

# Water conservation key to discussions on green building

BY JULIE WALLEISA AND MIMI BURNS | GUEST COLUMNISTS

New Mexico has made great strides in promoting sustainable construction. But now is the time to put the same emphasis on reducing water usage.

Gov. Bill Richardson's recent Executive Order requires state facilities to achieve a LEED (Leadership in Energy and Environmental Design) Silver rating and halve energy consumption, but makes no mention of water consumption. Mayor Martin Chavez issued a similar order for Alber-



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que last year.

While LEED has a category devoted to water efficiency, it is the only environmental category without a single prerequisite, and water credits comprise less than 8 percent of total LEED points. So, under both LEED and the recent state and city mandates, water conservation remains optional.

The city of Albuquerque met its goal of reducing average water usage by 30 percent between 1995 and 2005, from 250

gallons/per capita (person)/day (gpcd) to 174 gpcd.

In 2004, the mayor set a new goal of reducing usage to 150 gpcd by 2014. The city estimates that current household usage is 120 to 130 gpcd. While this is far better than Las Vegas, it is still higher than Tucson's 107 gpcd. Both Albuquerque and Santa Fe have launched impressive rebate programs for plumbing fixtures and xeriscaping, and are aggressively pursuing new sources of water for the future.

Gov. Richardson has taken these conservation initiatives a step farther with the Water Innovation Fund, which funds short-range technology projects that produce, deliver, conserve, recycle, or reuse water efficiently. This initiative awarded \$10 million for 24 projects in 2004 and another \$3.2 million for nine projects in 2005. Several New Mexico cities have also implemented, or are considering, changes in the water rate structure to reward efficiency and impose higher charges on high usage volumes. Research has shown that cities with this type of rate structure, such as Tucson and Boulder, have some of the lowest water usage in the southwest.

However, building water efficiency remains largely in the hands of those who make decisions on building projects. Many people still believe water efficiency requires replacing plantings with large expanses of rock, or replacing standard plumbing fixtures with alternative fixtures that might pose use or maintenance concerns. Since Albuquerque water usage is approximately 60 percent indoors and 40 percent outdoors, there are ample opportunities to save water in both arenas without resorting to desperate measures.

Few are taking advantage of fixtures that are similar in experience and maintenance to standard options. Many new buildings can reduce indoor usage by 30 to 40 percent without using alternative products such as ultra-low flow, .8 gallon per flush (gpf) toilets, waterless urinals, or composting toilets. For example, 1.1 gpf toilets use 31 percent less water than the standard

1.6 gpf toilet, low-flow sinks use 40 to 80 percent less water than the typical 2.5 gallon per minute (gpm) sink, and low-flow showers use 20 to 40 percent less water than a standard 2.5 gpm shower.

Outdoors, we can do much better than covering sites with mined rock and maintaining these sterile landscapes with herbicides. While landscape rock is a popular mulch in many xeriscapes, it is mined and transported, creating a very different feel than the natural New Mexico landscape, and may absorb and reflect heat.

Many areas of New Mexico have a much broader palette of appropriate native, regional and adapted low-water use plants than most people realize. These plant selections, can be attractively combined with landforms that direct water to plantings and ground materials that promote infiltration of water back into the ground.

Commercial and institutional buildings can incorporate rainwater capture systems, in either above-ground or underground cisterns as a source of irrigation water, and the landscape design can be planned to so that anticipated water demand will balance with anticipated supply.

Visible water conservation can serve as a learning opportunity for our entire community.

One local elementary school plans to incorporate three above-ground cisterns into the play area and direct site water and overflow into a site "riverbed" feature.

For playing fields, new technologies allow them to serve as retention ponds and be slowly irrigated with collected stormwater located below the major root zone. This approach saves on land use by co-locating recreation and drainage needs and could halve the amount of water required for irrigation. All of these strategies, as well as conserving fixtures within the building, can be integrated into educational lessons.

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