LEED V5

RATING SYSTEM

INTERIOR DESIGN AND CONSTRUCTION: COMMERCIAL INTERIORS

FINAL DRAFT
FEBRUARY 2025

SCORECARD

LEED v5 for Design and Construction: Commercial Interiors

			Impact Areas		
			Decarbonization	Quality of Life	Ecosystem Conservation & Restoration
Integrative Process, Planning & Assessments (IP)		**1**			
IPp1	Climate Resilience Assessment	Required		*	
IPp2	Human Impact Assessment	Required		*	
IPp3	Carbon Assessment	Required	*		
IPc1	Integrative Design Process	1	*	*	*
Location & Transportation (LT)		**14**			
LTc1	Compact and Connected Development	8	*	*	*
LTc2	Transportation Demand Management	4	*	*	
LTc3	Electric Vehicles	2	*		
Water Efficiency (WE)		**10**			
WEp1	Minimum Water Efficiency	Required	*		*
WEc1	Water Metering and Leak Detection	2	*	*	*
WEc2	Enhanced Water Efficiency	8	*		*
Energy & Atmosphere (EA)		**31**			
EAp1	Estimated Energy Use and Operational Carbon Projection	Required	*		
EAp2	Minimum Energy Efficiency	Required	*		
EAp3	Fundamental Commissioning	Required	*		
EAp4	Energy Metering and Reporting	Required	*		
EAp5	Fundamental Refrigerant Management	Required	*		
EAc1	Electrification	5	*		
EAc2	Enhanced Energy Efficiency	12	*		
EAc3	Renewable Energy	5	*		
EAc4	Enhanced Commissioning	4	*		
EAc5	Grid Interactive	3	*		
EAc6	Enhanced Refrigerant Management	2	*		
Materials & Resources (MR)		**26**			
MRp1	Planning for Zero Waste Operations	Required	*		*
MRp2	Quantify and Assess Embodied Carbon	Required	*		
MRc1	Interior Materials Reuse	4	*		*
MRc2	Reduce Embodied Carbon	4	*		
MRc3	Low-Emitting Materials	4		*	
MRc4	Building Product Selection and Procurement	10	*	*	*
MRc5	Construction and Demolition Waste Diversion	4	*		*
Indoor Environmental Quality (EQ)		**18**			
EQp1	Construction Management	Required		*	
EQp2	Fundamental Air Quality	Required		*	
EQp3	No Smoking	Required		*	*
EQc1	Enhanced Air Quality	2		*	
EQc2	Occupant Experience	7		*	
EQc3	Accessibility and Inclusion	2		*	
EQc4	Resilient Spaces	3		*	
EQc5	Air Quality Testing and Monitoring	4		*	
Project Priorities (PR)		**10**			
PRc1	Project Priorities	9			
PRc2	LEED AP	1			
Total		**Possible Points: 110**			

INTEGRATIVE PROCESS, PLANNING, AND ASSESSMENTS (IP)

IP Prerequisite: Climate Resilience Assessment

IPp1

Impact Area Alignment:

-- Decarbonization

☑ Quality of Life

-- Ecological Conservation and Restoration

Required

Intent

To promote comprehensive assessment of observed, projected, and future natural hazards for climate resilience, aiming to increase awareness of hazards, increase transparency of risks, reduce vulnerabilities, and ensure long-term safety and sustainability.

Requirements

Achievement Pathways	Points
Commercial Interiors	N/A
Climate and Natural Hazard Assessment	

Complete a climate and natural hazard assessment.

As part of the assessment, identify observed, projected, and future natural hazards that could potentially affect the project site and building function. Address site-specific natural hazards, including but not limited to drought, extreme heat, extreme cold, flooding, hurricanes and high winds, hail, landslides, sea level rise and storm surge, tornadoes, tsunamis, wildfires and smoke, winter storms, and other relevant hazards (specify).

Identify two priority hazards, at minimum, to address through proposed design strategies. For each priority hazard, the project team must assess and specify the following:

- Intergovernmental Panel on Climate Change emissions scenario used, specifying the shared socioeconomic pathways
- Projected service life of the LEED project (e.g., FY2050 or 100 years)
- Hazard level
- Hazard risk rating
- Exposure, sensitivity, adaptive capacity, vulnerability, and overall risk levels
- Potential impact on the project site and building function
- Potential impact on the project site during construction

Where possible, use the information from the assessment to inform the planning, design, and operations and maintenance of the project and describe how project-specific strategies were considered.

Impact Area Alignment:

-- Decarbonization

☑ Quality of Life

-- Ecological Conservation and Restoration

IP Prerequisite: Human Impact Assessment

IPp2

Required

Intent

To ensure that project development is guided by a thorough understanding of the social context of the local community, workforce, and supply chain, helping to address potential social inequities.

Requirements

Achievement Pathways	Points
Commercial Interiors	N/A
Human Impact Assessment	

Complete a human impact assessment that draws on relevant information from the following four specified categories, as applicable:

- *Demographics.* May include: race and ethnicity, gender, age, income, employment rate, population density, education levels, household types, and identification of nearby vulnerable populations
- *Local infrastructure and land use.* May include: adjacent transportation and pedestrian infrastructure, adjacent diverse uses, relevant local or regional sustainability goals/commitments, and applicable accessibility code(s)
- *Human use and health impacts.* May include: housing affordability and availability, availability of social services (e.g., health care, education, social support networks), community safety, local community groups, and supply chain and construction workforce protections
- *Occupant experience.* May include: opportunity for daylight, views, and operable windows; environmental conditions of air and water; and adjacent soundscapes, lighting, and wind patterns within the context of surrounding buildings (microclimate, solarscape, and neighboring structures)
- *Other (specify).*

Where possible, use the information from the assessment to inform the planning, design, and operations and maintenance of the project and describe how project-specific strategies were considered.

Impact Area Alignment:

☑ Decarbonization

-- Quality of Life

-- Ecological Conservation and Restoration

IP Prerequisite: Carbon Assessment

IPp3

Required

Intent

To understand and reduce long-term direct and indirect carbon emissions, including on-site combustion, grid-supplied electricity, refrigerants, and embodied carbon.

Requirements

Achievement Pathways	Points
Commercial Interiors	N/A
Carbon Assessment	

USGBC will provide the project team with a 10-year projected carbon assessment for the project. The assessment will use data from the following:

- EAp1: Estimated Energy Use and Operational Carbon Projection
- EAp5: Fundamental Refrigerant Management
- MRp2: Quantify and Assess Embodied Carbon
- Optional: LTc2: Transportation Demand Management

Impact Area Alignment:

- ☑ Decarbonization
- ☑ Quality of Life
- ☑ Ecological Conservation and Restoration

IP Credit: Integrative Design Process

IPc1

1 point

Intent

To support high-performance, cost-effective, and cross-functional project outcomes through an early analysis and planning of the interrelationships among systems. To provide a holistic framework for project teams to collaboratively address decarbonization, quality of life, and ecosystem conservation and restoration across the entire LEED rating system.

Requirements

Achievement Pathways	Points
Commercial Interiors	1
Integrative Design Process	1
OR	
LEED Certified Building	1

Integrative Design Process

Beginning in predesign and continuing through early occupancy, identify and apply opportunities to achieve synergies across disciplines and building systems through the following initiatives:

- *Integrated team.* Assemble and convene an interdisciplinary project team with diverse perspectives. Ensure the process is an equitable team effort through organized facilitation.
- *Design charette.* During predesign or early in design, conduct a charette with the owner or owner's representative and participants representing at least four key perspectives (e.g., architect, contractor, energy modeler, or community engagement representatives).
- *LEED goal setting.* Work as a team to define a set of specific and measurable project goals that address the LEED v5 impact areas of decarbonization, quality of life, and ecosystem conservation and restoration. Incorporate these goals into the owner's project requirements.

OR

LEED Certified Building (1 point)

Locate the project in a LEED-certified building.

LOCATION AND TRANSPORTATION (LT)

LT Credit: Compact and Connected Development
LTc1

Impact Area Alignment:

- ☑ Decarbonization
- ☑ Quality of Life
- ☑ Ecological Conservation and Restoration

1–8 points

Intent

To conserve land and ecosystem resources by encouraging development in areas with existing infrastructure. To promote livability, walkability, and transportation efficiency, including reduced vehicle distance traveled and associated emissions.

Requirements

Achievement Pathways	Points
Commercial Interiors	1–8
Option 1. LEED BD+C Certified Base Building	1–8
OR	
Option 2. Surrounding Density	1–3
AND/OR	
Option 3. Access to Transit	1–5
AND/OR	
Option 4. Walkable Location	1–3

Option 1. LEED BD+C Certified Base Building (1–8 points)
Locate in a LEED v4/v4.1 BD+C certified building that earned either LTc: Surrounding Density and Diverse Uses or LTc: Access to Quality Transit, or locate in a LEED v5 BD+C certified building that earned LTc1: Compact and Connected Development.

Table 1. Points for LEED BD+C Certified Building

Rating System	Credit	Points Earned	Equivalent ID+C Points
LEED v4 or LEED v4.1	LTc: Surrounding Density and Diverse Uses	1	1
		2	2
		3	3
		4 or more	4
	LTc: Access to Quality Transit	1	1
		2–3	3
		4–6	4
LEED v5	LTc1: Compact and Connected Development	1	1
		2–4	4
		5–6	8

OR

Meet any combination of the options below for a maximum of 8 points.

Option 2. Surrounding Density (1–3 points)
Locate in a building where the surrounding *existing density* within a ¼-mile (400-meter) offset of the project boundary meets the values in Table 2. Use either the "separate residential and nonresidential densities" or the "combined density" values.

Table 2. Points for Average Existing Density Within 1/4 Mile (400 Meters)

Combined Density		Separate Density			Points
Square Feet per Acre of Buildable Land	Square Meters per Hectare of Buildable Land	Residential Density (DU/acre)	Residential Density (DU/hectare)	Nonresidential Density (FAR)	
22,000	5,050	7	17.5	0.5	2
35,000	8,035	12	30	0.8	3

DU = dwelling unit; FAR = floor area ratio

AND/OR

Option 3. Access to Transit (1–5 points)
Locate any *functional entry* of the building in which the project is located within either

- A ¼ mile (400 meters) *walking distance* of existing or planned *bus*, *streetcar*, or *informal transit stops,* or
- A ½ mile (800 meters) walking distance of existing or planned *bus rapid transit* stops, passenger rail stations (i.e., light, heavy, or commuter rail), or commuter ferry terminals.
- The transit service at these stops and stations in aggregate must meet the minimums listed in Table 3.

Both weekday and weekend trip minimums must be met.

- For each qualifying transit route, only trips in one direction are counted toward the threshold.
- If service varies by day
    - For weekday trips, count the weekday with the lowest number of trips.
    - For weekend trips, only count the weekend day with the highest number of trips.
- If a qualifying transit route has multiple stops within the required walking distance, only trips from one stop are counted toward the threshold.
- Planned stops and stations may count if they are sited, funded, and under construction by the date of the LEED project's certificate of occupancy and are complete within 24 months of that date.

Table 3. Minimum Daily Public Transit Service

Weekday Trips	Weekend Trips	Points
72	30	2
132	78	3
160	120	4
360	216	5

AND/OR

Option 4. Walkable Location (1–3 points)
Locate in a building that meets the location efficiency requirements in Table 4 via Walk Score® or proximity to *existing and publicly available* uses within a ½ mile (800 meters) walking distance from any functional entry.

Table 4. Points for Location Efficiency

Walk Score®	Proximity to Uses	Points
60–69	4–7	1
70–79	8–10	2
80 or more	≥ 11	3

The following restrictions apply.

- A use may be counted as only one use type (e.g., a retail store may be counted only once even if it sells products in several categories).
- No more than two uses in each use type may be counted (e.g., if five restaurants are within walking distance, only two may be counted).
- The counted uses must represent at least three of the five categories.

Impact Area Alignment:

☑ Decarbonization

☑ Quality of Life

-- Ecological Conservation and Restoration

LT Credit: Transportation Demand Management
LTc2

1–4 points

Intent

To reduce pollution and land development effects from automobile use through encouraging alternative transportation networks. To promote more livable and healthy communities through reduced vehicle miles traveled and reduced associated emissions.

Requirements

Achievement Pathways	Points
Commercial Interiors	1–4
Transportation Demand Assessment	
AND	
Option 1. Parking	1–3
Path 1. Reduce Parking	1–3
AND/OR	
Path 2. Unbundle Parking	2
AND/OR	
Option 2. Active Travel Facilities	1–3
Path 1. LEED BD+C Certified Base Building	1–2
OR	
Path 2. Active Travel Facilities in Base Building	1–2
AND/OR	
Option 3. Compliant Base Building	1
Path 1. Bicycle Network and Storage	1
AND/OR	
Path 2. Base Building Shower and Changing Facilities	1
AND/OR	
Path 3. Tenant Space Shower and Changing Facilities	1
AND/OR	
Path 4. Bicycle Maintenance	1

Transportation Demand Assessment
Assess the number of *vehicle miles traveled* (VMTs) and carbon emissions associated with regular building occupants' travel to and from the project building as outlined below:

- Estimate the annual VMTs
- Estimate annual baseline case for carbon emissions
- Assess low-carbon transportation options
- Estimate annual proposed case for carbon emissions
- Estimate the total reduction of carbon emissions between annual baseline case and annual proposed case

Projects that participate in a local or regional government mandated transportation demand management program satisfy the transportation demand assessment requirement. Residential affordable housing projects in an infill location or an office, mixed-use, residential, or retail project located within a transit priority area, or within a ½ mile (800 meters) walking distance, of an existing or planned major transit stop are exempt from the above requirements.

AND

Implement one or more of the following strategies for up to a total of 4 points.

Option 1. Parking (1–3 points)

Path 1. Reduce Parking (1–3 points)
Locate in a building that provides a reduction in parking capacity using the base ratios for parking spaces found in the Institute of Transportation Engineers *Parking Generation Manual*, sixth edition, or a comparable resource applied by a qualified transportation engineer or planner or in supplementary LEED guidance. Points are awarded according to Table 1.

Table 1. Points for Percentage of Reduced Parking Capacity

Reduced Parking Percentage	Points
30% reduction from base ratios	1
60% reduction from base ratios	2
100% reduction from base ratios (no parking)	3

AND/OR

Path 2. Unbundle Parking (2 points)
Unbundle parking by purchasing parking separately from the tenant space lease. Do not provide free parking for employees. Implement a daily, monthly, or annual parking fee at a cost equal to or greater than the local market rate for public or private parking.

AND/OR

Option 2. Active Travel Facilities (1–3 points)

Path 1. LEED BD+C Certified Base Building (1–2 points)
Locate in a LEED v4/v4.1 BD+C certified building that earned LTc: Bicycle Facilities, or in a LEED v5 BD+C certified building that earned LTc2: Transportation Demand Management.

Table 2. Points for LEED BD+C Certified Building

Certification	Credit Name	Points Earned	Equivalent ID+C Points
LEED v4 or LEED v4.1	LTc: Bicycle Facilities	1	2
LEED v5	LTc2: Transportation Demand Management	1	1
		2	2

OR

Path 2. Active Travel Facilities in Base Building (1–2 points)
Locate in a building that meets the requirements for Option 3, Compliant Base Building, Path 1, for 1 point. Meet Option 3, Compliant Base Building, Path 2, for 1 additional point.

AND/OR

Option 3. Compliant Base Building (1 point)

Path 1. Bicycle Network and Storage (1 point)

Bicycle Network

Locate the project in a building such that a functional entry and/or bicycle storage is within a 600-ft (180-meter) walking distance or bicycling distance of a bicycle network that meets the following criteria:

- Is a *contiguous network* that spans a distance of at least 3 miles (4,800 meters).
- Consists of bicycle paths, lanes, or multiuse trails, or streets with a maximum speed limit of 25 mph (40 kph). Sidewalks where local code permits bicycles are acceptable.

Planned bicycle trails or lanes may be counted if they are fully funded by the date of the certificate of occupancy and are scheduled for completion within three years of that date.

AND

Bicycle Storage

Provide *short-term bicycle storage* within a 600 ft (180 meters) walking distance to any main entrance but no fewer than four storage spaces per building.

Provide *long-term bicycle* storage within a 300 ft (90 meters) walking distance from any functional entry but no fewer than four storage spaces per building in addition to the short-term bicycle storage spaces.

Points are awarded according to Table 3 below.

Shared micromobility storage, bicycle-sharing stations, and/or publicly available bicycle parking may be counted for up to 50% of the required short-term *and* long-term storage space if it meets the maximum allowable walking distance, is not double counted (i.e., the short-term and the long-term storage spaces are counted *separately*), and the storage location is communicated to the building occupants and visitors.

Table 3. Number of Spaces Required for Short- and Long-term Bicycle Storage

	Commercial, Institutional, Healthcare	Retail
Short-term storage	At least 2.5% of all peak visitors but no fewer than four spaces per building	At least two short-term bicycle storage spaces for every 5,000 ft^2 (465 m^2) but no fewer than two storage spaces per building
Long-term storage	At least 5% of all regular building occupants but no fewer than four storage spaces per building in addition to short-term storage	At least 5% of regular building occupants but no fewer than two storage spaces per building in addition to the short-term bicycle storage spaces
Health care projects can exclude patients from the regular building occupant count for long-term storage.		

AND/OR

Path 2. Base Building Shower and Changing Facilities (1 point)

Locate in a building that provides access to on-site showers with changing facilities for 1% of all regular building occupants. *Off-site* showers and changing facilities are *acceptab*le if they meet the needs of all occupants and are within 1/4 mile (400 meters) of walking distance.

AND/OR

Path 3. Tenant Space Shower and Changing Facilities (1 point)
Provide at least one shower within the tenant space with a changing facility for the first 100 regular building occupants and one additional shower for every 150 regular building occupants thereafter.

Large Occupancy Projects
Provide at least one on-site shower within the tenant space with a changing facility for the first 100 regular project occupants and one additional shower for every 150 regular project occupants thereafter, up to 999 regular project occupants. Thereafter, provide

- One additional shower for every 500 regular project occupants, for an additional 1,000–4,999 regular project occupants.
- One additional shower for every 1,000 regular building occupants, for an additional 5,000+ regular project occupants.

