Soak Stories

ANOTHER PIECE OF "HISTORY" AT THE WOODMAN INSTITUTE MUSEUM IN DOVER

The Woodman Institute Museum serves the Dover, NH community through its mission of promoting and preserving art as well as local and natural history. In keeping with their mission, the Woodman Museum partnered with the Soak Up the Rain (SOAK) Great Bay program to restore a different type of natural history on the site – the natural hydrology.

Volunteers pose with the completed rain garden after a successful day of playing in the dirt.

Hydrology describes the way rain water moves over and through the earth. Historically, when rain fell on the site of the Woodman property, it would soak into the ground. As roads were paved and buildings were constructed, however, these new surfaces prevented the rain from soaking into the ground. Instead, it would run off of the site, resulting in "stormwater" that was directed through ditches and pipes and into the Cocheco River.

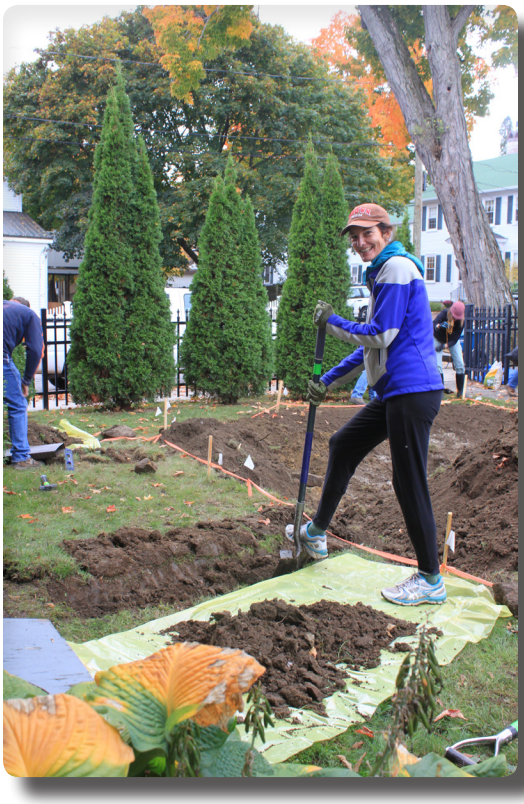
This fall, the Woodman Institute, the Great Bay Stewards, and a tribe of thoughtful volunteers worked together to install a rain garden at one of the museum's buildings. The rain garden collects runoff from a section of the main building roof, and allows it to soak into the ground to reduce the amount of stormwater flowing into the river.

A WET BASEMENT AND A POLLUTED BAY

A wet basement in the main building of the Woodman Museum prompted museum staff to replace the old and failing gutters on the roof. At the same time, the Soak Up the Rain Great Bay program was looking for a site with high visibility to install a rain garden to serve as a demonstration and reduce runoff into the river. The timing could not have been better for the two groups to work together on a single project that would achieve the multiple benefits of reducing water in the museum's basement and reducing stormwater flowing into the Cocheco and eventually Great Bay.

BUILDING A RAIN GARDEN

With new gutters installed, it was easy for the SOAK Great Bay Team to direct rain from the museum's roof into a rain garden. The rain garden, a sunken, flat-bottomed perennial garden, was carefully designed to absorb rain water from the roof as well as fit in with the museum's early 20th century history. To achieve

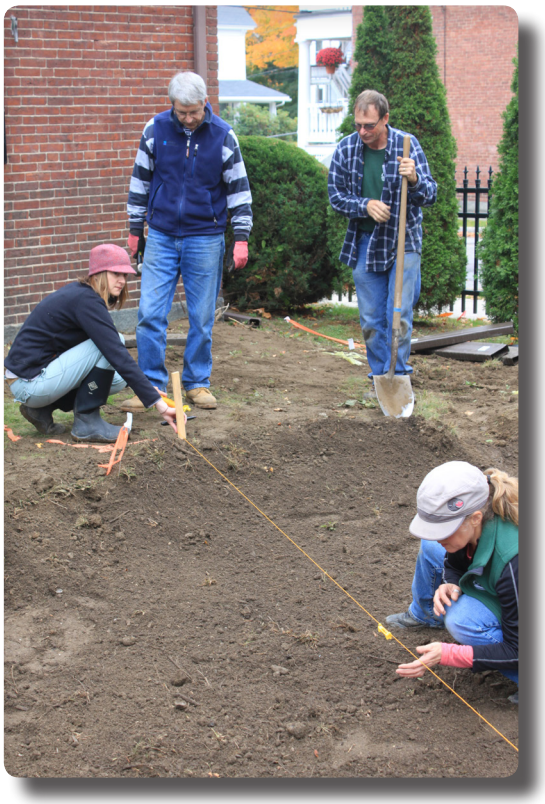


A volunteer digs trenches to bury the downspouts that carry roof runoff into the rain garden.

