CASE STUDY

A Sustainable Wastewater Treatment and Reuse Solution for Commercial Properties

AUDUBON EDUCATION CENTER, CALIFORNIA

Problem The Audubon Society wished to build an environmental education center in Debs Park, Los Angeles, that would be a model of green architecture and the first LEED Platinum-rated facility in the world. To do that, they needed a wastewater re-use option.

Solution Audubon won city approval to go "off" the sewer grid, so it could capture, treat, and re-use wastewater with an Orenco-manufactured AdvanTex® Textile Treatment System. Treated effluent is of such high quality that it is re-used for irrigation and will ultimately be used, when officially permitted, for toilet flushing. In 2004, the Audubon Center earned a Platinum rating with the highest score in LEED history.

AdvanTex Helps Audubon Earn First LEED Platinum Rating

In January of 2004, the Audubon Society's newly-constructed environmental education center in Los Angeles was awarded the first Platinum Rating in the history of the U.S. Green Building Council's LEED program. According to the Society's Jan. 13, 2004 news release, "The Audubon Center at Debs Park earned 53 LEED points, garnering particularly high marks for its efficient water system and renewable energy sources." That efficient water system is an AdvanTex wastewater treatment system, manufactured by Orenco®.

According to the Green Building Council, "The [Audubon] Center is designed to use 70% less water than a comparable conventional building, and

The LEED Platinum Audubon Center at Debs Park in Los Angeles uses several compact AdvanTex® AX20 Wastewater Treatment Systems (inside circular drive) to produce reusable effluent. Photo courtesy of Gary Leonard.

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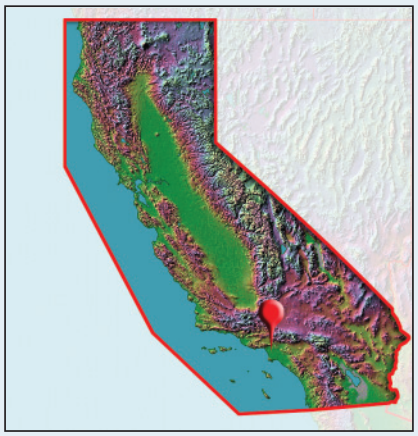
Project Overview

LOS ANGELES, CALIFORNIA



Institutional Facility
- Environmental Nature Center with Visitor center and office
- 1,200 gpd (4,542 L/day) design peak flows

Effluent Quality*
- 5 mg/L BOD_5 and TSS

Start-up Date
- September 2003

Primary Treatment
- One 5,000-gal. (18,927-L) two-chambered septic tank
- Solar-powered pumps

Secondary Treatment
- Three AdvanTex AX20 Textile Filters
- VeriComm® Control Panel & Monitoring System

Tertiary Treatment
- One 5,000-gal. (18,927-L) stabilization tank
- Ultraviolet disinfection
- Subsurface irrigation system

Operation
- Contracted service provider; quarterly visits/sampling

** Samples collected and analyzed by a third party, 3/23/10.*

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to treat all wastewater on site." The Center gets all its electricity from solar panels, and has no connection to the city's sewer system.

The wastewater from the 5,020-ft^2 (467-m^2) building flows to a primary treatment tank for settling and initial filtration, then to several AdvanTex pods filled with an engineered textile material for secondary treatment to very high standards. Next, the effluent is disinfected and used for subsurface irrigation. Once the city provides a permit, the effluent will also be used for toilet flushing. A remote telemetry control panel monitors the system around the clock.

The Audubon Center's AdvanTex Treatment System produces such high-quality effluent that it is reused for irrigation, and, when permitted, will also be reused for toilet flushing. Photo courtesy of BioSolutions, Inc. ©2004.

Steve Braband of BioSolutions, Orenco's local distributor, helped with the system design, supplied the equipment, and trained a local company to install and service the system. According to Randy Jenkins of Sierra Commercial Plumbing, which has the service contract for the system, the treated wastewater is so clear that, when he checks the storage tank, "I can see right to the bottom." Because the system is equipped with an Orenco VeriComm® Control Panel and Monitoring System, Jenkins can check on the system from his office computer and receive alarm notifications via e-mail. "One time, out of nowhere, the VeriComm system sent a high-water alarm," said Jenkins. "We were able to check it out, find the problem (a leaking toilet), and fix it."

Situated 10 miles (16 kilometers) northeast of L.A., in the 282-acre (114-hectare) Ernest E. Debs Regional Park, the Audubon Center was built to provide environmental education programs for the city's young people. But Braband also gives trainings and tours for regulators, utilities, public officials, and others working on LEED projects. In addition, Jenkins helps give tours to local architects.

A similar facility in Phoenix, Arizona — the Nina Mason Pulliam Audubon Center — installed an AdvanTex Treatment System as well. This facility uses the output from its system for subsurface irrigation of the adjacent Rio Salado Habitat Restoration Area, preserving potable water for other uses. The Phoenix Audubon Center also earned a LEED Platinum rating.

Clearly, these Audubon Centers are teaching visitors that there is a much better way of dealing with wastewater than to thoughtlessly, wastefully "flush and forget." Especially in arid regions that have recently had their water supplies drastically reduced, that's a vitally important lesson.

Data used by Orenco to derive the representations and conclusions contained within this Case Study were current as of September, 2012.

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"The water quality [at the Debs Park Audubon Center] is so incredible that the docents include the wastewater system on their tours. We gave them a vial of sample effluent, and the tour guides show it ... show that it is as clear as drinking water."

~ Steve Braband, BioSolutions

"I only go there [The Nina Mason Pulliam Rio Salada Audubon Center] once a quarter to service the system, and that's totally ample. It's really, really easy to take care of."

~ Steve Burnett, Arizona Wastewater Services

For more information about effluent sewers, Orenco Sewers™ and AdvanTex® Treatment Systems, contact Orenco Systems®, Inc.

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