

Going Green with Better Greenery

By Scott T. Shepherd

Most builders and architects have an appreciation for landscaping. After all, you know a well-placed shrub or tree can make an attractive home look even better, while the right plantings can ensure proper drainage after a heavy rain.

But with a little extra planning, landscaping can have a broader impact, turning an ordinary home into a "green" home that uses less energy and water. The right plantings can cut annual heating and cooling bills as much as 25 percent, according to the U.S. Department of Energy (DOE). And from the homeowner's perspective, DOE computer models estimate that the proper placement of just three trees can save the average household between \$100 and \$250 in energy costs every year — that's a great benefit to offer your customers.

MADE IN THE SHADE

Sunlight streaming through windows and beating on roofs can dramatically increase cooling costs. Since trees and shrubs can reduce the air temperature around a home

by three to six degrees, you should avoid cutting trees before you build (which means you also won't have to haul them away), and plant trees to provide shading.

Using shade effectively requires knowing the size, shape and location of the resulting shadow as it moves across the home. You should choose trees with appropriate sizes, densities and shapes for shading. Generally, place deciduous (leafy) trees on the southeast and south sides of the home; this will cut summer cooling costs and allow solar heating in winter. But don't plant large trees on the southern side where branches will block the winter sun.

A 6- to 8-foot deciduous tree planted near the home can begin shading windows as soon as the first year. Depending on the size of the home and the species of the tree, that tree can shade the roof in five to 10 years. Meanwhile, if trees shade an air conditioner, they can increase the efficiency of the unit by as much as 10 percent. (Don't place trees or shrubs too close to the unit, however, or they'll hinder air circulation and affect performance.) Use

evergreen trees or shrubs to provide continuous shade or to block heavy winds.

Trees and shrubs can also act as windbreakers by limiting the effects of wind chill. Moreover, a windbreak can reduce wind speed for a distance of as much as 30 times the windbreak's height. For maximum protection, plant a windbreaking tree at a distance from the home that is two to five times the mature height of the tree. At this distance, trees will be close enough to protect the home — and far enough away so they don't fall on it.

Trees, shrubs and ground cover can also shade the ground and paved areas around the home, reducing the heat these surfaces absorb and then release. Consider large bushes, a row of shrubs or climbing vines on a trellis to shade patios and driveways as well.

REGIONAL TIPS

The landscaping strategies you use depend on which of four climate regions you're building in. The U.S. Department of Energy offers these tips by climate zone:

Temperate Regions (Pacific Northwest, Lower Midwest, Mid-Atlantic)

- Maximize warming effects of the sun in the winter through use of deciduous trees.
- Maximize shade during the summer.
- Deflect winter winds away from buildings.
- Funnel summer breezes toward the home with proper placement of trees and shrubs.

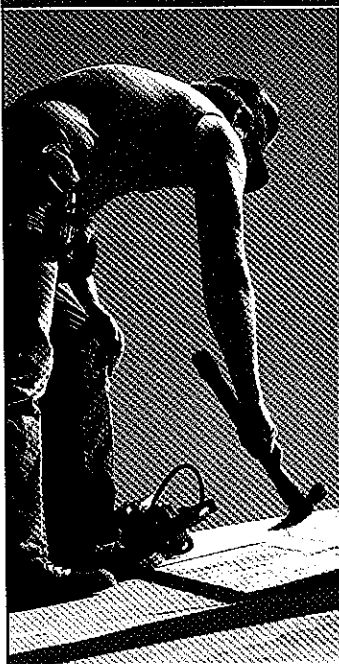
Hot-Arid Regions (Desert Southwest)

- Provide shade to cool roofs, walls and windows, but allow direct sun to warm up the house in the morning, if possible.
- Allow summer winds access to homes for passive cooling.
- Block or deflect winds away from air-conditioned homes.
- Shade the air conditioner or the outside compressor, but do not block air flow to it.

Hot-Humid Regions (Southeast, South)

- Channel summer breezes toward the home.

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- Maximize summer shade with trees that still allow penetration of low-angle winter sun.
- Shade the air conditioner or the outside compressor, but do not block air flow to it.
- Avoid planting beds close to the home if they require frequent watering.
Cool Regions (North)
- Use dense windbreaks to protect the home from cold winter winds.
- Allow the winter sun to reach south- and west-facing windows.
- Shade south and west windows and walls from the direct summer sun if summer overheating is a problem.

In addition to the regional climate, you should also consider the microclimate around the home, including the amount it's exposed to sun, shade, wind, rain, snow, moisture and/or dryness. For example, if the home is located on a sunny southern slope, it may have a warmer microclimate, even if it is located in a cool region. Combine your knowledge of regional conditions with your understanding of the microclimate to determine which plants best suit the landscape.

"X" MARKS WATER MANAGEMENT

So which plants best suit the landscape? That's the key question behind a low-maintenance landscaping technique known as xeriscaping.

Taken from a Greek expression that means "dry scene," xeriscaping is landscaping with slow-growing, drought-tolerant plants — usually native species — that conserve water and reduce yard trimmings. These plants also require less fertilizer and pest control. That's good news for homeowners who fret over the time and water required to maintain a yard.

Xeriscaping, which was developed during the water shortages of the 1970s, is regaining popularity in response to water management concerns across the country, not to mention the time management concerns of every overworked homeowner.

Traditional landscaping often includes

use of lush Kentucky bluegrass lawns, punctuated with exotic ornamental shrubs, flowers and trees. This thirsty practice assumes unlimited water supplies for irrigation and maintenance. With rapid housing growth in the West and Southwest, and seasonal droughts in almost every part of the country, local code officials are encouraging smarter approaches to landscaping. In the East, problems with disposal of grass clippings and pollution from fertilizer and pesticide runoff also have helped popularize xeriscaping techniques.

Xeriscaping includes selecting native plants that thrive without regular maintenance under typical local rainfall conditions. You can also choose drought-tolerant plants from other regions, but take care to avoid invasive species. (See the National Wildlife Federation at www.enature.com for lists of invasive plants by state.)

Ground covers, rock gardens and ornamental grasses can be substitutes for expansive, grass lawns. If a homeowner insists on grass, water-efficient buffalo grass and blue gamma grass are good options. Mulches, such as bark chips, pine needles, wood grindings, composted cotton burrs



A well-planned yard can mix bushes and native plants with trees and even rocks, which require little maintenance.

or gravel and decomposed granite, provide landscape variety.

If you've been thinking about building green, landscaping may not have been the first part of your building effort to come to mind. However, by removing fewer trees and shrubs, placing new ones in the right locations, and choosing drought-tolerant plantings you can "build green" without a lot of effort; it just requires a little forethought. If you'd like to tread a little lighter on the planet, looking at what you provide for landscaping is a good way to start.

Scott Shephard works for PATH Partners. For more information on PATH and to learn other techniques to improve a home's water and energy efficiency, visit www.pathnet.org. ■

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