

## Commentary: Litigation Issues With LEED Ratings and Checklist Design

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Green buildings are generally assumed to be energy efficient and sustainable. However, such indefinite concepts need to be reduced to measurable criteria to be incorporated into construction documents, contracts and building codes. Although others are being developed, the most widely used green building benchmark is currently the LEED rating system developed by the U.S. Green Building Council.

To receive LEED certification, a project must meet a variety of prerequisites such as minimum energy performance and indoor air quality requirements, and then earn points for achieving specific goals or standards in seven categories. Based on total points earned, the building is designated by USGBC as Certified, Silver, Gold or Platinum.

The current version of the LEED Rating System, LEED 2009, features a 110 point scale, allocated as follows:

- Site Selection – 26
- Water Efficiency – 10
- Energy and Atmosphere – 35
- Materials and Resources – 14
- Indoor Environmental Quality – 15
- Innovation in Design - up to 6 bonus points
- Regional Priority – up to 4 bonus points

Designations range from Certified, with a minimum score of 40, to Platinum, with a minimum score of 80. “Checklist” systems encourage designers and design-build contractors to select points enabling the building to receive the desired certification, but often lead to problems during the building’s construction or operation. The following are examples of some of the negative consequences that can result from selecting design features based solely on LEED points.

Site Selection Credit 1 - Heat Island Effect, Roof. A building earns one point for having a highly reflective roof system. Although “cool” roofing has been promoted as a means of reducing cooling loads, in some situations reflective roofing can negatively impact buildings. In colder climates, such as the northeastern U.S.,

cool roofing may actually result in a net increase in overall year-round energy costs, since heat gain by traditional roofing provides “free heating” during the winter.

In other climates, such as the desert Southwest, cool roofing systems can result in condensation within certain types of roof assemblies that would not occur if traditional, non-reflective roofing materials were used. Condensation can lead to water damage as well as mold, and litigation relating to building mold has been common for decades.

Indoor Environmental Quality Credit 2 - Increased Ventilation. One point is earned for either exceeding the ASHRAE minimum ventilation requirements by 30%, or for providing natural ventilation for the occupied spaces. For many buildings, air conditioning accounts for a significant percentage of overall energy use. A 30% increase in the volume of ventilation air could result in a significant increase in energy use even if energy recovery systems are used.

In warmer climates, increasing ventilation has the potential to significantly increase moisture loads (and consequently, the risk of high humidity conditions and microbial growth). Designers should document the owner’s approval of the additional construction and energy costs associated with achieving a LEED point for increased ventilation. Failure to do so could lead to owner claims against the design team related to increased energy use.

Materials and Resources Credit 6 - Rapidly Renewable Materials. One point is earned for using rapidly renewable materials (defined as materials harvested within a cycle of 10 years or less) for 2.5% of the value (based on cost) of all materials used on the project. Examples include bamboo and cotton insulation. Bamboo flooring is a material that has gained significant popularity with green building designers due to its rapidly renewable nature.

However, bamboo is extremely sensitive to moisture, much more so than traditional flooring materials like oak and maple. Most manufacturers of bamboo flooring recommend that it not be exposed to relative humidity levels outside a range of 40 to 55%. However, in the northeastern United States, for example, even air-conditioned buildings will likely experience relative humidity levels ranging from 10% in the winter to over 70% during the summer.

Many large-scale failures of bamboo flooring have occurred due to installers’ unfamiliarity with the increased sensitivity of the material to moisture fluctuations. An owner forced to replace costly flooring material within one or two years will likely seek legal recourse against the designer who specified it, the contractor who installed it, or both.

The potential for substantial legal liability is increased since flooring replacement often results in significant loss of use, as opposed to other remedial work that

can be sequenced to accommodate building operations. At a manufacturing facility, the cost to shut down production could greatly exceed the actual direct cost of repairing or replacing the floor.

Failure of building to live up to LEED claims. If a LEED-certified project does not function as implied by the certification, the owner may have a cause of action against parties connected with the project, under legal theories of negligence, breach of warranty, or even fraud. A recent lawsuit illustrates a fact pattern likely to become more common with checklist design.

A luxury condominium development in lower Manhattan achieved a LEED-Gold rating. In May 2010, the purchasers of one of the units sued the sponsor of the condominium conversion, the sponsor's owner and principal officer, the management company, the architect, the structural engineer, the marketing agent and the underlying owner of the land, alleging (among other things) that water leaked into the unit and that the vaunted green heating system did not function adequately.

The lesson from these examples is that blindly collecting LEED points on projects can lead to significant problems if the issues associated with each point are not fully understood and accommodated in the overall building design. Designers and design-build contractors need to be aware of the bigger picture of sustainable design, and pursue LEED certification in a manner that does not end up leading to costly remediation efforts or litigation.

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