

A Brief Overview of the LEED Rating Systems

The [LEED](#) (Leadership in Energy and Environmental Design) rating system has undergone many changes over the years in response to a variety of factors, including advancements in technology, advancements in building systems, and increased concern in certain areas of human health and environmental issues. In 2009, LEED underwent one such revision. LEED 2009 focuses on three major areas: harmonization between rating systems, credit weightings, and regionalization. Previously there were differences and inconsistencies between the different rating systems that are now unified in LEED 2009. One of the most important changes with LEED 2009 is the introduction of a new credit weighting system based, in part, on user requirements and changing market conditions. Consequently, greater emphasis is now placed on those strategies that will yield greater benefits in the areas of energy efficiency and CO₂ reduction. Another change with LEED 2009 is the addition of regional priority credits, which awards additional points based on the achievement of credits pertaining to specific regional environmental issues. As a result of this restructuring, the total number of possible LEED base points increased from 69 to 100 when using the standard categories, with a maximum of 110 points being possible if regional priority and innovation bonus points are included.

As of 2011, LEED is comprised of nine separate rating systems, each focusing on a different aspect of the built environment. Those rating systems, which are grouped under seven different reference guides, are discussed separately below.

- **Green Building Design and Construction Reference Guide**

- [LEED for New Construction and Major Renovation](#) Focuses typically on commercial buildings and may include multi-story residential complexes that are either newly constructed or undergoing major renovation (which may include major alterations to the building envelope, the HVAC system or renovation of interior spaces).
- [LEED for Schools](#) Similar to the non-school version of New Construction, LEED for Schools also addresses issues unique to academic spaces including acoustics, air quality, and master planning.
- [LEED for Core & Shell](#) Also similar to New Construction, Core & Shell addresses only the base building components, including HVAC, structure and envelope. This system may also be used by developers and owners of multi-tenant buildings in conjunction with Commercial Interiors, thereby allowing further green development of the interior spaces by the tenants.



- **Building Design and Construction Reference Guide: Healthcare Supplement**
 - [LEED for Healthcare](#) Addresses the unique demands of healthcare within the context of New Construction and focuses on care facilities, offices, and education and research centers.

- **Building Operations & Maintenance Reference Guide**
 - [LEED for Existing Buildings](#) Applicable to existing buildings not undergoing major renovations and focuses predominately on issues pertaining to building operation and maintenance, which includes purchasing guidelines, waste management, air quality and green cleaning processes and procedures.

- **Homes Reference Guide**
 - [LEED for Homes](#) Focuses on residential construction and looks at many of the same areas as New Construction.

- **Interior Design and Construction Reference Guide**
 - [LEED for Commercial Interiors](#) Looks at interiors in the context of tenant owned or leased spaces within a larger building, such as office, retail or institutional buildings. This system is designed to work with Core & Shell.

- **LEED for Retail Reference Guide**
 - [LEED for Retail](#) Designed to address a wide range of retail-specific issues in two different areas, which are 1) New Construction & Major Renovation, and 2) Commercial Interiors. The Retail versions of these are similar to their respective non-retail versions, but incorporate a variety of issues such as multi-tenant retail complexes, retail furnishings, and spatial occupancy in a retail setting. In LEED for Retail, the role of biobased products in both the New Construction and Commercial Interiors sections is similar to the non-retail versions of those sections. As such, biobased products are applicable to MR Credit 6: Rapidly Renewable Materials, MR Credit 7: Certified Wood, and IEQ Credit 4: Low Emitting Materials (IEQ Credit 4.4 in CI).

- **Neighborhood Development Reference Guide**
 - [LEED for Neighborhood Development](#) Looks at green neighborhood development integrating principles of New Urbanism, smart growth, and green infrastructure.

Multiple and Large Volume Certification

For projects looking to certify multiple buildings, there are two different options:

- [LEED Application Guide for Multiple Buildings and On-Campus Building Projects](#)
 - For multiple buildings that are on a shared site and controlled by a single entity, such as campuses or government building complexes.
- [LEED Volume Program](#)
 - Designed for buildings that are similar in size and type on different sites. This includes chain stores, hotels, banks, and grocery stores.
 - Currently this program is applicable only to new construction/major renovation projects, with an option for existing buildings becoming available mid-2011.
 - To be eligible for this program, companies must already have at least one LEED certified project and be planning at least 25 projects to be certified.

Role of Biobased Products within LEED

The potential role of biobased products differs between each of these rating systems. In LEED 2009, biobased products could fall under the categories of either “rapidly renewable” materials or “certified wood”. Although LEED 2009 does not specifically mention biobased products, the draft version of LEED 2012 mentions utilization of biobased materials for LEED credit in the Interior Design & Construction, Existing Buildings, and Building Design & Construction sections. In addition, the draft LEED 2012 documents specify that the biobased materials must contain organic carbon from modern carbon sources (as identified in [ASTM Test Method D6866](#)), must come from designated countries as defined in the [Federal Acquisition Regulation](#) (section 25.003), and must be documented in the USDA [BioPreferred](#) data base.

Examples of some of the credits that may directly utilize biobased products in the various LEED rating systems are listed below. In all of these rating systems, biobased product usage may also indirectly assist with achieving additional credits through potential reductions in VOC levels, various third party certifications, or other generally more environmentally conscientious design or formulation attributes. The MR 6 credit for using rapidly renewable materials is based on the fraction of the total project cost and can be difficult to attain. However, there are some noted successes, such as the [Weather Forecast Office](#) in Caribou, ME. In that project, MR 6 requirements were met by using pressed strawboard for all the built-in cabinetry, rapidly renewable ceiling tiles, and composite wood. The use of composite wood also helped in meeting the IEQ Credit 4 requirements.



- LEED for New Construction
 - MR Credit 6: Rapidly Renewable Materials
 - MR Credit 7: Certified Wood
 - IEQ Credit 4: Low Emitting Materials (e.g., low VOC paints and composite wood)

- LEED for Schools
 - MR Credit 6: Rapidly Renewable Materials
 - MR Credit 7: Certified Wood
 - IEQ Credit 4.4: Low Emitting Materials – Composite Wood and Agrifiber Products

- LEED for Core and Shell
 - MR Credit 6: Certified Wood
 - IEQ Credit 4.4: Low Emitting Materials – Composite Wood and Agrifiber Products

- LEED for Existing Buildings
 - MR Credit 1: Sustainable Purchasing – Ongoing Consumables
 - MR Credit 2.2: Sustainable Purchasing – Furniture
 - MR Credit 3: Sustainable Purchasing – Facility Alterations and Additions
 - IEQ Credit 3.3: Green Cleaning – Purchase of Sustainable Cleaning Products and Materials

- LEED for Commercial Interiors
 - MR Credit 6: Rapidly Renewable Materials
 - MR Credit 7: Certified Wood
 - IEQ Credit 4.4: Low Emitting Materials – Composite Wood and Agrifiber Products

- LEED for Homes
 - MR Credit 2.2: Environmentally Preferable Products

- LEED for Retail (Includes New Construction and Commercial Interiors)
 - MR Credit 6: Rapidly Renewable Materials
 - MR Credit 7: Certified Wood
 - IEQ Credit 4: Low Emitting Materials (IEQ Credit 4.4 in CI)

- LEED for Healthcare
 - MR Credit 3: Sustainably Sourced Materials and Products
 - MR Credit 5: Furniture and Medical Furnishings