



LEED BD+C: Core and Shell | v4 - LEED v4

Bird collision deterrence

Possible 1 point

Glossary

Intent

Reduce bird injury and mortality from in-flight collisions with buildings.

Requirements

Comply with one of the Building Façade options, one of the Interior Lighting options, one of the Exterior Lighting options, and the Post-Construction Monitoring Plan requirements below.

Building façade requirements

Develop a building façade design strategy to make the building visible as a physical barrier and eliminate conditions that create confusing reflections to birds. If all materials on the building façade have a Threat Factor of 15 or below, the project is exempt from the building façade requirements and the following Bird Collision Threat Rating calculations are not required.

Bird collision threat rating

If any material on the building façade has a Threat Factor above 15, then the Bird Collision Threat Rating calculations are required. First separate the building into Façade Zone 1 or Façade Zone 2. Façade Zone 1 includes the first 3 floors above ground level, as well as 1 floor above any green roofs. Façade Zone 2 includes all façade areas above the 3rd floor. Then identify the Material Types present on the building façade and the Threat Factor of each type (for detailed material types and associated threat factors, see the Bird Collision Deterrence: Summary of Material Threat Factors table developed by the American Bird Conservancy). Determine the total area of each Material Type.

No more than 15% of the glazed area in Façade Zone 1 can have a Threat Factor higher than 75. However, more than 15% of the glazed area in Zone 2 may have a Factor higher than 75. All glazed corners or fly-through conditions must have a Threat Factor less than or equal to 25.

Using the formulas below, achieve a maximum total building Bird Collision Threat Rating (BCTR) of 15 or less.

First, for each Façade Zone, perform the following calculation:

$$(((\text{Material Type 1 Threat Factor}) \times (\text{Material Type Area})) + ((\text{Material Type 2 Threat Factor}) \times (\text{Material Type Area})) \dots) / [\text{Total Façade Zone Area}] = \text{Façade Zone BCTR}$$

Then determine the total building Bird Collision Threat Rating by performing the following calculation with the Zone 1 and Zone 2 BCTRs:

$$[(\text{Zone 1 BCTR} \times 2) + (\text{Zone 2 BCTR})] / 3 = \text{Total Building BCTR}$$

AND

Interior Lighting Requirements

Develop a lighting design strategy to effectively eliminate or reduce light trespass from the building. The lighting in all spaces with a direct line of sight to exterior fenestration shall meet at least one of these two options:

Option 1. nighttime personnel

Include a requirement in any building operations guidelines stating that all interior lighting must be turned off by the appropriate nighttime personnel after hours when the space is unoccupied, or at a minimum from midnight until 6 a.m.

OR

Option 2. automatic shutoff

The lighting shall be controlled such that all lighting in the space will be automatically shut off after being vacant for a period of no longer than 30 minutes.

AND

Exterior lighting requirements

Develop a lighting design strategy to effectively reduce or eliminate light trespass from exterior fixtures. Meet the exterior and garage lighting power density and controls requirements in sections 9.4.1.3, 9.4.1.7, 9.4.3, of the ANSI/ASHRAE/IES Standard 90.1-2010 (with errata but without addenda).

Option 1. fixture shielding and automatic shutoff

Shield all exterior fixtures such that the installed fixture does not directly emit any light at a vertical angle more than 90 degrees from straight down. Exterior building fixtures that are not necessary for safety, building entrances, and circulation shall be automatically shut off from midnight until 6 a.m.

OR

Option 2. new construction SS credit, light pollution reduction

Demonstrate that the project complies with the exterior lighting requirements of the latest published LEED for New Construction SS Credit, Light Pollution Reduction.

AND

Post-construction monitoring plan requirements

Develop a three-year post-construction monitoring plan to routinely monitor the effectiveness of the building design in preventing bird collisions. Include methods to identify and document locations of the building where repeated bird strikes occur, the number of collisions, the date, the approximate time (if known), and features that may be contributing to collisions. The plan should also provide a process for corrective action.

Submittals

General

[REGISTER FOR THE PILOT CREDIT](#)

- Participate in the [LEEDuser pilot credit forum](#)
- Complete the feedback survey:

[CREDITS 1-14](#)

[CREDITS 15-27](#)

[CREDITS 28-42](#)

[CREDITS 43-56](#)

[CREDITS 57-67](#)

[CREDITS 68-82](#)

[CREDITS 83-103](#)

Credit Specific

Building Façade

- If all materials on the building have a Threat Factor of 15 or below and the project did not perform the calculations, submit a narrative describing why the materials, and building in general, are “bird-friendly.” This includes a material list and supporting data.
- A completed [Bird Collision Threat Rating spreadsheet](#).
- Plan(s) and/or elevation(s) depicting the location of all materials and shading/screening devices used to comply with this credit
- Applicable specification details on all materials and shading/screening devices used to comply with this credit

Interior Lighting

Option 1:

- A copy of the building operations guidelines text that stipulates that all interior lighting must be turned off by the appropriate nighttime personnel after hours when the space is unoccupied.

Option 2:

- Narrative, and drawings showing control locations, describing the lighting controls used on the interior lighting, the sequence of operation and how these controls comply with this credit and section 9 of the ANSI/ASHRAE/IES Standard 90.1-2010

Exterior Lighting

Option 1:

- A photometric report of those luminaires demonstrating that no light is emitted above 90 degrees from straight down in their final installed position(s).
- Narrative, and drawings showing control locations, describing the lighting controls used on the exterior lighting, the sequence of operation and how these controls comply with this credit.

Option 2:

- All submittals required for the LEED for New Construction SS Credit, Light Pollution Reduction.

Post-Construction Monitoring Plan

ALL PROJECTS

- A copy of the post-construction monitoring plan

AND

EBOM PROJECTS

- Provide records of all collisions during the Performance Period. Include the location, date, and approximate time of day for each collision.
- Plan(s) and/or elevation(s) depicting the location of all temporary and permanent materials and shading/screening devices used to retrofit the building façade in response to the results of the monitoring plan.
- Applicable specification details on all temporary and permanent materials and shading/screening devices used to retrofit the building façade in response to the results of the monitoring plan.