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Five essential ingredients make up green-building plan

BY DENNIS CELSOR AND GARY PARR

Green building has come of age.

The reason is simple: Who among us isn't looking for savings in our energy bills, especially when money is tight?

However, anyone planning on building a green home or commercial building can be overwhelmed when looking for information on how to proceed. There are five essential ingredients for building green.

1. Energy efficiency. Eighty percent of damage done to the environment comes from transporting, creating or using energy, said Joseph Lstiburek, internationally renowned building scientist and the author of numerous books and technical papers on building science, indoor air quality and durability. "If you want a green, sustainable building, it has to be ultra energy efficient first, then water-efficient and then material-efficient," he said. Energy efficiency in a green home depends on the integrity of the building. Look at how well it is sealed.

Air conditioning is the biggest factor in energy usage, and windows are the No. 1 consideration as to how much air conditioning a building uses. If possible, avoid east and west exposures, or incorporate an overhang or porch to minimize exposure to the sun.

Also, make sure the air-conditioner system is in an environment conducive to cooling — not in an attic, where the ambient heat can rob the system of its cooling effectiveness.

2. Water conservation. Water conservation will be crucial in future years due to predicted worldwide shortages in areas with growing populations. In addition, wasting water can waste energy. For example, it takes 100 pounds of pressure to move water one mile down a pipe. Green building takes water usage into account by planting native vegetation that can withstand the extremes of rain and drought and don't need irrigation.

3. Building materials. Use recycled, sustainable materials. These can include salvaged materials from old buildings, such as bricks, lumber and even hardware.

When using recycled products, avoid materials that have been in a landfill such as industrial byproducts.

Sustainable materials are those we can grow and replenish, such as trees, cork or bamboo, all of which are used for flooring. One excellent example is wood from the southern pine tree. These trees, which are strong and dense, not only serve as excellent building materials, they are also architecturally appealing.

4. Indoor air quality. Green builders realize that the tighter homes are built for energy efficiency, the more hazardous it is to indoor air. Environmental problems can be caused by off-gassing of building materials, combined with cleaning components that contain volatile organic compounds. These chemicals also can eat through the copper in evaporation coils. For this reason, it's essential to provide ventilation into homes. The choice of building materials used also can affect indoor air quality; floor tile and hardwood flooring are less likely to hold in dust, and a whole house central vacuuming system can remove particulate matter from the air.

5. Protecting the site. As in the Hippocratic Oath that guides the medical profession, "First do no harm" should be a central tenet of green builders. Green builders contain the building site during construction, taking steps to keep the trees alive and prevent soil erosion.

Environmentally friendly buildings someday will be the standard because protecting the environment and saving money at the same time just makes sense. Educating the public on the essentials will increase the number of people who opt for a green home or office building.

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