



STORMCAPTURE® PV SYSTEM SCHOOLS REDMOND ELEMENTARY

on Benefits of Stormwater Management Redmond, WA

Protecting nature within our urban environment requires the proper movement and management of stormwater runoff. To do so, communities have a maze of drainage networks, and precast concrete often plays a critical role.

In Redmond, Washington, the Lake Washington School District is utilizing precast concrete panel components to construct two extra-large underground StormCapture® PV detention vaults as part of the stormwater management system at the new Redmond Elementary School. Working together, general contractor BNBuilders Construction, BLRB Architects and AHBL Engineering designed the massive underground stormwater vaults while also

meeting the regulatory requirements of the Washington State Department of Ecology.

After review, they concluded that a precast concrete panel vault system would save approximately two-and-a-half months of installation time over a cast-in-place system. The precast solution would also detain stormwater to allow sediment to filter out in accordance with Ecology guidelines.

Ecology issues requirements for how stormwater runoff is treated before being discharged off jobsites. As a developed site with impervious surfaces, the school ensured its stormwater runoff would be as clean as

DESIGN & CONSTRUCTION TEAM

Owner

Lake Washington School District

Civil Engineer

AHBL Engineering

Architect

BLRB Architects

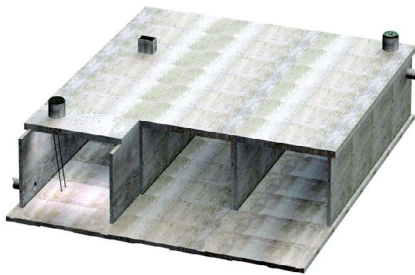
General Contractor

BNBuilders Construction

Manufacturing Facility

Oldcastle Infrastructure
Auburn, WA

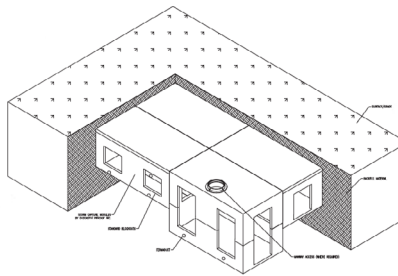
StormCapture® PV System Schools Redmond Elementary on Benefits of Stormwater Management Redmond, WA



from an undeveloped site. “The measures incorporated – to hold, filter, clean and discharge clean stormwater – were accomplished naturally by way of onsite biofiltration swales that allow the water to be channeled, filtering it naturally,” said the Lake Washington School District Support Service Team.

“Also, the system uses cartridges and mechanically filters the water. The engineering behind the stormwater system is pretty amazing in terms of the invert elevations and how the water level is going to build-up and be metered, then discharged from the site.”

Selected by BNBuilders Construction, Oldcastle Infrastructure of Auburn, Washington designed, engineered, manufactured and then delivered the precast concrete components of the underground detention vaults. Oldcastle Infrastructure Auburn Project Manager Rick Roof remarked, “Using precast provided a variety of benefits including strength, durability, flexibility of design, and it vastly improved the construction schedule, operational efficiencies and overall quality of the detention structures for this project.”



Typical StormCapture ISO View

PRECAST SOLUTION

In total, the Auburn plant supplied 44 flat-base slabs, 54 wall panels, 44 top slabs as well as ladders, cast-iron covers and risers for the 44-foot-wide by 178-foot-long North detention vault. The South vault, installed in November, required 48 flat-base slabs, 40 wall panels, 48 top slabs, plus ladders, cast-iron covers, and two H-20 rated five-foot by 10-foot grates and risers for the 44-foot-wide by 220-foot-long vault.

The segmented precast stormwater vaults hold approximately 900,000 gallons of rainwater while allowing sediment to settle before being discharged into the storm drain system. Each precast panel was sealed using hydrophobic sealer. As soon as water touches the sealer, it triggers the sealer to spread, harden and cure between the panels so there is no seepage. The construction of the North precast concrete panel vault took six days.

A paved parking lot will eventually cover the detention vaults, so stormwater will be piped into the underground structures. Oldcastle Infrastructure Area Technical Manager Deon Lourens remarked, “These are complicated systems, and it’s great to see what our capabilities are as a company. The benefits of precast include speed, quality and versatility, which saves time and money for onsite contractors.”

About Oldcastle Infrastructure

Oldcastle Infrastructure, A CRH Company, is the leading provider of building materials, products and services for infrastructure projects to several market sectors nationwide, including: Building Structures, Communications, Energy, Transportation and Water.

For More Information Contact:

Oldcastle Infrastructure

Phone: 800.579.8819

Email: contactstormwater@oldcastle.com
oldcastleinfrastructure.com