

HOW DOES YOUR GARDEN GROW?

Water reuse & retention gardens on a budget

By Susie Murray



The landscape transformation project at the city of Santa Rosa (Calif.) Municipal Services Center South (MSCS) building is nearing completion. The project began when the Water Use Efficiency and Storm Water & Creeks divisions teamed up

to practice what they preach, driven by goals to reduce water consumption and site runoff. At a time when common phrases in municipal planning are “That’s not in the budget” and “economic downturn,” the groups decided to do the job themselves.

Setting the Stage

In Santa Rosa, a Mediterranean climate known to gardeners as the coastal warm zone proved to be a challenge. The city experiences some of the driest, hottest and coldest temperatures in Sonoma County. Winters are wet and cool, with temperatures dipping below freezing. With average rainfall of less than 1 in. during summer months and temperatures that peak at more than 100°F, vegetation such as turf need a lot of supplemental water.

The landscape prior to project implementation consisted of 7,000 sq ft of thirsty, weed-riddled lawn, scraggly ivy and failing trees. The site’s orientation provided some great opportunities: Plants at the entrance never get direct sunlight, whereas those on the back side of the building are pummeled by intense heat all summer long. The area along the street side is shaded by trees, and the parking lot is a mix of shade and more intense sun. Envisioning a range of demonstration gardens, the design team got to work.

Breaking Ground

After the retrofit plan was



More than 300 low-water-use plants were used in the landscape transformation project at the Santa Rosa MSCS.

established, the first ground-breaking step was to dig a deep bioretention swale for a rain garden that runs approximately 250 ft—almost the entire length of the building. After the swale was filled with gravel salvaged from a nearby project and a collection of river rock donated by a nearby resident, the design team started on the lawn. The team prepared the site using a technique called sheet mulching. This is an environmentally friendly technique where rather than removing the lawn, the team blanketed it with recycled cardboard and added a 3-in. layer of hot compost, creating a blank canvas ready for planting.

A few weekends later, after the compost cooled, the design team installed point-source irrigation and planted more than 300 new low-water-use plants to complete the work.

The overarching design theme is a wave—called the “Low Water Use Wave”—and features the following design components:

- The Mediterranean garden is located along the most visible part of the new installation and is planted with an assortment of Mediterranean ornamentals in a wave pattern, with grasses as the focal point. In a breeze, the swaying plants are a sight to behold.
- The rain garden, a low impact development feature, was designed to collect rainwater from the roof and allow the water to infiltrate before running off into the storm drain. In December 2012, the first winter season since installation, Sonoma County was hit with unusually heavy rains, putting the new rain garden to the test. MSCS noted that it worked perfectly: Little, if any, water made it to the street, and the garden itself is an attractive part of the layout.
- The native garden is located along the southwestern side of the building, which is unprotected year round. During the winter months, it is subject to occasional frosts, and in the summer receives direct sunlight intensified by the surrounding pavement most of the day. The team chose plants designed by nature to survive the most severe

local conditions and the plants are doing well.

- The recycled component area includes everything from pipes to planters. In the design phase, the team wanted to include recycled materials. They scouted out some old culvert pipes that had lain unused for more than 20 years. The entrance to the building now is home to culvert pipe planted with *Chondropetalum tectorum* (common

name Cape Rush). Vertically installed, these gray concrete pipes are simple, striking and appropriate, as the building is home to utilities and public works employees—no-nonsense public servants who unflinchingly support environmental stewardship without fanfare.

- Parking lot trees often are set up for failure and this site was no exception. All of the planting strips were either too small or planted with the

B-10
Rear Reel

NEW!
F-10
Front Reel

AQUATECH
Combination Jet/Vac System
A Product of Hi-Vac Corporation

The Difference Is REEL!TM

Whether you prefer a Rear Reel design or Aquatech's new Front Reel design, choose the sewer cleaning option that's right for you.