AND/OR

Path 4. Bicycle Maintenance (1 point)
Provide a permanently secured bicycle repair station that includes a complete set of tools and an air pump securely fastened to the repair stand in the area dedicated to long-term bicycle storage.

Impact Area Alignment:

☑ Decarbonization

-- Quality of Life

-- Ecological Conservation and Restoration

LT Credit: Electric Vehicles

LTc3

1–2 points

Intent

To encourage the use of electric vehicles and infrastructure. To help reduce the negative health effects on communities by lowering greenhouse gas emissions and other pollutants emitted from conventionally fueled cars and trucks.

Requirements

Achievement Pathways	Points
Commercial Interiors	1–2
Option 1: LEED BD+C Certified Base Building	1–2
OR	
Option 2: Electric Vehicle Supply Equipment	1–2

Projects can earn up to 2 points by meeting Option 1 or Option 2.

Option 1. LEED BD+C Certified Base Building (1–2 points)
Locate in a LEED v4/v4.1 BD+C or LEED v5 BD+C certified building that earned LTc: Green/Electric Vehicles.

Table 1. Equivalent ID+C Points for LEED BD+C Certified Building

Certification	Credit Name	Points Earned	Equivalent ID+C Points
LEED v4 or LEED v4.1	LTc: Green/Electric Vehicles	1	1
LEED v5	LTc3: Electric Vehicles	1	1
		2	2

OR

Option 2. Electric Vehicle Supply Equipment (1–2 points)
Locate in a building that has electric vehicle supply equipment (EVSE) meeting the thresholds listed in Table 2. EVSE must meet the following criteria:

- Provide Level 2 or Level 3 charging capacity per the manufacturer's requirements and the requirements of the National Electrical Code (NFPA 70).
- Provide 208–240 volts or greater for each required space.
- Meet the connected functionality criteria for ENERGY STAR-certified EVSE and be capable of responding to time-of-use market signals (e.g., price).
- Include at least one electric vehicle charging station for an accessible parking space at least 9 ft (2.5 meters) wide with a 5-ft (1.5-meter) access aisle and have charging station accessibility features for use by persons with mobility, ambulatory, and visual disabilities.

Table 2. Points for Installed EVSE (% of Total Building Parking Spaces)

Commercial Minimum EVSE Parking	Points
5% or *at least* 2 spaces*, whichever is greater	1
10% or *at least* 4 spaces*, whichever is greater	2
Residential Minimum EVSE Parking	**Points**
10% or at least 5 spaces*, whichever is greater	1
15% or at least 10 spaces*, whichever is greater	2

WATER EFFICIENCY (WE)

WE Prerequisite: Minimum Water Efficiency
WEp1

Impact Area Alignment:

- ☑ Decarbonization
- -- Quality of Life
- ☑ Ecological Conservation and Restoration

Required

Intent

To reduce potable water consumption and the associated energy consumption and carbon emissions required to treat and distribute water and preserve potable water resources through an efficiency-first approach.

Requirements

Achievement Pathways	Points
Commercial Interiors	N/A
Minimum Fixture and Fittings Efficiency	
Option 1. Prescriptive Path—Maximum Flush and Flow Rates	
OR	
Option 2. Performance Path—Calculated Reduction	
AND	
Minimum Equipment Water Efficiency	

Meet all minimum water efficiency requirements outlined below, as applicable to the project scope.

Minimum Fixture and Fittings Efficiency
Meet the minimum water efficiency requirements for fixtures and fittings outlined below.

Projects located where standard supply pressure is different than the LEED baseline supply pressure may calculate the water consumption of flow fixtures and fittings at the local standard supply pressure.

Option 1. Prescriptive Path—Maximum Flush and Flow Rates
For all new and existing fixtures and fittings within the tenant space, do not exceed the maximum flush and flow rates listed in Table 1.

Table 1. Maximum Installed Flush or Flow Rates for Prescriptive Path

Fixture or Fitting	Maximum Installed Flush or Flow Rate (IP)	Maximum Installed Flush or Flow Rate (SI)
Toilet (water closet)*	1.28 gpf**	4.8 lpf**
Urinal*	0.50 gpf	1.9 lpf
Public lavatory (restroom) faucet	0.50 gpm	1.9 lpm
Private lavatory faucets*	1.50 gpm	5.7 lpm
Kitchen faucet	1.8 gpm	6.8 lpm
Showerhead*	2.00 gpm	7.6 lpm

**The WaterSense label is available for this fixture type. WaterSense-labeled fixtures are recommended for projects located in the U.S. and Canada.*
***For dual-flush toilets, the full flush volume shall be equal to or less than 1.28 gpf / 4.8 lpf; a weighted average cannot be used.*

OR

Option 2. Performance Path—Calculated Reduction
For all the new and existing fixtures and fittings within the tenant space, reduce aggregate water consumption by 20% from the baseline listed in Table 2.

Table 2. Baseline Water Consumption of Fixtures and Fittings

Fixture or Fitting	Baseline Installed Flush or Flow Rate (IP)	Baseline Installed Flush or Flow Rate (SI)
Toilet (water closet)*	1.6 gpf**	6.0 lpf
Urinal*	1.0 gpf	3.8 lpf
Public lavatory (restroom) faucet	0.50 gpm at 60 psi	1.9 lpm at 415 kPa
Private lavatory faucets*	2.2 gpm at 60 psi	8.3 lpm at 415 kPa
Kitchen faucet	2.2 gpm at 60 psi	8.3 lpm at 415 kPa
Showerhead*	2.5 gpm at 80 psi per shower stall	9.5 lpm at 550 kPa per shower stall

**The WaterSense label is available for this fixture type. WaterSense-labeled fixtures are recommended for projects located in the U.S. and Canada.*
***For dual-flush toilets, the full flush volume shall be equal to or less than 1.28 gpf / 4.8 lpf; a weighted average cannot be used.*

AND

Minimum Equipment Water Efficiency
Newly installed appliances, equipment, and processes within the tenant space must meet the requirements listed in Tables 3 and 4 below. Existing appliances and equipment can be excluded.

Table 3. Standards for Appliances

Appliance		Requirement	
Residential clothes washer		ENERGY STAR or performance equivalent	
Commercial clothes washer		ENERGY STAR for commercial clothes washers with ≤ 8.0 cubic feet (227 liters) of capacity or performance equivalent	
Residential dishwashers (standard and compact)		ENERGY STAR or performance equivalent	
Prerinse spray valves		≤ 1.3 gpm (4.9 lpm)	
Ice machine		ENERGY STAR or performance equivalent and use either air-cooled or closed-loop cooling, such as chilled or condenser water system	
Commercial Kitchen Equipment		**Requirement (IP)**	**Requirement (SI)**
Dishwasher	Undercounter	≤ 1.6 gal/rack	≤ 6.0 liters/rack
	Stationary, single tank, door	≤ 1.4 gal/rack	≤ 5.3 liters/rack
	Single tank, conveyor	≤ 1.0 gal/rack	≤ 3.8 liters/rack
	Multiple tank, conveyor	≤ 0.9 gal/rack	≤ 3.4 liters/rack
	Flight machine	≤ 180 gal/hr	≤ 680 liters/hr
Food steamer	Boilerless/ connectionless	≤ 2 gal/hr/pan	≤ 7.5 liters/hr/pan
	Steam generator	≤ 5 gal/hr/pan	≤ 19 liters/hr/pan
Combination oven	Countertop or stand	≤ 1.5 gal/pan	≤ 5.7 liters/pan
	Roll-in	≤ 1.5 gal/pan	≤ 5.7 liters/pan

Table 4. Standards for Processes

Process	Requirement
Heat rejection and cooling	No once-through cooling with potable water for any equipment or appliances that reject heat
Discharge water temperature tempering	Where local requirements limit the discharge temperature of fluids into a drainage system, use a tempering device that runs water only when the equipment discharges hot water. OR Provide a thermal recovery heat exchanger that cools drained discharge water below code-required maximum discharge temperatures while simultaneously preheating inlet makeup water. OR If fluid is steam condensate, return it to boiler.
Venturi-type flow-through vacuum generators or aspirators	Use no device that generates a vacuum by means of water flow through the device into the drain.

Impact Area Alignment:

- ☑ Decarbonization
- ☑ Quality of Life
- ☑ Ecological Conservation and Restoration

WE Credit: Water Metering and Leak Detection
WEc1

1–2 points

Intent

To conserve potable water resources, support water management, limit potential material waste due to water leak damage, and identify opportunities for additional water savings by tracking water consumption.

Requirements

Achievement Pathways	Points
Commercial Interiors	1–2
Option 1. Meters	1
AND/OR	
Option 2. Submeters	1
AND/OR	
Option 3. Leak Detection Sensors	1

Option 1. Meters (1 point)
Install (or use existing) permanent water meters or submeters that measure the total water consumption for each water source for the tenant space.

- The tenant must be able to access the meter data.
- Meter alternative water sources separately from municipally supplied potable water.
- Commit to sharing with USGBC the resulting tenant space water usage data at least annually. This commitment must carry forward for five years or until the building changes ownership or lessee.

AND/OR

Option 2. Submeters (1 point)
Install permanent water submeters for each applicable subsystem defined below:

- Indoor plumbing fixtures and fittings. Meter systems serving at least 80% of indoor fixtures and fittings as described in WEp1: Minimum Water Efficiency, fixtures and fittings, not addressed in the prerequisite, including janitor sinks, water coolers, and bottle fillers, which may be included or excluded from the measured total water consumption of the tenant space at the project team's discretion.
- Commercial kitchen (if the kitchen serves at least 100 meals per day of operation).
- Laundry (if the project includes commercial laundry equipment that processes at least 120,000 lbs (57,606 kg) of laundry per year or if the project includes a public laundry room).

The tenant must be able to access the submeter data in real time via local network, building management system (BMS), cloud service, app, or online database. All submeters must be capable of recording data at least hourly.

AND/OR

Option 3. Leak Detection Sensors (1 point)
Install permanent water flow meter/sensors for at least 50% of the project flush fixtures in the tenant space; water sensors can be installed on each flush fixture or for a group of flush fixtures (e.g., one per restroom facility).

The leak detection system should be able to identify a leak triggered by abnormal flow rate above normal range, or physically detect a water leak, and initiate an alarm upon a leak detection.

The tenant must be able to access the sensor data in real time via local network, BMS, cloud service, app, or online database.

Develop an action plan that addresses how the tenant will have access to data in real time and how the tenant will address and remedy any detected leak.

Impact Area Alignment:

☑ Decarbonization

-- Quality of Life

☑ Ecological Conservation and Restoration

WE Credit: Enhanced Water Efficiency
WEc2

1–8 points

Intent

To reduce potable water consumption and the associated energy consumption and carbon emissions required to treat and distribute water and to reward the use of alternative water sources that preserve potable water resources.

Requirements

Achievement Pathways	Points
Commercial Interiors	1–8
Option 1. Whole-Project Water Use	1–8
OR	
Option 2. Fixture and Fittings—Calculated Reduction	1–6
AND/OR	
Option 3. Appliance and Process Water	1–2
AND/OR	
Option 4. Optimize Process Water Use	1–2
Path 1. Limit Cooling Tower Cycles	1–2
OR	
Path 2. Optimize Water Use for Cooling	1–2
OR	
Path 3. Process Water Use	1–2

Implement a combination of the strategies below for a maximum of 8 points. Projects may either attempt Option 1 or any combination of Options 2 or 3 below.

Option 1. Whole-Project Water Use (1–8 points)
To pursue this pathway, project teams must develop a water use baseline and create a proposed use model. Points are achieved based on reductions from the baseline in Table 1.

Table 1. Points for Reducing Overall Project Water Use

Percent Reduction	Points	Total Points for Alternative Water
30%	1	2
35%	2	3
40%	3	4
45%	4	5
50%	5	6
55%	6	7
60%	7	8
65%	8	--

OR

Option 2. Fixture and Fittings—Calculated Reduction (1–6 points)
Further reduce fixture and fitting water use from the calculated baseline in WEp1: Minimum Water Efficiency, Minimum Fixture and Fittings Efficiency, Option 2, Performance Path—Calculated Reduction. Some of these fittings and fixtures may be outside the tenant space. Additional potable water savings can be earned above the prerequisite level using alternative water sources. Points are awarded according to Table 2.

■

Table 2. Points for Reducing Indoor Water Use

Percentage Reduction	Points
25%	1
30%	2
35%	3
40%	4
45%	5
50%	6

AND/OR

Option 3. Appliance and Process Water (1–2 points)

Newly installed equipment within the tenant space must meet the minimum requirements in Tables 3, 4, and/or 5. One point is awarded for meeting all applicable requirements in any one table for a maximum of 2 points. All applicable, newly installed equipment listed in each table must meet the standard. Existing appliances and equipment can be excluded.

Table 3. Compliant Commercial Washing Machines

To use Table 3, the project must process at least 120,000 lbs. (57,606 kg) of laundry per year.

Washing Machine	Requirement (IP Units)	Requirement (SI Units)
On-premise, minimum capacity 2,400 lbs. (10,886 kg) per 8-hour shift	Maximum 1.8 gal per pound*	Maximum 7 liters per 0.45 kg*

*Based on equal quantities of heavily, medium, and lightly soiled laundry.

Table 4. Standards for Compliant Commercial Kitchen Equipment
To use Table 4, the project must serve at least 100 meals per day of operation.

Commercial Kitchen Equipment		Requirement (IP)	Requirement (SI)
Dishwasher	Undercounter	ENERGY STAR	ENERGY STAR or performance equivalent
	Stationary, single tank, door	ENERGY STAR	ENERGY STAR or performance equivalent
	Single tank, conveyor	ENERGY STAR	ENERGY STAR or performance equivalent
	Multiple tank, conveyor	ENERGY STAR	ENERGY STAR or performance equivalent
	Flight machine	ENERGY STAR	ENERGY STAR or performance equivalent
Food steamer	Boilerless/ connectionless	≤ 1.7 gal/hr/pan including condensate cooling water	≤ 6.4 liters/hr/pan including condensate cooling water
	Steam generator	≤ 2.2 gal/hr/pan including condensate cooling water	≤ 8.3 liters/hr/pan including condensate cooling water
Combination oven	Countertop or stand	ENERGY STAR	ENERGY STAR or performance equivalent
	Roll-in	ENERGY STAR	ENERGY STAR or performance equivalent
Food waste disposer	Disposer	3–8 gpm, full-load condition; 10-minute automatic shutoff or 1 gpm, no-load condition	11–30 lpm, full-load condition; 10-minute automatic shutoff or 3.8 lpm, no-load condition
	Scrap collector	Maximum 2 gpm makeup water	Maximum 7.6 lpm makeup water
	Pulper	Maximum 2 gpm makeup water	Maximum 7.6 lpm makeup water
	Strainer basket	No additional water usage	No additional water usage

Table 5. Compliant Laboratory and Medical Equipment

Lab Equipment	Requirement (IP)	Requirement (SI)
Reverse-osmosis water purifier	75% recovery	
Steam sterilizer	For 60-in sterilizer: 6.3 gal/U.S. tray For 48-in sterilizer: 7.5 gal/U.S. tray	For 1,520-mm sterilizer: 28.5 liters/DIN tray For 1,220-mm sterilizer: 28.35 liters/DIN tray
Sterile process washer	0.35 gal/U.S. tray	1.3 liters/DIN tray
X-ray processor, 150 mm or more in any dimension	Film processor water recycling unit	
Digital imager, all sizes	No water use	

AND/OR

Option 4. Optimize Process Water Use (1–2 points)
Include any associated base building water use that is necessary for equipment that serves the tenant space.

Path 1. Limit Cooling Tower Cycles (1–2 points)
For cooling towers and evaporative condensers, conduct a one-time potable water analysis, measuring at least the five control parameters listed in Table 6.

Table 6. Maximum Concentrations for Parameters in Condenser

Parameter	Maximum Level
Ca (as $CaCO_3$)	600 ppm
Total alkalinity	500 ppm
SiO_2	150 ppm
Cl^-	300 ppm
Conductivity	3,300 µS/cm

ppm = parts per million
µS/cm = micro siemens per centimeter

Calculate the maximum number of cooling tower cycles by dividing the maximum allowed concentration level of each parameter by the actual concentration level of each parameter found in the potable makeup water analysis. Limit cooling tower cycles to avoid exceeding maximum values for any of these parameters.

The materials of construction for the water system that come in contact with the cooling tower water shall be of the type that can operate and be maintained within the cycles established in Table 7.

Table 7. Points for Cooling Tower Cycles

Cooling Tower Cycles	Points
Maximum number of cycles achieved without exceeding any maximum concentration levels or affecting operation of condenser water system.	1
Meet the maximum calculated number of cycles to earn 1 point, and increase the number of cycles by a minimum of 25% by increasing the level of treatment and/or maintenance in condenser or makeup water systems. OR Meet the maximum calculated number of cycles to earn 1 point and use a minimum of 20% alternative water.	2

Projects whose cooling is provided by district cooling systems are eligible to achieve Path 1 if the district cooling system complies with the above requirements.

OR

Path 2. Optimize Water Use for Cooling (1–2 points)
To be eligible for Option 2, the baseline system designated for a building using ASHRAE 90.1-2019 or 90.1-2022, Appendix G, Table G3.1, 1–3, must include a cooling tower (systems 7, 8, 11, 12, and 13).

Achieve increasing levels of cooling tower water efficiency beyond a water-cooled chiller system with axial variable-speed fan cooling towers having a maximum drift of 0.002% of recirculated water volume and three cooling tower cycles. Points are awarded according to Table 8.

Table 8. Points for Reducing Annual Water Use Compared to Water-Cooled Chiller System

Percentage Reduction	Points
25%	1
50%	2

Projects whose cooling is provided by district cooling systems are eligible to achieve Path 2 if the district cooling system complies with the above requirements.

