cubic meter PM2.5 – 15 micrograms per cubic meter	20 micrograms per cubic meter	IP-10	ISO 7708
Ozone (for building in EPA non-attainment areas ¹⁷)	0.075 parts per million	0.075 parts per million		
Total volatile organic compounds (TVOCs)	500 micrograms per cubic meter	200 micrograms per cubic meter	IP-1	ISO 16000-6
Target Chemicals listed in Table 4-1 of CDPH Standard Method v1.1, except formaldehyde	CDPH Standard Method v1.1-2010 Allowable concentrations in Table 4-1	CDPH Standard Method v1.1-2010 Allowable concentrations in Table 4-1	IP-6 and IP-1	ISO 16000-3 and 16000-6

For each sampling point where the maximum concentration limits are exceeded take corrective action and retest the noncompliant concentrations. Repeat until all requirements are met. When retesting noncompliant building areas, it is recommended that project teams take samples from the same locations as in the first test.

Conduct the air sample testing as follows:

All measurements must be conducted before occupancy, but during normal occupied hours with the building ventilation system started at the normal daily start time and operated at the minimum outdoor air flow rate for the occupied mode throughout the test.

All interior finishes, such as millwork, doors, paint, carpet, acoustic tiles, and movable furnishing such as workstations and partitions must be installed.

²⁷ **EPA Non-attainment areas** are areas of the U.S. (by county) where air pollution levels consistently exceed the national ambient air quality standards (NAAQS) on an annualized basis. Projects outside of the U.S. must follow the EPA guideline or a local equivalent, whichever is more stringent.

The number of sampling locations depends 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.

EQ CREDIT: THERMAL COMFORT

ID&C

1 point

This credit applies to:

- Commercial Interiors (1 point)
- Retail (1 point)
- Hospitality (1 point)

Intent

To promote occupants' productivity, comfort and well-being by providing quality thermal comfort systems.

Requirements

Thermal Comfort Design

CI, RETAIL, HOSPITALITY

Design heating, ventilating and air conditioning (HVAC) systems and the building envelope to meet the requirements of ASHRAE Standard 55-2010, Thermal Comfort Conditions for Human Occupancy (with errata but without addenda²⁸). Demonstrate design compliance in accordance with Section 6.2 Documentation.

For natatoriums, demonstrate compliance with ASHRAE HVAC Applications Handbook, 2011 Edition, Chapter 5, Places of Assembly, Typical Natatorium Design Conditions (with errata but without addenda²⁹).

Provide heating, ventilating and air conditioning (HVAC) systems and controls designed to monitor and control zone relative humidity to 65% or less during all design load conditions. Monitoring and control of the zone relative humidity applies when zones are both occupied and unoccupied.

AND

Thermal Comfort Control

CI, RETAIL, HOSPITALITY

For at least 50% of occupants, provide thermal comfort controls³⁰ that enable adjustments to meet individual needs and preferences.

Operable windows may be used in lieu of 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 62.1-2010 (with errata but without addenda³¹).

²⁸ Project teams wishing to use ASHRAE approved addenda for the purposes of this credit may do so at their discretion. Addenda must be applied consistently across all LEED credits.

³⁰ Individual comfort controls could include UFAD individual diffusers and thermally powered diffusers. Operable windows may be used in lieu of controls for occupants located 25 feet inside and 10 feet to either side of the operable part of a window. The areas of operable window must meet the requirements of ASHRAE 62.1-2010 (with errata but without addenda²). Individual comfort plug-in devices are acceptable for meeting the intent of this credit.

³¹ Project teams wishing to use addenda approved by ASHRAE for the purposes of this credit may do so at the project team's discretion. Addenda must be applied consistently across all LEED credits.

For all individual spaces and shared multi-occupant spaces, provide comfort controls that enable adjustments to meet group needs and preferences.

Conditions for thermal comfort are described in ASHRAE Standard 55-2010 (with errata but without addenda²) and include the primary factors of air temperature, radiant temperature, air speed and humidity.

EQ CREDIT: INTERIOR LIGHTING

ID&C

1-2 points

This credit applies to:

- Commercial Interiors (1-2 points)
- Retail (2 points)
- Hospitality (1-2 points)

Intent

To promote occupants' productivity, comfort and well-being by providing high-quality lighting.

