

Protecting Puget Sound

Landscape architect Angela Danadjieva's job was to beautify (and hide) Seattle's new half billion dollar sewage treatment facility.

By LESLEE JAQUETTE

After a decade of: planning; permits; building a 3,000-foot-long retaining wall; moving 30,000 cubic yards of topsoil; 20 miles of irrigation line; 10,000 trees and 15,000 shrubs and ground cover plants, the \$573 million West Point Sewage

Treatment Plant in Seattle, Wash., is open.

Found on a spit of land on the east side of Puget Sound, adjacent to Seattle's largest public park, the secondary treatment plant was the single largest investment ever made to protect the water quality of Puget Sound. The key to the success of the project was the landscape design created by Angela Danadjieva of Tiburon, Calif., and

CHM2Hill of Seattle.

"I'll probably never work on a job where landscaping receives a higher priority," says Landscape Project Manager Linda Sullivan, Seattle.

The goal of the project was to install the plant on a linear piece of land. Sullivan says the landscape designers promised to hide the plant from the perspective of the shoreline trails that are popular with visitors to Discovery Park. To achieve this goal many of the tanks were submerged on the 32 acres dedicated to the plant facilities. The inside of the plant includes three acres of landscaping

while the outside doubled the public area to 20 acres of landscaping, trails and beach access.

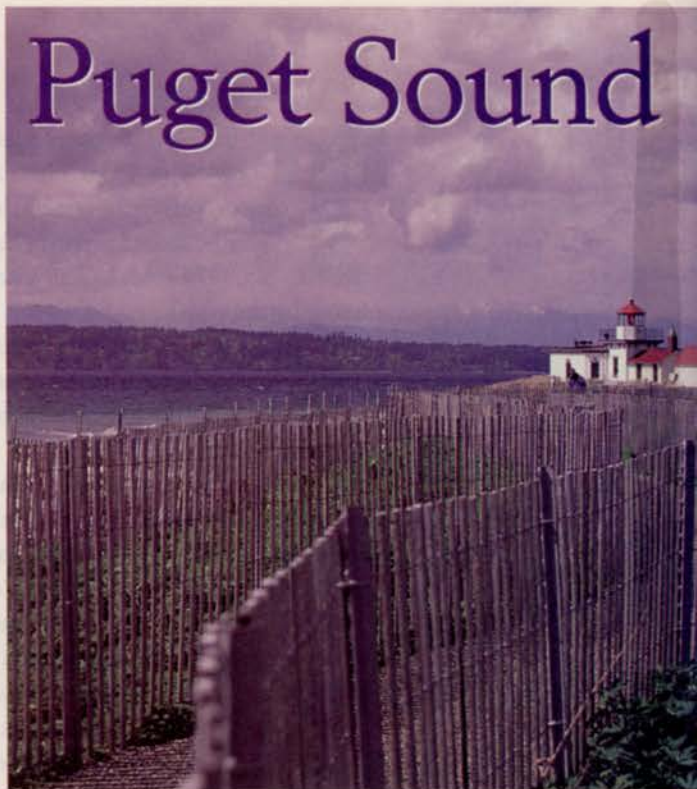
Beyond the goal to create a landscape that blends with Discovery Park, the landscape screens the plant from view, increases wildlife habitat and diversity and creates a tranquil and passive environment where people can enjoy nature, undisturbed by the sewage plant. A tall order considering the old plant, built in the 1960s, included acres of concrete surrounded by chain link fence.

"She's sculptural in approach," says Sullivan of Danadjieva. "What you see instead of an industrial facility is the undulation of wetlands, wall, trail and water, blended by the use of native plants."

One of Sullivan's responsibilities was managing the growing contracts for the project.

Working with regional nurseries was important because the job was so large planners couldn't be certain plants would be available through the conventional bidding process. To obtain the right plants (80 native species) all the right size at the right time, she negotiated growing contracts after a selection process in which nurseries submitted qualifications, growing plants, financial plans and, finally, prices. Price was a factor, but only about 30 percent of the qualification process, says Sullivan, adding, "it was more important to get high quality materials."

