Water Retention Case Study

TRITON STORMWATER SOLUTIONS

“Stack” the Odds in Your Favor!

Triton SWS stackable underground stormwater management system answers the call

The Situation:

Metro Transit of Minneapolis/St. Paul needed to expand its Hiawatha Line operations and maintenance facility to meet the growing need for light rail travel in the Twin Cities. This required additional stormwater storage capacity – a big challenge given the constraints of the site; the numerous poles required to power the trains dotted the entire area, putting usable space at a premium, and demanding a flexible design.

“One of Triton SWS’ biggest benefits was the modular design – we were able to work around existing and proposed infrastructure – while still being able to meet the required storage volumes.”

Lance Hoff, Royal Enterprises, Project Manager

The Solution:

Triton Stormwater Solutions innovative underground chambers, boasting large storage capacity and unrivaled strength – which allows them to be stacked to increase storage volume while saving space – meant that the project could meet the stringent requirements without disrupting the existing site infrastructure.

After consultation with Triton SWS’ staff, contractor Royal Enterprises chose a combination of Triton’s S-29 and M-6 chambers stacked in a two-tier design. The designers also utilized the maintenance-saving Main Header Row to filter out sediments before they enter the storage rows. By stacking the chambers, a tremendous savings in space was realized, while the sediment-trapping capabilities of the Main Header Row will deliver important maintenance-cost benefits: sediments are easily removed through a cleaning port, and the storage chamber floors will not become sediment laden, as they can with competitive systems.

An impressive 10,213 cubic feet of storage was achieved with a 2,837 square foot project site, using Triton SWS’ double-stacking capability.

Installation took just two days!

The Installation:

A remarkable 10,213 cubic feet of storage volume was achieved with just a 2,837 square foot project area. Once the initial site preparation was finished, the two-tier chamber installation – including backfilling – was completed in just two days.

Due to the Triton SWS chambers' tremendous strength, the first layer of chambers was topped by just one foot of crushed stone in preparation for the second tier. The second tier of storage chambers, running perpendicular to the first, was then placed, and 9.5' of fill was placed over the chambers, making the site ready for paving.

Because the Triton SWS chambers could be used with reinforcing geogrid, the shortage of desired sharp-edged stone did not derail the project.

A potential roadblock – a shortage of desired, sharp-edged igneous rock – also was overcome by Triton SWS' flexibility: The crew was able to fit a reinforcing geogrid at each elevation, making the available rounded stone acceptable.

Today, the expanded Hiawatha facility is serving Twin Cities' commuters better than ever!

Triton SWS' innovative Main Header Row reduces maintenance costs through sediment trapping, and also allows a number of pre-storage treatment options.

Triton SWS Advantages

Built with green technology soy resin, Triton SWS' chambers are completely modular to allow maximum flexibility in design and application. In addition, using a Triton SWS system can contribute to 18 LEED credits and meet Zero Discharge goals. Triton SWS 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.

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 Stormwater Solutions gives you Power Over Water.

TRITON STORMWATER SOLUTIONS

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