OR

Path 3. Process Water Use (1–2 points)
Demonstrate that the project is using a minimum of 20% alternative water to meet the process water demand for 1 point or using a minimum of 30% alternative water to meet the process water demand for 2 points. Ensure that alternative water is of sufficient quality for its intended end use.

The minimum percentage of alternative water used should be based on water use during the month with the highest water demand.

Process water uses eligible for achievement of Path 3 must represent at least 10% of total building regulated water use and may not include water used for cooling.

ENERGY AND ATMOSPHERE (EA)

EA Prerequisite: Estimated Energy Use and Operational Carbon Projection

EAp1

Impact Area Alignment:

- ☑ Decarbonization
- -- Quality of Life
- -- Ecological Conservation and Restoration

Required

Intent

To enable tenants and interior design teams to visualize the scale and relative impact of design decisions that will impact their project's long-term operational carbon emissions.

Requirements

Achievement Pathways	Points
Commercial Interiors	N/A
Provide Data on Project and Annual Energy Use	
AND	
Sign-Off on 10-Year Operational Carbon Projection	

Comply with the following:

Provide Data on Project and Annual Energy Use

If the project has an energy model that includes all energy used within the project, including energy provided by base building systems, provide USGBC with the estimated annual energy use of each energy type.

If the project does not have such an energy model, provide USGBC with the following data to facilitate an annual energy calculation:

- Project information: Occupancy type, age of building, gross area, location by zip code, and the approximate hours of occupancy on a weekly basis.
- High-load amenity information: Include commercial kitchens, commercial laundries, data centers, etc. and the percent of gross area attributable to each.
- Energy-related information: lighting power density; number of LEED points pursued in reducing plug and process loads; and fuel types used for space heating, service hot water, cooking, and clothes drying as applicable.

From the data provided, USGBC will provide the project team with a rough estimate of the annual energy used of each energy type by the project.

Sign-Off on 10-Year Operational Carbon Projection

From the modeled energy data or the energy estimate, USGBC will provide the project team with a 10-year operational carbon projection. The assumptions behind the estimate include the following:

- No changes are made over the decade that impact energy use
- The initial electrical carbon coefficient is the latest subregional eGRID coefficient for projects in the U.S., or national coefficient elsewhere, or other more local coefficient that can be credibly documented
- The electrical carbon coefficient will decline linearly at 3.8% per year (the equivalent of declining by 95% over 25 years)

For tenant spaces, the tenant, or for owner occupied spaces, the owner, must attest that they have reviewed the 10-year carbon projection.

Impact Area Alignment:

☑ Decarbonization

-- Quality of Life

-- Ecological Conservation and Restoration

EA Prerequisite: Minimum Energy Efficiency
EAp2

Required

Intent

To promote resilience and reduce the environmental and economic harms of excessive energy use and greenhouse gas emissions by achieving a minimum level of energy efficiency.

Requirements

Achievement Pathways	Points
Commercial Interiors	N/A
Option 1. ASHRAE 90.1-2019	
OR	
Option 2. ASHRAE 90.1-2022	

Projects registering before Jan. 1, 2028, may comply with either Option 1 or Option 2.

Projects registering on or after Jan. 1, 2028, must comply with Option 2.

Option 1. ASHRAE 90.1-2019
Comply with ANSI/ASHRAE/IES Standard 90.1-2019.

For projects applying the Normative Appendix G, “Performance Rating Method,” compliance path.

- Future source energy metric. The future source energy metric may be used in place of the “cost”
    - Replace all references to “cost” with “future source energy.” Use an electric site-to-source energy conversion factor of 2.0 based on future projections for the U.S. A lower national average value may be used as applicable for projects outside of the U.S.
    - Replace ASHRAE 90.1, Table 4.2.1.1, “Building Performance Factors (BPFs),” with the BPFs derived for the future source energy metric in Table 1.
- Alterations**.** For interiors project scope except initial build-out construction, apply the following ASHRAE 90.1-2022 addenda.
    - Substantial alteration. Multiply the building performance factor (BPF) by 1.05 if the alterations are defined as a substantial alteration in ASHRAE 90.1-2022, Section G3.1.4(a).
    - Other alterations. Apply ASHRAE 90.1-2022, Section G3.3 (“Performance Calculations for Other Alterations”), replacing all references to ASHRAE 90.1-2022, Section 5 through 10, prescriptive criteria with the corresponding ASHRAE 90.1-2019, Section 5 through 10 criteria.

Table 1. ASHRAE 90.1-2019-Equivalent Building Performance Factors for a Future Source Energy Metric

	Climate Zone																		
Building Type	**0A**	**0B**	**1A**	**1B**	**2A**	**2B**	**3A**	**3B**	**3C**	**4A**	**4B**	**4C**	**5A**	**5B**	**5C**	**6A**	**6B**	**7**	**8**
Multifamily	0.74	0.69	0.73	0.70	0.73	0.70	0.71	0.70	0.63	0.70	0.71	0.69	0.68	0.70	0.70	0.68	0.68	0.68	0.74
Health care/hospital	0.72	0.72	0.73	0.73	0.74	0.71	0.72	0.74	0.71	0.72	0.73	0.71	0.74	0.73	0.80	0.73	0.77	0.78	0.79
Hotel/motel	0.72	0.71	0.72	0.71	0.71	0.70	0.71	0.73	0.72	0.71	0.73	0.73	0.71	0.73	0.74	0.70	0.72	0.70	0.70
Office	0.62	0.63	0.61	0.62	0.58	0.60	0.57	0.62	0.55	0.55	0.61	0.57	0.58	0.61	0.59	0.58	0.60	0.54	0.58
Restaurant	0.65	0.62	0.63	0.61	0.62	0.58	0.63	0.63	0.63	0.67	0.66	0.66	0.70	0.70	0.68	0.73	0.72	0.74	0.77
Retail	0.57	0.54	0.53	0.53	0.48	0.47	0.47	0.47	0.47	0.52	0.50	0.56	0.57	0.53	0.59	0.58	0.56	0.53	0.60
School	0.57	0.57	0.58	0.57	0.55	0.54	0.57	0.51	0.49	0.48	0.51	0.52	0.51	0.53	0.51	0.53	0.50	0.51	0.58
Warehouse	0.28	0.30	0.24	0.27	0.23	0.24	0.27	0.23	0.20	0.33	0.26	0.28	0.40	0.32	0.29	0.44	0.38	0.40	0.44
All others	0.65	0.62	0.64	0.62	0.57	0.54	0.57	0.56	0.58	0.59	0.57	0.60	0.60	0.59	0.65	0.62	0.62	0.61	0.64

OR

Option 2. ASHRAE 90.I-2022
Comply with ANSI/ASHRAE/IES Standard 90.1-2022. Use any applicable compliance path in ASHRAE 90.1, Section 4.2, or an approved equivalent standard for elements within the project scope.

For projects applying the Normative Appendix G, “Performance Rating Method” compliance path, one of the following metrics may be used in place of “Cost”:

- Future source energy.
    - Replace all references to “cost” with “future source energy.” Use an electric site-to-source energy conversion factor of 2.0 based on future projections for the U.S. A lower national average value may be used as applicable for projects outside of the U.S.
    - Replace ASHRAE 90.1, Table 4.2.1.1, “Building Performance Factors (BPF),” with the BPFs derived for the future source energy metric in Table 2.
- Site energy or source energy documented using ASHRAE 90.1-2022, Informative Appendix I.

Table 2. ASHRAE 90.1-2022-Equivalent Building Performance Factors for a Future Source Energy Metric

	Climate Zone																		
Building Type	**0A**	**0B**	**1A**	**1B**	**2A**	**2B**	**3A**	**3B**	**3C**	**4A**	**4B**	**4C**	**5A**	**5B**	**5C**	**6A**	**6B**	**7**	**8**
Multifamily	0.64	0.59	0.62	0.60	0.61	0.59	0.61	0.60	0.49	0.57	0.59	0.56	0.55	0.57	0.57	0.55	0.55	0.55	0.60
Health care/hospital	0.64	0.64	0.66	0.65	0.66	0.63	0.64	0.65	0.63	0.64	0.65	0.62	0.64	0.62	0.69	0.63	0.68	0.69	0.70
Hotel/motel	0.65	0.63	0.64	0.63	0.62	0.61	0.62	0.63	0.62	0.59	0.60	0.60	0.57	0.58	0.59	0.56	0.58	0.56	0.56
Office	0.54	0.54	0.53	0.54	0.49	0.52	0.49	0.52	0.45	0.46	0.52	0.47	0.48	0.51	0.48	0.48	0.50	0.45	0.49
Restaurant	0.61	0.58	0.58	0.57	0.57	0.54	0.58	0.59	0.57	0.62	0.61	0.61	0.65	0.64	0.63	0.67	0.66	0.69	0.72
Retail	0.47	0.45	0.44	0.44	0.40	0.39	0.37	0.39	0.36	0.40	0.41	0.42	0.45	0.43	0.46	0.44	0.43	0.42	0.46
School	0.52	0.53	0.53	0.53	0.51	0.51	0.53	0.48	0.46	0.43	0.48	0.47	0.45	0.49	0.46	0.46	0.44	0.44	0.48
Warehouse	0.25	0.25	0.21	0.24	0.20	0.21	0.24	0.20	0.17	0.30	0.22	0.25	0.36	0.28	0.25	0.40	0.34	0.36	0.40
All others	0.58	0.56	0.56	0.56	0.50	0.47	0.49	0.48	0.48	0.49	0.49	0.50	0.51	0.50	0.55	0.52	0.52	0.52	0.55

Impact Area Alignment:

☑ Decarbonization

-- Quality of Life

-- Ecological Conservation and Restoration

EA Prerequisite: Fundamental Commissioning
EAp3

Required

Intent

To improve energy performance and limit greenhouse gas emissions by verifying that systems are operating per the owner's project requirements.

Requirements

Achievement Pathways	Points
Commercial Interiors	N/A
Comply With Commissioning Requirements	

Comply with ANSI/ASHRAE/IES Standard 90.1's commissioning requirements for building systems, controls, and the building envelope, as applicable to the project scope, with the following additional provisions:

- All projects shall provide commissioning that addresses the project scope of work including any tenant interfaces or interconnections with base building systems. Section 4.2.5.2 exceptions shall not apply.
- The referenced version of Standard 90.1 with errata shall be:
    - 2019 or later for projects registered before Jan. 1, 2028.
    - 2022 or later for projects registered on or after Jan. 1, 2028.
- By the end of the design development phase, the owner shall designate a commissioning provider (CxP) with experience completing commissioning on at least two projects of equal or larger scope and complexity. For alterations meeting the criteria in Exception 4.2.5.2, the commissioning provider may be directly associated with design or installation of the building systems or controls being commissioned.
- In addition to the requirements of the applicable version of ASHRAE 90.1, the CxP shall:
    - In predesign or as early as possible, assist in the development of the owner's project requirements (OPR), reviewing and updating the OPR through design and construction. OPR must address project scope of work for HVAC, service water heating, power, lighting, other equipment including on-site renewable energy, and envelope.
    - During design, review the basis of design (BOD) for compliance with the OPR, and attend at least one meeting to discuss review comments and commissioning.
    - During construction, review submittals and substitutions for design deviations that impact the OPR, attend at least one milestone meetings and perform a sample review (minimum 10%) of completed contractor documentation for QA/QC.

Impact Area Alignment:

☑ Decarbonization

-- Quality of Life

-- Ecological Conservation and Restoration

EA Prerequisite: Energy Metering and Reporting

EAp4

Required

Intent

To support energy management practices and facilitate identification of ongoing opportunities for energy and greenhouse gas emissions savings by tracking and reporting building energy use and demand.

Requirements

Achievement Pathways	Points
Commercial Interiors	N/A
Energy Monitoring and Recording	
AND	
Report Energy Data	

This prerequisite applies only to project scope including at least one of the following:

- Initial fit out of project with gross area of at least 10,000 ft^2 (929 m^2), or
- Alteration replacing electric power distribution for project with gross area of at least 10,000 ft^2 (929 m^2).
- New service for electricity, fuel, or thermal energy supplied directly to the tenant by a utility, energy provider, or plant that is not in the building.
- New on-site renewable energy.

Energy Monitoring and Recording

- For initial fit out of interior spaces with gross area of at least 10,000 ft^2 (929 m^2), install (or use existing) measurement devices to monitor and record tenant energy use per ANSI/ASHRAE/IES Standard 90.1.

  The referenced version of Standard 90.1 with errata shall be:
  - 2019 or later for projects registered before Jan. 1, 2028.
  - 2022 or later for projects registered on or after Jan. 1, 2028.

- For initial fit out of interior spaces less than 10,000 ft^2 (929 m^2), or for all alterations replacing electrical power distribution or providing new energy service directly to the tenant from a utility, energy provider, or plant that is not in the building, provide measurement devices capable of measuring total energy consumption for each new service, at least monthly.
- For new on-site renewable energy generation systems installed in the project scope, provide measurement devices capable of measuring renewable energy generation:
  - At 15-minute intervals for tenant spaces larger than 10,000 ft^2 (929 m^2)
  - At least monthly for interior spaces less than 10,000 ft^2 (929 m^2)

Report Energy Data

- Commit to reporting the following data to USGBC at least annually: monthly energy data for 12 consecutive months of total energy consumption for each tenant-metered energy source; tenant-metered on-site renewable energy generation; and, if available, tenant-metered peak electrical demand. This commitment must carry forward for five years or until the building changes ownership or lessee.

Impact Area Alignment:

☑ Decarbonization

-- Quality of Life

-- Ecological Conservation and Restoration

EA Prerequisite: Fundamental Refrigerant Management

EAp5

Required

Intent

To reduce greenhouse gas emissions from refrigerants by accelerating the phaseout of refrigerants with high global warming potential (GWP) and by reducing refrigerant leakage.

Requirements

Achievement Pathways	Points
Commercial Interiors	N/A
Option 1. No Refrigerants	
OR	
Option 2. Refrigerants	

Option 1. No Refrigerants
Do not use refrigerants in the project.

OR

Option 2. Refrigerants
Meet the following requirements for refrigerant-containing equipment installed, replaced, or altered in the project scope of work:

- Complete refrigerant inventory. Complete an inventory of the refrigerant-containing equipment installed within the project scope of work and any existing equipment under control of the tenant. The inventory shall include the refrigerant type, GWP, amounts of refrigerants contained in each, and the total GWP of all refrigerants.
- Do not use hydrochlorofluorocarbon (HCFC) refrigerants in new equipment.
- Evaluate available alternatives during the design process for any refrigerants with GWP > 700.
- Leak check and repair. Prior to substantial completion, check both new and existing refrigerant-containing equipment for refrigerant leaks and repair all leaks identified. For systems with field-assembled joints, perform a leak check, vacuum check, and pressure check prior to charging with refrigerant.

Note: The refrigerant inventory may be documented for the tenant or for the entire building provided that these include tenant systems.

Impact Area Alignment:

☑ Decarbonization

-- Quality of Life

-- Ecological Conservation and Restoration

EA Credit: Electrification

EAc1

1–5 points: LEED Platinum projects do not install new on-site combustion equipment in the project scope of work.

Intent

To encourage buildings to be designed so that they do not depend on burning fuel on-site, leading to better indoor and outdoor air quality and to low-carbon operations as the grid decarbonizes.

Requirements

Achievement Pathways	Points
Commercial Interiors	1–5
Option 1. No On-Site Combustion—Base Building and Tenant Systems	5
OR	
Option 2. No On-Site Combustion Except at Low Temperatures—Base Building and Tenant Systems	1–5
Path 1. Space Heating	2
AND/OR	
Path 2. Service Water Heating	1
AND/OR	
Path 3. Cooking and Other Process Loads	1–2
Option 3. No On-Site Combustion, Limited Scope	1–3
OR	
Option 4. Base Building Documentation and Tenant Compliance	5

Option 1. No On-Site Combustion—Base Building and Tenant Systems (5 points)
Design and operate the project from start-up with no on-site combustion except for emergency support systems.

The combined weighted average equipment efficiency for space heating and service water heating (SWH) must be at least 1.8 COP for initial build-out construction or at least 1.2 COP for alterations.

The following equipment may be excluded from the COP determination:

- Space heating equipment in climate zones 0 through 2.
- Supplemental heating equipment designed only for operation at low temperatures.
- SWH equipment in nonresidential spaces complying with the point-of-use water heater criteria in ASHRAE 90.1-2022, Section 11.5.2.3.3, W05, without exceptions.

OR

Option 2. No On-Site Combustion Except at Low Temperatures—Base Building and Tenant Systems (1–5 points)
Pursue any combination of the following paths for a maximum of 4 points:

Path 1. Space Heating (2 points)
Design space heating to be capable of operating without on-site combustion except at low temperatures. Projects in climate zones 3 and above must have a weighted average space heating equipment efficiency of at least 1.8 COP for initial build-out construction or at least 1.2 COP for alterations.

The following equipment may be excluded from the COP determination:

- Supplemental heating equipment designed only for operation at low temperatures.

AND/OR

Path 2. Service Water Heating (1 point)
Design SWH systems to be capable of operating without on-site combustion except at low temperatures. Projects with total SWH capacity exceeding 34,000 Btu/hr (10 kW) must have a weighted average service hot water equipment efficiency of at least 1.8 COP for initial build-out construction or at least 1.2 COP for alterations.

The following equipment may be excluded from the COP determination:

- SWH equipment in nonresidential spaces complying with the point-of-use water heater criteria in ASHRAE 90.1-2022, Section 11.5.2.3.3, W05, without exceptions.
- Supplemental heating equipment designed only for operation at low temperatures.

AND/OR

Path 3. Cooking and Other Process Loads (1–2 points)
Design cooking, laundry, process equipment, and on-site power generation except emergency support systems to be capable of operating without on-site combustion.

- Not in scope. (1 point)
  Cooking, laundry, or process heating systems are not in project scope of work.
- In scope. (2 points)
  Cooking, laundry, process heating, process drying, and/or on-site power generation are installed within the project scope.

The following equipment may be excluded:

- Process heating equipment designed for operation at low temperatures.

