

TOP AEC FIRMS

Multipurpose solutions are on the rise

Primed by regulatory imperatives and the national focus on sustainability, operations integrate stormwater control measures into parks and streetscapes of all kinds.

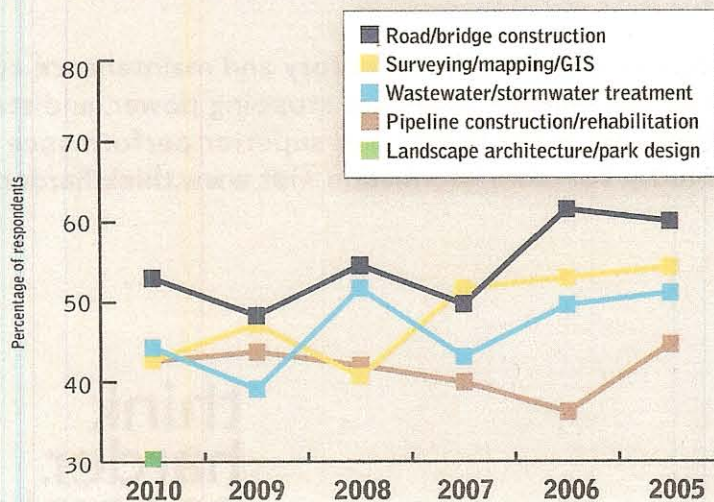
For the first time since 2005, when we began asking how your operations use consulting firms, “landscape architecture/park design” is one of the top five responses. That puts the category behind such stalwarts as road construction, surveying and mapping, pipeline construction, and water treatment.

In fact, the percentage of our readers who use architecture, engineering, and construction (AEC) firms for this purpose has increased every year for the last three years, rising from 27% in 2008 to more than 30% in 2010.

We can think of at least three reasons for this trend.

A new face at the top

Although public works departments continue to retain architecture, engineering, and construction (AEC) firms largely for road and water projects, nearly a third are now turning to those same firms for landscape architecture/park design. Source: PUBLIC WORKS



WORKING WITH NATURE CAN BE AN ATTRACTIVE AND EDUCATIONAL WAY TO TREAT NONPOINT POLLUTION

“What’s driving this trend are aesthetics and functionality,” says Jim Bays, technology fellow for natural treatment systems in CH2M Hill’s wastewater office, which designed the 50-acre Freedom Park in Naples, Fla.

Completed last October, the \$32 million engineered wetland is the city’s antidote to development-driven environmental degradation. Untreated stormwater from a subdivision was threatening to impair Naples Bay. Total maximum daily loads had been established for the Gordon River, which feeds the bay. The Florida Department of Environmental Protection required a 29% reduction in total nitrogen in the river.

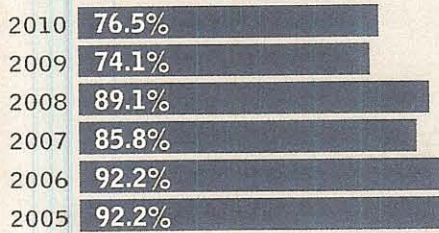
The designers recommended treating runoff onsite rather than diverting it elsewhere. Now stormwater is routed to a pond before flowing to 15 acres of engineered wetlands that capture

North Florida Water Management District contributed \$12.3 million toward buying the land, design, and construction of Freedom Park; the Florida Communities Trust provided \$6 million for construction. Collier County property taxes funded the remaining \$13.2 million. Photos: CH2M Hill



Early rebound

Use of AEC firms has rebounded slightly despite the continued decline in property and sales tax revenues. Source PUBLIC WORKS



and convert ammonia and nitrates to nitrogen gas. The water then flows into a 15-acre restored natural cypress swamp forest and trickles into the Gordon River Basin.

“The city’s desire to conserve land led to creating a water quality park to treat stormwater,” Bays says of the project, which is home to a 2,500-square-foot educational facility with six lookout pavilions, water fountains, and walking trails. “We decided that since we were going to do something like this, let’s at least make sure it’s multifunctional, safe, and attractive.”

Such developments not only provide public recreational opportunities and create wildlife and aquatic life habitat, but they also reduce maintenance costs by storing a large volume of runoff before treating and discharging it.

FUNDING FORMULAS INCREASINGLY REQUIRE NATURAL SOLUTIONS

Since 1987, Section 319 of the Clean Water Act has made more than \$20 million in grants avail-

able to communities for establishing best management practices (BMPs) to reduce nonpoint sources of water pollution. As part of EPA’s mandate to satisfy all Clean Water Act requirements, the federal government is urging infrastructure managers to explore “green” ways of removing pollutants from stormwater to the “maximum extent allowable.”

