Oldcastle Infrastructure™
A CRH COMPANY

PENTAGON RENOVATION PROGRAM | ARLINGTON, VA

CUDO® Installation

Owner
U.S. Department of Defense

Contractor
Ikhana, LLC

Engineer
Louis Berger Group, Inc.

Featured Products

CUDO Cube System

DVS

The Pentagon Renovation Program (PENREN) was a long-term project by the U.S. Department of Defense to perform a complete top-to-bottom renovation of the immense facility in Arlington, Virginia. The renovation plans included building a Remote Delivery Facility (RDF), a new 250,000 square-foot shipping and receiving operation adjoining the Pentagon. The RDF would significantly improve the physical security of the Pentagon by providing a secure, consolidated location for receiving and screening the thousands of items shipped to the building each day.

CHALLENGE

All this new impervious hardscape created a stormwater management dilemma for the Pentagon. The new RDF facility with its surrounding roadways, loading docks and parking lots would generate a significant amount of stormwater runoff, so the Department of Defense contracted with Louis Berger Group, a full-service engineering firm based in Morristown, New Jersey to design a solution that could handle 5,700 cubic feet of stormwater storage in the 1,856 square-foot worksite.

SOLUTION

Needing an underground, traffic-rated stormwater detention system with a small footprint that could be installed quickly without heavy equipment, Louis Berger Group ultimately selected a CUDO® system from Oldcastle Infrastructure. In total, just 378 CUDO cubes were required to meet the Pentagon's requirements, offering 5,731 cubic feet of stormwater storage with just a 1,512 square-foot footprint.

In addition, to mitigate the amount of trash, debris and sediment from entering the CUDO system, Louis Berger Group also specified a DVS-60, a five-foot diameter Dual-Vortex Separator, to be installed upstream of the structure. The standard DVS-60 offers 29 cubic feet of both sediment and floatables storage at a maximum treatment flow rate of 2.6 cfs, but the depth of the unit can be increased to add storage capacity.

BENEFIT

The CUDO modular stormwater storage system was able to provide a quick and easy installation without the need of heavy equipment and within a smaller footprint while the DVS pre-treatment provided particle separation from stormwater runoff. Settled particles and sediment are collected in the isolated bottom storage area, while floating trash, debris and petroleum hydrocarbons are retained in the cylinders and upper storage areas. This stormwater solution system provided by Oldcastle Infrastructure ensures that the system functions at peak storage volume, without reducing the design percolation rates or impeding flow in and out of the system during its service life.