Option 3. No On-Site Combustion, Limited Scope (1–3 points)

- For the project scope of work:
  - Do not install on-site combustion equipment in the project scope of work.
  - Combined weighted average equipment efficiency for new space heating and SWH must be at least 1.8 COP for initial build-out construction or at least 1.2 COP for alterations.

The following equipment may be excluded from the COP determination:

- Space heating equipment in climate zones 0 through 2.
- Supplemental heating equipment designed only for operation at low temperatures.
- SWH equipment in nonresidential spaces complying with the point-of-use water heater criteria in ASHRAE 90.1-2022, Section 11.5.2.3.3, W05, without exceptions.

Points are awarded according to Table 1 based on the minimum project scope of work.

Table 1. Points for No On-Site Combustion, Limited Scope

Minimum Project Scope of Work	Points
One or more cooking, heating, service water heating, or process heating systems	1
At least 20% of the project's peak combined heating and service water heating load, or all commercial cooking equipment	2
At least 50% of the project's peak combined heating and service water heating load, or all commercial cooking equipment	3

OR

Option 4. Base Building Documentation and Tenant Compliance (5 points)
Points are awarded according to Table 2.

- Locate in a building that has documented a LEED credit per Table 2 AND/OR
- Meet the following criteria per system type in the project scope of work:
    - System types are defined as:
        - Space heating.
        - Service water heating (SWH).
        - Cooking and other process loads.

    - **Criteria per system type:**
        - Do not install on-site combustion equipment.
          AND
        - Combined weighted average equipment efficiency for space heating system type and SWH system type must be at least 1.8 COP for initial build-out construction or at least 1.2 COP for alterations.

    The following equipment may be excluded from the COP determination:
        - Space heating equipment in climate zones 0 through 2.
        - Supplemental heating equipment designed only for operation at low temperatures.
        - SWH equipment in nonresidential spaces complying with the point-of-use water heater criteria in ASHRAE 90.1-2022, Section 11.5.2.3.3, W05, without exceptions.

Table 2. Points for Achievement of Base Building Performance and Tenant Performance

Base Building Documentation			Minimum System Types in Project Scope Complying With Criteria	Points Awarded
LEED Rating System(s)	**LEED EA Credit Name and Credit Option**	**Base Building Minimum Threshold**		
LEED v5 BD+C	EAc1: Electrification	1 point	None	1
		2 points	None	2
		3 points	At least one, or all systems in scope	3
		4 points	At least two, or all systems in scope	4
		5 points (NC) 4 points (CS)	All systems in scope	5
LEED v5 O+M	EAc1: GHG Emissions Reduction Performance, Option 1, GHG From On-Site Combustion	2 points	None	1
		3 points	None	2
		4 points	At least one, or all systems in scope	3
		5 points	At least two, or all systems in scope	4
		6 points	All systems in scope	5

For all options:

Equipment Efficiency (for Options 1 and 2)
Determine weighted average COP using either of the following:

- Equipment efficiencies at rated conditions. For equipment with multiple rated conditions, use the rating closest to 17°F (–9°C) OA db, 32°F (0°C) entering liquid temperature, or 44°F (6°C) heating source leaving liquid temperature.
- Annual average COP calculated with an energy simulation.

District energy. Projects with district energy must comply with the requirements of this credit at the district facility or see additional guidance for interpretation of credit requirements.

Fuel cells. Fuel cells using fossil fuel are ineligible for credit.

Low temperatures. “Low temperatures” refers to outside air dry-bulb temperatures (OA db) below 20°F (–6.5°C).

Impact Area Alignment:

☑ Decarbonization

-- Quality of Life

-- Ecological Conservation and Restoration

EA Credit: Enhanced Energy Efficiency
EAc2

1–12 points: 7 points are required for LEED Platinum projects

Intent

To design buildings that minimize energy use to reduce the environmental damage caused by resource extraction, air pollution, and greenhouse gas emissions, and to facilitate the transition to a clean energy future.

Requirements

Achievement Pathways	Points
Commercial Interiors	1–12
Option 1. Prescriptive Path	1–12
Path 1. ASHRAE 90.1-2022 Compliance for Project Scope	3
AND/OR	
Path 2. Regulated Loads	1–4
Case 1. Additional Efficiency—Systems Optimization	1–4
OR	
Case 2. Additional Efficiency Requirements Beyond ASHRAE 90.1-2022	1–4
OR	
Path 3. Plug and Process Loads (PPL)	1–5
Case 1. Plug Load Management	1
AND/OR	
Case 2. Efficient Plug and Process Load Equipment	1–5
OR	
Case 3. Plug and Process Load Exceptional Calculation	1–5
Path 4. Base Building Energy Efficiency	2
OR	
Option 2. Energy Simulation	1–12
Path 1. Percentage Reduction Excluding On-Site Renewable Contribution	1–12
OR	
Path 2. Percentage Reduction Including On-Site Renewable Contribution	1–12

Option 1. Prescriptive Path (1–12 points)

Path 1. ASHRAE 90.1-2022 Compliance for Project Scope (3 points)
Comply with the provisions of ASHRAE 90.1-2022, Sections 5 through 11, for the project scope of work.

AND/OR

Path 2. Regulated Loads (1–4 points)
Apply Case 1 or Case 2, up to a maximum of 4 points:

Case 1. Additional Efficiency—Systems Optimization (1–4 points)
Points are awarded according to Table 1. For projects complying with Path 1, reference ASHRAE 90.1-2022 or approved equivalent standard. For other projects registered prior to Jan. 1, 2028, reference ASHRAE 90.1-2019 or approved equivalent standard.

Table 1. Systems Optimization

	Threshold	Points
Lighting power. Reduce connected lighting power, including existing fixtures below the lighting power allowance by the specified percentage.	15%	1
	30%	2
Cooling, heating, and service water heating efficiency. Demonstrate the specified percent improvement in prescriptive efficiencies for at least 75% of the combined cooling, heating, and service water heating capacity installed or replaced in the project scope of work.	15%	1
Fan power. Demonstrate the specified percent improvement in fan power below the prescriptive fan power limitation for systems altered or replaced in the project scope of work.	20%	1

OR

Case 2. Additional Efficiency Requirements Beyond ASHRAE 90.1-2022 (1–4 points)
Applicable only to projects complying with ASHRAE 90.1-2022, Sections 5–11, that are also defined as "substantial alterations to existing buildings" per ASHRAE 90.1, Section 11.1.4. Points are awarded according to Table 2.

Document achievement of incremental ASHRAE 90.1-2022, Section 11, energy credits, above the minimum required by ASHRAE 90.1-2022, Section 11, from the following list of eligible measures:

Eligible measures from ASHRAE 90.1, Section 11.5.2, for LEED points:

- HVAC measures (H01 to H07)
- Service water heating measures (W01 to W09)
- Lighting measures (L01 to L06)
- G07 Building Mass/Night Flush

Table 2. Points for ASHRAE 90.1-2022, Section 11, Credits

ASHRAE 90.1-2022, Section 11, Credits	Points
Min. required by 90.1-2022 plus 13 credits	1
Min. required by 90.1-2022 plus 25 credits	2
Min. required by 90.1-2022 plus 38 credits	3
Min. required by 90.1-2022 plus 50 credits	4

AND/OR

Path 3. Plug and Process Loads (1–5 points)

Case 1. Plug Load Management (1 point)
Implement the following:

- Provide a plug load dashboard that is accessible through an application to all regular occupants of the space.
- For tenant types with IT departments, implement policies for PCs, monitors, and visual displays to be controlled off when not in use, except scheduled maintenance periods.

AND/OR

Case 2. Efficient Plug and Process Load Equipment (1–5 points)

- Install or reuse eligible plug and process equipment meeting the criteria in Table 3 for 90% of applicable equipment by quantity or rated load. Either include or exclude all eligible equipment reused in the project from the calculations. For one Table 3 equipment category (1 point)
- For two Table 3 equipment categories (2 points)
- For three or more Table 3 equipment categories (3 points)

OR

- Process-intensive spaces. Install or reuse eligible plug and process equipment meeting the criteria in Table 3 for at least 90% of total applicable equipment rated load. Rated load of compliant equipment must total at least:
  - 0.3 Watt/ft^2 (3.2 W/m^2) (3 points)
  - 0.5 Watt/ft^2 (5.4 W/m^2) (4 points)
  - 1.0 Watt/ft^2 (10.8 W/m^2) (5 points)

Table 3. Plug, Process, Refrigeration, and Conveyance Equipment Criteria

Equipment Category	Applicable Equipment	Criteria
ENERGY STAR products— plug loads and small appliances	• Office equipment • Appliances • Electronics • Other (e.g., vending machines, pool pumps, water coolers)	ENERGY STAR rated or approved equivalent with at least 0.1 W/ft^2 (1.1 W/m^2) of total rated load
ENERGY STAR products— process loads	• Commercial food service equipment • Data center/server equipment • Commercial laundry equipment • Electric vehicle chargers (EVSE) • Other (e.g., laboratory-grade refrigerators and freezers)	ENERGY STAR rated or approved equivalent with at least 0.1 W/ft^2 (1.1 W/m^2) of total rated load
People conveyance	• Elevators • Escalators • Moving walkways	ISO 25745 At least Class A-rated
Data center electrical system	Electrical system design	ASHRAE 90.4-2022 Design electrical loss component (ELC) is at least 20% lower than the maximum design electrical loss
Refrigeration systems	Referenced in ASHRAE 90.1, Section 6.8, tables AND not ENERGY STAR eligible	10% improvement beyond ASHRAE 90.1, Section 6.8, tables
	Refrigerated warehouse	California Title 24-2022, Section 120.6, refrigerated warehouse requirements
Airport equipment	Baggage handling equipment	Individual carrier systems (ICS) with variable frequency drive
	Aircraft and jetway air-conditioning	Preconditioned air (PCA) systems with efficiencies meeting ASHRAE 90.1 prescriptive efficiencies for HVAC equipment

OR

Case 3. Plug and Process Load Exceptional Calculation (1–5 points)
Using the ASHRAE 90.1, Section G2.5, exceptional calculation method, demonstrate a minimum percentage improvement in total project plug and process, refrigeration, and conveyance loads. Points are awarded according to Table 4 below.

Table 4. Points for Percent Improvement in Plug and Process Loads

Percent Improvement	Points
8%	1
16%	2
24%	3
32%	4
40%	5

Path 4. Base Building Energy Efficiency (2 points)
Locate in a base building that complies with one of the following:

- ASHRAE 90.1-2022
- Current ENERGY STAR score of at least 75
- LEED base building documentation of energy efficiency per Table 5

Table 5. LEED Base Building Documentation of Energy Efficiency

Interior Fit Out Classification	LEED Base Building Documentation of Energy Efficiency		
	Rating System(s)	EA Credit Name and Credit Option	Base Building Minimum Threshold
Initial build-out	LEED v5 BD+C	EAc3: Enhanced Energy Efficiency	5 points
Alterations of previously occupied space	LEED v5 O+M	EAc2: Optimized Energy Performance	5 points
Initial build-out	LEED v4 or LEED v4.1 BD+C	Optimize Energy Performance	8 points

OR

Option 2. Energy Simulation (1–12 points)
Demonstrate an improvement in future source energy calculated per ASHRAE Standard 90.1, Normative Appendix G, "Performance Rating Method," with the following additional provisions:

- Use the ASHRAE 90.1 version applied for EAp2: Minimum Energy Efficiency.
- Replace ASHRAE 90.1-2019 or 90.1-2022, Table 4.2.1.1, "Building Performance Factors (BPF)," with Table 7 below. For alterations except initial build-out construction, the following ASHRAE 90.1-2022 adjustments may be applied:
    - Substantial alteration. Multiply the building performance factor (BPF) by 1.05 if the alteration is defined as a substantial alteration in ASHRAE 90.1-2022, Section G3.1.4(a).
    - Other alterations: Apply ASHRAE 90.1-2022, Section G3.3 ("Performance Calculations for Other Alterations"). For projects documented using ASHRAE 90.1-2019, Appendix G, replace all references to 90.1-2022, Section 5 through 10, prescriptive criteria with the corresponding 90.1-2019, Section 5 through 10, criteria.
- Replace all references to "cost" with "future source energy." Use an electric site-to-source energy conversion factor of 2.0 based on future projections for the U.S. A lower national average value may be used as applicable for projects outside of the U.S.
- Model energy efficiency measures for plug and process loads using Section G2.5, "Exceptional Calculation Method," or approved calculations in the LEED reference guidance. Calculate the

performance index (PI) and percentage improvement with and without the plug and process savings.

- Calculate the PI and performance index target (PI_t) as follows:
  - $PI_{nre} = PBP_{nre} / BBP$
  - $PI = PBP / BBP$
  - $PI_t = [BBUE + (BPF \times BBRE)] / BBP$
    Where
    - PI_{nre} = performance index for future source energy excluding on-site renewable contribution
    - PI = performance index for future source energy including on-site renewable contribution
    - PI_t = performance index target for future source energy use
    - BBP = baseline building performance for baseline building future source energy use
    - BBUE = baseline building unregulated future source energy use
    - BBRE = baseline building regulated future source energy use
    - PBP_{nre} = *proposed building performance* without any credit for reduced annual future source energy from *on-site renewable energy* generation *systems*
    - PBP = *proposed building performance*, including the reduced annual future source energy associated with all *on-site renewable energy* generation *systems*

Points are awarded according to Table 6, using either Path 1 or Path 2.

Table 6. Points for Percentage Improvement in PI Below PI_t

Path 1. Percentage Reduction Excluding On-Site Renewable Contribution (100% – PI_{nre} / PI_t)	OR	Path 2. Percentage Reduction Including On-Site Renewable Contribution (100% – PI / PI_t)	Points
0%		5%	2
2%		10%	3
4%		20%	4
6%		30%	5
8%		40%	6
10%		50%	7
12%		60%	8
14%		70%	9
16%		80%	10
18%		90%	11
20%		100%	12

Table 7. ASHRAE 90.1-2019-Equivalent Building Performance Factors for a Future Source Energy Metric

	Climate Zone																		
Building Type	**0A**	**0B**	**1A**	**1B**	**2A**	**2B**	**3A**	**3B**	**3C**	**4A**	**4B**	**4C**	**5A**	**5B**	**5C**	**6A**	**6B**	**7**	**8**
Multifamily	0.74	0.69	0.73	0.70	0.73	0.70	0.71	0.70	0.63	0.70	0.71	0.69	0.68	0.70	0.70	0.68	0.68	0.68	0.74
Health care/hospital	0.72	0.72	0.73	0.73	0.74	0.71	0.72	0.74	0.71	0.72	0.73	0.71	0.74	0.73	0.80	0.73	0.77	0.78	0.79
Hotel/motel	0.72	0.71	0.72	0.71	0.71	0.70	0.71	0.73	0.72	0.71	0.73	0.73	0.71	0.73	0.74	0.70	0.72	0.70	0.70

	Climate Zone																		
Building Type	**0A**	**0B**	**1A**	**1B**	**2A**	**2B**	**3A**	**3B**	**3C**	**4A**	**4B**	**4C**	**5A**	**5B**	**5C**	**6A**	**6B**	**7**	**8**
Office	0.62	0.63	0.61	0.62	0.58	0.60	0.57	0.62	0.55	0.55	0.61	0.57	0.58	0.61	0.59	0.58	0.60	0.54	0.58
Restaurant	0.65	0.62	0.63	0.61	0.62	0.58	0.63	0.63	0.63	0.67	0.66	0.66	0.70	0.70	0.68	0.73	0.72	0.74	0.77
Retail	0.57	0.54	0.53	0.53	0.48	0.47	0.47	0.47	0.47	0.52	0.50	0.56	0.57	0.53	0.59	0.58	0.56	0.53	0.60
School	0.57	0.57	0.58	0.57	0.55	0.54	0.57	0.51	0.49	0.48	0.51	0.52	0.51	0.53	0.51	0.53	0.50	0.51	0.58
Warehouse	0.28	0.30	0.24	0.27	0.23	0.24	0.27	0.23	0.20	0.33	0.26	0.28	0.40	0.32	0.29	0.44	0.38	0.40	0.44
All others	0.65	0.62	0.64	0.62	0.57	0.54	0.57	0.56	0.58	0.59	0.57	0.60	0.60	0.59	0.65	0.62	0.62	0.61	0.64

Impact Area Alignment:

☑ Decarbonization

-- Quality of Life

-- Ecological Conservation and Restoration

EA Credit: Renewable Energy
EAc3

1–5 points: 100% of tenant annual site energy consumption from any combination of Tier 1, Tier 2, and Tier 3 renewable energy is required for LEED Platinum projects.

Intent

To encourage and recognize the use of renewable energy to reduce environmental and economic impacts associated with fossil fuel energy use and increase the supply of new renewable energy within the electrical grid, fostering a just transition to a green economy.

Requirements

Achievement Pathways	Points
Commercial Interiors	1–5
Renewable Energy Supply or Procurement	1–5

Supply or procure renewable energy meeting the renewable energy criteria referenced below. Points are rewarded according to Table 1.

Points documented for Tier 1, Tier 2, and/or Tier 3 renewable energy may be added together up to a maximum of 4 points.

Tenant annual site energy consumption must include

- Total estimated annual electricity and fuel use for systems and equipment within the project boundary or exclusively serving the project space (excludes shared air handling units or thermal energy) AND
- Total estimated annual energy consumption for thermal energy (chilled water or hot water) supplied directly to the tenant by a utility, energy provider, or plant that is not in the building.

Renewable energy may be allocated to the tenant from the base building, provided it is

- Allocated equally for the entire building area (including tenant area and base building core area) OR
- Incremental to the renewable energy required for the base building for LEED Core and Shell EAc4: Renewable Energy.

Table 1. Points for Renewable Energy Procurement

Points	Tier 1			Tier 2	Tier 3
	Minimum Rated Capacity[1]	or	Percent of Tenant Annual Site Energy	Percent of Tenant Annual Site Energy	Percent of Tenant Annual Site Energy
1	A * 1 W / ft^2 (A * 10.8 W/m^2)	or	5%	20%	50%
2	A * 2 W / ft^2 (A * 21.6 W/m^2)	or	10%	40%	100%
3			20%	60%	
4			35%	80%	
5			100% Tier 1 and/or Tier 2 renewable energy		

A = the sum of gross floor area of all floors of the building up to the three largest floors of the building, prorated to the project based on project area.

