



## Creative use of vinyl brings added value

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New retention wall system is cost effective, quick to install, and environmentally friendly



The Pima County regional Flood Control District in Tucson, Ariz., used the Truline retention System on a wall project saving the district \$600,000 in repair costs.

Since the occurrence of Hurricane Katrina, flood protection and seawalls are gaining lots of attention, not to mention the increased scrutiny of environmental permit applications for these types of projects. Structural, civil, environmental, and marine engineers have been looking for a less expensive, more flexible, non-labor intensive earth retention and flood protection product that can meet the higher level of demand of environmentally sensitive construction products and methods. Innovative structures from Truline Retention Systems have been used with success on a variety of projects. Two very different applications are described in detail below

### Canada del Oro Wash

The job of the Pima County Regional Flood Control District in Tucson, Ariz., is to minimize flood and erosion damages for all county residents, property, and infrastructure. The district is involved in a variety of flood control and natural resource management activities.

When district engineers faced a problem of major soil degradation at a 410-foot protection wall following severe flooding in mid 2007, they began researching alternative methods of earth-to-earth retention.

The soil had receded so far from the bank line that a 6-foot-deep tow had degraded to a mere 18 inches, causing the protection wall to collapse. With 4-1/2 feet of scour, officials knew they would have problems containing the soil by the next rainy season. A similar situation existed in another area the year before and replacement of the wall cost approximately \$800,000. The district needed to find a lower-cost, yet viable alternative.

While researching retention walls and sheet piling on the Internet, one of the project managers for the district discovered Truline's cast-in-place modular seawall system that combined the strength of concrete with the durability of vinyl.

According to reports from the district, the Truline solution minimized the need for heavy installation equipment and a large installation crew — thereby making for quicker and less expensive project completion.

The job took a total of two weeks from start to completion, compared with the two months it took using tradition repair methods with the previous project. Because it was much less labor intensive, the district was able to perform the installation with a minimal crew.

The procedure involved digging a trench and then driving 10-foot sheets rigged for installation in 10-inch-wide sections. Truline's unique U-channel shape allowed concrete to be poured directly into the wall system, creating an extremely strong wall with all the benefits and protection of having an external

vinyl skin. Vinyl is ultraviolet-resistant to discourage discoloration and fading in harsh environments, such as Arizona, and it will not rust or corrode, making it virtually maintenance-free.

According to the district, by the time the job was completed, the Truline solution came in at 25 percent of the cost of the previous method used to repair the protection wall, saving the county approximately \$600,000.

District staff said that the Truline product allowed them to keep within the same footprint of the existing bank protection and that, because it is much less invasive than other repair techniques, it made environmental permitting for the job much simpler.

Centerport, N.Y.

When Centerport homeowner Rosalind Resnick's 100-year-old concrete seawall was crumbling into the sea and environmentally acceptable options were dwindling, it was her friend Ray Guerin who discovered the new Florida-based product Truline. Guerin happened onto the Truline website following a three-year saga that began when Resnick purchased her property in 2005.

"It was an amazing, picture-perfect property...except for the seawall," explained Resnick. "The engineers said it had to be replaced, and they put a plan together suggesting large concrete blocks."

A two-year permitting process focused on concerns from the Department of Environmental Conservation (DEC) regarding the delicate ecosystem residing in the sea grass next to the existing seawall. When the permit was finally issued in July 2007, it was determined that the concrete blocks could not be brought in on the waterside of the property. The only viable route was street-side from the front of the house; with only 3 to 6 feet of clearance on either side of the property, the option required hauling the blocks over the back lawn. With the concrete blocks weighing in at 2,500 pounds each, the contractor, Ron Takats of Takron Contracting, had to seek alternatives.

Guerin introduced Takats to the Truline product and the project was back on track. After revisiting the permitting process with the DEC and town of Huntington, work was ready to begin in May 2008. Within a few weeks, the material was ordered, delivered to the front driveway and easily carried into the backyard by just two people. Once the 12-foot pilings were installed, they were filled with 3/4-inch aggregate for stabilization.

"In my 20 years of experience, this is the best product I have used for seawalls," commented Takats. "In these rocky conditions, the pilings sank in so smoothly and were so easy to manage. I have zero complaints with this product."

"It is really beautiful," said Resnick. "My neighbors keep stopping by to check on the progress and talk about how spectacular it looks."

"Truline is great for marinas and people who have no access to their waterway because of beach grass," added Takats.

In addition to the seawall, Takats took an innovative approach using Truline to create a series of steps that complement the project. Finishing the dock area with a boardwalk and solar lights, Takats created a complete outdoor leisure area for this home overlooking Centerport Harbor. Resnick added, "What began as a nightmare turned into the perfect dream project."



When Centerport, N.Y., homeowner Rosalind Resnick's 100-year-old concrete seawall was crumbling into the sea, Truline's products gave her contractor an environmentally acceptable and affordable option.

### The advantages of vinyl

The Truline Retention System is an inexpensive, flexible, non-labor intensive earth retention and flood protection product that can meet the higher level of demand of environmentally sensitive construction products and methods. It is installed using much less labor and equipment when compared with other systems, therefore reducing installation costs. Also, the product is much less invasive to the environment compared with traditional repairs.

Additional benefits of the Truline Retention System include the following:

- It provides engineers and contractors with design and fill options depending on the job site.
- It will not unzip in the lock/joints above or below the surface.
- It creates a much stronger wall with reinforced steel and concrete fill.
- It installs with all traditional installation methods and equipment.
- It is made of 94.6 percent post-industrial recycled material.
- It has a 50-year limited warranty.

For more information on the Truline solution, visit [www.truline.us](http://www.truline.us)