



## University of Hawaii Chooses Triton for New Oceanography Center

### The Situation

The University of Hawaii outside Honolulu was building a new 30,000 square-foot addition to its existing Biomedical Science Building to house the Center for Microbial Oceanography: Research & Education (C-MORE).

The building was designed with sustainable design principles and energy-efficient strategies, and is currently targeting LEED Gold certification. Project manager Kimberly Polkinhorn, an associate with Group 70 International, noted that the Triton system was selected to minimize stormwater flow to the storm drainage system, and to allow the water to percolate back into the ground and recharge the water table.

Since the project site is in a rainy part of the island, minimizing run-off entering the overtaxed stormwater system was critical. The island also is subject to tropical storms, necessitating a system that can handle large volumes of rainwater in short time periods.

### The Solution

A Triton Stormwater Solutions system was selected for both its LEED credits, as well as its exceptional strength, which allows chamber rows to be double-stacked to save space.

"The area where we needed to install the stormwater chambers was pretty tight due to existing electrical ducts and a tree that the university wanted to maintain," explains Jared Mimura, engineer at Austin, Tsutsumi and Associates, who handled the civil infrastructure and grading for the site. "The Triton system allowed us to stack chambers if we needed in order to squeeze more storage into a smaller space."



A pipe manifold system was used to distribute stormwater to the chamber rows.



The design flexibility and large storage capacity of the Triton chambers allowed project managers to work within a footprint small and reduce environmental impact on mature trees and landscape during construction.

With the Triton system, potentially harmful run-off can be collected and stored underground, protecting the environment without the wasted space, cost and liability of a traditional retention pond and leaving natural green space.

Through its innovative Main Header Row, which allows a number of pre-treatment options, the Triton system also can be used to control sediments and some pollutants.

### How Triton works

Water enters the Triton system through a standard manhole or pretreatment device, allowing pollutants, such as hydrocarbons, to be captured. Pre-treatment best management practices can be as simple as a deep sump catch basins and oil-water separators, or as extensive as storm water treatment devices.

Water gathers in the structure until it reaches a sufficient level to enter the Main Header Row, where remaining sediments are collected and a sediment floor keeps the sediments from clogging the base stone. Through this settling and controlled distribution process, a majority of sediments carried by the stormwater are captured before the water is dispersed into open-bottom distribution chambers — making the Triton system easier and less expensive to maintain.

## The Installation

Installed in October, the Triton system allowed for the storage of over 3,000 CF in a footprint of 45 feet by 80 feet, by 13 feet deep.

After digging to the desired depth, the two-man crew put down a six inch base layer of stone. Next, the chambers were put in place and the walls of the trench were lined with a class 2 non-woven geo fabric. The site was backfilled with stone up to twelve inches past the crown of the chambers and the geo fabric was folded back and backfilled with material to the desired elevation. Due to their inherent strength, the Triton chambers require just 16 inches of cover.

The installation went very smoothly and was finished within four hours.

"We have never done a system like this before," explains David Itokazu, vice president of operations at J.J.S. Construction, the civil contractors on the project. "It was lightweight yet very sturdy and it was very easy to handle."



**The strength of the Triton chambers allows access holes as large as 33" in diameter to be cut into the top of them for inspection and clean out ports. The University of Hawaii project team took advantage of this to easily place inspection ports at the end of each distribution row.**

"We appreciated all of the great customer service support and response we received from Joe Miskovich and the staff at Triton. It was a pleasure working with all of them. We seldom experience such satisfying results when working directly with 'mainland USA' companies."

— DAVID ITOKAZU, VICE PRESIDENT OF OPERATIONS,  
J.J.S. CONSTRUCTION



**A two-man team was able to install the chambers and manifold system in under four hours.**

## Triton Advantages

Built with green technology soy resin, Triton's stormwater chambers are completely modular to allow maximum flexibility in design and application. In addition, using a Triton system can contribute to 18 LEED credits and meet Zero Discharge goals. Triton is also registered as a federally certified green carbon neutral product and approved for use in all government owned or leased buildings and properties.

### Key Points

- Replicates pre-development hydrology.
- Achieves higher pollutant removal rates through soil filtration and accelerated microbial actions (bio-remediation). In soils that do not perk well, the benefits of microbial actions still occur.
- Helps counter drought conditions by maintaining ground base flow to streams.
- Eliminates thermal discharge loadings.
- Provides a lower cost alternative to drainage pipes for conveyance, with added benefits of groundwater recharge and water quality enhancement.
- Eliminates the need for costly pre-treatment devices.
- Eco-friendly soy-oil based and carbon-neutral product.
- Eliminates need for restrictive holding ponds and creates new opportunities for green space with unique underground capacity.
- Achieves up to 18 LEED credits and Zero Discharge goals.

**Triton Stormwater Solutions is the proven, comprehensive solution to stormwater management challenges. On your next project, turn to Triton Stormwater Solutions, the stronger, lighter, larger, greener, easier-to-install, cost-effective stormwater solution. Triton gives you Power Over Water.**



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