Renewable Energy Criteria

Renewable Energy Classifications

- Tier 1. On-site renewable energy generation or equity project
  The renewable generation equipment may be located
  - On the project site.
  - On the campus on which a project is located.
  - On the site of an equity project, provided that the renewable power system is provided, installed, and commissioned at no cost to the equity entity, that the ownership of the renewable power system is transferred to the equity entity, and that the rights to the power provided be given to the equity entity.

- Tier 2. New off-site renewable electricity
  - Off-site renewable electricity produced by new generation asset(s) must be
    - Contracted to be operational within two years of building occupancy, OR
    - Contracted no more than five years after the renewable asset's commercial operations date.

- Tier 3. Off-site renewable energy
  - Off-site renewable electricity that is Green-e Energy certified or equivalent
  - Renewable fuels that are Green-e Energy certified or equivalent

Renewable Energy Contract Length

- Contract length shall be 10 years or prorated across 10 years for shorter contract lengths.

Renewable Energy Environmental Attributes

- *Ownership.* All environmental attributes (energy attribute certificates [EACs] or renewable energy certificates) associated with renewable energy generation must be retired on behalf of the LEED project for the renewable energy procurement to contribute to credit achievement.
- *Project energy source.* Renewable electricity generation and EAC procurement can only be applied to tenant electricity use or district energy use up to 100% of annual electricity plus district energy use. Renewable fuels can only be applied to tenant fuel use or district heat up to 100% of annual fuel plus district heat use.
- *Vintage.* EACs credited to the project must be generated no earlier than 18 months before the LEED project's initial application submission date.
- *Location.* Tier 2 and Tier 3 renewable assets must be in the same country or region where the LEED project is located.
- *Tier 2 bulk purchase*. Green-e Energy certification or equivalent is required for one-time purchase or annual purchase of EACs or renewable power totaling more than 100% of the tenant's annual electricity use.

Impact Area Alignment:

☑ Decarbonization

-- Quality of Life

-- Ecological Conservation and Restoration

EA Credit: Enhanced Commissioning
EAc4

1–4 points

Intent

To further ensure that the building systems function as designed, and that they continue to maintain energy performance over time.

Requirements

Achievement Pathways	Points
Commercial Interiors	1–4
Option 1. Enhanced Commissioning	1–2
AND/OR	
Option 2. Monitoring-Based Commissioning (MBCx)	1–2
Path 1. Basic MBCx	1
OR	
Path 2. Enhanced MBCx	2

Option 1. Enhanced Commissioning (1–2 points)
Owner must designate an independent commissioning provider (CxP) during predesign or very early in the design phase.

Comply with ANSI/ASHRAE/IES Standard 202-2024, "Commissioning Process" for mechanical, electrical, plumbing, data center, process, building monitoring, building enclosure, and renewable energy systems within the project scope of work (including any interconnection with base building systems).

The CxP must comply with the following additional requirements:

- Attend at least one coordination meeting during the design phase, and at least two milestone meetings during the construction phase to discuss review comments and commissioning.
- Provide an ongoing commissioning plan.
- During occupancy, review the training materials to confirm that they meet the training plan, and confirm that the training occurred.

If the project scope includes alterations to 25% or more of the building envelope area or 5,000 ft^2 (465 m^2) of the building enclosure, then field testing for the building enclosure shall include the following if applicable:

- Water penetration testing, as per ASTM E1105 or AAMA 501.2, as appropriate.
- Infrared imaging, as per ASTM C1153 or ASTM C1060, as appropriate.

AND/OR

Option 2. Monitoring-Based Commissioning (MBCx) (1–2 points)

Path 1. Basic MBCx (1 point)

Process and communications. Commit to implementing MBCx for a minimum of three years. Include all of the following:

- MBCx plan. Develop an MBCx plan and include it in the current facilities requirements and operations and maintenance plan. The MBCx plan must describe
  - Roles and responsibilities.
  - Training of operations staff.

- A software technology description, including frequency and duration of trend monitoring.
- An action plan for identifying, prioritizing, correcting, and verifying correction of operational errors.
- Review and reporting criteria. At least annually, provide a summary report of trends, benchmarks, faults, energy savings opportunities, corrective actions taken, and planned actions.

- Energy information system (EIS). Have in place a remotely accessible platform with software functionality to perform smart analytics and visually present project electricity consumption and fuel consumption, excluding shared systems serving the project space. Tenant access to the building EIS is acceptable.

  Include the following functionality:
  - Annual energy benchmarking of energy use intensities
  - Comparison of total project energy consumption and energy consumption of fuel and electricity to the prior interval annually and monthly
  - If electricity interval metering is required in EAp4: Energy Metering and Reporting, provide visualization and reporting of hourly total electricity and submetered data. For total tenant electricity, include an hourly "loadshape" and comparison of hourly electricity to the prior interval, and to the same interval of the prior year annually, monthly, weekly, and daily.
  - Provide hourly monitoring and visualization of electric energy use for
    - Commercial kitchen equipment in project spaces with more than 20 kW of rated capacity.
    - Process equipment in project spaces with more than 20 kW of rated capacity.
  - Training. Train operations staff to use the EIS to proactively inform energy-efficient operations or confirm training occurred within the past six years**.**

OR

Path 2. Enhanced MBCx (2 points)
Comply with Path 1 and implement the following enhanced MBCx practices and software capabilities:

- Provide MBCx through a corporate MBCx program or contracted service. Fully coordinate the MBCx process between the space operations staff and the monitoring-based commissioning provider (MBCxP).
- Process and communications. The MBCxP process must include
  - Expeditious communication of major anomalies or faults identified by MBCxP to facilities staff.
  - At least quarterly, an MBCxP summary of anomalies and faults detected and communication with facilities staff to discuss and prioritize issues.
  - For projects with fault detection and diagnostics (FDD), training of operations staff in the use of FDD to proactively identify and correct building system issues for optimized system operation, or a confirmation that training occurred within the past six years.

- Enhanced energy information system (EIS). Include the following additional functionality:
  - Normalization of energy consumption
  - Automated reporting of energy use anomalies
  - Greenhouse gas emissions reporting
  - Hourly metering and visualization of electricity for the following, if applicable:
    - On-site electricity generation
    - At least 90% of lighting power altered or installed in the project scope of work.

        - HVAC or refrigeration equipment with thermal energy capacity exceeding 900,000 Btu/hr (264 kW, 75 tons), or with rated fan power exceeding 75 hp (56 kW).
        - Electricity use for process equipment with thermal energy capacity exceeding 900,000 Btu/hr (264 kW, 75 tons)

- FDD for projects with large HVAC and refrigeration capacity. For total project installed capacity of either cooling systems, heating systems, or refrigeration systems exceeding 7,200 kBtu/hr (600 tons, or 2,110 kW), provide a remotely accessible FDD system that addresses at least 60% weighted by capacity of
    - Air-handling equipment AND
    - Large hydronic or commercial refrigeration equipment (chillers, boilers, etc.).

  The FDD system must be able to
    - Perform smart analytics and visually present FDD data.
    - Direct link from reported fault to view relevant trend data.
    - Sort and filter faults.
    - Export fault reports (summary reports and detailed individual faults).
    - Act as a data historian capable of storing critical trend data for at least three years.

Impact Area Alignment:

☑ Decarbonization

-- Quality of Life

-- Ecological Conservation and Restoration

EA Credit: Grid Interactive

EAc5

1–3 points

Intent

To enhance power resilience and position buildings as active partners contributing to grid decarbonization, reliability, and power affordability through peak thermal load reduction and integrated management of building loads in response to variable grid conditions.

Requirements

Achievement Pathways	Points
Commercial Interiors	1–3
Option 1. Peak Thermal Load Reduction	1–3
Path 1. Ventilation Energy or Heat Recovery	1
AND/OR	
Path 2. Low Thermal Conductance	1
AND/OR	
Path 3. Infiltration	1
AND/OR	
Option 2. Energy Storage	1–2
AND/OR	
Option 3. Demand Response Program	1
AND/OR	
Option 4. Automated Demand-Side Management	1
Path 1. System-Level Controls	1
OR	
Path 2. Building Automation System	1
Option 5. Power Resilience	1

Comply with any of the following up to a maximum of 3 points. Each requirement may be documented at the building level or for the project only.

Option 1. Peak Thermal Load Reduction (1–3 points)
Comply with any of the following peak thermal load reduction criteria for 1 point each.

Path 1. Ventilation Energy or Heat Recovery (1 point)
Each fan system supplying outdoor air to the project shall have an energy or heat recovery system with a minimum 70% enthalpy recovery ratio or a minimum 75% sensible heat recovery ratio. Provisions must be made to bypass or control the energy recovery system during moderate outside air conditions.

In aggregate, fan systems supplying less than 15% of the project's total outdoor air can be excluded.

AND/OR

Path 2. Low Thermal Conductance (1 point)

- For initial build-out, comply prescriptively with the thermal bridging requirements of ASHRAE 90.1-2022, Section 5.5.5. Projects in climate zones 0 through 3 shall not be excepted.
- For projects locating in an existing building, demonstrate one of the following:

- Total envelope UA (the sum of U-factor times assembly area) no more than 125% of the total building envelope UA meeting the ASHRAE 90.1-2022 prescriptive building envelope criteria for new construction.
- Minimum 30% improvement in total envelope UA for the alteration versus historical total envelope UA (no more than three years prior to project registration), AND total envelope UA is no more than 200% of the conductance of a total building envelope UA meeting the ASHRAE 90.1-2022 prescriptive envelope criteria for new construction.

AND/OR

Path 3. Infiltration (1 point)
Either at the building level, or for the compartmentalized tenant space, demonstrate one of the following through air leakage testing conducted within five years of project occupancy:

- Measured air leakage of the building envelope less than or equal to Table 1, below. OR
- For projects locating in existing buildings, a reduction in air leakage of at least 30%, to a measured air leakage less than 1.0 cfm/ft^2 (5 L/s*m^2) at 75 Pascals (0.3 in H_2O) documented through air leakage testing before and after alterations are implemented.

Table 1. Caps on Air Leakage Rates

Pressure Test Conditions Across the Building Envelope	Maximum Air Leakage[1]	
	Initial Build-Out	Renovation of Previously Occupied Space
At pressure difference of 50 Pascals (0.2 in H_2O)	0.17 cfm/ft^2 (0.85 L/s*m^2) [1]	0.26 cfm/ft^2 (1.3 L/s*m^2) [1]
At pressure difference of 75 Pascals (0.3 in H_2O)	0.24 cfm/ft^2 (1.20 L/s*m^2) [1]	0.35 cfm/ft^2 (1.75 L/s*m^2) [1]

Path 3 notes:

1. Air leakage per ft^2 or m^2 of building envelope area (including exterior walls, roofs, and base floor/slab).
2. Complete air leakage testing using ASTM E779, ANSI/RESNET/ICC 380, ASTM E3158, ASTM E1827, or equivalent.

AND/OR

Option 2. Energy Storage (1–2 points)
Provide on-site electric storage and/or thermal storage meeting the criteria in Table 2 below.

Include automatic load management controls capable of storing the electric or thermal energy during off-peak periods or periods with low grid carbon intensity, and using stored energy during on-peak periods or periods of high grid carbon intensity.

Table 2. Peak Storage Capacity Relative to Peak Demand

Storage	1 Point	2 Points
Electric storage capacity Relative to peak electric demand	0.2 kWh / kW	0.4 kWh / kW
Thermal storage capacity Relative to peak coincident thermal demand (heating + cooling + service water heating + process heat)	1.0 kWh / kW or Btu / Btu/hr or ton-hr / ton	2.0 kWh / kW or Btu / Btu/hr or ton-hr / ton

AND/OR

Option 3. Demand Response Program (1 point)
Enroll in a minimum one-year demand response (DR) contract with a qualified DR program provider, with the intention of multiyear renewal.

On-site combustion-based electricity cannot be used to meet the demand-side management criteria.

AND/OR

Option 4. Automated Demand-Side Management (1 point)
On-site combustion-based electricity cannot be used to meet the demand-side management criteria.

Path 1. System-Level Controls (1 point)
Provide automated demand response controls for at least two of the following systems installed within the project scope of work:

- HVAC systems (50% of rated capacity)
- Lighting systems (50% of power)
- Automatic receptacle controls (50% of number of receptacles)
- Service water heating (90% of capacity)
- Electric vehicle supply equipment

OR

Path 2. Building Automation System (1 point)

- Develop a plan for shedding at least 10% of the project's peak electricity demand for a minimum of one hour. The plan shall address both winter and summer peaks considering electrified grid projections.
- Use a control system that automatically sheds electricity demand in response to triggers denoting strain on the grid or high grid emissions. For example:
    - Signal from a DR program provider
    - Data obtained through an API indicating high grid emissions.
    - Peak demand tariff period when the grid is operating in the highest demand window.
    - Time-of-use rate when pricing is highest.

AND/OR

Option 5. Power Resilience (1 point)
Identify critical equipment that requires continuous operation. Design the project to be capable of islanding and operating independently from the grid to power the critical loads with the project's on-site renewable and energy storage systems for a minimum of three days.

Impact Area Alignment:

☑ Decarbonization

-- Quality of Life

-- Ecological Conservation and Restoration

EA Credit: Enhanced Refrigerant Management
EAc6

1–2 points

Intent

To reduce greenhouse gas emissions by accelerating the use of refrigerants with low global warming potential (GWP) and promoting better refrigerant management practices.

Requirements

Achievement Pathways	Points
Commercial Interiors	1–2
Option 1. No Refrigerants or Low GWP	1–2
Path 1. No Refrigerants	2
OR	
Path 2. Low GWP Refrigerants	1–2
AND/OR	
Option 2. Limit Refrigerant Leakage	1
Retail	1–2
Option 1 or 2	1
AND/OR	
Option 3. GreenChill Certification for Food Retailers	1–2

Option 1. No Refrigerants or Low GWP (1–2 points)

Path 1. No Refrigerants (2 points)
Do not use refrigerant-containing equipment in the project.

OR

Path 2. Low GWP Refrigerants (1–2 points)
The maximum total weighted average refrigerant GWP in all new refrigerant-containing equipment is less than or equal to 80% (1 point) or 50% (2 points) of the total weighted average GWP of refrigerants meeting the benchmarks in Table 1.

Projects that limit effective refrigerant GWP by reducing refrigerant charge per unit of capacity relative to comparable equipment may use adjusted benchmarks per additional guidance.

Table 1. Refrigerant GWP Benchmarks

GWP Benchmark[1]	Equipment and Systems
1,400	Heat pump service hot water heaters
700	HVAC
	Data centers, computer room air-conditioning, and information technology equipment cooling
	Process chiller equipment or ice rink refrigeration equipment
300	All other process refrigeration for retail, industrial, or cold storage

Note: GWP benchmarks are based on a 100-year time horizon GWP relative to CO_2.

AND/OR

Option 2. Limit Refrigerant Leakage (1 point)
Design, construct, and operate the project's refrigerant-using equipment to minimize refrigerant leakage. For initial build-out of projects with less than 50% of the capacity of refrigerant-using equipment installed in the project scope of work, compliance must be documented for base building systems as well as any systems installed in the project scope of work.

- Design.
  - Refrigerant-using equipment shall be self-contained, with no field-installed piping:
    - For equipment with refrigerants > 700 GWP AND
    - For at least 80% of the total GWP of refrigerants used in the project
  - Specify an "automatic leak detection" system in fully enclosed spaces with equipment that has an overall refrigerant charge exceeding 100 tons of equivalent CO_2 emissions (tCO_2e).

- Installation.
  - Field-installed refrigerant piping shall use brazed or press-type fittings.

- Operation.
  Have in place a refrigerant maintenance plan and designate a responsible oversight party. The plan shall include standards for recordkeeping and protocols for
  - Updating the refrigerant inventory.
  - Tracking and recording refrigerant charge and leakage rates for all refrigerant-using equipment.
  - Ensuring that installation, maintenance, and removal of refrigeration-containing equipment is performed by appropriately certified refrigeration personnel, including in tenant spaces.
  - Auditing annually and calibrating automatic leak detection systems.
  - For equipment without automatic leak detection systems: checking pressure loss and leaks at least as frequently and with the minimum intervals for equipment containing refrigerants as follows, with a total GWP as follows: every 24 months for 50 tCO_2e or less; every 12 months for 50 to 500 tCO_2e; every 3 months for more than 500 tCO_2e.
  - Identifying the maximum time frame for repairing leaks.
  - More frequent leakage testing and repairing, to be twice as frequent if the total annual refrigerant recharge/leakage exceeds 1%.

Retail (1–2 points)

Meet Option 1 and/or Option 2 above, or Option 3 below, for a maximum of 2 points.

AND/OR

Option 3. GreenChill Certification for Food Retailers (1–2 points)
Available to projects where food retailing constitutes more than 20% of the project's gross area.

Demonstrate achievement of the Environmental Protection Agency's GreenChill certification for projects in the U.S. For international projects, comply with the relevant GreenChill requirements for the certification level.

- GreenChill Silver certification (1 point)
- GreenChill Gold or Platinum certification (2 points)

For all options:

District energy. Projects with district energy must comply with the requirements of this credit at the district facility or see additional guidance for interpretation of credit requirements.

MATERIALS AND RESOURCES (MR)

MR Prerequisite: Planning for Zero Waste Operations
MRp1

Impact Area Alignment:

- ☑ Decarbonization
- -- Quality of Life
- ☑ Ecological Conservation and Restoration

Required

Intent

To reduce the amount of waste that is generated by building occupants and hauled to and disposed of in landfills and incinerators through reduction, reuse, and recycling services and education, and to conserve natural resources for future generations. To set the building up for success in pursuing zero waste operations.