this, the SOAK Great Bay Team called upon UNH Cooperative Extension Specialist, Master Gardener, and horticulturist, Cathy Neal. Cathy developed a planting plan for the rain garden that incorporated historically appropriate plants that are also able to tolerate the fluctuating wet and dry conditions of a rain garden. The rain garden was sized to accommodate a storm causing one inch of rain. In New Hampshire, 90% of storms produce one inch or less of rain. Three gutter downspouts drain the roof into the garden. Buried extensions on the downspouts allowed the garden to be placed ten feet away from the building to help prevent water from seeping into the basement.

Under the threat of heavy rains, volunteers from several groups, including the Great Bay Stewards and The Stewardship Network, were on hand to shape the garden, back fill with loam and compost, plant, and mulch. A berm was built on the down-slope sides of the garden to ensure a flat-bottomed shape and a consistent depth. A reinforced overflow outlet was built to safely allow stormwater from larger storms to exit the rain garden without damage. The volunteers learned the basics of creating a rain garden while lending a hand to benefit the museum and Great Bay.

The result is a large and beautiful garden full of plants that are hardy enough for a rain garden's changing conditions and will provide food and habitat for pollinators, such as Siberian and blue flag irises, red milkweeds, brown eyed susans, marsh marigolds, winterberry and dogwood shrubs, and several ferns and grasses. The garden was immediately put to work as showers moved in just as the site clean-up was completed.

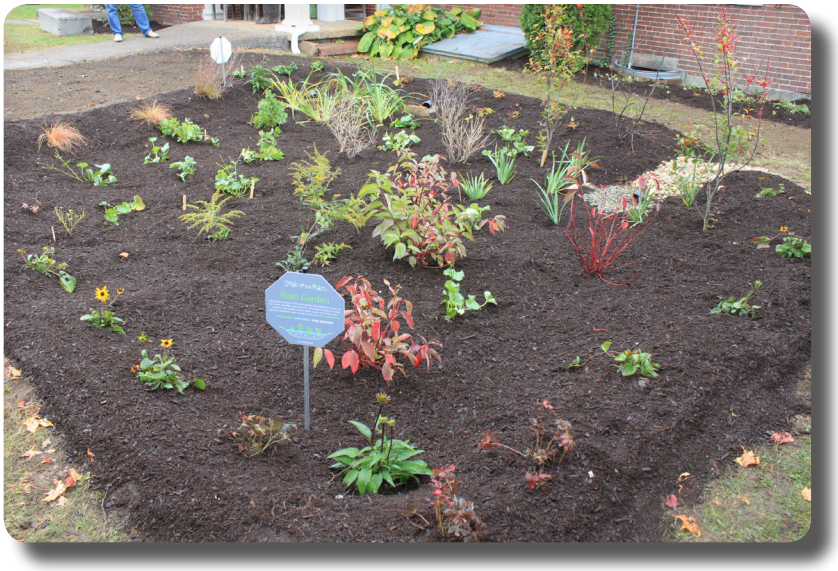


DES SOAK staff work with volunteers to make check the depth of the garden and make sure the bottom is level.

LESS WATER AND POLLUTION REACHING THE BAY

Staff at the Woodman Institute Museum report that the rain garden is working well: the basement is staying drier and the garden is soaking up the rain. Directing the stormwater from the roof into the rain garden is estimated to prevent over 19,367 gallons of runoff, 3.45 pounds of sediment, 0.01 pounds of phosphorus, and 0.2 pounds of nitrogen from reaching the

Cocheco River each year. This helps prevent flooding, eases stress on the underground pipes and catch basins that make up Dover's stormwater system, and results in a cleaner Cocheco and a cleaner Bay.



Completed rain garden after October installation.

Soak up the Rain (SOAK) Great Bay is a pilot, residential stormwater management program under NHDES's voluntary SOAK NH program. SOAK Great Bay is focused on providing assistance to property owners in the Great Bay watershed to reduce stormwater runoff and pollution to the bay. In August 2013, the Great Bay Stewards partnered with NHDES to expand their knowledge of residential stormwater management, receive hands on training to identify potential stormwater issues, and assist homeowners with installing solutions.

The Stewards are currently searching for additional homeowners willing to have their property considered for a SOAK project.
Contact them at:
The Great Bay Stewards
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