Industry Leading Power & Efficiency
Operator Friendly • Simple Maintenance
Ergonomic Design • Global Sales & Support

1.800.752.2400
www.aquatechinc.com

The Global Leader in Combination Jetting and Vacuum Systems

Scan for video on our New F-10

AQUATECH **O'BRIEN** **UltraVac** **Hi-Vac**
A Product of Hi-Vac Corporation A Product of Hi-Vac Corporation A Product of Hi-Vac Corporation A Product of Hi-Vac Corporation A Product of Hi-Vac Corporation



When breaking ground, the design team used an environmentally friendly technique called sheet mulching. Instead of removing the lawn, it was blanketed with recycled cardboard and a 3-in. layer of hot compost.

Introducing Typar C-Class Geotextiles

**Strong, durable geotextiles.
Tough Over Time.**

Typar's new line of C-Class Geotextiles were built from the ground-up to meet the requirements of AASHTO M288 and provide the highest performance geotextile available to the transportation market.

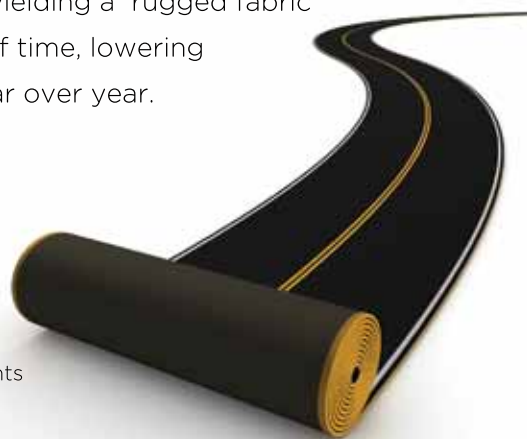
With over 35 years of field tested results, we've learned a thing or two about how to make the right product for the right application. Our heat-bonded fabrics are uniform with a high degree of isotropic strength. Typar C-Class geotextiles are permeable like a nonwoven and strong like a woven, yielding a rugged fabric that stands the test of time, lowering total project cost, year over year.

Audited by NTPEP and certified to meet AASHTO M288 requirements

Made in the USA

www.typargeosynthetics.com

A fiberweb BUSINESS



TYPAR
Geosynthetics you can trust

Write in 771

32 • STORM WATER SOLUTIONS • MARCH/APRIL 2013

wrong species of tree. Because parking is always a sensitive issue, it was not as easy as jack-hammering pavement and planting appropriate trees, so the team compromised. The team combined eight small planting wells into four larger ones and planted Valley oak trees. Valley oaks are native, not susceptible to sudden oak death, and, when established, will provide shade for the building as well as the parking lot. In areas where the parking fingers could not be made larger, the team replaced existing failing trees with a species appropriate for the environment.

- All sprayheads have been removed and subsurface drip irrigation has been installed. The makeover reduced the site's annual plant water need from as high as 230,000 gal to less than 50,000 gal. The site is irrigated with tertiary treated water piped from the Laguna Wastewater Treatment Plant.

With these gardens and practices, MSCS hopes to inspire landscaping professionals, business owners and motivated do-it-yourself-ers to reduce turf, save water by refining irrigation systems and using low-water-use plants, and clean storm water runoff by promoting infiltration with rain gardens and bioretention swales.

These demo garden projects also represent what Santa Rosa city staff is all about. Work was completed on lunch breaks and weekends with a team of more than 50 volunteers that comprised employees at all levels from three departments. The enthusiasm displayed by this ambitious group has produced a colorful new landscape requiring a fraction of the water previously used. MSCS anticipates that the project will inspire additional conversions and beautification of existing turf landscapes throughout Santa Rosa. **SWS**

Susie Murray is a water resources specialist for the city of Santa Rosa's utilities department. Murray can be reached at smurray@srcity.org.

For more information, write in 809 on this issue's reader service form on page 40.