Wahaso Website Project Case Study

Category:

Stormwater Harvesting

Project Name:

St. Louis Gateway Arch Park – Luther Ely Smith Square

Client:

Michael Van Valkenburgh Associates and the National Park Service

Background:

In 2009, the CityArchRiver 2015 project envisioned a major upgrade to the St. Louis Gateway Arch parks grounds to celebrate the Arch's 50th anniversary. Right after World War II, Civic leader Luther Ely Smith conceived the idea of building a memorial to help revive the riverfront and memorialize the story of the nation's westward expansion.

Commissioning Date:

September 2015

Challenge:

More challenging than harvesting rainwater off a clean roof surface, harvesting and treating stormwater to make it safe for spray irrigation requires special consideration along the entire treatment train. Run-off can include hydrocarbons, nitrates, organic matter and animal waste. Treated water would need to be clean, clear and free from harmful pathogens. The Park Service was insistent that the harvesting equipment not interfere with the sightlines of the park.

Solution:

Wahaso brought in two other partners to deliver a complete solution. It was critical in the treatment train to remove most of the suspended solids coming from the stormwater runoff before they entered the storage system. SunTree Technologies recommended their Nutrient Separating Baffle Box system to remove sediment, organic material and hydrocarbons from large storm flows entering the cistern. The system holds trash above the standing water line and uses a series of baffles to remove suspended solids to less than 350 microns.

Partner Oldcastle Precast supported the design and engineering of the Storm Capture system to hold 37,000 gallons of pre-treated stormwater below-grade in nine pre-cast modules. Oldcastle also helped resolve the sightlines question by providing an additional module to contain all the harvesting equipment below-grade. A 8' X 10' pre-cast equipment room was delivered with ventilation, sump pump, ladder and large access doors to avoid confined space restrictions.

Wahaso's filtration and sanitation skid was designed to minimize maintenance of the system. A special 50-micron filter is capable of self-cleaning while it is operating, eliminating the need to

replace bag filters. Special high-intensity UV units are able to eliminate any potentially harmful pathogens even if the water is slightly cloudy.

Results:

Wahaso's solution was installed and started up in time to join in the celebration of the opening of the Luther Ely Smith Square in the Fall of 2015. Harvested water was provided for irrigation of the lawns and landscaping for the Spring 2016 season. The system delivers clean, clear and safe water for spray irrigation at 40 GPM and 70 PSI and is expected to only require service at the beginning and end of each irrigation season. The use of the below-grade water storage system and equipment room means that park will remain clear of obstructions so that attendees can focus on the beautiful Gateway Arch before them.

Link to TV News video on Luther Ely Smith opening: http://www.kmov.com/clip/12031591/arch-green-space-now-open-to-visitors