Requirements

Achievement Pathways	Points
Commercial Interiors	N/A
Storage and Collection of Recyclables	
AND	
Zero Waste Operations Planning	

Comply with the following requirements:

Storage and Collection of Recyclables
Provide dedicated areas accessible to waste haulers, janitorial staff, 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 organics/food waste, mixed paper, corrugated cardboard, glass, plastics, and metals.
    - Mixed recyclables are acceptable for paper, corrugated cardboard, glass, plastics, and metals if required by local conditions.
    - Space for the storage of organics/food waste recycling is required even if service is not available at the time of building occupancy.
- Take appropriate measures for the safe collection, storage, and disposal of batteries, mercury-containing lamps, and electronic waste.

Zero Waste Operations Planning
Include design details, maintenance manuals, and/or other resources from the design and construction team that help facilitate building occupants and operators to meet high performance waste prevention and recycling goals once in operation.

Impact Area Alignment:

☑ Decarbonization

-- Quality of Life

-- Ecological Conservation and Restoration

MR Prerequisite: Quantify and Assess Embodied Carbon

MRp2

Required

Intent

To quantify embodied carbon impacts of materials used in commercial interiors projects and assess the top sources of embodied carbon.

Requirements

Achievement Pathways	Points
Commercial Interiors	N/A
Embodied Carbon	
AND	
High-Priority Embodied Carbon Sources	

Comply with the following requirements:

Embodied Carbon

- Quantify the embodied carbon impacts (global warming potential, or GWP) and quantities of interior materials for the project. Include the following when included in the scope of work: gypsum wallboard, flooring, insulation, wood and wood composites, wall framing, ceiling systems, concrete, metals, and paints and coatings. Project teams may include furniture at their discretion.
- Quantify the cradle-to-gate (A1 through A3) embodied carbon emissions for each material defined as the product's GWP/unit times the amount of material used.
    - Alternatively, projects using life-cycle assessment or embodied carbon software tools may report A1–A3 results from their tool.

AND

High-Priority Embodied Carbon Sources

Identify the top three sources of embodied carbon on the project and describe how project-specific strategies were considered to reduce the impacts of these hot spots.

Impact Area Alignment:

☑ Decarbonization

-- Quality of Life

☑ Ecological Conservation and Restoration

MR Credit: Interior Materials Reuse

MRc1

1–4 points

Intent

To discourage unnecessary demolition and encourage the on-site reuse of existing interior elements and furniture, and to incorporate reused materials into new project design wherever possible. Such practices reduce embodied carbon, keep materials in circularity, reduce demand for virgin material sourcing, preserve cultural resources and histories, and foster markets for reused materials.

Requirements

Achievement Pathways	Points
Commercial Interiors	1–4
Option 1. Reuse Existing Interior and Minimize Renovation	1–4
Path 1. Furniture and Interior Nonstructural Elements Reuse	1–4
OR	
Path 2. Furniture Reuse	1–2
AND/OR	
Option 2. Materials Reuse	1–3

Demonstrate reduced environmental impacts during initial project decision-making by reusing existing building resources and by incorporating off-site reused materials into the project design. For projects with deconstruction or demolition in scope, conduct a salvage assessment prior to deconstruction or demolition activities and identify materials that can be retained on-site or diverted off-site to reuse markets.

- Note: Materials sent for off-site reuse contribute to waste diversion in MRc5: Construction and Demolition Waste Diversion. Materials retained on-site or acquired from off-site sources and incorporated into the project contribute to this credit.

Achieve points through building and/or material reuse. Pursue Option 1 and/or Option 2 for a maximum of 4 points.

Option 1. Reuse Existing Interior and Minimize Renovation (1–4 points)

Maintain the existing interior nonstructural elements and furniture. Only materials that remain in place (on-site reuse) are included in this credit option. On-site reuse can include materials that come from the same project owner's stockpile or warehouse but excludes any off-site reused materials incorporated into the project that originate from external sources. Hazardous materials remediated as a part of the project must be excluded from the calculation.

Path 1. Furniture and Interior Nonstructural Elements Reuse (1–4 points)

Compile the total cost for the project's on-site reused and new nonstructural elements and furniture, pricing reused elements as if they were new. Include all the following elements in the project, as applicable to the scope of work: flooring, walls, ceilings, insulation, and furniture. Determine the cost of the elements of the project that are reused on-site and calculate the percentage of the total value of the project, including both new and reused. Points are awarded according to Table 1.

Table 1. Points for On-Site Reuse of Interiors and Furniture as a Percent of Total

Percent of Furniture and Interior Systems Reused On-Site (by Cost)	Points
10%	1
20%	2
30%	3
40%	4

OR

Path 2. Furniture Reuse (1–2 points)
Compile the total cost for the project's furniture that is reused on-site. Include the total project cost for reused and new furniture, pricing the reused furniture as if it were new. Determine the percentage of reused furniture based on cost and earn points according to Table 2.

Table 2. Points for Furniture Reuse

On-Site Furniture Reuse (by Cost)	Points
20%	1
40%	2

AND/OR

Option 2. Material Reuse (1–3 points)
Survey and identify material procurement opportunities from off-site reuse and/or salvage sources. Incorporate reused materials into the project design. Specific targeted reuse materials are valued higher because they have high impacts (embodied carbon or pollution), are hard to recycle, and significant amounts of these materials end up in landfill.

Earn points according to Tables 3 and 4. Calculate the percent reused per material type according to Equation 1.

Table 3. Points for Salvaging Materials

Salvage Strategies and Percentages	Points
Incorporate off-site reused materials for at least 25% of 1 targeted material type OR Incorporate off-site reused materials for at least 25% of 2 other material types OR Incorporate an equivalent weighted average of targeted and other material reuse types	1 point
Incorporate off-site reused materials for at least 50% of 1 targeted material type OR Incorporate off-site reused materials for at least 25% of 2 targeted material types OR Incorporate off-site reused materials for at least 25% of 4 other material types OR Incorporate an equivalent weighted average of targeted and other material reuse types	2 points
Incorporate off-site reused materials for at least 75% of 1 targeted material type OR Incorporate off-site reused materials for at least 50% of 2 targeted material types Or Incorporate an equivalent weighted average of targeted and other material reuse types	3 points

Table 2. Salvage Material Types and Correlating Units

Material Type	Unit
Targeted Materials	
Carpeting	Surface area
Ceilings	Surface area
Furniture (ancillary and systems)	Count, weight, volume, or floor area
Other Materials	
Dimensional lumber	Board foot or linear
Doors	Count
Casework	Linear
Floor-covering materials (not including carpet)	Surface area
Lighting fixtures	Count
Plumbing fixtures	Count
Mechanical equipment	Count
Door hardware	Count
Project defined other; must be permanently installed	Project defined

Equation 1. Reuse % per Material Type

Reuse % per material type = amount of material type reused/total amount of material type in commercial interiors scope

Impact Area Alignment:

☑ Decarbonization

-- Quality of Life

-- Ecological Conservation and Restoration

MR Credit: Reduce Embodied Carbon

MRc2

1–4 points: A 10% reduction of embodied carbon is required for LEED Platinum projects

Intent

To reduce the embodied carbon impacts of materials used in commercial interiors projects.

Requirements

Achievement Pathways	Points
Commercial Interiors	1–4
Option 1. Reduce Embodied Carbon of New Materials	1–4
AND/OR	
Option 2. Interiors Life-Cycle Assessment	1–4

Option 1. Reduce Embodied Carbon of New Materials (1–4 points)

Points are awarded according to Table 1. Industry averages for material categories are defined by the U.S. Environmental Protection Agency, the most recent Carbon Leadership Forum Material Baselines report, or similarly robust and widely recognized publications and industry-wide environmental product disclosures (EPDs) applicable to the project region.

Projects must track the global warming potential (GWP)/unit of the materials installed, reconciling the design-phase embodied carbon intensities if materials or GWP values have changed. The reconciliation of material quantities is not necessary unless quantities have changed more than 10% from design through construction.

Projects must use project-specific material quantities and identify product-specific or facility-specific Type III EPDs for covered materials to demonstrate reductions. Biogenic carbon may only be included for calculations that include C-stage emissions.

Table 1. Points Awarded for Embodied Carbon Assessment and Reduction

	Points
Meet baseline or industry average	1
10% reduction	2
20% reduction	3
30% reduction	4

AND/OR

Option 2. Interiors Life-Cycle Assessment (1–4 points)

For tenant improvements and renovation projects, conduct a cradle-to-grave (modules A–C, excluding operating energy and operating water-related energy) life-cycle assessment (LCA) of the project's entire scope of work, including structure and enclosure (if any); ceiling; wall; flooring; and interior partition assemblies, including acoustic insulation, metal framing, finishes, coatings, and furniture. LCA data sets must be compliant with ISO 14044. Biogenic carbon may only be included for calculations that include C-stage emissions. Include results for the following impact categories in the Interiors LCA report:

- GWP (greenhouse gases), in kg CO_2e
- Depletion of the stratospheric ozone layer, in kg CFC-11e
- Acidification of land and water sources, in moles H^+ or kg SO_2e

- Eutrophication, in kg nitrogen eq or kg phosphate eq
- Formation of tropospheric ozone, in kg NO_x, kg O_3 eq, or kg ethene
- Depletion of nonrenewable energy resources, in MJ using CML/depletion of fossil fuels in TRACI

Compare results to a baseline developed for the project and earn points according to Table 2.

Table 2. Points Awarded for Interiors LCA

Pathway	Threshold	Points
Path 1	Conduct an LCA of the project's complete interior design and compare against a baseline interiors project.	1
Path 2	Meet the requirements of Path 1 and demonstrate at least a 10% reduction in GWP compared with the interiors project baseline	2
Path 3	Meet the requirements of Path 1 and demonstrate reductions compared with the interiors project baseline of at least 20% for GWP and demonstrate at least a 10% reduction in two additional targeted impact categories	4

Impact Area Alignment:

-- Decarbonization

☑ Quality of Life

-- Ecological Conservation and Restoration

MR Credit: Low-Emitting Materials

MRc3

1–4 points

Intent

To reduce concentrations of chemical contaminants that can damage air quality and the environment. To protect human health and the comfort of installers and building occupants.

Requirements

Achievement Pathways	Points
Commercial Interiors	1–4
Low-Emitting Material Criteria	1–4

Specify and install permanent products, paints, coatings, adhesives, sealants, flooring, walls, ceilings, insulation, furniture, and/or composite wood products that meet the low-emitting criteria. Points are awarded according to Table 1 below.

Table 1. Thresholds for Low-Emitting Materials

Number of Product Categories	Threshold	Points
2	> 90% of all products in each product category	1
4	> 90% of each additional product category	2
6	> 80% of each product category	3
8	> 80% of each product category	4

Product categories:
The following products and materials are not applicable to the low-emitting materials product categories: structural elements, equipment related to fire suppression, HVAC (including ductwork), plumbing, electrical, conveying and communications systems, poured concrete, structural framing, structural insulated panels, and water-resistive barriers (material installed on a substrate to prevent bulk water intrusion).

Paints and Coatings

- Paints and coatings, by volume, cost, or surface area, must meet the volatile organic compound (VOC) emissions evaluation criteria.
- The paints and coatings product category includes all interior paints and coatings wet-applied on-site.
- Exclude foamed-in-place and sprayed insulation (include in insulation category).

Adhesives and Sealants

- Adhesives and sealants, by volume or cost, must meet the VOC emissions evaluation criteria.
- The adhesives and sealants product category includes all interior adhesives and sealants wet-applied on-site, including those used to install air or vapor barrier membranes and floor-setting materials.

Flooring

- Nonstructural flooring materials, by surface area or cost, must meet the VOC emissions evaluation criteria.
- The flooring product category includes all types of hard and soft surface flooring finishes (e.g., carpet, ceramic tile, vinyl, rubber, engineered wood, solid wood, stone, and laminate), raised flooring systems, entryway ("walk-off") systems, area rugs, wood subflooring, underlayments, sandwich panels, and air barrier membranes and vapor barrier/vapor retarder membranes (if used inside an air barrier membrane).
- Exclude poured concrete, composite wood subflooring (include in the composite wood category, if applicable), and wet-applied products applied on the floor.

Walls

- Nonstructural wall materials, by surface area or cost, must meet the VOC emissions evaluation criteria.
- The walls product category includes all finish wall treatments (e.g., wall coverings and wall tile), finish carpentry (e.g., millwork, paneling, railings, and trim/moldings), gypsum wallboard, wall base/skirting, interior and exterior doors, nonstructural wall framing, and nonstructural sandwich panels.
- Exclude wet-applied products applied on the wall, case goods, cabinetry (include in the furniture category), countertops (include in the furniture category), bathroom accessories, door hardware, and curtain wall and storefront systems.

Ceilings

- Nonstructural ceilings materials, by surface area or cost, must meet the VOC emissions evaluation criteria.
- The ceilings product category includes all types of ceiling finishes (e.g., ceiling panels and ceiling tile), suspension grids, surface ceiling structures (such as gypsum wallboard or plaster), suspended systems (including canopies and clouds), and nonstructural sandwich panels.
- Exclude wet-applied products applied on the ceiling and corrugated metal decking.

Insulation

- Insulation products, by surface area or cost, must meet the VOC emissions evaluation criteria.
- The insulation product category includes all thermal and acoustic boards; batts (faced and unfaced); rolls; blankets; sound attenuation fire blankets; and foamed-in-place, loose-fill, blown, and sprayed insulation.
- Exclude insulation installed outside an air barrier membrane.

Furniture

- Furniture in the project scope of work, by cost, area, or number of units, must meet the furniture emissions evaluation criteria or VOC emissions evaluation criteria.
- The furniture product category includes all permanently installed office furniture, cubicles/systems furniture, seating, desks, tables, filing/storage, specialty items, beds, case goods, casework, countertops, moveable/demountable partitions, bathroom/toilet partitions, shelving, lockers, retail fixtures (including slatwall), window treatments, and furnishing items (such as nonfixed area rugs, cubicle curtains, and mattresses) purchased for the project.
- A custom item in the furniture category is considered to meet the low-emitting criteria if all components of the finished piece, applied on- or off-site, are declared under the furniture category and meet the VOC emissions evaluation criteria. Alternatively, a custom piece meets the criteria if the finished piece, as a whole, meets the furniture emissions evaluation or VOC emissions evaluation criteria.
- Exclude office and bathroom accessories, art, recreational items (such as game tables), cabinet and drawer hardware, and planters from the credit.

Composite Wood

- Composite wood products, by surface area or cost, must meet the formaldehyde emissions evaluation criteria.
- The composite wood product category includes all particleboard, medium-density fiberboard (both medium density and thin), hardwood plywood with veneer, composite or combination core, and wood structural panels or structural wood products.

Low-Emitting Criteria

VOC Emissions Evaluation Criteria

- *Third-party certification:* Product has a qualifying third-party certification, valid at the time of product purchase, that demonstrates testing and compliance according to the California Department of Public Health (CDPH) Standard Method v1.2-2017 using the private office scenario. Products used in classrooms may be modeled using the schools or private office scenario.
  OR
- *Qualified independent laboratory report:* Product has a qualifying laboratory report (or summary) demonstrating the product has been tested no more than three years prior to the product's purchase, according to the CDPH Standard Method v1.2-2017. Products may use the private office scenario and must meet the VOC limits in Table 4-1 of the private office scenario. Products used in classrooms may be modeled using the schools or private office scenario.
  OR
- Product is inherently *nonemitting*, *salvaged*, or *reused*.

Furniture Emissions Evaluation

- Product has a qualifying third-party certification, valid at the time of product purchase, that demonstrates testing according to ANSI/BIFMA Standard Method M7.1-2011 (R2021) and complies with specific sections of ANSI/BIFMA e3-2014 or e3-2024, "Furniture Sustainability Standard." Statements of product compliance must include the exposure scenario(s).
- Seating products must be evaluated using the seating scenario. Classroom furniture must be evaluated using the standard school classroom scenario. Other products should be evaluated using the open plan or private office scenario, as appropriate. The open plan scenario is more stringent.

  OR

- Product is inherently *nonemitting*, *salvaged*, or *reused*.

Salvaged and reused materials: Product is more than one year old at the time of use.

If another product (including but not limited to adhesives, sealants, paints, and coatings) is applied to the inherently nonemitting material and has a separate manufacturer and cost, to the end user, from the original material, the applied product may be documented as a separate product and meet the low-emitting criteria applicable to the applied product, even if applied off-site.

If another product is applied to the inherently nonemitting/salvaged/reused material and does not have a separate manufacturer and cost, to the end user, the result is considered a new finished product that no longer qualifies as an inherently nonemitting material and is subject to the VOC emissions evaluation criteria.

Formaldehyde Emissions Evaluation

- Product has a qualifying third-party certification from a California Air Resources Board (CARB) approved/Environmental Protection Agency (EPA) recognized third-party certifier, valid at the time of product purchase, that demonstrates the product is one of the following:
    - Certified as ultra-low-emitting formaldehyde product under EPA's Toxic Substances Control Act, Formaldehyde Emission Standards for Composite Wood Products (TSCA, Title VI) (EPA TSCA Title VI), or the CARB Airborne Toxic Control Measure (ATCM).
    - Certified as no-added-formaldehyde resins (NAF) product under EPA TSCA Title VI or CARB ATCM.
    - Wood structural panels manufactured according to PS 1-09 or PS 2-10 (or one of the standards considered by CARB to be equivalent to PS 1 or PS 2) and labeled bond classification exposure 1 or exterior.
    - Structural wood product manufactured according to ASTM D 5456 (for structural composite lumber), ANSI A190.1 (for glued laminated timber), ASTM D 5055 (for I-joists), ANSI PRG 320 (for cross-laminated timber), or PS 20-15 (for finger-jointed lumber).

  OR

- Product is inherently *nonemitting, salvaged*, or *reused*.

Impact Area Alignment:

- ☑ Decarbonization
- ☑ Quality of Life
- ☑ Ecological Conservation and Restoration

MR Credit: Building Product Selection and Procurement

MRc4

1–10 points

Intent

To encourage the use of products and materials that have sustainability information available and that have environmentally, economically, and socially preferable impacts in alignment with industry momentum. To reward project teams for selecting products from manufacturers who have disclosed sustainability information about their products and optimized their products across multiple criteria areas.