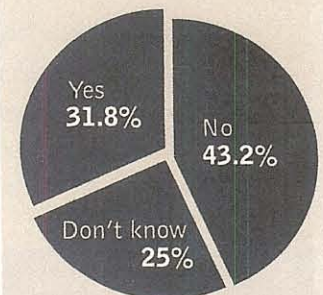
The American Recovery and Reinvestment Act of 2009 (ARRA) added \$2 billion to last year’s \$829 million federal allocation for Drinking Water state revolving loans, and the Clean Water loan program caught a windfall of \$4 billion on top of its \$689 million allocation — a three-fold increase in just one year. The legislation’s requirement that states award at least 20% to projects that promote energy efficiency, water efficiency, green infrastructure, and environmental innovation is now standard operating procedure.

Washington State allocated \$13.6 million of its \$65.4 million Clean Water allocation to “green reserve” projects like the 10-acre Yauger Park project in Olympia, which began in May. The design provides enhanced treatment for 840 acre-feet of runoff annually through bioretention ponds, biofiltration swales, a 5,000-square-foot rain garden, and water harvesting for park irrigation. Residents who use the park’s picnic areas, nature trails, and athletic fields will be largely unaware of the natural cleansing processes taking place around them.

Yet stormwater treatment need not take place on such a large scale to be effective.

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Does your department plan on using an AEC firm within the next six months?



“We’re seeing that the decision to move forward [on projects] is contingent on getting matching funding,” says Mark Bridgers, a principal at FMI Corp. Source PUBLIC WORKS

—Michael Rietang

Community builder

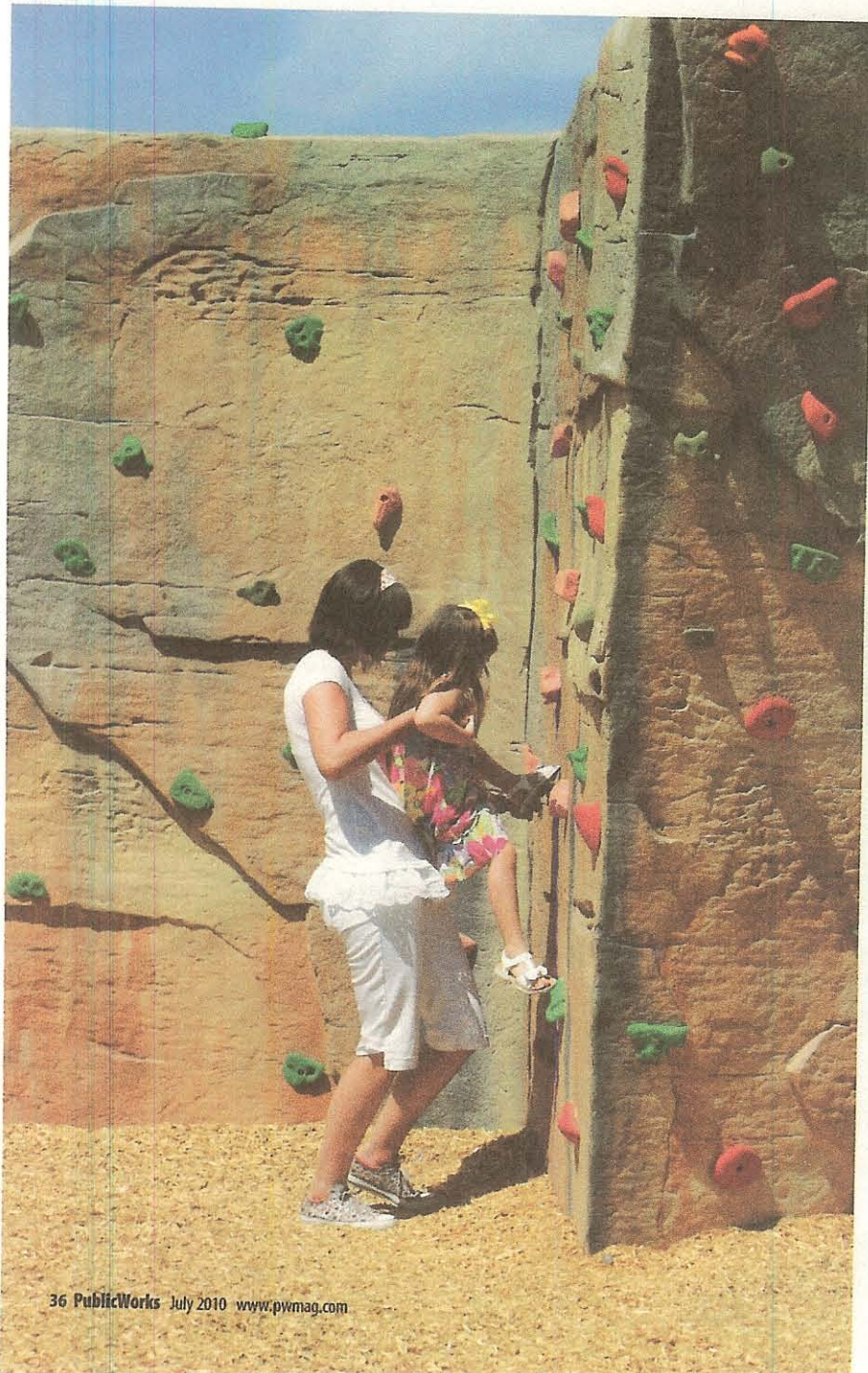
A county park unites residents of disparate housing developments.