Requirements

CI, HOSPITALITY

Meet the requirements of Section 9.5, Building Area Method; or Section 9.6 Space-by-Space Method; of ANSI/ASHRAE/IES Standard 90.1-2010 (with errata but without addenda).

AND

Lighting Control (1 point)

For at least 90% of individual spaces provide individual lighting controls that enable occupants to adjust the lighting to suit their individual tasks and preferences, with at least three lighting levels or scenes. For example, in a private office or workstation, ambient lighting used along with task lighting meets the requirements.

For all shared multi-occupant spaces, provide multi-zone control systems that enable occupants to adjust the lighting to meet group needs and preferences, with at least three lighting levels or scenes (on, off, mid-level³²).

Lighting for any active presentation (as in a conference room or classroom, but not in a corridor) or projection wall must be separately controlled from the rest of the lighting in the space.

Switches or manual controls must be within the space the controlled luminaires are located and in a location that a person operating the controls can see via a direct line of sight of the luminaires being controlled.

AND/OR

Lighting Quality (1 point)

Incorporate at least 4 of the following interior lighting features for 90% of the regularly occupied spaces. There are two categories, hardware and design.

Hardware:

- Use light fixtures with a luminance (surface brightness) of less than 12,500cd/m² (approximately the surface luminance of a bare T8 lamp) above 45 degrees from nadir (straight down). Exceptions include:
 - a) Wallwash fixtures properly aimed at walls, as specified by manufacturer's data

³² Mid level is 40-60% of the maximum

- b) Indirect uplighting fixtures, provided there is no view down into these uplights from a regularly occupied space above.
- Use light sources (lamps, LEDs, etc.) that have a CRI of 80 or higher for 95% or more of the associated connected lighting load. Lamps or fixtures specifically included in the design to provide colored lighting for effect are exempt.
- For 60% of the connected lighting load, use lamps that last a minimum of 24,000 hours AND for 90% of the connected lighting load, use lamps that last at least 6,000 hours, per manufacturer's data.

Design:

- Provide suspended, wall-mounted, free-standing or partition-mounted indirect or direct/indirect ambient lighting for 75% of the connected lighting load.
- Calculate average surface reflectances so that the averaged total surface brightness per surface exceeds all of the following thresholds:
 - Ceilings (85%):

$$[(\text{reflectance of ceiling 1} * \text{surface area of ceiling 1}) + (\text{reflectance of ceiling 2} * \text{surface area of ceiling 2}) + \dots] / \text{total ceiling surface area} \geq 0.85$$
 - Walls (60%):

$$[(\text{reflectance of wall 1} * \text{surface area of wall 1}) + (\text{reflectance of wall 2} * \text{surface area of wall 2}) + \dots] / \text{total wall surface area} \geq 0.60$$
 - Floors (30%):

$$[(\text{reflectance of floor 1} * \text{surface area of floor 1}) + (\text{reflectance of floor 2} * \text{surface area of floor 2}) + \dots] / \text{total floor surface area} > 0.30$$
- If furniture is included in the scope of work, calculate average surface reflectances so that the averaged total surface brightness for work surfaces and movable partitions exceed the following thresholds:
 - Work surfaces (50%):

$$[(\text{reflectance of work surface 1} * \text{surface area of work surface 1}) + (\text{reflectance of work surface 2} * \text{surface area of work surface 2}) + \dots] / \text{total work surface area} > 0.50$$
 - Movable Partitions (50%):

$$[(\text{reflectance of moveable partition 1} * \text{surface area of moveable partition 1}) + (\text{reflectance of moveable partition 2} * \text{surface area of moveable partition 2}) + \dots] / \text{total moveable partition area} > 0.50$$
- Provide a lighting design that has an average wall surface illuminance to average work plane (or surface if defined) illuminance ratio that does not exceed 1:10.
- Provide a lighting design that has an average ceiling³³ illuminance to work-surface illuminance ratio that does not exceed 1:10

RETAIL

Meet the requirements of Section 9.5, Building Area Method; or Section 9.6 Space-by-Space Method; of ANSI/ASHRAE/IES Standard 90.1-2010 (with errata but without addenda).

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

Provide the ability to reduce the ambient light levels in the sales area(s) to a mid-level (40-60% of maximum).

