

A Tortoise-friendly Haven at Birmingham Zoo

February 27, 2009

Click to EnlargeBirmingham Zoo in Alabama contacted Certified Aquascape Contractor Lee Vought, owner of Vought Water Gardens in Decatur, about a tortoise enclosure that needed relocating. For 15 years, the zoo had serviced the concrete water feature by pressure-washing it every day to remove the tortoise waste. In addition to the relocation help, the zoo hoped for a lower-maintenance feature.

Vought worked with the zoo's herpetologist to learn about tortoise behavior and needs to ensure that the new water feature met the zoo's and the habitants' requirements. Because tortoises forage throughout the day, the team needed to select vigorous plants for botanical filtration that proved nontoxic to the reptiles.

The tortoises' oversized scales coupled with their innate digging habits contributed to the zoo's original choice of concrete for the enclosure. For Vought's team, it created a challenge for them to overcome.

Click to EnlargeThey overdug the hole and lined it with low-gauge wire mesh and a layer of large river gravel. Then they sandwiched the 45 mil EPDM rubber liner and needle-punched underlayment with another layer of gravel and wire mesh. This placed the liner in a protective cocoon.

The two-man team designed a pondless waterfall feature at the site of the new enclosure. It originates with a 4-foot cascade, rocked in such a way as to prevent the tortoises from destroying the 6,000 series Biofalls.

The cascade spills into a short run of stream that widens out into a shallow pool. The team ensured adequate flow through this area to exchange water without causing a current that might spook the tortoises. The water feature includes shallow beach entry for ease of exit.

As the water finishes the stream's run, the pooling area suppresses again into an oversized bog equipped with an Aquascape Centipede and Snorkel Vault. Two pumps power the entire system.

Zoo staff reported that the new feature has required no maintenance. In addition to no leaks or other destruction, the wetland filtration system completely manages the tortoise waste load. They now use this enclosure as a teaching aid to the zoo's many student visitors, which coincides with Vought Water Garden's mission of environmental stewardship and education.

* Photos courtesy of Vought Water Gardens

Specifications

Designer: Lee Vought

Installer: Vought Water Gardens

Contact information: P.O. Box 184, Decatur, AL 35602; 256-350-8857; www.voughtwatergardens.com

Project location: Birmingham Zoo, 2630 Cahaba Road, Birmingham, AL 35223

Size: The project measures about 25 feet long and moves about 500 gallons of water.

Components: Wire mesh, 20 tons of rick and gravel, driftwood and Aquascape products including EPDM 45 mil rubber

liner, underlayment, 3-inch tubing, two 2-inch check valves, manifold, a 4,500 gph pump, a 3,000 gph pump, a Snorkel Vault, a Snorkel Extension, a Centipede, six standard Aquablox and a 6,000 series Biofalls.

Time to complete: about 60 man hours

Total retail: \$15,000