LEED BD+C: New Construction | v4 - LEED v4

Building life-cycle impact reduction

Possible 5 points

1 result in**All** .

Intent

To encourage adaptive reuse and optimize the environmental performance of products and materials.

Requirements

Demonstrate reduced environmental effects during initial project decision-making by reusing existing building resources or demonstrating a reduction in materials use through life-cycle assessment. Achieve one of the following options.

Option 1. historic building reuse (5 points)

Maintain the existing building structure, envelope, and interior nonstructural elements of a historic building or contributing building in a historic district. To qualify, the building or historic district must be listed or eligible for listing in the local, state, or national register of historic places. Do not demolish any part of a historic building or contributing building in a historic district unless it is deemed structurally unsound or hazardous. For buildings listed locally, approval of any demolition must be granted by the local historic preservation review board. For buildings listed in a state register or the U.S. National Register of Historic Places (or local equivalent for projects outside the U.S.), approval must appear in a programmatic agreement with the state historic preservation office or National Park Service (or local equivalent for projects outside the U.S.).

Any alteration (preservation, restoration, or rehabilitation) of a historic building or a contributing building in a historic district on the project site must be done in accordance with local or national standards for rehabilitation, whichever are applicable. If building is not subject to historic review, include on the project team a preservation professional who meets U.S. federal qualifications for historic architects (or local equivalent for projects outside the U.S.); the preservation professional must confirm conformance to the Secretary of Interior's Standards for the Treatment of Historic Properties (or local equivalent for projects outside the U.S.).

OR

Option 2. renovation of abandoned or blighted building (5 points)

Maintain at least 50%, by surface area, of the existing building structure, enclosure, and interior structural elements for buildings that meet local criteria of abandoned or are considered blight. The building must be renovated to a state of productive occupancy. Up to 25% of the building surface area may be excluded from credit calculation because of deterioration or damage.

OR

Option 3. building and material reuse (2–4 points)

Reuse or salvage building materials from off site or on site as a percentage of the surface area, as listed in Table 1. Include structural elements (e.g., floors, roof decking), enclosure materials (e.g., skin, framing), and permanently installed interior elements (e.g., walls, doors, floor coverings, ceiling systems). Exclude from the calculation window assemblies and any hazardous materials that are remediated as a part of the project.

Materials contributing toward this credit may not contribute toward MR Credit Building Product Disclosure and Optimization - Sourcing of Raw Materials.

Table 1. Points for reuse of building materials

Percentage of completed project surface area reused	Points BD&C	Points BD&C (Core and Shell)
25%	2	2
50%	3	3
75%	4	5

OR

Option 4. whole-building life-cycle assessment (3 points)

For new construction (buildings or portions of buildings), conduct a life-cycle assessment of the project's structure and enclosure that demonstrates a minimum of 10% reduction, compared with a baseline building, in at least three of the six impact categories listed below, one of which must be global warming potential. No impact category assessed as part of the life-cycle assessment may increase by more than 5% compared with the baseline building.

The baseline and proposed buildings must be of comparable size, function, orientation, and operating energy performance as defined in EA Prerequisite Minimum Energy Performance. The service life of the baseline and proposed buildings must be the same and at least 60 years to fully account for maintenance and replacement. Use the same life-cycle assessment software tools and data sets to evaluate both the baseline building and the proposed building, and report all listed impact categories. Data sets must be compliant with ISO 14044.

Select at least three of the following impact categories for reduction:

- global warming potential (greenhouse gases), in kg CO_2e;
- depletion of the stratospheric ozone layer, in kg CFC-11;
- acidification of land and water sources, in moles H^+ or kg SO_2;
- eutrophication, in kg nitrogen or kg phosphate;
- formation of tropospheric ozone, in kg NOx, kg O_3 eq, or kg ethene; and
- depletion of nonrenewable energy resources, in MJ.

SITES-LEED Equivalency

This LEED credit (or a component of this credit) has been established as equivalent to a SITES v2 credit or component. For more information on using the equivalency as a substitution in your LEED or SITES project, see this article and guidance document.