

Site Design and Architecture

South Magnolia CSO Control Facility

May 2013

Project design for the future

The South Magnolia Combined Sewer Overflow (CSO) Control Project provides an example of how King County Wastewater Treatment Division works to protect public health and the environment and to be a good neighbor to communities. King County is building a CSO Control Facility in Magnolia to meet state and federal water quality standards and help protect Puget Sound by reducing discharges of untreated stormwater and sewage during heavy rains. Flows exceeding system capacity during storms will be diverted at 32nd Avenue West to an underground storage tank located in the Terminal 91 West Yard area. The tank will store stormwater and wastewater volumes exceeding system capacity until storms pass and stored flows can be sent to West Point Treatment Plant in Discovery Park. The South Magnolia CSO Control Facility will help King County meet current standards of no more than one untreated CSO event per year on a long-term average.

The South Magnolia CSO Control Facility site- both above and below ground- illustrates King County's commitment to water quality. As the project team developed a design concept for the storage facility site at the Port of Seattle's Terminal 91 West Yard, they faced a challenge to design around a range of future uses proposed for the surrounding West Yard area. In 2013, a long-term community vision for a waterfront park achieved a critical milestone when the City of Seattle agreed to purchase the land around the County's facility site from the Port of Seattle for future park development. The County's site, featuring CSO control, on site stormwater management, predominantly native plant landscaping and benefits to local wildlife, creates an example of environmental sustainability for future park users.



South Magnolia CSO Control Facility elements as of May 2013. In early 2014, the conveyance pipe installation method and alignment will be known, and either a new or modified diversion structure will be built on 32nd Avenue West.



Smith Cove Park/Terminal 91 West Yard area today. King County's project will use space in both areas for construction.

Working with the community on design

King County works closely with communities during design of our facilities. From community meetings to workshops to one-on-one discussions, we find ways to maintain a dialogue with people as a design is developed. Project Web updates and newsletters help the community to keep current on design refinements.

In Magnolia, we first received community feedback in 2009, when attendees at a community meeting encouraged King County to site a storage facility in the Port of Seattle's Terminal 91 West Yard, and introduce native plants and wildlife habitat to the industrial waterfront site.

King County's project team developed a site vision to provide a basis for design concepts:

Acknowledging that the CSO control facility is a distinct part of an as-yet un-designed whole, we are designing the landscape and architecture to express King County Wastewater Treatment Division's mission of protecting water quality.

The site plan includes a surface design that evokes the structure of the underground tank and predominantly native plantings that help with stormwater management, provide wildlife habitat, and selectively screen or provide views into the facility site. The equipment building features a distinctive scupper feature that will create a rainwater cascade visible to passersby on 23rd Avenue West. People will see the rainwater from the building's roof captured in a rain garden beneath the scupper.

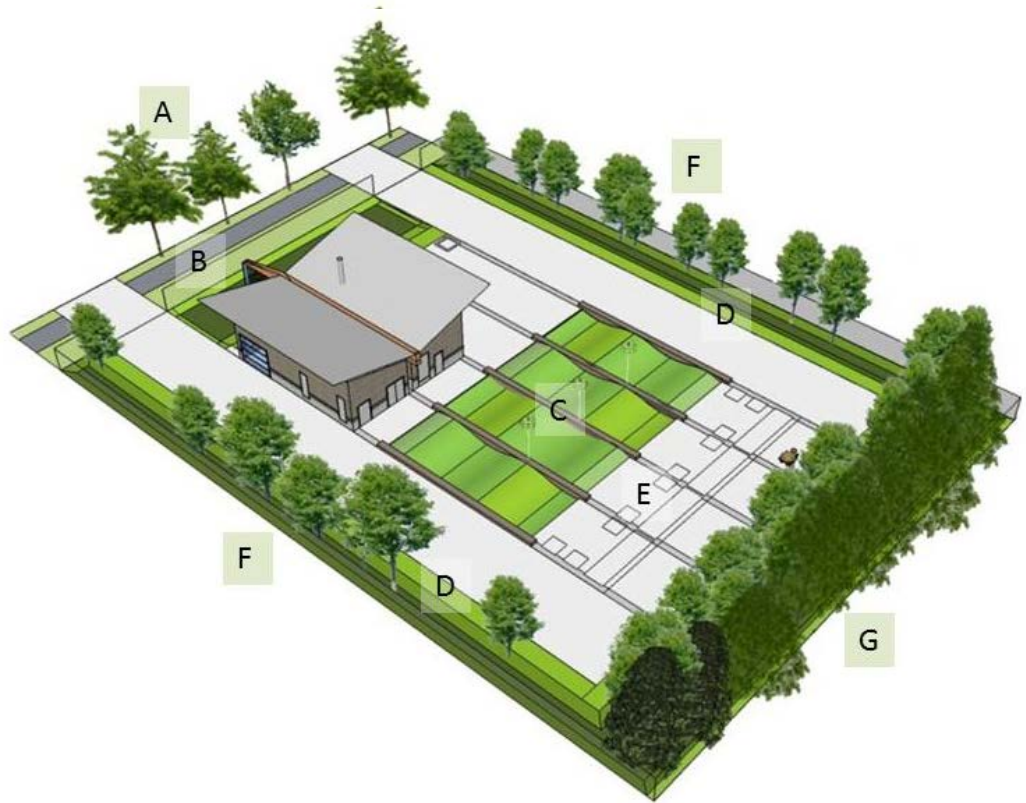
In response to community input, the final site design is wildlife friendly. The site includes special habitat features to support migratory birds that nest in our area. An osprey nesting platform is used to provide an alternative nesting site to structures like power poles. People will be able to see these features from outside the site, where they will be protected.

