

Case Study

StormChambers

CITY OF SAN DIEGO LEVERAGES NDS TEAM FOR DESIGN OF WATERTIGHT DETENTION SYSTEM THAT ELIMINATES NEED FOR EXTERIOR PIPE MANIFOLD AT JOINT-USE PARK

The city of San Diego, Standley Middle School and the adjacent Standley Park were approved to build a new aquatic center complete with an outdoor pool and amenities buildings, outdoor pavilion and pedestrian walking paths.

The construction of the new recreation center would require deep underground site excavation for under pool drainage, stormwater storage and sewer pipelines. The project required approximately 7,100 CFS of underground stormwater storage – which would be placed under the baseball field adjacent to the pool area.

NDS DESIGNS IMPERVIOUS SYSTEM WITH MORE STORAGE, LESS SPACE

NDS was brought in to provide specific design layouts and engineering specifications. Once it was determined an NDS StormChamber system was the ideal solution, the DesignWorx team designed a subsurface detention system that eliminated the need for an exterior pipe manifold. Initially a solid wall pipe system was proposed, but pipe systems only provide storage inside of the pipe while the NDS system provides storage in the chambers and surrounding stone, allowing for more storage in the footprint.

In addition, the NDS team incorporated a 30Mil HDPE liner since the soils onsite were not suitable for infiltration.



"We appreciate the quality of work NDS provides and quick feedback from the team."

- Cheng Luo, Specifier

Using a watertight detention system as a stormwater best management practice would restrict the infiltration of water into underlying and adjacent soil, and instead release the water slowly downstream via outlet structures connected to under drain and outlet pipes.

A pre-con meeting with the general contractor and the subcontractor one week prior to installation covered the manufacturer's manufacturer's recommended installation steps and provided a chance to walk the site and answer questions. The stakeholder reported that the meeting went smoothly in part due to the quality of the StormChamber design layout.

SEDIMENT TRAP SAVES ON MAINTENANCE COSTS

When it was time, a combination of 4 start chambers, 54 middle chambers and 4 end chambers were installed. In addition, 3 SedimenTraps were included, an NDS technology that gathers sediment in one location for easier maintenance. "By using our SedimenTraps, the City of San Diego's school system maintenance department was able to reduce their spend by approximately 50% over other systems thanks to its simple and efficient design," said Joe DeSanti, Specification Manager, NDS.

PROJECT SUMMARY

PROJECT TYPE

Storage & Infiltration

PROPERTY

Public School

STAKEHOLDERS

WSP San Diego North
Balfour Beatty

NDS PRODUCTS USED

(62) SC-44105 chambers
(3) SC-ST sediment trap
(4) SC-NWFF-500 rolls of nonwoven geotextile
(3) SC-WFF-75 rolls of woven geotextile
(3) SC-3020P 30x20" HDPE pipe
(3) SC-FL-10 10" cast iron frame and lid