



Penn-DOT Project Shows Triton's Superiority

The Situation

When the Pennsylvania Department of Transportation needed a stormwater management solution to support changes at a busy hospital intersection in Dubois, they initially spec'd a Triton competitor's product in the bid proposal. But, when the contractor suggested the Triton system as a time- and cost-saving alternative, Penn-DOT opened its ears and eyes.

Recognizing the Triton system's advantages in recreating pre-development hydrology, ease of maintenance, strength and storage capacity, Penn-DOT approved the Triton product, which also qualified the project for LEED credits.



The Dubois project required a storage capacity of 11,500 cu ft of water, in a footprint that is 80' x 50'.

The Dubois project called for storage of stormwater from the streets at the intersection, as well as the hospital's parking lot. It also needed to be robust enough to handle the first flush from a 100-year precipitation event, and contain sediment to protect the city's water.

The Solution

The system was designed through collaboration between the contractor, distributor JMD Company and Triton's Engineering Staff. It is comprised of a Main Header Row with integral Triton sediment catch basins and seven distribution rows to allow for large volumes of water to be easily managed during high peak flows.

The system has a collection port to easily clean the sediment catch basins, as well as a pressure-wash inlet on the opposite end of the Main Header Row, to allow any sediments collecting on the floor to be easily flushed or washed back down to the catch basins for collection.

"Going in, the Triton system was seen by Penn-DOT as being equal to the originally spec'd product," Ruffing observed. "Going out, I think it was seen by everyone on the site as superior to other systems."

Rick Ruffing, On-site Manager, JMD Company

How Triton works

Water enters the Triton system through a standard manhole, or if desired, a pretreatment device that can be used to capture pollutants. Pre-treatment best-management practices can be as simple as a deep-sump catch basin, similar to that used in the Dubois installation, and oil-water separators, or as elaborate as full stormwater treatment devices, such as an ecostorm plus unit.

Water gathers in the structure until it reaches a sufficient level to enter the Main Header Row, where remaining sediments are collected and a specially designed sediment floor keeps them from clogging the base stone. When the water rises to a sufficient level in the Main Header Row, it flows to the distribution rows. Through this settling and controlled distribution process, a vast majority of the sediments carried by the stormwater are captured before the water is dispersed



An integral Triton sediment catch basin (inset photo) was built into the Main Header Row.

into the open-bottom distribution chambers – making the Triton system easier and less-expensive to maintain. The design of the Triton Main Header Row system does not rely on non-woven geo-fabric to filter the sediment (which can quickly get clogged and is very difficult to clean), thus making the Triton system much more robust. It also means that the Triton chambers operate at the intended design capacity for the life of the system, if properly maintained.

The Installation

After digging to the desired depth and installing the sediment catch basins, a 12" layer of base stone was put in place. Next, a 3-man crew put the chambers 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 6" past the crown of the chambers, and the geo-fabric was folded back and backfilled with material to the desired elevation. The entire installation was completed in a day, and the chamber placement took just over four hours.

"It went together very easily," said Rick Ruffing on-site manager for JMD Company, suppliers of the materials for the project. "It was much easier than other systems we have worked with – by far the easiest way of doing it that I have seen."

Ruffing noted that the Triton System made a very favorable impression on the Penn-DOT oversight crew.



Lightweight and easy to handle, the Triton chambers can be placed without the aid of heavy equipment.



The controlled settling and distribution process is ensured by the design of the Main Header Row.

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.

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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