The landscaping features predominantly native plants adapted to our region's Mediterranean climate, with its mild, wet winters and dry summers. Plants with higher moisture tolerance are used in stormwater bioretention areas.

In 2012, the project team began reviewing landscape and architecture design with the community at meetings, briefings, and information sessions. The community provided input on color themes for the building, architectural elements, plant selections, and fencing. The project team further refined the design to reflect this input.

Site Design Features

- A- Street trees and restored pathway according to permit conditions
- B- Rain garden to capture roof runoff
- C- Grassland swales to soften appearance, divided by gabion walls
- D- Bioswales to retain and filter driveway runoff
- E- Lift slabs to access flushing equipment
- F- Trees to filter view from surrounding area
- G- Successional planting of deciduous trees and coniferous trees

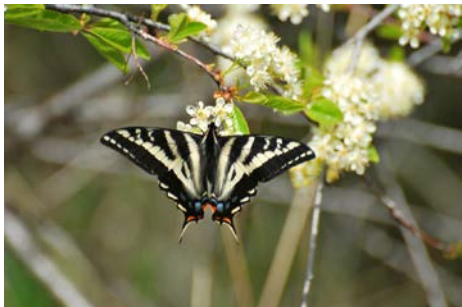


Gabion walls, a landscaping element that will be used to evoke the storage tank bays underneath the surface (see C on the diagram at right).

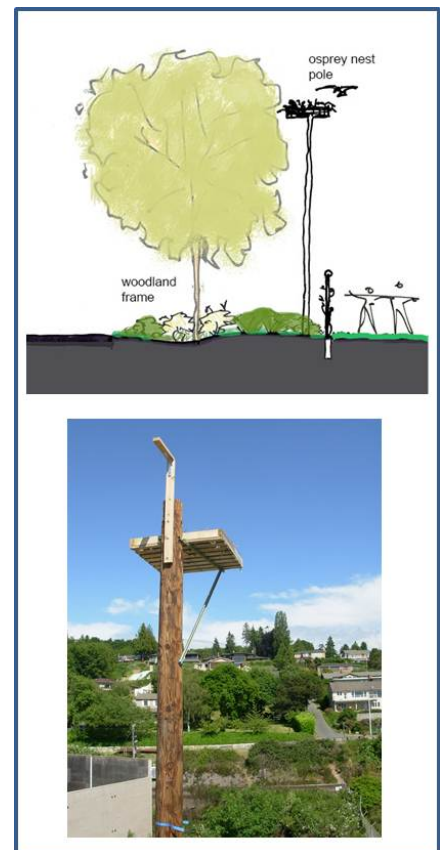
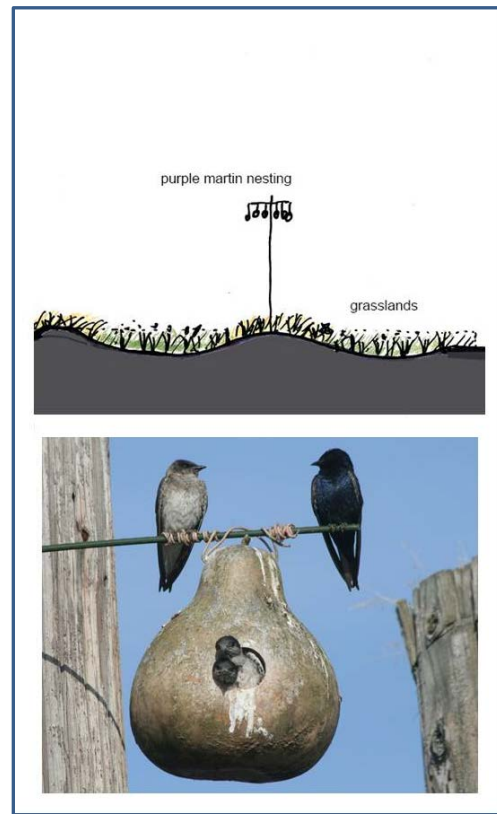
Mercer Slough Environmental Education Center, Bellevue
Photo courtesy of Nate Cormier

Building Design Features

- A- Scupper feature visible to passersby
- B- Vegetation to prevent splashing and soften building appearance
- C- Inverted roof to direct water to raingarden for infiltration
- D- Tile pattern to soften building appearance
- E- Glass trim to provide visual interest and let light in



Landscape plants, clockwise from top left: red flowering currant, black twinberry, vine maple, bitter cherry, and Oregon iris.



Examples of habitat features: purple martin nesting gourds, left, and osprey nesting platform, right.

Want more information?

For a list of plants used in the landscape, along with gardening information and benefits to wildlife, see the "Plant Palette" fact sheet, available on the project Web at www.kingcounty.gov/environment/wtd/Construction/Seattle/SMagnoliaCSOStorage.