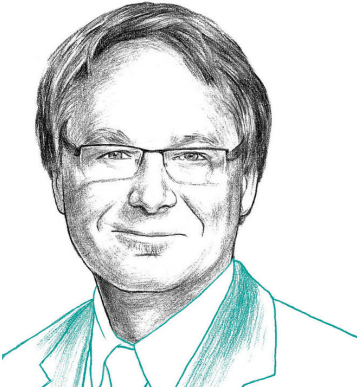


Custom Home

The art and craft of home design

THE INDOOR-
OUTDOOR ISSUE





Rex Bost

Owner
FreeRain, Raleigh, N.C.

RIGHT AS RAIN

Today's most advanced custom homes and outdoor spaces use rainwater as a resource

BY BRUCE D. SNIDER

Like the oil-price shocks of the 1970s, the record-breaking drought now gripping the American West is sounding an alarm about our management of an essential natural resource. And there are striking parallels between energy efficiency and water conservation. Both entail changes in behavior, upgrades to infrastructure, and the development of site-specific solutions. Just as forward-thinking custom builders have long exploited solar energy with photovoltaic panels, an increasing number of them are harvesting and managing another precious resource: rainwater.

Population growth and rainfall patterns squeeze water supplies.

While California suffers through the worst drought in its history, the southeastern U.S. has been getting plenty of rain. So why is Raleigh, N.C., builder Rex Bost installing rainwater collection systems in so many of his new homes? "The green movement is making people more conscientious

about the environment," he says. "But it's really about dollars."

In Raleigh, production builders went on a post-recession land-buying spree, Bost says. "Custom builders are being forced into the outlying areas," where a private company controls the market—and the price—for water. "Clients say, 'If I'm going to irrigate this half-acre of grass it's going to cost me \$500 a month.'" In contrast, a \$7,000 system that directs rainwater from downspouts to a buried storage tank can supply a typical house's irrigation and toilet-flushing needs at near-zero marginal cost.

Bost operates a side business in water harvesting systems and believes a coming shortfall in local reservoir capacity will spur further interest in rainwater development. In his mind, the solution is neighborhood-scale systems that collect gutter outflow for centralized storage and treatment, then return it to homes for use. He says the cost can be paid for in the savings on water retention systems, retention ponds, and stream buffers.

Rain gardens slow the flow of water on site.

Atlanta architect Robert M. Cain designs sustainable houses that collect roof runoff for irrigation, toilet flushing, and even drinking. To capture rainwater from the ground, he uses rain gardens: low areas filled with water-loving plants that allow rainfall to seep gradually into soil rather than rush off to a storm sewer. "I try to have no more water leave the site after we develop it, possibly even less," Cain says. "It makes sense to rejuvenate the water table and capture what you can to use on the site."

Few clients arrive understanding the principles involved, he admits, "but it's a simple philosophy, and people respond to it." On one current project, all runoff will be directed to a new pond that will be used for aquaculture—raising catfish or tilapia. "We're also planning to build it deep enough to use as a geothermal heat source," Cain says.

Remember this word: xeriscape.

Before joining Phoenix-based Desert Star Construction, Jeremy Meek studied in Queensland, Australia, where by law, he says, "any new home has to have a water catchment tank for irrigation." He brings the same strategy to the "personal resorts" his firm builds in the Sonoran Desert.

One project uses two 12,000-gallon tanks to store water collected from roof downspouts and feed a low-flow "fertigation" system that combines irrigation water with fertilizer. Electronic controls will anticipate rainfall patterns, and drought-tolerant plantings will minimize demand. "We encourage xeriscape," Meek says. "Less of the lush environment, more of the desert landscape."

The relatively low price of water means a slow return on investment for such projects, Meek says. "But if you look at development costs and reduced impact fees from the municipality, it's a much quicker payback." A smaller meter, reduced main size, and other avoided costs could result in big savings. "Cost is always going to raise people's awareness more than anything else," Meek says, "and the cost of water is going up." **CH**