LEED Pilot Credit Library

Pilot Credit 57: Enhanced Acoustical Performance—Exterior Noise Control

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Applicable Rating Systems

This credit is available for pilot testing by the following LEED project types:

- New Construction
- Schools
- Core & Shell
- NC - Retail
- Healthcare
- Existing Buildings: Operations & Maintenance

Intent

Improve or have no negative impacts on the outdoor acoustical environment as a result of new or major renovation building construction.

Requirements

Design and locate exterior noise sources[1] for new and majorly renovated buildings so that project noise levels at the nearest property line or public right of way are a minimum of 5 dBA below the existing ambient noise levels without the project, and no more than 60 dBA. Ambient sound level shall be measured as a Day-Night Equivalent Level (Ldn), and future sound levels from the project shall be calculated. Project building equipment noise shall be evaluated with respect to existing levels, and mitigated as required to not exceed the levels set out above. Emergency equipment (e.g. generators) do not need to meet these noise requirements, however, an operations plan must be included to describe their schedule for periodic testing.

[1] Noise sources may include building equipment mounted on the rooftop, inside building but exterior venting, or located at grade), transformers, traffic associated with the building, and other sources.

Credit Submittals

General:

1. Register for Pilot Credit(s) here.
2. Register a username at LEEDuser.com, and participate in online forum
3. Submit feedback survey; supply PDF of your survey/confirmation of completion with credit documentation

Credit Specific:

- Ambient noise measurements should be taken on the project site prior to construction or clearing to establish current Ldn.
- Calculations for building equipment noise emission should be submitted, establishing that noise is expected to be at least 5 dB below the established Ldn, and no louder than 60 dBA at the nearest property line or public right of way
- Narrative describing:
    - Exterior equipment and noise mitigation design;
    - Traffic noise control (routing, barriers, etc);
    - Factors that improve the acoustical environment such as building shielding.
    - Operations plan for testing of emergency equipment, describing the reason a particular time of day was chosen for testing.

Additional Questions

1. The goal of this credit is to maintain the existing background noise environment which was present prior to the building's construction. This will be more difficult in situations with low exterior background noise levels than for those buildings being constructed in urban environments. If your project is located in a low-noise environment, was this too difficult to achieve? Would you suggest any alternatives?
2. Was the energy tradeoff too costly for this credit to be utilized in your project?

Background Information

This pilot credit is intended to maintain the existing background noise of a site, prior to the new building's construction. U.S. legislation was introduced in the 1970's to curb the trend of rising ambient noise levels. In Europe and Australia, similar requirements state that noise emission is significantly below the measured existing site noise. However, in the 1980's the EPA's noise code was defunded. This pilot credit has been developed in order to bring awareness to the rising ambient noise levels due to lax local noise codes.

Noise can be an annoyance and quality-of-life issue that can negatively affect sleep patterns and outdoor recreation. The effect noise has on habitat is just starting to be understood since most metrics for measuring noise are based on human-hearing ranges.

Many parks and cultural heritage sites are now focusing on preserving quiet and natural soundscapes for both visitors and to protect the natural ecosystems.