CASE STUDY

Advanced Stormwater Quality for Sonoma County Airport Apron

Santa Rosa, CA

OWNER
Sonoma County, Sonoma County, CA

ENGINEER
Mead & Hunt, Windsor, CA

CONTRACTOR
Granite Construction, Santa Rosa, CA

INSTALLATION DATE
Summer 2025

PRODUCTS
49 SC-800 StormTech® Chambers
2 30" (750 mm) Nyloplast® Drain Basins
2 EcoStream™ ES128 Biofilters
N-12® Dual Wall Pipe Manifolds

CHALLENGE

The Charles M. Schulz Sonoma County Airport reconstructed its aging apron pavement, where commercial aircraft park, load passengers, and refuel. The apron upgrade expanded the area to accommodate growing operations. The work, which was completed without disrupting airline activity, replaced deteriorated pavement and upgraded drainage and pavement markings. As part of the upgrade, the project incorporated a new stormwater quality biofiltration system.

SOLUTION

To provide the highest level of stormwater quality, the airport selected the EcoStream Biofiltration system. Two EcoStream units, each 16' x 8' (4.8 x 2.4 m), were installed side-by-side, forming the largest combined EcoStream unit in Northern California. These filters were placed in a custom concrete vault positioned at the edge of the apron.

Collected stormwater flows through catch basins into the EcoStream system. Water enters the top of the unit. The initial mulch layer captures trash and large debris, while the middle layer,

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an ADS-developed media, removes smaller sediment, phosphorus, metals and nutrients. Finally, a layer of crushed rock allows the treated water to drain into a perforated pipe with sock.

After treatment, the stormwater is routed into a 30" (750 mm) Nyloplast Basin and then into the StormTech system, which includes 49 SC-800 chambers with an Isolator® Row for additional pretreatment.

The SC-800 StormTech chambers provide stormwater detention, slowly releasing water into the municipal stormwater network. A downstream manhole with a weir further controls the discharge rate. Throughout the StormTech system, N-12 Dual Wall HDPE pipe serves as manifolds to convey flow between chambers.

PRODUCT DESCRIPTIONS

EcoStream BioFilter is designed to capture and retain a variety of pollutants including sediment, nutrients, heavy metals and hydrocarbons while helping to meet green infrastructure objectives. This high-flow, low-impact system incorporates the processes of sedimentation, filtration, adsorption, and biological. The EcoStream has curb inlet and piped inlet options that are cost-effective to maintain. The biofiltration system, which has multiple configurations, can be installed in a compact footprint and provides a high filter media area and flow rate.

Nyloplast Drain Basins were custom built for the project as they are for each application. Nyloplast products are more durable and corrosion resistant than precast basins and combine a rugged PVC structure with ductile iron grates. The basins can be easily adjusted in the field to meet the final grade. The structures are shipped with rubber gaskets to ensure a watertight connection.

StormTech Chambers are designed to save valuable land, reduce flooding risks and protect water resources. The chambers provide a durable structural system and are designed in accordance with AASHTO LRFD Bridge Design specification for the HS-20 live loads. StormTech chambers are available in a variety of sizes to meet any project need and are injection molded for uniform wall thickness. StormTech end caps can be either pre-cut or cut in the field to fit the manifolds, which will save installation time. The end caps also add to the structural integrity of the system and in larger sizes provide storage capacity.

N-12 Dual Wall pipe has a corrugated exterior and smooth interior wall that provide exceptional strength and hydraulics. The inert HDPE material is resistant to the effects of chemicals, abrasions and hot soils. N-12 is available in 4"-60" (100-1500 mm) diameters and in 20' (6 m) lengths. The inline bell design allows for pipe ends to be pushed together for easy installation.

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