³³ The area of the ceiling that shall affect a workstation in an open plan environment shall extend 2x the ceiling height from the center of the workstation (may be drawn and calculated as a rectangle, square, or circle in plan)

EQ CREDIT: DAYLIGHT

ID&C

1-3 points

This credit applies to:

- Commercial Interiors (1-3 points)
- Retail (1-3 points)
- Hospitality (1-3 points)

Intent

To provide building occupants with a connection between indoor spaces and the outdoors through the introduction of daylight and views into the regularly occupied areas of the building. To reduce the use of electrical lighting and give building occupants a circadian stimulus and a connection to the outdoors by admitting daylight into regularly occupied areas.

Requirements

CI, RETAIL, HOSPITALITY

For all daylighting, provide manual or automatic (with manual override) glare control devices (e.g. blinds, shades or curtains) for all instructional and regularly occupied spaces to give occupants visual privacy, security, and block any glare from daylight.

AND

Project teams must choose one of the following options and cannot use a combination of the three.

OPTION 1. Simulation - Daylight Autonomy (2-3 points)

Regularly Occupied Spaces, Classrooms, and Core Learning Spaces	Points
75%	2
90%	3

Demonstrate through computer simulations that the applicable spaces achieve a minimum DA value of 50%, based on an annual illuminance of 300 lux when blinds are operated to block direct sunlight.

Demonstrate that all regularly occupied spaces achieve a maximum DA value of 5%, based on an illuminance level of 3000 lux when blinds are operated to block direct sunlight.

Calculation grids must be no more than 3 feet square and at the appropriate work plane height (30 inches above finished floor if otherwise undefined).

OR

OPTION 2. Simulation - Illuminance Calculations (1-2 points)

Regularly Occupied Spaces, Classrooms, and Core Learning Spaces	Points
75%	1
90%	2

Demonstrate through computer simulations that the applicable spaces achieve illuminance levels between 300 lux and 3000 lux for both of the following sky conditions:

- 9:00 am equinox on a clear-sky day (solar time)
- 3:00 pm equinox on a clear-sky day

Illuminance intensity for sun (direct component) and sky (diffuse component) for clear sky and overcast conditions for those time periods shall be derived from the local weather data, or TMY weather tapes for the nearest city, first by selecting the two days within 15 days of September 21st and March 21st that represent the clearest sky and most overcast sky condition, and then averaging the hourly value for the appropriate spring and fall hour.

OR

OPTION 3. Measurement (1 point)

Regularly Occupied Spaces, Classrooms, and Core Learning Spaces	Points
75%	1

Demonstrate through records of indoor illuminance measurements that the applicable spaces have illuminance levels between 300 lux and 3000 lux during any given hour between 9:00 a.m. and 3:00 p.m. solar time.

Measurements may be taken during any regularly occupied month, but must be taken twice, at least six months apart.

Measurements must be taken on a maximum 10-foot-square grid for all occupied spaces larger than 150 square feet and on a maximum 3-foot-square grid for all smaller spaces that are recorded on building floor plans.

EQ CREDIT: QUALITY VIEWS

This credit is available in the Pilot Credit Library

ID&C

1 point

This credit applies to:

- Commercial Interiors (1 point)
- Retail (1 point)
- Hospitality (1 point)

Intent

To give building occupants a connection with the natural outdoor environment by providing quality views.

Requirements

CI, RETAIL, HOSPITALITY

Achieve a direct line of sight to the outdoors via vision glazing for 75% of all regularly occupied spaces. Regularly occupied areas that can be counted toward this credit must meet the following criteria:

- In plan view, the area is within sight lines drawn from perimeter vision glazing to provide at least an 11 degree horizontal angle of view to the perimeter vision glazing.
- In section view, the area is within sight lines drawn from perimeter vision glazing to provide at least an 11 degree vertical angle of view to the perimeter vision glazing.

The view from each area must include objects at least 25 feet outside the vision glazing, objects lit with daylight that are exposed to direct sunlight or display wind movement, and natural elements (e.g. sky, vegetation, water, people, animals, or other random movement). Interior atria may be used to meet up to 30% of the required area.

For private offices, the entire square footage of the office may be counted if 80% of the area satisfies the line-of-sight criteria. For other multi-occupant spaces, only the actual square footage that satisfies the line-of-sight criteria may be counted.

Lines of sight may be drawn through interior glazing. Any permanent interior obstructions (e.g. lab hoods, fixed partitions) must be considered as limiting the view angle. Demountable opaque full-height or partial-height partitions must be included in calculations and line-of-sight drawings. Movable furniture and partitions³⁴ are not included in the credit calculations.

