

ERTEC Environmental Systems

Protecting Global Lands and Waterways™

Case Study

ProWattle™ Slope Stabilization
Edge Guard™ Perimeter Control



- > Lower Project Costs
- > Better Performance
- > Long Term Durability
- > ZERO WASTE

- ✓Recycled
- ✓Reusable
- ✓Recyclable

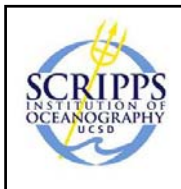


Project Awards 2011:

American Public Works Association, San Diego Chapter—Project of the Year

American Society of Civil Engineers—Outstanding Project, Water Quality, Flood Control, and Drainage.

Project Team



Application: Slope Stabilization / Perimeter Control

Product: ERTEC ProWattle™ & Edge Guard™

Project: Watershed Pollution Control Program—Scripps Institution of Oceanography (SIO), UC San Diego

Landscape Architect: KTU&A

Project Management: University of California, San Diego

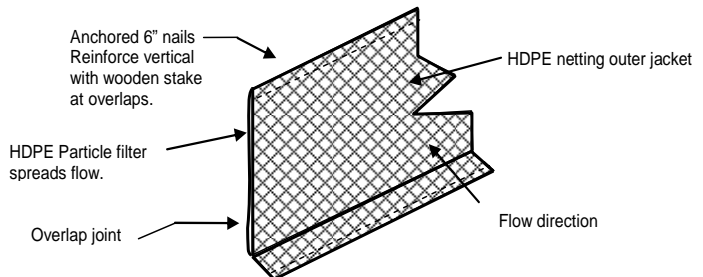
General Contractor: Western Rim Constructors

Installation Date: August 2009 thru November 2011

The Project: This award winning and highly successful Watershed Pollution Control Program was focused on reducing bacterial and other contaminants into ocean waters of special biological significance directly off the Pacific Shoreline. The sloping 30 acre campus of Scripps Institution of Oceanography is located above the legendary La Jolla surfing beach. The adjacent waters now have significantly less pollution due to the completion in 2011 of this innovative project by UC San Diego.

The California EPA (Regional Water Quality Control Board) required UC San Diego to reduce the amount of off-campus dry weather flows and reduce pollutants in storm-water run-off. This project has become a model for California, helping UCSD meet state mandates. Several BMPs were used including landscaping enhancements and new vegetation cover, water diversion, structures, media filters, pollution prevention controls and ERTEC erosion and sediment controls installed starting in 2009 and are featured in this case study.

ERTEC ProWattle™ (PW): Most of SIO is located on sloping terrain. PW was used to protect selected slopes from erosion. Unlike other methods such as fiber rolls (wattles), PW is designed to spread rather than concentrate flow which nearly eliminates undercutting. ProWattle™ dramatically reduces logistics, installation and maintenance costs. Ongoing maintenance consists of spreading accumulated sediment upstream into vegetated areas. Most important for this project is that ProWattle is durable and will last many years. Eventually, new native vegetation will fill-in to provide cover and soil protection. Durability is important in this climate because it will take 4 to 5 years for vegetation to provide the required coverage. (continues page 2.)



Slope Stabilization Method: The traditional practice in the Western U.S. is to use wattles (fiber rolls) terraced as water velocity checks along slope contours evenly spaced and parallel prior to hydraulically applying a soil stabilizer. The intent is to minimize down-slope velocity so rilling and erosion can be controlled. Soil stabilizer, seed or straw is also applied to keep soil particles in place. Because they are cumbersome, fiber rolls can be logistics intensive and laborious to install. They also may become ineffective due to damming which often causes undercutting which in turn concentrates flows. ProWattle™ is an alternative to fiber rolls. ProWattle™ is reusable and on many projects can be redeployed when vegetation coverage is greater than 70%.

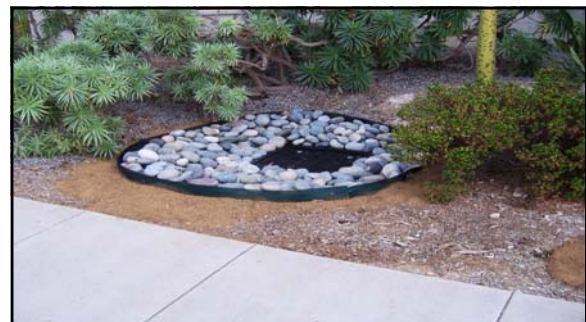


PW was installed on steep slopes throughout SIO

ERTEC Edge Guard™ (EG): EG was used as an edging device throughout the SIO property—at the base of slopes protected by PW, around drain inlets, traffic islands, small drainage areas, perimeters with new sod, mulch & topsoil. EG filters and allows water to flow-through which prevents mulch and sediment overtopping. EG (“I” shaped) has all the same flow spreading and filtering capabilities as PW (“L” shaped) and is intended for protecting perimeters and edges in flat or nearly flat areas.



Edge Guard with rock, used as an effective edge treatment



Edge Guard with rock, used around a drain inlet as long term protection from sediment.



In some areas PW was threaded through existing sparse Veg

Project Stormwater Sample results 2010-2011:

Stormwater sampling over the very heavy storm seasons of 2009/2010 and 2010/2011 indicated significant reduction of sediment and contaminant effluents. Monitoring will continue.

Summary

“ERTEC products are a key component to a lot of what we did on this project. Everything is looking really nice as the plants fill in. We have been very pleased and will continue to expand their use”.—Laura Moore, Principal Civil Engineer, Project Manager, UC San Diego.

“As the landscape designer, I was looking for a system that would provide excellent erosion and sediment control until vegetation could take over. In this climate that might take several years so we needed something that could endure and perform for many years. ERTEC has performed as we had hoped.” - Mark Carpenter, Senior, Associate, KTU&A



A new way of doing things

Time and time again, ERTEC has delivered better results to owners:

- Lower Total Cost
- Significantly Better Sediment Control
- Better than ZERO Waste