By Rosemarie Rossetti, Ph.D

The fusion of green with universal design

Universal Design Living Laboratory, Columbus, Oh.

The home that my husband, Mark Leder and I built and live in, the Universal Design Living Laboratory (www.udll.com) in Columbus, Oh., is the national demonstration home and garden. It is the highest rated universal design home in North America, earning three national certifications. Universal design is a framework for the design of living and working spaces and products, benefiting the widest possible range of people in the widest range of situations without special or separate design. As a person who uses a wheelchair, I know from experience the value that universal design provides.

Green is an approach to building homes that conserves natural resources and highlights environmental quality. Our home earned a Silver LEED rating from the U.S. Green Building Council. It received a Gold rating on the National Green Building Standard certification program through the National Association of Home Builders.

Flooring Options

Hard surface flooring is easier than carpet to roll on in a wheelchair or walker. In a universal design home, there are green options for hardwood flooring. Bamboo is a fast-growing grass and is harder than maple or oak. Eucalyptus is a hard, durable wood that is harder than cherry or pine.

If carpeting is preferred in a home, select one that is easy to roll on in a wheelchair. Choose a carpet with a thin pad underneath and a low pile. One green recycled fiber carpet choice is made of polyester fiber recovered from plastic bottles. Wool carpets are also considered green.

Window Features

A way to save on heating and cooling bills is to install multiple pane windows having argon gas-filled Low E II insulating glass. A coating on the glass significantly blocks the sun's ultraviolet rays.

Casement windows are preferred to double hung windows due to their ease of operating for a person who uses a wheelchair. These windows allow more air circulation due to the size of the panes that open. The window locks must be reachable from a seated position.

Toilet Features

When choosing a toilet select one that will use less water. WaterSense labeled toilets use 1.28 gallons per flush or less while still providing equal or superior performance.

Also, select a toilet that is a little taller than the standard toilet that is 15" from the floor to the top of the seat. A 17" high toilet seat makes a significant positive difference for people making it easier to get on and off and to transfer to and from a wheelchair. Also, install a grab bar on the wall next to the toilet to make transfers safer and easier.

Casement Windows

Showerheads & Handshower Features

Handshowers that have at least a 6' long hose provide more benefits that a showerhead mounted on a shower wall. People who need to be seated in order to take a shower have the independence and greater adjustability to position the showerhead on the vertical bar. This bar on many models is constructed so that it also serves as a grab bar. Additional horizontal grab bars will be needed in the shower for safety.

Showerheads on handshowers should be lightweight and ergonomic. Ranges in cost may be due to a number of factors including material composition, integrated technology, size, style, functional design, finish, and the life of the warranty.

To conserve the amount of water used to take a shower, select a showerhead that is WaterSense labeled. The specification is that the maximum flow rate value of the showerhead must be equal to or less than 2.0 gallons of water per minute. Water is conserved by mixing more air into the water stream. By installing high-efficiency handshowers, the average household could save more than 2,300 gallons


Easier Access Kitchen

of water per year. Since these water savings will reduce demands on water heaters, households will also save on energy costs.

Door Features

To make each room more accessible for people who use wheelchairs or scooters, install 36" wide doors. Also, install lever handles rather that door knobs. Lever handles are easier to operate for people with paralysis or arthritis. The cost difference for these wider doors and lever handles is minimal. The benefits are long lasting, providing for independence and greater access to the entire home.

Exterior door thresholds should be 1/2" or lower to be easier to roll over in a wheelchair. The exterior main door should have multiple height peepholes or include glass in the design so all residents can view the porch to see who is there.

Heavily insulated fiberglass exterior doors are a weather


Landscape Pavers

resistant energy-efficient green solution. Select interior doors made from fast growing wood species like poplar or from lumber certified by a credible third-party certification program like the Sustainable Forestry Initiative.

Landscape Paver Features

When selecting landscape pavers consider those that are compliant with the Americans with Disabilities Act. They meet pedestrian slip resistance standards with a static coefficient of friction of 0.8 and offer smooth travel for people using wheelchairs.

Permeable pavers allow for rain and melted snow to percolate through the paver making these a green choice. In an environment with freezing temperatures, these permeable pavers are a great choice since water doesn't accumulate and they are less likely to ice over and be safer to walk on.

Initial Product Cost vs. Long-Term Value

When comparing prices on products that have green and universal design features compared to those that do not, recognize the benefits to the occupants and the saving in the long run. Universal design offers features provide more independence, safety, accessibility and comfort. Green features provide energy and water savings. In view of the benefits over the long haul, the investment in these products becomes an easy choice.

Rosemarie Rossetti, Ph.D. works with consumers, home designers, and builders to create inspired and livable homes. She is an internationally known speaker, consultant and author. To contact her, visit www.rosemariespeaks.com. To learn about her home and get the free report of the universal design features in the home, go to www.udll.com.

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