

CUBESMARTSM HEADQUARTERS

EAST WHITELAND, PA - STORMWATER CASE STUDY

CubeSmartSM, a provider of self-storage facilities, recently chose to expand its presence in Pennsylvania by opening a corporate location in East Whiteland. Originally, the town envisioned the site would consist entirely of office space, but when CubeSmart chose to purchase the space, the company decided to relocate its corporate headquarters here and use the other half for storage. The space includes offices for 160 employees, as well as self-storage facilities.



Engineers from Nave Newell, Inc., were tasked with designing the new location, which would include the installation of a stormwater management system. The engineering team collaborated with contractors at Lyons & Hohl to develop the new layout for the site, and were faced with a number of on-site challenges.

The engineers had to overcome a 60' topographic grade in order to establish the building pad and parking area. Also, the site is the last piece of land to be developed at a prominent intersection located at the top of a steep bluff. Because of this, engineers were under close scrutiny county and state regulators and had to be mindful of the quality of the receiving watershed.

System Specs	
Storage Provided	94,319 CF
Area	33,089 SF
Chamber Model	Recharger® 330XLHD
# Units	723
Project Engineer	Nave Newell, Inc. King of Prussia, PA
Contractor	Lyons & Hohl Honeybrook, PA



Recharger® 330XLHD Chambers

Engineers selected the CULTEC stormwater system to detain excess stormwater on-site and allow for infiltration in accordance with both regulations.

Due to location, engineers had to be very careful in establishing the discharge site. Runoff could not be discharged directly over the side of the bluff for fear of erosion down the slope.

CULTEC CONTACTOR® & RECHARGER® STORMWATER SOLUTIONS

"We knew that any consistent flow of runoff going over the side of the bluff would eventually cause it to erode and negatively affect the environment," said Alex Tweedie, Nave Newell Design Engineer. "In order to prevent any chance of erosion, a pipe was extended outside of the area to create a discharge site that would be able to adequately receive the runoff."



Since only half of the site was dedicated to office space, the demand for parking was greatly reduced. Still, engineers had to optimize the grading to create enough level pads for the parking and reserve parking areas. The most efficient solution was to install a subsurface stormwater system. A grass field for reserve parking was placed on top of the stormwater system, leaving space for approximately 100 additional parking spots.

Given the constrictions of the site terrain and the storage requirement of 93,397 cubic feet, engineers chose to install CULTEC's Recharger® 330XLHD model. With a capacity of over 400 gallons, this CULTEC chamber is one of the largest available. It provided a balance of maximizing storage while using a small footprint, and best satisfied the requirements of the CubeSmart site. The unit is 52 inches wide by 30.5 inches high and has an installed length of 7.5 feet long with a bare chamber capacity of 7.5 cubic feet per linear foot.

"We prefer to install an open chamber system over a pipe system because you get a much better overall footprint," said John Hogan, Nave Newell Design Engineer. "The Recharger 330XLHD is a very efficient chamber which has a lower volume in the early stages of a storm."

The system was installed in under three weeks, saving dollars in cost-of-labor. "CULTEC's chambers are created out of lightweight polyethylene making the installation fast and efficient," said Mike Hohl, Project Manager at Lyons & Hohl Site Contractors. "The entire system was installed with only a handful of workers."

The extensive bed included over 700 chambers placed in 45 rows. In addition, CULTEC No. 410™ non-woven geotextile encased the entire bed to prevent soil intrusion. In the end, the team was able to satisfy both town regulations and engineering requirements with a cost-effective yet environmentally friendly solution.



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