Fixed window treatments (e.g. ceramic frit patterns, wire meshes, bars, grill-work) in the field of view may compromise the quality of the view. The project team must demonstrate that such fixed treatments do not compromise the quality of view. Occupants should be able to see movement, discern a human face and not have to look at moiré patterns through the fixed window treatments.

Vision glazing must be clear glazing with a minimum visible light transmittance of at least 60%.

³⁴ **Movable furniture and partitions** are those that can be moved to provide access to the view by the user without the need for tools or assistance from special trades and facilities management.

EQ CREDIT: ACOUSTIC PERFORMANCE

[This credit is available in the Pilot Credit Library](#)

ID&C

2 points

This credit applies to:

- Commercial Interiors (2 points)
- Hospitality (2 points)

Intent

To provide workspaces and classrooms that promote occupants' well-being, productivity, and communications through effective acoustic design.

Requirements

CI, HOSPITALITY

For all occupied spaces, meet the following requirements for room noise levels, speech privacy and sound isolation performance of constructions, limiting reverberation time and reverberant noise buildup, paging, masking and sound reinforcement systems, as applicable to the space.

Projects that cannot meet the requirements due to limited scope of work must submit a detailed description justifying their design decisions. Projects required to observe historic preservation requirements may document special circumstances in a report justifying their design decisions.

Room Noise Levels

Evaluate noise from building mechanical systems. Room noise levels shall fall within the sound level ranges shown in either the 2011 ASHRAE Handbook, HVAC Applications, Chapter 48, Table 1, or the AHRI Standard 885-2008, Table 15. Conformance measurements for room sound levels shall be measured using a sound level meter that conforms to ANSI S1.4 for type 1 (precision) or type 2 (general purpose) sound measurement instrumentation

Comply with design criteria for HVAC noise levels in occupied spaces resulting from the sound transmission paths listed in Table 6 in the ASHRAE 2011 Applications Handbook.

Speech Privacy and Sound Isolation

Speech privacy shall be measured in terms of the Articulation Index (AI), Privacy Index (PI), or Speech Transmission Index (STI). Meet the following speech privacy goals for enclosed rooms. Normal speech privacy shall generally be provided between all enclosed, private spaces. Confidential speech privacy shall be achieved between spaces occupied by different tenants, and for all other spaces deemed "confidential" by building occupants.

Speech Privacy Goal	AI	PI	STI
Normal	<0.15	>85%	<0.19
Confidential ³⁵	<0.05	>95%	<0.12

³⁵ To achieve confidential speech privacy, the sum of the composite STC and the A-weighted background noise level shall be at least 75. This assumes a "conversational" voice level of 60 dBA at three feet. For "raised" and "loud" voice levels, add 5 to 10 dBA to the total, respectively.

Where building codes include STC ratings, meet or exceed requirements where they are applicable. In lieu of a building code, meet the following STC_C ratings:

Adjacency Combinations ³⁶		STC_C
Residence (within a multi-family residence) or Hotel/Motel Room	Residence or Hotel/Motel Room	55
Residence or Hotel/Motel Room	Common Hallway/Stairway	50
Residence or Hotel/Motel Room	Retail	60
Retail	Retail	50
Standard Office	Standard Office	45
Executive Office	Executive Office	50
Conference Room	Conference Room	50
Office/Conference Room	Hallway/Stairway	50
Mechanical Equipment Room	Occupied Area	60

As applicable, use the following table to estimate the composite STC rating (STC_C) of interior partitions.

Weaker element (% wall area)	STC of door or window	(1) layer 5/8" GWB each side, metal stud (STC 40)	(1) layer 5/8" GWB each side, metal stud with insulation (STC 45)	(2) layers 5/8" GWB each side, metal stud with insulation (STC 50)
Open door (10%)	0	10	10	10
Open door (20%)	0	7	7	7
Un-gasketed door (10%)	20	30	30	30
Un-gasketed door (20%)	20	27	27	27
1/8" glazing (10%)	26	35	36	36
1/8" glazing (20%)	26	33	33	33
Gasketed door or 1/4" glazing (20%)	30	37	39	40
Gasketed door or 1/4" glazing (10%)	30	35	36	37
1/4" laminated glazing (10%)	35	39	42	44
1/4" laminated glazing (20%)	35	39	40	41
Acoustically rated STC-45 door or insulating glazing with 4" airspace (10%)	45	40	45	50
Acoustically rated STC-45 door or insulating glazing with 4" airspace (20%)	45	40	45	49

