PERMA•CRETE®

World Wide

Building Green in 2008

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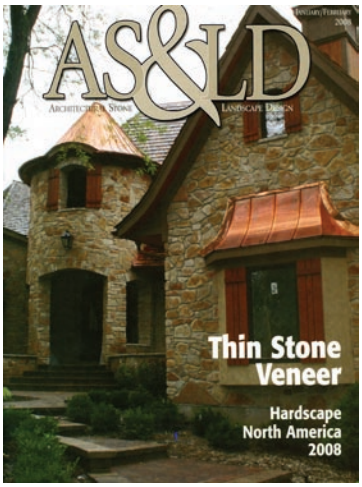
There's a new awareness and acute concern over the environmental standards in which we live. It's been labeled as the new green society, and it's responsible for rapidly increasing changes in building codes and other public standards of living.

It's also happened so fast that most, if not all, of us are unclear about what it all means, how it works, what the definitions are, and how specific applications apply for the target buzzwords now regularly referenced everywhere. The most-commonly misunderstood word in all of this is green.

Let's take a minute to clearly define the new environmental goals, and explain how each facet fits together to achieve cleaner energy and create a better and healthier world to live in.

The LEED® (Leadership in Energy and Environmental Design) Green Building Rating System™ is the national benchmark for high-performance green buildings. Developed through consensus by green building experts, LEED evaluates the environmental performance of a building and provides independent, third-party certification that a project is green.

LEED isn't rigidly structured; not every project must meet identical requirements to qualify. LEEDs outlines the intent, requirements, technologies, and strategies for gaining ratings points. A building requires a minimum of 26 points to be certified, with a total of 69 points available.



Using LEED building practices results in energy and cost savings over the life of the structure with better indoor air quality and plenty of daylight. Studies have shown that in these environments, workers increase labor productivity, students have higher test scores and lower absenteeism, and even retail sales are higher.

The U.S. government is adopting LEED or similar green building standards for the General Services Administration (which owns or leases over 8,300 buildings), the U.S. Army, the Department of State, the Department of Energy (DOE), and the Environmental Protection Agency (EPA). Eight states, including California, New York, Oregon, and Washington, have adopted LEED for public buildings. Many agencies are requiring LEED silver certification (32 points) as a minimum.

Why Build Green?

In the United States, buildings account for 36 percent of total energy use, 76 percent of electricity consumption and 48 percent of greenhouse-gas emissions. Buildings also account for 30 percent of raw materials use, 30 percent (136 million tons) of waste output, and 12 percent of potable water consumption. The movement to provide sustainable buildings is growing. For example:

- Green building construction starts will exceed $12 billion in 2007.
- LEED for new construction began in 2000, and for existing buildings, commercial interiors, operation/maintenance, and tenant improvements in 2004.
- There are LEED projects in all 50 states and 41 countries.
- The number of LEED registered projects worldwide: 7,842 commercial, 8,204 residential.
- The number of LEED certified projects worldwide: 1,004 commercial, 267 residential.

What Makes a Product Green?

A green product is a building component with minimal or no negative environmental impacts, and/or allows for the elimination or substitution of potentially hazardous materials. However, it's likely that many building products will be used that aren't green in themselves, but used in a way to reduce the overall environmental impacts of the building.

One of the most critical standards in determining whether our own PERMA•CRETE® products are green, is the volatile organic compounds (VOCs) "toxic off-gassing" emitted by the products as they're installed, as well as the amount of time needed for installed products to finish any continued off-gassing. Simply meeting the maximum U.S. standard for VOC emissions is no longer sufficient for products to gain green status.

VOCs in paints and coatings have been regulated variously in different parts of the U.S. for more than 20 years. In 1998, the EPA established a national VOC limit of 450 g/l (grams per liter) for architectural and industrial maintenance coatings; this limit will soon be lowered. However, the national limit can be, and has been, superseded by stricter rules within the states, a trend expected to continue.

For example, the California Air Resources Board (CARB) provides model rules and suggested control measures (SCM) for California's air-quality districts; other groups around the nation often follow CARB's lead. CARB's current SCM is 250 g/l and, this year, CARB is reconsidering its SCM at 100 g/l.

It's also important to note that a product may be considered green for more than one reason. Recycled plastic lumber, for example, is made from recycled waste, it's highly durable and eliminates the need for pesticide treatments.

Conversely, a product with one or more green attributes might not qualify if it also carries significant environmental risks. For example, wood treated with toxic preservatives has advantages in terms of durability, but it wouldn't be considered green due to possible health and environmental hazards.

Defining Standards of Green

The materials and methods used to produce a building product are also key factors in determining green products.

Salvaged Products: If a product can be reused instead of producing a new one from raw materials, resource use and energy are saved. Examples are used bricks and millwork.

Post-Consumer Recycled Materials: Materials that can be recycled after initial use into other products - preferable to pre-consumer materials, since they're more-likely to be diverted from landfills.

Pre-Consumer Recycled Products: Industrial by-products of manufacturing, such as fly ash used to make concrete, are examples of pre-consumer or "post-industrial" recycled materials.

Reduced Material Use Products: Products that create resource efficiency benefits, such as foundation systems that minimize concrete use, and concrete pigments that turn plain slabs into attractive finished floors without other finishing methods.

Low Manufacturing Impact Products: Examples are mineral products such as natural stone or slate.

Products That Save Energy or Water: Examples include structural insulated panels (SIPs), and insulated concrete forms (ICFs).

Equipment That Saves Energy: Examples include compact fluorescent lamps and occupancy/lighting controls.

Equipment That Conserves Energy: All toilets and showerheads that meet federal water efficiency standards; other products such as rainwater catch systems are also included.

Products That Contribute To a Safe Environment: Included are zero- and low-VOC caulks and adhesives; however, the EPA is presently working on establishing new VOC data that could minimize a product's initial green status.

Other Products: Examples are exterior stains and paints with low VOC emissions, and masonry fireplaces that burn wood more completely with low emissions.

Quality Systems, Inc., headquartered in Nashville, TN, is the manufacturer of PERMA•CRETE® products sold worldwide to over 1,200 Dealers.

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