Jellyfish®

CASE STUDY

Commercial Redevelopment Site Uses Jellyfish to Treat Stormwater Runoff

A full-service commercial and residential developer has installed Imbrium's Jellyfish® fine sediment filter to treat stormwater runoff at a commercial bank redevelopment project in Newton, New Jersey. The developer chose Jellyfish to help meet the state's stormwater quality treatment requirements.

The New Jersey Department of Environment Protection's (NJDEP's) stormwater treatment program requires the use of a filtration system prior to infiltration to protect groundwater from pollutants in stormwater runoff. Jellyfish's state-of-the-art verified technology, which has obtained interim certification from the NJDEP, was identified as the ideal stormwater treatment Best Management Practice (BMP) for this site for several key reasons.

Tight Site Space a Major Concern

Design and installation consideration was required as a result of pre-existing underground utilities and surrounding infrastructure on an adjacent property. Because space at this location was extremely limited, it was essential to install a small but powerful, performance-verified filtration system.

After rejecting larger-vault footprint alternatives due to their unsuitability for the site's space restrictions, the compact, highly-efficient Jellyfish JF6 model was chosen, offering the perfect combination of enhanced treatment flow capacity and a small footprint.

The typical elevation drop design requirement for filtration BMPs is 2 or more feet. Because Jellyfish is designed with only 18 inches (457 mm) of "head" or drop to fully operate the system, it fit easily within the site drainage system parameters. In addition, Jellyfish's advanced membrane filtration of very fine sediment particles at a superior treatment flow rate of 50 gallons per minute (3.15 L/s) per cartridge resulted in a treatment solution that was one-third the footprint of the other BMPs considered.

With the smallest footprint, the Jellyfish pre-cast concrete structure's components are significantly lighter, making the unit easier to place with smaller equipment, when compared to other NJDEP-approved filter systems. The Jellyfish unit was much easier to install since the heaviest lift was less than half the weight of the alternative vault structure considered. This translated into significant time and equipment cost savings for the contractor and developer.

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Easy to Maintain and Low Long-term Cost

Jellyfish's low long-term maintenance costs makes it an extremely attractive choice. In this case, a major reason the Jellyfish was chosen over other filtration BMPs considered was its affordability over the long term. The Jellyfish unit installed at the commercial redevelopment site contains only 7 small, 20-pound (9 kg) cartridges. The alternative filtration device considered required 22 large, 200+ pound (90 kg) cartridges, resulting in a significant savings in maintenance time and costs.

Another important consideration was the fact that Jellyfish's cartridges are passively backwashed after every storm, manually backwashed annually during routine maintenance, and do not require annual replacement and disposal. The Jellyfish is also a simple system to inspect as well as maintain. At this site, the maintenance cost of Jellyfish over a three-year period was estimated to be one-third the cost of other filtration BMPs considered.

Economical Approach

Martin Realty Development & Construction Co., a well-established full-service developer, has been operating in central New Jersey since 1972. President Steve Martin was quite excited about the implementation of the Jellyfish technology. "For us, using the Jellyfish system was more economical, and it met NJDEP requirements. It was also a pleasure to work with Imbrium, with their support at the time of installation of the structure and the filters."

With Jellyfish working quietly underground, owners can be confident that stormwater runoff from the site will be filtered with the best and most cost-effective technology available before being infiltrated back into the groundwater.

Jellyfish a Popular Choice

The Jellyfish filtration system continues to gain popularity among organizations committed to protecting the environment.

Jellyfish is a remarkably compact system that allows 3 times the flow capacity with just one-third the footprint and one-fifth the weight of conventional filtration BMPs. Its unique high surface area membrane filtration tentacles trap over 80% TSS, effortlessly capturing neutrally-buoyant particles, oils and saturated hydrocarbon-based particles, making it a cost-effective treatment solution.

Jellyfish. Fine Sediment Filtration, Inspired by Nature.

For more information on the Jellyfish fine sediment filter system, visit Imbrium online at:

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