Limiting Reverberation Time and Reverberant Noise Buildup

Meet the reverberation time requirements in the following table, adapted from Table 9.1 in the Performance Measurement Protocols for Commercial Buildings³⁷:

Room Types	Applications	T60 (sec)
Apartments and condominiums		< 0.6

³⁶ The sound isolation ratings are considered the composite sound isolation performance values associated with the demising constructions, whether they are the floor/ceiling or wall partitions. Details such as the ceiling plenum conditions, windows, doors, penetrations through the constructions, etc. shall be addressed to provide this composite sound isolation rating. The values will provide Normal speech privacy (except at corridor walls with doors), assuming a background sound level of at least 30 dBA.

³⁷ Adapted from ASHRAE (2007d), ASA (2008), ANSI (2002), and CEN (2007)

Hotels/Motels	Individual rooms or suites	< 0.6
	Meeting/banquets rooms	< 0.8
Office Buildings	Executive and private offices	< 0.6
	Conference rooms	< 0.6
	Teleconference rooms ≤ 25	< 0.6
		≤ 40
	Open-plan offices without sound masking	< 0.8
	Open-plan offices with sound masking	0.8
Courtrooms	Unamplified speech	< 0.7
	Amplified speech	< 1.0
Performing Arts Spaces	Drama theaters, concert and recital halls	varies by application
Laboratories	Testing/research with minimal speech communication	< 1.0
	Extensive phone use and speech communication	< 0.6
Churches, Mosque, Synagogue	General assembly with critical music programs	varies by application
Libraries		< 1.0
Indoor Stadiums, Gymnasiums	Gymnasiums and natatoriums	< 2.0
	Large seating-capacity spaces with speech amplification	< 1.5

Paging, Masking and Sound Reinforcement Systems

Sound Reinforcement

1. All large conference rooms and auditoria seating more than 50 persons shall consider sound reinforcement and AV playback capabilities, depending on their use. If it is determined that these systems are not required, the design team must submit a detailed description justifying their design decisions.
2. Sound reinforcement system shall achieve a minimum Speech Transmission Index (STI) of 0.60 or a Common Intelligibility Scale (CIS) rating 0.77 at representative points within the area of coverage to provide acceptable intelligibility from the system.
3. Performance of the system shall achieve:
 - 70 dBA minimum sound level
 - Maintain sound level coverage within +/- 3 dB at the 2000 Hz octave band throughout the space.
4. Upgraded sound isolation shall be considered for acoustically-sensitive spaces that are adjacent to spaces with sound reinforcement systems.

Masking Systems

For projects that use masking systems, meet the following:

1. Systems shall be designed for levels that do not exceed 48 dBA.
2. Loudspeaker coverage shall provide uniformity of +/- 2 dBA
3. Suitable spectra shall be designed to effectively mask speech spectra³⁸.

³⁸ "Masking speech in open-plan offices with simulated ventilation Noise: Noise level and spectral composition Effects on Acoustical Satisfaction", Veitch, J.A. Bradley, J.S.; Legault, L.M. Norcross, S., and Svec, J.M. IRC – IR – 846, National Resource Council Canada, April 2002.

PERFORMANCE

PF PREREQUISITE: TENANT-LEVEL ENERGY METERING Required

ID&C

This prerequisite applies to:

- Commercial Interiors
- Retail
- Hospitality

Intent

To provide accurate tenant level energy-use information to support energy management and identify opportunities for additional energy-saving investments.

Requirements

CI, RETAIL, HOSPITALITY

Install new or use existing tenant-level electricity and heating/cooling energy resource meters. Utility owned meters are acceptable.

Commit to sharing with USGBC energy consumption data and electrical demand data acquired from energy resource meters on the project, extending for a five year period beginning on the date the Project accepts LEED certification from the Green Building Certification Institute (GBCI) or typical occupancy.

PF PREREQUISITE: FUNDAMENTAL COMMISSIONING AND VERIFICATION Required

ID&C

This prerequisite applies to:

- Commercial Interiors
- Retail
- Hospitality

Intent

To support the design, construction, and eventual operation of a project that meets the owner projects requirements related to energy, water, indoor environmental quality, and durability.

