



Woodstalk particleboard.
Photo courtesy of
Columbia Forest Products.

Building It Green

By Kristin Berkery

You don't have to achieve FSC certification to sell environmentally-friendly products... nor do you have to subscribe to a specific set of standards to design a "green" building.

That's not to say the Forest Stewardship Council, the Sustainable Forestry Initiative, the U.S. Green Building Council, and the LEED program don't have their merits. Each is attempting to do "the right thing" – support industry while protecting the environment. But it's overwhelming to understand each group's goals and relationships, and it can be downright challenging to follow their standards to the letter. Because the issue of environmentally-friendly construction standards is so new, bumps in the road and detours are to be expected along the way. The key to success with green projects is to remain flexible with your expectations.

If your concern is designing or building an environmentally-friendly structure, you can work within the guidelines of the LEED program, which is administered by the U.S. Green Building Council (www.usgbc.org) and relies on FSC standards. When a building project is registered with the LEED program, LEED points are accumulated for each environmentally-friendly product or practice incorporated into the project. The higher the points, the "greener" a structure is considered to be... but a building can still be kinder to the environment and its occupants without having a green certification.

There are some key choices you can make in the design and construction of a building to benefit the environment and the end-users. For better indoor air quality, avoid the use of materials that emit high levels of volatile organic compounds (VOCs) such as polyvinyl chloride (PVC), urea-formaldehyde, benzene, methylene, and toluene. Traditional adhesives often contain these substances, but recent air quality restrictions have encouraged manufacturers to create new formulations that contain fewer VOCs.

Another environmentally-conscious practice involves obtaining construction materials from local sources when possible. Shipping materials over long distances increases vehicle emissions that may contribute to poor air quality. From a social responsibility perspective, buying materials in your area also benefits your local economy.

Photo on facing page:
A young bamboo plant.

A cork tree after having the outer bark harvested. Photo courtesy of Joseph Gerencher, Jr.



As one of the few renewable building materials, wood is still a good choice for construction projects. Some people believe it's bad to use wood in any form because of the misconception that it harms the environment, but that's an unrealistic and uninformed view. The alternatives to wood are often non-renewable, non-biodegradable, and more polluting to manufacture.

Responsibly managed forests and effective environmental policies go a long way toward protecting our forests and ensuring we'll have enough wood for future construction. The key is to find a balance between environmental legislation that protects our forests while allowing industry to remain solvent and productive.

The Manual of Millwork notes

that wood veneers are an ideal way to achieve the beauty and warmth of wood while conserving the resource. "Usually sliced at between 1/28" and 1/42" in thickness, wood veneer will yield about 40 times more surface area than the same log sawn for lumber" (2003 Manual of Millwork, p. 155, 1.14.1).

In the last few years, new products have been developed that incorporate easily renewable or recycled materials. These innovations include bamboo or cork flooring, countertops made from recycled glass and cast concrete, wheat straw fiber particleboard, and wood products constructed with used wood or even logs salvaged from the bottoms of rivers and lakes.

Bamboo is a unique product that can actually be used in many applications – flooring, plywood, veneers, and countertops. The world's fastest growing plant, bamboo can be harvested in just four to six years versus 40 to 60 years for hardwoods. While it's a member of the grass family, bamboo is extremely durable and harder than most hardwoods. One drawback is that urea-

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formaldehyde (UF) is used in nearly all manufactured bamboo products, but reportedly they don't off-gas as much as particleboard with UF. However, there are a small number of bamboo products in the marketplace with no added formaldehyde.

Cork is considered a good flooring material for kitchens or other rooms where people may be on their feet for long stretches. It's a low-density, compressible product that resists moisture and decay. Cork flooring is manufactured from waste cork resulting from the production of wine corks. The material is harvested from the bark of the cork tree every nine or ten years, and the tree is not harmed by the process. Sometimes phenol-formaldehyde is used as a binder in cork flooring, which is lower in VOCs than urea-formaldehyde.

Recycled glass and cast concrete countertops are extremely durable and environmentally responsible, but they can be more expensive due to custom fabrication and installation. Hard-to-recycle types of glass can be


incorporated in the countertops, keeping those materials out of landfills. Fly ash, a coal combustion by-product that would normally be dumped in landfills, can be partially substituted for Portland cement for a high quality concrete. (Portland cement is energy-intensive to produce and emits a large amount of greenhouse gases during its manufacture.) The cost for recycled glass and concrete countertops is comparable to marble, without the environmental damage caused by mining.

Particleboard products made from annually renewable wheat straw fiber, like Woodstalk™, offer a number of environmental benefits. No formaldehyde is used in their manufacture and the wheat straw component is an agricultural waste product that would normally be burned, creating air pollution. The result is a particleboard product that's moisture resistant, machinable, lightweight, and tree-free.

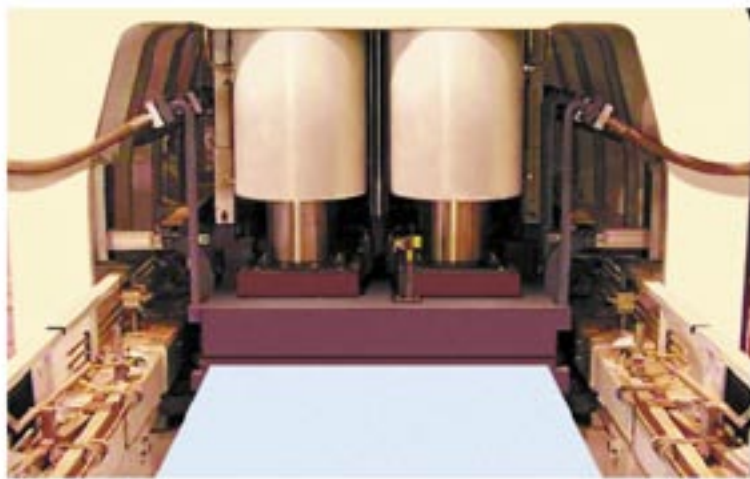
Because wood is one of the most durable and re-useable of construction materials, it makes sense to salvage wood that's no longer needed. Useable

wood can be reclaimed from old buildings, wood pallets, wine barrels, and lake- and riverbeds. No living trees are used, which lessens the burden on our forests. In many cases, reclaimed wood is high quality old growth wood with a tighter grain, higher ring count, and richer color. It's also less likely to bend, warp, and twist because the wood has air-dried for many years.

There are a number of ways to reduce our impact on the environment when we construct or remodel buildings, they simply require a close analysis of the products and processes we use. But being "environmentally responsible" is not an all-or-nothing thing – taking small steps toward using greener practices makes a difference, too.

More information about using environmentally-friendly products and processes in construction can be found at www.buildinggreen.com and www.healthyhomedesigns.com. 

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