**THE BASICS**

Xeriscaping refers to landscaping with slow-growing, drought tolerant plants to conserve water, reduce yard trimmings, and reduce the amount of supplemental irrigation. It is usually promoted in arid parts of the country that do not have easily accessible supplies of fresh water. The word xeriscaping combines xeros (Greek for “dry”) with scape (a kind of view or scene). Plants whose natural requirements are appropriate to the local climate are emphasized, and care is taken to avoid losing water to evaporation and run-off.

The practice of xeriscaping will vary from region to region. Plants that are appropriate in one climate may not work well in another. The moist Northwest may be considered inhospitable to sturdy plants of the desert south. Landscapes

Source: City of Arlington, TX

DOLLARS AND SENSE
INITIAL COST - The initial costs of xeriscaping can be higher than other landscaping due to its need for comprehensive planning. Planners must study the area and find suitable vegetation appropriate for the climate and region. Approximate average installed costs will range from $0.75 to $1.50 per square foot depending on if the installation is all new or a retrofit of an existing lawn or landscape. New installations, or “new starts” will tend to be in the upper price range. Regional labor, material, and overhead costs may drive the price even higher. Costs can be significantly reduced if the homeowner provides some, or all, of the labor for installation and material.

MAINTENANCE COST – Xeriscaping does require periodic maintenance to remove weeds and replenish mulch and gravel. Irrigation systems will also require some maintenance, and specific irrigation systems (requiring additional maintenance) may be needed in some areas. Typically, more mature xeriscapes will require more maintenance than newer ones. Xeriscaping can also require more maintenance than traditional turf landscapes. Maintenance costs can be reduced if the homeowner provides some, or all, of the labor and material.

NOTE: For more specific information on water consumption, and installation and maintenance costs, see the final reports for the following xeriscape projects funded by the Bureau of Reclamation, Department of the Interior, under the National Xeriscape Demonstration Program (NXDP).

MAKING THE SWITCH
What is required to transition from your current building practices to using this technology?

Using xeriscaping requires planning, design, and identification and selection of appropriate plants for the region, climate zone, and soils. Check local ordinances for landscape bylaws and check for any community restrictions. Usually, it is advisable to engage the services of a qualified landscape designer. After planning and design, you should consider the following principles of xeriscaping:

- **Improve the soil.** The ideal soil will do a good job of absorbing and retaining water. It may be worthwhile to have the soil tested at a garden center, or by using a home test kit.
- **Limit turf areas.** Retain some turf for open space, functionality, and visual appeal. Use water-saving species of turf.
- **Select appropriate plants.** Use drought-resistant plants native to the region. Select plants for ultimate size to reduce pruning maintenance. Don’t mix plants with different (high and low) watering needs in the same planting area.
- **Provide mulch.** Cover soil surface around plants with a thick mulch layer to help reduce water loss to evaporation and limit weed growth.
- **Irrigate.** Consider soaker hoses or drip-irrigation systems that deliver water to the base of the plant. Avoid over watering.
- **Maintain landscaping.** Thicken the layer of mulch to keep weeds from growing up. Don’t cut turf areas too short. Avoid over fertilizing.

For drought-resistant plantings, use regionally-specific native plants. Avoid use of exotic species that can be invasive and spread into natural ecosystems. Find out what the natural annual precipitation is for the region, and how that precipitation is spread throughout the year. Use trees, hedges, shrubs, or tall ornamental grasses as natural windbreaks. Avoid watering during the hottest, windiest time of day. Minimize the number of younger plants that need more water than mature plants.

Xeriscaping techniques vary by region. Landscape architects, horticulturalists, and gardeners in many areas have developed lists of plants which can thrive under local climate conditions and rainfall patterns. Drought tolerant species may be imported, although some concern must be given to avoiding species which may crowd out indigenous plants or become invasive. Groundcover, a common substitute for lawns, may be herbaceous perennials, ornamental grasses, or deciduous or coniferous shrubs. Buffalo grass and blue gamma grass may be substituted for water-thirsty bluegrass in many situations. Mulches, such as bark chips, pine needles, wood grindings, composted cotton burrs, or gravel and decomposed granite can provide landscape variety.

Xeriscaping also uses the concept of zoning, in which plants with similar water needs are grouped together in specific zones. Lots may be designed with a smaller but highly visible area where regular irrigation is provided, but with other broad areas requiring little maintenance or watering.
FOOD FOR THOUGHT
This section provides some things to think about before switching to this building technology – make sure it’s the right choice for you.

- Site planning and layout design will normally need a qualified landscaper or a landscape architect. Local universities, agriculture schools, horticulture specialists, or city and state water conservation offices and programs may be a source for xeriscaping information and recommendations.
- Builders and developers can use xeriscaping in conjunction with other low impact development (LID) techniques to minimize irrigation and landscape maintenance costs in new construction projects. However, check local ordinances or community covenants for any landscape bylaws or restrictions.
- Initial costs for research, planning, and installation of some plantings may be higher than traditional landscaping.
- Native species of plants vary widely by region. However, landscape designers familiar with xeriscaping principles are available in all parts of the United States. In addition, state agencies and universities can usually provide information about indigenous and drought-tolerant plants.