Requirements

CI, RETAIL, HOSPITALITY

The following requirements only apply to systems included within the project's scope of work (e.g., when the exterior envelope is not included in the scope of the project).

Commissioning Process Scope

Projects must complete the following commissioning process (CxP) activities in accordance with ASHRAE Guideline 0-2005, ASHRAE Guideline 1.1-2007 for HVAC&R Systems and NIBS Guideline 3-2006 for Exterior Enclosures as they relate to energy, water, indoor environmental quality and durability:).

- Develop Owner Project Requirements (OPR),
- Develop a Basis of Design (BOD)
- Review the OPR, BOD and project design
- Develop and implement a Cx plan;
- Incorporate Cx requirements into the construction documents;
- Construction checklists
- Develop system test procedures
- Verify system test execution
- Maintain an issues and benefit log throughout the commissioning process;
- Prepare a final Cx process report.
- Document all findings and recommendations and report directly to the owner throughout the process

Projects must also complete the following activities in accordance with the LEED-specific guidance below/

- Designate a Commissioning Authority (CxA)
- Prepare and maintain a Current Facilities Requirements and Operations and Maintenance Plan documenting information necessary for efficient buildings operations

Systems and Assemblies to be included in the Commissioning Process

All commissioning activities must address the following systems and assemblies within the tenant project scope of work as they relate to energy, water, indoor environmental quality, and durability:.

- Building envelope
- Mechanical
- Electrical
- Renewable energy
- Plumbing

- District energy systems (DES) as directed by the LEED DES requirements

Qualifications for Commissioning Authority (CxA)

The individual serving as the CxA must meet the following qualifications:

- Documented commissioning process (CxP) experience with at least two (2) building projects with similar CxP scope of work;
- Documented CxA experience must include pre-design or early design phase involvement through at least 10 months of occupancy;
- Independent of the project design and construction management activities;
- A qualified employee of the owner or an independent consultant who is not part of the project's design or construction team or disinterested subcontractor of the design or construction team who reports their findings to the owner.
- For projects smaller than 20,000 gross square feet, the CxA may be a qualified employee of the design or construction team not directly responsible for design or construction activities

Guidelines for Current Facilities Requirements and Operations and Maintenance Plan

These documents must include, at a minimum:

- Sequence of operations for the building
- Building occupancy schedule
- Equipment run-time schedule
- Set points for all HVAC equipment
- Set lighting levels throughout the building
- Minimum outside air requirements
- Any changes in schedules or set points for different seasons, days of the week and times of the day
- Systems narrative describing the mechanical and electrical systems and equipment in the building
- Preventative maintenance plan for building equipment described in the systems narrative
- An ongoing commissioning process program to include:
 - Periodic commissioning requirements
 - Ongoing commissioning tasks
 - Continuous tasks for critical facilities

Deliverables by Project Phase

The deliverables below are required to be produced at the project phase identified:

- Pre-design
 - Initial Owners Project Requirement
- Schematic Design
 - Updated Owners Project Requirement
 - Initial Basis of Design
- Design Development
 - Updated Owners Project requirement
 - Updated Basis of Design
 - Identified CxA and their qualifications
 - Initial Cx Plan
 - Review of the OPR, BOD, and project design
 - Issues and Benefits Log
- Construction Documents
 - Updated Owner Project Requirements
 - Updated Basis of Design
 - Updated Cx Plan
 - Review the OPR, BOD, and the project design
 - Issues and Benefits Log
 - Construction documents with Cx requirements
 - Construction checklists

- Construction
 - Updated Owner Project Requirement
 - Updated Basis of Design
 - Issues and Benefits Log
 - System test procedures
 - Verification of systems test execution
- Occupancy and Operation
 - Updated Owners Project requirement
 - Updated Basis of Design
 - Updated Issues Log
 - Commissioning Report

PF CREDIT: ENHANCED COMMISSIONING

ID&C

5 points

This credit applies to:

- Commercial Interiors (5 points)
- Retail (5 points)
- Hospitality (5 points)

Intent

To further support the design, construction, and eventual operation of a project that meets the owner project requirements related to energy, water, indoor environmental quality and durability.

Requirements

CI, RETAIL, HOSPITALITY

Implement, or have a contract in place to implement, the following additional commissioning process activities that are within the tenant's scope of work, in addition to the requirements of PF Prerequisite: Fundamental Commissioning and Verification.