The plant list for the project included 10,000 trees, mostly willow and pine, 50,000 shrubs and 100,000 plugs of American dunegrass and wetland grass. Because of the strong commitment made to the public that



Lisa Niehaus is head gardener for the treatment plant's 23 acre park.



Park grounds feature native plants

Bald eagles soar over the park's bluffs, noisy sea lions gambol in the surf while a great blue heron stands on the shore poised like a statue. On a sunny day 13,000-foot-high Mount Baker looms large as wood ducks splash in the wetlands pond near the heron.

The new landscape surrounding the West Point Secondary Treatment Plant in Seattle, Wash., looks natural, with a little help from head gardener Lisa Niehaus. She and staff maintain the 23-acre park on Puget Sound.

Niehaus is the former senior gardener and horticulture crew chief for Seattle City Parks, and Seattle's Woodland Zoo, but she has her hands full at the site of Puget Sound's largest restoration area. The area is divided into the three acres within the treatment plant with their planters and green buffer, as well as the outside 20 acres.

Drainage is the biggest problem inside the facility due to the shallow soil atop a number of submerged treatment tanks. To expedite better drainage, Niehaus is interplanting with smaller plants around the 80 different varieties of native plants already in place. She hopes the roots on these plants will spread and form a cachement for Seattle rains.

Tending the long, linear park, which includes a 1.1-acre pond and wetlands, Niehaus fights a battle

with weeds, critters, irrigation and wind damage. Using a summer staff of five along with volunteer gardeners, she attempts to weed enough so that eventually young plants can compete. Similarly, about all she can do is monitor for pests. Her goal is to let population levels of insects control themselves.

"The end result is a natural habitat that people can enjoy. It doesn't need to be perfect like a formal rose garden," says Niehaus.

Niehaus and crew keep an eye on 20 miles of temporary irrigation lines, observing which plants are prospering and which need more water. Still, getting familiar with the site and drawings and keeping 250 sprinkler zones functioning is one of her biggest challenges.

Another challenge is wind. It whips and curves around the beach and inside planters and walls. The larger hemlocks and willows on the windward side of the park suffered tremendous windburn last winter. Where these need to be replanted, Niehaus plans to use smaller, one-gallon trees that won't be as susceptible to wind. By the time they are tall enough to be affected by the wind they will have developed sufficient roots to survive the assault.

To prevent voles (mountain beaver) and deer from stripping bark off of new trees, Niehaus uses products like Ropel and Deer Away.

While some of her maintenance techniques are commonplace, like using only slow-release fertilizers, some are unique. For instance, in March and April she floods the wetlands about one foot higher than normal to control cattails and keep their roots from choking out other vegetation.

The most exciting future prospect for the park, says Niehaus, is that the site may one day use reclaimed water for irrigation. If the permit process continues as planned, she should be able to use reclaimed water in the summer of 1998. □

In March and April, Niehaus floods the wetlands to control cattails and keep roots from choking out other vegetation.

PHOTOS BY LESLEE JAQUETTE

the sewage plant be screened immediately, the plant material was planted very close together. The design calls for the material to gradually slope from the flat, sandy spit and intertidal lagoon up toward the treatment plant and forested hillside.

To achieve best growth, 110,000 lineal feet of irrigation was submerged in 30,000 yards of topsoil. Compatible with the subgrade, this soil is a mix of 60 percent sand and 40 percent Groco.

"We realized we needed to have a sandy, loose soil to be successful and forgiving during winter construction," says Sullivan.

Sullivan credits Ohno Construction of Seattle with a job well done, particularly given they had to bring in the topsoil by barge to minimize impact on the neighborhood and park.

To do this contractors used a temporary dock and maneuvered soil in all kinds of weather and conditions.

Even though the materials were planted during a year that included one of Seattle's wettest winters, the park is quickly achieving its goal as a screen, habitat and public space.

"Even though Danadjieva was under tremendous pressure to simplify things by using more straight lines, she was absolutely single minded in her realization of her vision. She surrounded herself with highly technical people who were able to communicate within the limits of construction documents," says Sullivan.

"Danadjieva imagined, communicated and then saw this project constructed." □