Requirements

Achievement Pathways	Points
Commercial Interiors	1–10
Product Categories	1–10

Select nonstructural building products that demonstrate achievement in one or more of five criteria areas:

- Climate health
- Human health
- Ecosystem health
- Social health and equity
- Circular economy

Products that achieve two or more criteria areas are considered multi-attribute. Products that achieve higher levels of achievement and/or across additional criteria areas will be given a higher value in credit calculations.

Achievement is demonstrated through eligible compliant manufacturer product documentation, which includes third-party product certifications, ecolabels, declarations, and standards. A single product document can demonstrate multiple benefits and/or achievement levels, or the product can earn multi-attribute criteria through a combination of separate eligible product documents.

There are three achievement levels for products:

Level 1	A product in this level achieves a first step toward sustainability for a criteria area. Widespread achievement of these practices drive market transformation toward sustainability outcomes within the criteria area. Products scored at this level earn a 1x multiplier.
Level 2	This level represents a leadership position in the marketplace for a given sustainability attribute. Products at this level are optimized and demonstrate a level of sustainability that peers aspire to achieve. Products scored at this level earn a 2x multiplier.
Level 3	Products that earn this level are elite and represent the forefront of sustainability. Products scored at this level earn a 3x multiplier.

This credit rewards the selection of eligible interior and enclosure materials from the following product categories:

- Paints and coatings
- Adhesives and sealants
- Flooring
- Walls
- Ceilings
- Insulation
- Furniture
- Composite wood
- Plumbing fixtures

Eligible products meet the achievement levels and are scored as 1, 2, or 3. These scores are added across criteria areas to sum to a maximum score of 5 per product. This cumulative score is called the product "multi-attribute score."

Each individual product's value (cost, area, volume, or unit) is adjusted based on its multi-attribute score:

Product value x multi-attribute score = adjusted product value for LEED

To determine total compliant product value per category, follow Equation 1.

Equation 1. Calculate the Multi-Attribute Adjusted Value of a Product Category

$$\text{Product category adjusted value for LEED} = 100 \times \frac{\left(\begin{matrix}\textit{Product A}\\ \text{multi-attribute score} * \\ \textit{Product A} \text{ value}\end{matrix}\right) + \left(\begin{matrix}\textit{Product B}\\ \text{multi-attribute score} * \\ \textit{Product B} \text{ value}\end{matrix}\right) + \left(\begin{matrix}\textit{Product C}\\ \text{multi-attribute score} * \\ \textit{Product C} \text{ value}\end{matrix}\right) + \left(\begin{matrix}\textit{Product D}\\ \text{multi-attribute score} * \\ \textit{Product D} \text{ value}\end{matrix}\right) + \ldots}{\text{Total value of all products in the product category}}$$

Any product category adjusted value for LEED that exceeds 100% earns 1 point. Any product category adjusted value for LEED that exceeds 200% earns 2 points. Points are awarded for achievement of whole product categories, up to a maximum of 10 points.

Informative note:
Please see the resources section of the credit library for additional details on this credit.

Impact Area Alignment:

☑ Decarbonization

-- Quality of Life

☑ Ecological Conservation and Restoration

MR Credit: Construction and Demolition Waste Diversion

MRc5

1–4 points

Intent

To reduce construction and demolition (C&D) waste disposed of in landfills and incineration facilities and to decrease pollution to the environment. To reduce the environmental impacts and embodied carbon of manufacturing new materials and products. To delay the need for new landfill facilities that are often located in frontline communities. To create green jobs and materials markets for building construction services.

Requirements

Achievement Pathways	Points
Commercial Interiors	1–4
Construction and Demolition Materials Management Plan	
AND	
Diversion	1–4

Comply with the following requirements:

Construction and Demolition Materials Management Plan
Develop and implement a C&D materials management plan and achieve points through diversion and recycling.

AND

Diversion (1–4 points)
Follow the materials management plan and provide a final waste management report detailing all waste generated, including disposal and diversion rates for the project. Calculations can be by weight or volume but must be consistent throughout. Points are awarded according to Table 1.

Divert C&D waste materials by employing strategies including off-site salvage, source-separation for single-material recycling, mixed C&D recycling, and industry/manufacturer take-back programs.

- Source-separated materials are considered 100% diverted for credit calculation purposes. These include
  - Recovered materials sent to a single-material recycler.
  - Recovered materials sent for off-site salvage/reuse.
  - Materials sent to a qualifying manufacturer or industry take-back program.
  - Salvaged materials are valued at twice the diversion rate (200%) of other diverted materials for credit calculation purposes. Salvaged materials include recovered materials sent off-site for reuse. Note: Materials reused on-site contribute to MRc1: Interior Materials Reuse.
- Mixed C&D materials sent to a processing facility for recovery must take the facility average recycling rate. Recycling rates not verified by a third party must assume a maximum of 35% recovery rate.
- Materials destined for alternative daily cover or incineration/energy recovery are considered waste (0% diverted).
- Exclude hazardous waste from calculations. Exclude on-site reuse from credit calculations (include in MRc1: Interior Materials Reuse credit).
- Exclude excavated soil and land-clearing debris from calculations.

Table 1. Points for C&D Diversion.
Meet any criteria up to a total of 4 points:

Pathway	Thresholds	Points
Path 1	Divert at least 35% of the total construction and demolition materials. • At least 10% of diverted materials must be salvaged or source-separated and sent to a single-material recycler(s)	1
Path 2	Divert at least 50% of the total construction and demolition materials. • At least 20% of diverted materials must be salvaged or source-separated and sent to a single-material recycler(s)	2
Path 3	Divert at least 65% of the total construction and demolition materials. • At least 30% of diverted materials must be salvaged or source-separated and sent to a single-material recycler(s)	3
Path 4	Salvage or source-separate and recycle these targeted materials: clean gypsum, carpet, ceilings, and furniture. • Targeted materials diversion must exceed 10% of the total construction and demolition materials	1

INDOOR ENVIRONMENTAL QUALITY (EQ)

EQ Prerequisite: Construction Management
EQp1

Impact Area Alignment:

-- Decarbonization

☑ Quality of Life

-- Ecological Conservation and Restoration

Required

Intent

To promote the well-being of construction workers and building occupants by minimizing environmental quality problems associated with construction and renovation.

Requirements

Achievement Pathways	Points
Commercial Interiors	N/A
Construction Management	

Develop and implement construction management practices for the construction and preoccupancy phases of the building. The practices must address all of the following:

- **No smoking.** Prohibit smoking during construction except in designated smoking areas located at least 25 feet (7.5 meters) from the building. Install signage that prohibits smoking during construction.
- **Extreme heat protection.** Implement measures that protect construction workers from extreme heat.
- **HVAC protection.** Keep contaminants out of the HVAC system. Do not run permanently installed equipment if possible or maintain proper filtration if it is used. Replace all air filtration media after completion of construction and before occupancy. Confirm that testing and balance work is completed with new filtration.
- **Source control.** Keep sources of contaminants out of the building and have a plan to eliminate any that are introduced.
    - Store carpets, acoustical ceiling panels, fabric wall coverings, insulation, upholstery and furnishings, and other absorptive materials in a designated area protected from moisture damage.
- **Pathway interruption.** Prevent circulation of contaminated air and when cutting concrete or wood, sanding drywall, installing VOC-emitting materials, or performing other activities that affect indoor air quality in other workspaces.
    - Isolate areas of work to prevent contamination of other spaces, whether they are finished or not. Seal doorways, windows, or tent off areas as needed using temporary barriers.
    - Use walk-off mats at entryways to reduce introduced dirt and pollutants.
    - Use dust guards and collectors on saws and other tools.
- **Housekeeping.** Maintain a clean jobsite. Use vacuum cleaners with high-efficiency particulate filters and use sweeping compounds or wetting agents for dust control when sweeping.
- **Scheduling.** Sequence construction activities to reduce air quality problems. For renovation projects, coordinate construction activities to minimize or eliminate disruption of operations in occupied areas.

Impact Area Alignment:

-- Decarbonization

☑ Quality of Life

-- Ecological Conservation and Restoration

EQ Prerequisite: Fundamental Air Quality
EQp2

Required

Intent

To design for above-average indoor air quality (IAQ) to support occupant health and well-being.

Requirements

Achievement Pathways	Points
Commercial Interiors	N/A
Investigate Regional and Local Air Quality	
AND	
Ventilation and Filtration Design	
AND	
Entryway System Designs	

Comply with the following requirements:

Investigate Regional and Local Air Quality

- Investigate outdoor air quality in accordance with ASHRAE Standard 62.1-2022, Sections 4.1–4.3.

AND

Ventilation and Filtration Design

Meet the requirements of ASHRAE Standard 62.1-2022, Sections 5 and 6. Use the ventilation rate procedure, the IAQ procedure, the natural ventilation procedure, or a combination thereof. Comply with the following additional provisions:

- **Filtration.** Each central HVAC system within the project's scope of work that supplies outdoor air and/or recirculated air to regularly occupied spaces must meet one of the following:
    - Minimum efficiency reporting value of 13, in accordance with ASHRAE Standard 52.2-2017; or
    - Equivalent filtration media class of ePM1 50%, as defined by ISO 16890-2016, "Particulate Air Filters for General Ventilation—Determination of the Filtration Performance."
    - In-room air-cleaning systems.
        - Use systems tested for effectiveness and safety per ASHRAE Standard 241-2023, Section 7.4 (and Normative Appendix A). If treating for particles and gases, use systems tested for effectiveness per ASHRAE 62.1-2022, Addendum N. If treating for infectious aerosols, use systems tested for effectiveness per ASHRAE Standard 241-2023, Section 7.
- **Outdoor air measurement.** Provide outdoor airflow measurement devices for all mechanical ventilation systems in the project scope of work with outdoor air intake flow greater than 1,000 cfm (472 L/s).

Health Care

For health care spaces, meet the requirements of Sections 6–10 of ASHRAE Standard 170-2021 as applicable.

AND

Entryway System Designs

Install permanent entryway systems to capture dirt and particulates entering the building at primary exterior entrances within the project scope of work. There is no length requirement for entryway systems.

Impact Area Alignment:

-- Decarbonization

☑ Quality of Life

☑ Ecological Conservation and Restoration

EQ Prerequisite: No Smoking
EQp3

Required

Intent

To minimize exposure to tobacco smoke, smoke from tobacco substitutes or cannabis, and vehicle emissions.

Requirements

Achievement Pathways	Points
Commercial Interiors	N/A
Option 1. Locations With Smoking Prohibitions	
OR	
Option 2. Projects Located in Buildings Where Smoking Is Not Prohibited by Law	

Option 1. Buildings With Full Smoking Prohibitions
Locate the project in a building in which smoking inside the building is prohibited by law or by the landlord, and the no-smoking policy is communicated to all building occupants according to the law or with permanently installed signage.

Prohibit smoking outside the project except in designated smoking areas located at least 25 feet (7.5 meters) (or the maximum extent allowable by local codes) from all exterior entries, outdoor air intakes, and operable windows to the project.

OR

Option 2. Buildings With Partial Smoking Prohibitions
Prohibit smoking in the project spaces.

Smoking must also be prohibited in all common areas used by the project occupants and any areas of the building served by the same HVAC system as the project. Ensure that smoke cannot migrate by either mechanical or natural ventilation into the project spaces.

Communicate the no-smoking policy to occupants of the project. Have in place provisions for enforcement or no-smoking signage.

Impact Area Alignment:

-- Decarbonization

☑ Quality of Life

-- Ecological Conservation and Restoration

EQ Credit: Enhanced Air Quality
EQc1

1–2 points

Intent

To design for increased indoor air quality (IAQ) to better protect the health of building occupants.

Requirements

Achievement Pathways	Points
Commercial Interiors	1–2
Option 1. Increased Ventilation	2
OR	
Option 2. Enhanced Indoor Air Quality Design	1
OR	
Option 3. Verification of Ventilation and Filtration	1

Design the project to exceed the requirements of ASHRAE 62.1-2022, Section 6. If using the ventilation rate procedure to comply with EQp2: Fundamental Air Quality, use Option 1 or Option 2; if using the indoor air quality procedure (IAQP), use Option 2.

Option 1. Increased Ventilation (2 points)
Increase *breathing zone* outdoor air ventilation rates by at least 15% above the minimum rates (for 1 point, or 30% for 2 points) as determined in EQp2: Fundamental Air Quality.

Increased outdoor air rates should be provided to 95% of all regularly occupied spaces.

OR

Option 2. Enhanced Indoor Air Quality Design (1 point)
In addition to the design compounds and design limits outlined in ASHRAE 62.1-2022, Tables 6-5 and 6-6, design and verify enhanced IAQ using the lower design limits listed below in Table 1.

Table 1. Additional Design Limits for Enhanced Indoor Air Quality Design

Design Compound or PM2.5	Enhanced IAQP Design Limit*
PM2.5	10 ug/m^3
Formaldehyde	20 µg/m^3
Ozone	10 ppb

OR

Option 3. Verification of Ventilation and Filtration (1 point)
For spaces receiving mechanical ventilation from base building systems, measure the total quantity of outdoor air delivered to the project and verify the results are within 10% of the rates reported in EQp2: Fundamental Air Quality, and outlined in the current facilities requirements and operations and maintenance plan. Measurements shall quantify the amount of outdoor air for each base building air-handling unit serving the project, and account for worst-case conditions.

Note: This path is only applicable for tenant improvements to a previously occupied space and is not applicable for initial build-out.

Impact Area Alignment:

-- Decarbonization

☑ Quality of Life

-- Ecological Conservation and Restoration

EQ Credit: Occupant Experience

EQc2

1–7 points

Intent

To move beyond neutral or sufficient spaces toward human-centered design that supports customization, enjoyment, and emotional connections between people and the building, thus increasing the likelihood of consistent satisfaction and ongoing stewardship.

Requirements

Achievement Pathways	Points
Commercial Interiors	1–7
Option 1. Biophilic Environment	1–4
Path 1. Integrated Biophilic Design	1
AND/OR	
Path 2. Quality Views	2–3
AND/OR	
Option 2. Adaptable Environment	1–2
AND/OR	
Option 3. Thermal Environment	1
AND/OR	
Option 4. Sound Environment	1–2
Path 1. Mapping Acoustical Expectations for Indoor and Outdoor Spaces	1
AND/OR	
Path 2. Acoustic Criteria for Indoor and Outdoor Spaces	1
AND/OR	
Option 5. Lighting Environment	1–6
Path 1. Solar Glare	1
AND/OR	
Path 2. Quality Electric Lighting	1
AND/OR	
Path 3. Proximity to Windows for Daylight Access	1
AND/OR	
Path 4. Daylight Simulation	1–4

Option 1. Biophilic Environment (1–4 points)

Path 1. Integrated Biophilic Design (1 point)

Integrate biophilic design that demonstrates each of the following five principles adapted from *The Practice of Biophilic Design* by Kellert and Calabrese:

1. Biophilic design requires repeated and sustained engagement with nature.
2. Biophilic design focuses on human adaptations to the natural world that, over evolutionary time, have advanced people's health, fitness, and well-being.
3. Biophilic design encourages an emotional attachment to the building and building location.
4. Biophilic design promotes positive interactions between people and nature that encourage an expanded sense of relationship and responsibility for the human and natural communities.
5. Biophilic design encourages mutual reinforcing, interconnected, and integrated architectural solutions.

AND/OR

Path 2. Quality Views (2–3 points)

Provide occupants in the building with a view to the outdoor natural or urban environment for 75% (for 2 points, 90% for 3 points) of all regularly occupied floor area. Auditoriums, conference rooms dedicated to video conferencing, and gymnasiums may be excluded. Views into interior atria may be used to meet up to 30% of the required area.

- Views must be through glass with a visible light transmittance above 40%. If the glazing has frits, patterns, or tints, the view must be preserved. Neutral gray, bronze, and blue-green tints are acceptable.
- Views must include at least one of the following:
    - Nature, urban landmarks, or art; or
    - Objects at least 25 feet (7.5 meters) from the exterior of the glazing.
- Occupants must have direct access to the view and be within three times the head height of the glazing.

AND/OR

Option 2. Adaptable Environment (1–2 points)

Allow occupants choice and flexibility, and/or the capability to adapt the space to meet their individual needs. Provide variability and/or optionality for thermal, sound, and lighting environments that invite occupants to either alter their experience and/or move between sensory zones. Include at least one accessible quiet space that allows occupants to retreat from high levels of sensory stimulation.

Projects must also demonstrate at least one of the additional strategies below for 1 point or three for 2 points:

Additional strategies:

- Provide socializing, meeting, dining, eating, and/or working areas where occupants can sit outside the main action and have permanent architectural features at their backs, creating a comfortable, semiprotected space that overlooks the larger area (prospect).
- Provide alternative paths that enable travel around the perimeter of the space so that people are not required to travel across a large open space.
- Provide choice in furniture configuration and a variety of seating to accommodate a wide range of body types, including seating with back rests and without arm rests.
- Provide height variety for permanently installed fixtures, like counters and sinks, and/or height-adjustable tables and desks, where appropriate.
- Provide the ability for all occupants to easily access outdoor or transitional space located within 2,000 feet (600 meters) of a building entrance or access point.