The following requirements only apply to systems included within the project's scope of work (e.g., when the exterior envelope is not included in the scope of the core and shell project).

Commissioning Process Scope

Projects must complete the following commissioning process (CxP) activities in accordance with ASHRAE Guideline 0-2005, ASHRAE Guideline 1.1-2007 for HVAC&R Systems and NIBS Guideline 3-2006 for Exterior Enclosures as they relate to energy, water, indoor environmental quality and durability:

- Review contractor submittals
- Include systems manual requirements in construction documents
- Include operator and occupant training requirements in construction documents
- Verify systems manual updates and delivery
- Verify operator and occupant training delivery and effectiveness
- Verify seasonal testing
- Review building operations 10 months of substantial completion.
- Develop an on-going commissioning process program

Systems and Assemblies to be included in the Commissioning Process

All commissioning activities must address the following systems and assemblies within the tenant project scope of work as they relate to energy, water, indoor environmental quality and durability:

- Building Envelope
- Mechanical
- Electrical
- Plumbing
- Renewable energy
- District energy systems (DES) as directed by the LEED DES requirements

Qualifications for Commissioning Authority (CxA)

The Individual to serving as the CxA must meet the following qualifications:

- Documented Cx experience with at least two (2) building projects with similar Cx scope of work.
- Independent of the project design and construction teams directly responsible for design and construction activities;
- A qualified employee of the owner or an independent consultant who is not part of the project's design or construction teams or disinterested subcontractor of the design or construction team who reports their findings to the owner.

Deliverables by Project Phase

The deliverables below are required to be produced at the project phase identified.

- Design Development
 - Systems manual structure
 - Operator and occupant training requirements
- Construction Documents
 - Systems manual requirements
 - Operator and occupant training requirements
- Construction
 - Submittal reviews
 - Submittal review log
- Occupancy and Operations
 - Systems manual
 - Systems manual evaluation
 - Operator and occupant training
 - Operator and occupant training evaluation
 - Seasonal testing
 - Seasonal testing verification
 - 10 months building operations review
 - Commissioning issue resolution plan
 - On-going commissioning process plan

PF CREDIT: ADVANCED ENERGY METERING

[This credit is available in the Pilot Credit Library](#)

ID&C

2 points

This credit applies to:

- Commercial Interiors (2 points)
- Retail (2 points)
- Hospitality (2 points)

Intent

To provide accurate building level and system level energy-use information to support energy management and identify opportunities for additional energy-saving investments.

Requirements

CI, RETAIL, HOSPITALITY

Install *advanced energy metering*. This is defined as:

- Meters that are permanently installed, record at intervals of 1 hour or less, and transmit data to a remote location. Electrical meters shall record both consumption and demand. Whole-building electrical meters should record power factor if appropriate.
- Data collection system that uses a LAN, Building Automation System, wireless network, or some other similar communication infrastructure.
- Data storage with the capability of storing all meter data for at least 18 months.
- Remotely-accessible data retrieval that provides energy use management features that include, as a minimum, reporting of hourly, daily, monthly, and annual energy use data for all meters in the system.

Commit to sharing with USGBC energy consumption data and electrical demand data acquired from all energy resource meters on the project, extending for a five year period beginning on the date the Project accepts LEED certification from the Green Building Certification Institute (GBCI) or typical occupancy.

AND, select the appropriate project type and Option below:

OPTION 1. Prescriptive Approach (2 points)

OPTION 1. Prescriptive Approach		
Project Type	Metering Scope	Requirements
Most project types	Tenant space, whole-building energy	Install advanced energy metering for all whole-building energy sources AND major end-uses that represent 10% or more of the total annual consumption of the tenant space
Projects < 5,000 square feet	Tenant space, whole-building energy	Install advanced energy metering for electricity and heating/cooling energy sources AND major end-uses that represent 10% of the total annual consumption of the tenant space.