In 2003, Senior Park Planner Clay Campbell struck a deal with the University of New Mexico's Landscape Architecture Program: have graduate students prepare preliminary designs for a new park in Albuquerque. The agreement allowed the county to stretch limited financial resources while giving students valuable experience in learning how far \$2,500 can go.

PROJECT INFO

Name: Ambassador Edward L. Romero Park
Client: Bernalillo County (N.M.) Parks and Recreation Department
AEC firm: Weston Solutions Inc.
Cost: \$892,000 (Phase I)
Project delivery method: Design-bid-build
Completed: May 2009

The park includes a 9-foot-tall climbing wall (pictured left) and play mound, a tot playground, a turf play area, two shade structures, picnic areas, walking paths, and a reclaimed storm drainage/wetland area. Photos: Julia Mulder, Weston Solutions Inc.



The result: Four acres of recreation space in an area where parks are scarce. Now residents have convenient access to playgrounds, a climbing wall, walking paths, a picnic area, and connections to a local bicycle path.

The space also offered an opportunity to smooth hard feelings between residents of an established subdivision and those of a newer development that was built on farmland. By hosting informal meetings to gather feedback, the students cultivated a sense of community between residents of both subdivisions, which surround the park.

“The students brought tremendous creativity to the project and were able to help me advance it,” says Campbell.

Seven graduate students, grouped into three teams, prepared three master plan concepts based on public input. A team from Weston Solutions Inc. (formerly Resource Technology Inc.) combined common threads and complementary patterns from the three plans into a single design that incorporates elements that work best together.

To ensure a 100-year storm event wouldn't drain into existing stormwater facilities that are already overtaxed, the developer of the newer subdivision was required to dig a retention pond on the park site that eventually became a weed-infested eyesore. Incorporating community feedback gathered by the students — and key to the aesthetics of the park — Weston designed a grading plan that spread water around the site and eliminated the need for a fence around the pond. Runoff entering the site through numerous drainage easements around the park's perimeter is channeled into shallow bio-swales and diffused across the

The park's entry plaza honors Edward L. Romero, founder of the Albuquerque Hispano Chamber of Commerce, co-founder of the Hispanic Culture Foundation and the National Hispanic Cultural Center in New Mexico, and former U.S. Ambassador to Spain and Andora.



park to irrigate native and xeric plantings as well as low-water-use hybrid turf. Comprised of a “reservoir” blend of gravel, compost, and native soils, the swales are capped with stepping stone-like pieces of broken concrete slabs that provide a path throughout the park.

Recycled concrete from streetscape and sidewalk replacement projects also controls erosion. To reduce runoff generated within the park, porous concrete — a first for Albuquerque — was used to pave the parking lot. The entry plaza is paved with permeable bricks.

A second phase of construction is under way to add basketball and sand volleyball courts as well as another picnic area and walking paths. It will cost the county \$580,000 and is expected to be completed by September.

— Victoria K. Sicaras

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WHY IT'S COOL:

The Albuquerque Bernalillo County Water Authority is currently constructing a potable water reuse pipeline that will transport polished wastewater from the authority's 60-mgd Southside Water Reclamation Plant to some 26 parks, fields, and other recreation areas. When the pipeline is complete, Ambassador Edward L. Romero Park will be the first Bernalillo County facility to be entirely irrigated with treated effluent. Image: Robert Oberdorfer, Weston Solutions Inc.

