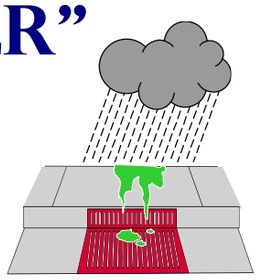
ORANGE "STORMWATER"

Protecting Orange County's Water Quality
Through Effective Stormwater Management



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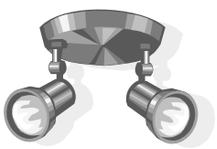
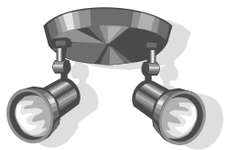


INSIDE THIS "GREEN" ISSUE



PROJECT SPOTLIGHT

LOCAL "GREEN" PROJECTS

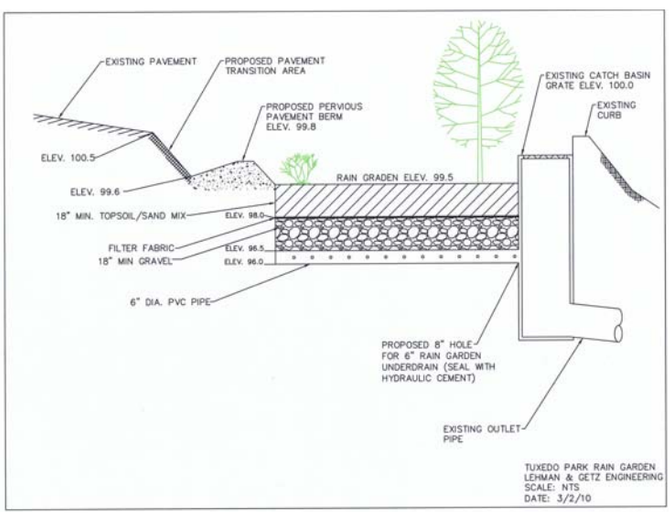
TUXEDO PARK RAIN GARDEN

by Karen Emmerich, AICP, PP
Lehman & Getz Engineering, P.C.

In February 2010, Dena Steele of the Tuxedo Park Garden Club contacted Lehman & Getz Engineering about preparing a rain garden design for Tuxedo Park's Village Hall parking lot. The Garden Club had discussed the concept of a rain garden with Kevin Sumner of Orange County Soil & Water Conservation District, and he suggested that a rain garden be constructed in the northwest corner of the Village's parking lot.

The parking lot is a large expanse of asphalt that slopes toward Little Wee Wah Lake. At the corner of the lot there is a catch basin that empties into a pipe, which discharges directly to the lake. The Garden Club recognized that runoff from the parking lot and the roof drains from Village Hall were contributing pollutants to the lake. They decided to undertake a rain garden as a demonstration project to show residents that a stormwater practice can be an effective filter for stormwater as well as an attractive addition to the landscape.

Lehman & Getz expanded on Kevin Sumner's design, and prepared a plan for a 190-square foot rain garden. The Village DPW cut the pavement in the corner of the lot, creating a pie-shaped area for the garden. Once the pavement was removed, the area was excavated so that the proper soil and underdrain pipe could be installed.



At the bottom of the rain garden is a 6" diameter perforated pipe, which transmits filtered stormwater that doesn't infiltrate into the ground to the outfall. On top of the pipe is 18" of gravel, covered by filter fabric. Above that is 18" of topsoil. Runoff from the parking area enters the rain garden at the edge of the parking lot, runs through a gravel filter* to pick up large particulates, and then into the rain garden. It filters through the topsoil into the gravel beneath, and finally, into the ground and/or the perforated pipe before it flows out to the lake. The catch basin is now available only for overflow purposes, when the garden cannot handle the volume of water coming from the parking lot and roof leaders.

* The original design called for pervious pavement to act as a filter on the edge of the rain garden, the idea being that a harder surface would be easy to clean of debris that runs off from the parking lot (tree litter, sticks, etc.), but would still allow water to pass through the media. The Village chose to substitute river jacks due to cost considerations and availability.

The Garden Club members chose native plants for the site, including Red Twig Dogwood, Joe Pye Weed, and Cardinal Flower, to name a few. They planted the garden in mid-April, and this photo was taken a week after planting.

VILLAGE OF GREENWOOD LAKE'S VILLAGE HALL PROJECT

Here is the Village Hall parking area before construction began to convert the area to pervious pavers and a vegetated swale.

At work on installing the pervious pavers.

The vegetated swale is in place.

The "Before" photo shows a generator and dumpster– they have since been moved. The generator is by the Police Department and the dumpster is now to the side of Village Hall.

The trellis is in place along one side of Village Hall and a green screen will soon be installed.

The rain garden is located right in front of Village Hall and the pervious paver sidewalk.

The Village received ARRA (American Recovery and Reinvestment Act) funds for this project which began in March 2010 and is expected to be completed by mid-September. The green infrastructure elements of the project are:

* Replacement of 15,700 sf +/- of impervious surface with pervious surface and landscaping (sidewalks and parking areas)
* Rain garden to treat roof runoff
* Vegetated swale to treat runoff from driveway area and encourage infiltration of stormwater
* Native plants used throughout the landscaping plan, prepared by Karen Arent, Landscape Architect
* Trellis and Green Screen alongside of Village Hall to reduce heat island effects from Village Hall and to provide an aesthetic background
* Used Unilock Eco Priora pervious pavers for walkways and parking area

Design by Lehman & Getz Engineering and Karen Arent, Landscape Architect.
Contractor is DTM Development from Monroe.