OR

OPTION 2. Performance Approach (2 points)

OPTION 2. Performance Approach		
Project Type	Metering Scope	Requirements
Most project types	Tenant space, whole-building energy	Install <i>cost-effective advanced energy metering</i> . <i>Cost-effective</i> is defined as: Incremental cost for the entire system (over and above monitoring and control systems already installed in the building and/or required in PF Prerequisite: Building-Level Metering) up to 40% of the projected total annual energy cost for all energy sources consumed in the tenant space
Projects < 5,000 square feet	Tenant space, whole-building energy	AND Incremental cost (over and above monitoring and control systems already installed in the building and/or required in PF Prerequisite: Building-Level Metering) of metering any individual tenant energy end-use or portion of end-use that represents 10% or more of the total annual energy consumption of the tenant space up to 40% of the total annual energy cost for that end-use or portion of end-use.

FOR BOTH OPTIONS:

Assess and install metering according to the following prioritization:

1. Whole-building energy sources consumed within the tenancy.
2. Tenant energy end-uses, proceeding from the largest to the smallest based on projected energy consumption.

Typical energy sources may include:

- Electricity
- Natural Gas
- Propane
- Steam
- Chilled water
- On-site Renewable Generation
- Geothermal or Ground Source Energy

Typical end-uses may include:

- HVAC systems and equipment
- Lighting
- Plug loads
- Vertical transportation
- Processes
- Other end-uses as appropriate to the facility type

PF CREDIT: RECONCILE PROJECTED AND ACTUAL ENERGY PERFORMANCE

[This credit is available in the Pilot Credit Library](#)

ID&C

2 points

This credit applies to:

- Commercial Interiors (2 points)
- Retail (2 points)
- Hospitality (2 points)

Intent

To provide for the ongoing accountability of building energy consumption over time.

Requirements

CI, RETAIL, HOSPITALITY

Develop and implement a tenant-level Measurement & Verification (M&V) program in accordance with Option D: Calibrated Simulation (either Savings Estimation Method 1 or 2), as specified by the International Performance Measurement and Verification Protocol (IPMVP), Concepts and Options for Determining Energy Savings in New Construction, Volume III, 2006.

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

An executed contract(s) must be in place for all services necessary to execute the M&V program, and requires the submittal of the final M&V report to the project team and building owner, including:

- Reconciliation between actual tenant energy use and tenant energy use projected by EA Credit 1.
- Discussion of reconciliation and variances between actual tenant energy use and tenant energy use projected by EA Credit 1.
- Actual avoided tenant energy use compared to the EA Credit 1 baseline.
- Avoided tenant energy costs compared to the EA Credit 1 baseline.
- Avoided tenant GHG emissions compared to the EA Credit 1 baseline.
- Recommendations for any remedial or future action.

INNOVATION

IN CREDIT: INNOVATION

ID&C

1-6 points

This credit applies to:

- Commercial Interiors (1-6 points)
- Retail (1-6 points)
- Hospitality (1-6 points)

Intent

To provide projects the opportunity to achieve exceptional performance above the requirements set by the LEED Green Building Rating System and/or innovative performance in categories not specifically addressed by the LEED Green Building Rating System.

Requirements

CI, RETAIL, HOSPITALITY

Credit can be achieved through a combination of Innovation, Pilot, and Exemplary Performance strategies as described below:

OPTION 1. Innovation (1 point)

Achieve significant, measurable environmental performance using a strategy not addressed in the LEED Green Building Rating System.

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.

AND/OR

OPTION 2. Pilot (1 point)

Attempt and achieve one pilot credit from the USGBC's LEED Pilot Credit Library.

AND/OR

OPTION 3. Additional Strategies (1- 4 points)

- **Innovation (1- 4 points)**
Defined in Option 1 above.
- **Pilot (1- 4 points)**
Defined in Option 2 above.
- **Exemplary Performance (1-2 points)**
Achieve exemplary performance in an existing LEED 2012 prerequisite or credit that allows exemplary performance as specified in the LEED Reference Guide 2012 Edition. An exemplary performance point is typically earned for achieving double the credit requirements and/or achieving the next incremental percentage threshold of an existing credit in LEED.

REGIONAL PRIORITY

RP CREDIT: REGIONAL PRIORITY

ID&C

1-4 points

This credit applies to:

- Commercial Interiors (1-4 points)
- Retail (1-4 points)
- Hospitality (1-4 points)

Intent

To provide an incentive for the achievement of credits that address geographically specific environmental, social equity, and public health priorities.

Requirements

CI, RETAIL, HOSPITALITY

Earn up to four of the six Regional Priority credits. These credits have been identified by the USGBC chapters as having additional importance for the 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, up to a maximum of four.