ADVANTAGES
- Water savings
- More water available for other uses (such as showers, sinks, hoses)
- Little or no lawn mowing
- Xeriscape plants along with proper bed design tend to take full advantage of rainfall
- When water restrictions are implemented, xeriscape plants will tend to survive, while more traditional plants may not
- Increased habitat for native bees, butterflies, and other fauna
- Provides for more adaptable plants and vegetation for a particular climate
- Offers an alternative type of landscape that can be more colorful and attractive

DISADVANTAGES
- May require more start-up work to prepare beds for planting than simply laying sod
- Some homeowners’ associations may object to non-traditional plants. However, some states, such as Florida, enforce Homeowner Association regulations that make it unlawful to include a clause prohibiting a property owner from implementing xeriscaping or Florida-friendly landscape.
- May require that people moving from water-abundant to water-scarce areas change their mindset as to what types of plants they are able to maintain practically and economically
- May have to substitute one type of plant for another
- Xeriscape beds require periodic maintenance which is more involved than simply mowing and edging, especially to maintain color
- Weeds and trash may also be more of a problem than in a traditional lawn

RESULTS FROM THE FIELD
This technology has been evaluated by other builders in real-world building projects – learn from their experiences. For more information on Technologies in Practice, visit www.toolbase.org.

Santa Fe, NM, Chapman Companies, Rancho San Marcos (2004 PATH Field Evaluation)
- Xeriscaping was combined with rainwater and greywater irrigation systems to provide front and backyard lawns and shrubbery, and a small orchard of fruit trees.
- Local government water use restrictions were in place that limited residential development.

San Antonio, TX, Medallion Homes (1998)
- Landscaping qualified as a Backyard Wildscape by Texas Parks and Wildlife Department because it promulgated native vegetation and reduced water consumption and erosion over traditional landscaping.
- Standard landscaping package included water-efficient Bermuda sod and xeriscaping that used native vegetation that required little or no dry-weather watering.
- Native mulch recycled from trees helped retain soil moisture.
- During construction, as many trees as possible were saved and new landscaping was placed to provide shading in summer.

Steamboat Springs, CO, Bentley Residence (1998)
- Xeriscaping with native plants eliminated the need for outdoor irrigation for a majority of the site.
- Rain water from the roof and from around the foundation is collected along with greywater from showers, sinks, and tubs and stored in 500-gallon, below-ground holding tank, and then piped to a small turf and garden area.

TECH CHECK
Below is a checklist of steps to follow in order to implement this technology in each of your projects.

- Preliminary Research. Become familiar with xeriscaping techniques for your climate and region. Visit existing xeriscape projects in your area. Obtain information and ideas from local or state colleges, landscapers, horticulturists, or landscape designers. Look into local water conservation programs through city and state water conservation offices and websites.
- Regulations or Restrictions. Check for any local or state requirements, covenants, or restrictions affecting xeriscaping.
- Planning. Select a qualified land planner or landscape designer. Have the selected site planner prepare landscaping options incorporating xeriscaping.

Source: City of Arlington, TX
www.ci.arlington.tx.us/waterdice/smartscape_explanation.html
DEFINITIONS

Herbaceous Perennial
A plant with green and soft stems, as opposed to brown, woody stems, and whose roots stay alive through winter. Consequently, above ground features grow back at the beginning of each growing season.

Deciduous
Referring to a plant which sheds its leaves at the end of the growing season and gains them back at the beginning of the next growing season.

Coniferous
Referring to a plant which bears cones to contain its seeds.

Source: City of Longmont, Colorado
www.ci.longmont.co.us/Water_Waste/water_restrictions/waterwiseseminars.htm

The Partnership for Advancing Technology in Housing (PATH) is dedicated to accelerating the development and use of technologies that radically improve the quality, durability, energy efficiency, and affordability of America’s housing. Managed by HUD, the PATH partnership includes the homebuilding, manufacturing, insurance and financial industries, and Federal agencies concerned with housing.

PATH addresses barriers to innovation, provides information on advanced building technologies, and advances housing technology research; making affordable, quality American homes a reality.

For more information on the PATH program, visit www.pathnet.org.

TechSpecs are prepared for PATH by the NAHB Research Center.

RESOURCES

General information about xeriscaping and its installation:

ToolBase Services
Information on this building technology and many others brought to you by PATH and the building scientists at the NAHB Research Center.
www.toolbase.org

American Nursery & Landscape Association
1000 Vermont Avenue NW
Suite 300
Washington, DC 20005-4914
(202) 789-2900
www.anla.org

American Horticultural Society
7931 East Boulevard Drive
Alexandria, VA 22308
(703) 768-5700
www.ahs.org

Sustainable Building Sourcebook
www.greenbuilder.com/sourcebook/Xeriscape.html

New Mexico Water Conservation Program
Office of the State Engineer/Interstate Stream Commission
www.ose.state.nm.us/water-info/conservation/xeriscape-101.html