AND/OR

Option 3. Thermal Environment (1 point)

- Design indoor occupied spaces to meet the requirements of ASHRAE Standard 55-2023, “Thermal Environmental Conditions for Human Occupancy” with errata. Investigate thermal conditions in and around the project and explain how the design considers the following:
    - Thermal conditions that align and adjust with changing seasons
    - Overcooling during nontemperate seasons
        - Design solutions for newly arrived occupants or occupants transitioning between different thermal environments to adjust to the space while maintaining an appropriately warm environment for those already in the building.
        - Design solutions for long-term occupants in transition spaces to customize their working area.
    - Support for occupants carrying out different tasks requiring varying levels of movement
        - Cooling solutions for those completing high-movement tasks

AND/OR

Option 4. Sound Environment (1–2 points)

Path 1. Mapping Acoustical Expectations for Indoor and Outdoor Spaces (1 point)
Determine the desired sound environment early in the design process by mapping the following:

- For each primary indoor and outdoor space, acoustical expectations specific to the use of the space and occupant needs. (Categories to consider include: noise exposure, acoustical comfort and noise sensitivity, acoustical privacy, communication, and soundscape.)
    - Example classification for noise exposure zones: high risk, medium risk, low risk, or no risk.
    - Example classifications for acoustical comfort: loud zone, quiet zone, mixed zone, circulation, sensitive, and no specific expectations.
    - Example classifications for acoustical privacy: high speech security, confidential speech privacy, normal speech privacy, marginal speech privacy, or no privacy.
    - Example classifications for communication zones: excellent, good, marginal, and none or no specific expectations.
    - Example classifications for soundscape management: preserve, improve, restore, mitigate, specialized (e.g., wellness, therapeutic, or agency in equity), or no specific expectations.
- Define acoustic criteria and potential design strategies and solutions to meet the acoustical expectations for each space. (Categories to consider include: internally generated background noise, externally intrusive background noise, electronically generated masking sound, outdoor acoustical environment, airborne sound reverberation, sound insulation, vibration insulation, and impact noise.)

OR

Path 2. Acoustic Criteria for Indoor and Outdoor Spaces (2 points)
Through calculations, modeling, and/or measurements, demonstrate that the mapping exercise completed in Path 1 informed design strategies and solutions to meet acoustic criteria for at least 75% of the occupied spaces and all classrooms, and core learning spaces.

AND/OR

Option 5. Lighting Environment (1–6 points)

Path 1. Solar Glare (1 point)
Provide manual or automatic (with manual override) glare-control devices in all regularly occupied spaces that will receive direct or reflected sun penetration. Spaces designed intentionally for direct sunlight may be excluded.

AND/OR

Path 2. Quality Electric Lighting (1 point)
Comply with the following requirements for regularly occupied spaces:

- **Electric Light Glare Control**
    - Each luminaire shall meet one of the following requirements:
        - Have calculated luminance of less than 6,000 candela per square meter (cd/m^2) between 45 and 90 degrees from nadir.
        - Achieve a unified glare rating (UGR) of 19 or lower using the UGR tabular method for each space.

- Achieve a UGR rating of 19 or lower using software modeling calculations of the designed lighting. (Modeling must be performed as outlined in the NEMA White Paper on Unified Glare Rating.)

- **Color rendering**: Use luminaires that have a color rendering index of at least 90, or that meet the color rendering requirements in Table 1, in accordance with Illuminating Engineering Society (IES) TM-30-20.

Table 1. Color Rendering Requirements Using TM-30-20

Measure		Requirement
Fidelity index	R_f	78 or higher
Gamut index	R_g	95 or higher
Red Local Chroma Shift	Rcs,h1	-1% to 15%

AND/OR

Path 3. Proximity to Windows for Daylight Access (1 point)
Design the interior layout to provide at least 30% of the regularly occupied area to be within a 20-foot (6-meter) horizontal distance of envelope glazing. The glazing must have a visible light transmittance above 40%. Regularly occupied areas with visual obstructions (incapable of providing a view to envelope glazing) should be excluded from the compliant area.

OR

Path 4. Daylight Simulation (1–4 points)
Perform a daylight simulation analysis for the project to understand and optimize access to daylight and visual comfort. Use the calculation protocols in IES LM-83-23 with the following clarifications:

- Calculate spatial daylight autonomy$_{300/50\%}$ ($sDA_{300/50\%}$) and annual sunlight exposure$_{1000,250}$ ($ASE_{1000,250}$) as defined in IES LM-83-23 for each regularly occupied space in the project. $sDA_{150/50\%}$ may be used for areas without visual tasks with design targets of 225 lux.
- For any regularly occupied spaces with $ASE_{net(1000,250h)}$ greater than 20%, identify how the space is designed to address glare.
- Calculate the average $sDA_{300/50\%}$ or $sDA_{150/50\%}$ for the total regularly occupied floor area. Do not exclude spaces based on ASE. Points are awarded based on this calculation, according to Table 1.

Table 1. Points for Daylight Simulation

Average $sDA_{300/50\%}$ or $sDA_{150/50\%}$ Value	Points
≥ 40%	1
≥ 55%	2
≥ 65%	3
≥ 75%	4

Impact Area Alignment:

-- Decarbonization

☑ Quality of Life

-- Ecological Conservation and Restoration

EQ Credit: Accessibility and Inclusion

EQc3

1–2 points

Intent

To support the diverse needs of occupants and increase widespread usability of the building to foster an individual and collective sense of belonging.

Requirements

Achievement Pathways	Points
Commercial Interiors	1–2
Accessibility and Inclusion Strategies	1–2

Comply With Local Accessibility Codes

Support access for those with physical disabilities by locating in a building that meets all locally applicable accessibility codes identified in the IPp2: Human Impact Assessment.

If there is no locally applicable code, the base building must include the following strategies:

- Accessible routes or regularly used exterior building entrances must have ramps to accommodate elevation changes.
- All doors meant for human passage from the main exterior building entrance to the project entrance have a minimum clear width of 32 in (0.86 m).
- Reception desks, security counters, and service counters within the project boundary all have a front-approach, wheelchair-accessible section.

AND

Include at least 5 (1 point) or 10 (2 points) of the following accessibility and inclusion strategies that go beyond the locally applicable accessibility code and are most relevant to the project:

Accessibility for Physical Diversity

- Provide wave-to-open or vertical hand/foot-press door operators at all regularly used building entrances.
- Design meeting spaces to accommodate mobility devices for at least 10% of occupants.
- Incorporate accessible and inclusive equipment and activities in fitness facilities. Ensure an open and accessible route to and around the equipment.
- Where nonaccessible routes are provided (e.g., stairs), provide an alternate accessible route that starts and terminates at the same location.

Accessibility for Safety and Aging

- Provide nonslip flooring.
- Fix area rugs to the floor below and provide transition strips at all edges.
- Provide a visual indication or a railing at all full-height glazing, except in private residences.
- Provide audible and visual alerts for emergency alerts.
- Provide closed risers (visually and physically) in all stairs.
- Use visual contrast between walls and floors, walls and doors, and walls and casework.
- Provide visual, tactile, contrasting, or photoluminescent warnings at floor level changes.

Accessibility for Social Health

- Provide lactation rooms or pods.
- Provide at least one fully accessible, all-gender, single-user restroom OR one multiuser, all-gender restroom on each floor of the building.
- Include at least one adult changing station or table in a designated, accessible restroom or family restroom, or in one men's and one women's restrooms.
- Provide signage in all languages spoken by more than 5% of the local population.
- Support neurodivergent users by achieving *EQc: Occupant Experience*, Option 1, Biophilic Environments, Path 1, Integrated Biophilic Design.

Accessibility for Navigation

- Provide wayfinding signage that clearly indicates exits, entrances, and major functions in the project.
- Provide nontext diagrams and symbols at signage.
- Provide braille, visual and auditory cues, and/or continuous linear indicators on paths of travel.
- Use pattern and color blocking to identify key access spaces.
- Provide haptic/tactile maps for wayfinding.

Impact Area Alignment:

-- Decarbonization

☑ Quality of Life

-- Ecological Conservation and Restoration

EQ Credit: Resilient Spaces
EQc4

1–3 points

Intent

To support design features that increase the capacity for occupants to adapt to changing climate conditions and be protected from events that may compromise the quality of the indoor environment and, subsequently, occupant health and well-being.

Requirements

Achievement Pathways	Points
Commercial Interiors	1–3
Option 1. Management Mode for Episodic Outdoor Ambient Conditions	1
AND/OR	
Option 2. Management Mode for Respiratory Diseases	1
AND/OR	
Option 3. Design for Occupant Thermal Safety During Power Outages	1–2
Path 1. Consider Extreme Heat	1
AND/OR	
Path 2. Consider Extreme Cold	1
AND/OR	
Option 4. Operable Windows	1–2

Comply with any of the following options for up to 2 points.

Option 1. Management Mode for Episodic Outdoor Ambient Conditions (1 point)
Design systems with the capability to operate an episodic outdoor event management mode as described in ASHRAE Guideline 44. The mode should address varying outdoor conditions or events that could negatively influence indoor air quality, such as wildfire smoke. Include the management mode in the design and commissioning documents. Verify proper implementation of the mode during commissioning.

AND/OR

Option 2. Management Mode for Respiratory Diseases (1 point)
Design occupied spaces with the capability to operate an infection risk management mode that provides the minimum equivalent clean airflow rates outlined in ASHRAE 241-2023, Section 5.1. Include the management mode in the design and commissioning documents as outlined in ASHRAE 241-2023, Section B10.2, “Design Documentation.” Verify proper implementation of the mode during commissioning.

AND/OR

Option 3. Design for Occupant Thermal Safety During Power Outages (1–2 points)

Path 1. Consider Extreme Heat (1 point)
Demonstrate through thermal modeling that a building will passively maintain thermally habitable conditions during a power outage that lasts two days during peak summertime conditions of a typical meteorological year. Designate specific thermal safety zones where habitable conditions will be maintained during a power outage.

AND/OR

Path 2. Consider Extreme Cold (1 point)
Demonstrate through thermal modeling or Passive House certification that a building will passively maintain thermally habitable conditions during a power outage that lasts two days during peak wintertime conditions of a typical meteorological year. Designate specific thermal safety zones where habitable conditions will be maintained during a power outage.

AND/OR

Option 4. Operable Windows (1–2 points)
Design 50% (for 1 point) or 75% (for 2 points) of the regularly occupied spaces to have operable windows with the capability to provide access to outdoor air during heat waves or localized power outages. The windows must meet the opening size and location requirements of ASHRAE 62.1-2022, Section 6.4.

Impact Area Alignment:

-- Decarbonization

☑ Quality of Life

-- Ecological Conservation and Restoration

EQ Credit: Air Quality Testing and Monitoring

EQc5

1–4 points

Intent

To support better management of indoor air quality (IAQ) and identify opportunities for health-based approaches to building operations.

Requirements

Achievement Pathways	Points
Commercial Interiors	1–4
Option 1. Preoccupancy Air Testing	1–2
Path 1. Particulate Matter and Inorganic Gases	1
AND/OR	
Path 2. Volatile Organic Compounds	1
AND/OR	
Option 2. Continuous Indoor Air Monitoring	1

Option 1. Preoccupancy Air Testing (1–2 points)
After construction ends and before occupancy, but under ventilation conditions typical for occupancy, conduct baseline IAQ testing. Retail projects may conduct the testing within 14 days of occupancy. The number of measurements should be specified according to Table 1 and taken in respective locations of the building.

Table 1. Number of Measurements Required for Preoccupancy Air Testing

Total Occupied Floor Area, ft^2 (m^2)	Number of Measurements
≤ 5,000 (500)	1
> 5,000 (500) and ≤ 15,000 (1,500)	2
> 15,000 (1,500) and ≤ 25,000 (2,500)	3
> 25,000 (2,500) and ≤ 200,000 (20,000)	4 plus one additional measurement per each 25,000 ft^2 (2,500 m^2) above 25,000 ft^2
> 200,000 (20,000)	10 plus one additional measurement per each 50,000 ft^2 (4,600 m^2) above 200,000 ft^2

Path 1. Particulate Matter and Inorganic Gases (1 point)
Test for the particulate matter (PM) and inorganic gases listed in Table 2, using an allowed test method, and demonstrate that the contaminants do not exceed the concentration limits listed in the table. Measure for a four-hour period, calculating peak concentration for carbon monoxide and average concentration for ozone, PM2.5, and PM10.

Table 2. Limits for Particulate Matter and Inorganic Gases

Contaminant (CAS#)	Concentration Limit ($\mu g/m^3$)	Allowed Test Methods (Laboratory Based)	Direct Reading Instrument Minimum Specifications
Carbon monoxide (CO)	9 ppm; no more than 2 ppm above outdoor levels	ISO 4224 EPA Compendium Method IP-3 GB/T 18883-2002 for projects in China	Direct calibrated electrochemical instrument with accuracy of +/– 3% of reading and resolution of 0.1 ppm NDIR CO sensors with accuracy of 1% of 10 ppm full scale and display resolution of less than 0.1 ppm
Particulates (for projects in attainment areas)	ISO class 8 or lower per ISO 14644-1:2015 OR meet PM 10: 50 $\mu g/m^3$ PM 2.5: 12 $\mu g/m^3$	n/a IP-10A	Accuracy (+/–): Greater of 5 $\mu g/m^3$ or 20% of reading Resolution (+/–): 5 $\mu g/m^3$
Particulates (for projects in nonattainment areas)	ISO class 8 or lower per ISO 14644-1:2015 OR meet PM 10: 50 $\mu g/m^3$ PM 2.5: 35 $\mu g/m^3$	n/a IP-10A	Accuracy (+/–): Greater of 5 $\mu g/m^3$ or 20% of reading Resolution (+/–): 5 $\mu g/m^3$
Ozone	0.07 ppm OR 0.01 ppm for projects pursuing *EQc: Enhanced Air Quality*, Option 1, Path 2	ISO 13964 ASTM D5149-02 EPA-designated methods for ozone	Monitoring device with accuracy greater of 5 ppb or 20% of reading and resolution (5 min average data) +/– 5 ppb

AND/OR

Path 2. Volatile Organic Compounds (1 point)

- Perform a screening test for total volatile organic compounds (TVOC). Use ISO 16000-6, EPA TO-17, or EPA TO-15 to collect and analyze the air sample. Calculate the TVOC value per EN 16516:2017; California Department of Public Health Standard Method v1.2 2017, Section 3.9.4; or an alternative calculation method, as long as the full method description is included in the test report.
    - If the TVOC levels exceed 500 $\mu g/m^3$, investigate for potential issues by comparing the individual volatile organic compound (VOC) levels from the GC/MS results to associated cognizant authority health-based limits. Correct any identified issues and retest if necessary.
- Test for the individual VOCs listed in Table 3 using an allowed test method and demonstrate that the contaminants do not exceed the concentration limits listed in the table. Laboratories that conduct the tests must be accredited under ISO/IEC 17025 for the test methods they use.

Table 3. Volatile Organic Compound Limits

Contaminant (CAS#)	Concentration Limit ($\mu g/m^3$)	Allowed Test Methods
Formaldehyde 50-00-0	20 $\mu g/m^3$ (16 ppb)	ISO 16000-3, 4; EPA TO-11a; EPA comp. IP-6A; ASTM D5197-16
Acetaldehyde 75-07-0	140 $\mu g/m^3$	
Benzene 71-43-2	3 $\mu g/m^3$	ISO 16000-6; EPA IP-1; EPA TO-17; EPA TO-15; ISO 16017-1, 2; ASTM D6196-15
Hexane (n-) 110-54-3	7,000 $\mu g/m^3$	
Naphthalene 91-20-3	9 $\mu g/m^3$	
Phenol 108-95-2	200 $\mu g/m^3$	
Styrene 100-42-5	900 $\mu g/m^3$	
Tetrachloroethylene 127-18-4	35 $\mu g/m^3$	
Toluene 108-88-3	300 $\mu g/m^3$	
Vinyl acetate 108-05-4	200 $\mu g/m^3$	
Dichlorobenzene (1,4-) 106-46-7	800 $\mu g/m^3$	
Xylenes—total 108-38-3, 95-47-6, and 106-42-3	700 $\mu g/m^3$	

AND/OR

Option 2. Continuous Indoor Air Monitoring (1 point)
Provide indoor air monitors for all of the following parameters:

- Carbon dioxide (CO_2)
- Particulate matter (PM2.5)
- Total volatile organic compounds
- Temperature
- Relative humidity

Monitors must be building grade or better and located between 3 and 6 feet (1-2 meters) above the floor.

PROJECT PRIORITIES (PR)

PR Credit: Project Priorities

PRc1

1–9 points

Intent

To promote achievement of credits that address geographically sensitive or adaptation-specific environmental, social equity, and public health priorities. To encourage projects to think creatively to test and accelerate new sustainable building practices and strategies.

Requirements

Achievement Pathways	Points
Commercial Interiors	1–9
Regional Priority	1–9
Project-Type Credits	
Exemplary Performance	
Pilot Credits	
Innovation Strategies	

Achieve any combination of the following for a maximum of 9 points:

Regional Priority
Achieve a regional priority credit from USGBC's Project Priority Library. These credits have been identified by USGBC as having additional regional importance for the project's region.

Project-Type Credits
Achieve a project-type credit from USGBC's Project Priority Library. These credits have been identified by USGBC as addressing unique needs for the given adaptation or building application.

Exemplary Performance
Achieve an exemplary performance credit from USGBC's Project Priority Library. These credits have been identified by USGBC as going above and beyond an existing LEED v5 prerequisite or credit in the LEED v5 priority areas of scale, decarbonization, resilience, health, equity, and/or ecosystems.

Pilot Credits
Achieve a pilot credit from USGBC's Project Priority Library.

Innovative Strategies
Achieve significant, measurable, environmental performance using a strategy not addressed in the LEED green building rating system.

Identify all of the following:

- The intent of the proposed innovation strategy
- Proposed requirements for compliance
- Proposed submittals to demonstrate compliance
- The design approach or strategies used to meet the requirements

PR Credit: LEED AP

PRc2

1 point

Intent

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

Requirements

Achievement Pathways	Points
Commercial Interiors	1
LEED AP	1

At least one principal participant of the project team must be a LEED AP with a specialty appropriate for the project.

APPENDIX I: LEED PLATINUM REQUIREMENTS

EAc1: ELECTRIFICATION

Do not install new on-site combustion equipment in the project scope of work.

EAc2: ENHANCED ENERGY EFFICIENCY

7 points are required

EAc3: RENEWABLE ENERGY

100% of tenant annual site energy consumption is from any combination of Tier 1, Tier 2, and Tier 3 renewable energy.

MRc2: REDUCE EMBODIED CARBON

10% reduction in embodied carbon.