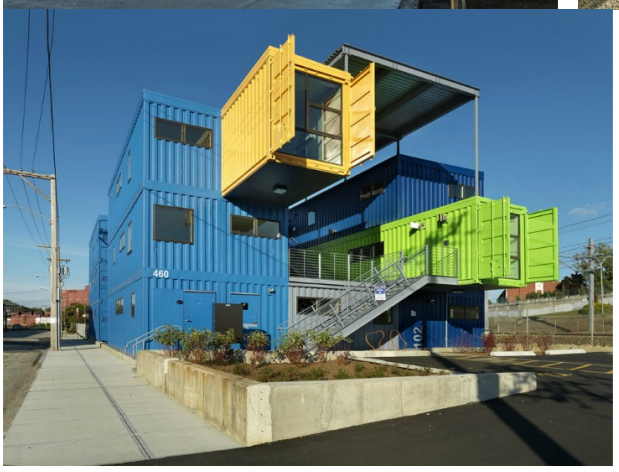
GREEN INFRASTRUCTURE IN PROVIDENCE, RI

The Box Office

From http://web.uri.edu/riss/the-box-office/ and http://www.morrisbeacon.com/media/portfolio-projects/implementation/box-office/box%20office.pdf:

At the Box Office, a bioretention system was integrated to filter and subsequently reduce stormwater runoff from the largely impervious brownfield site. The system collects runoff, allowing it to infiltrate back into the ground where, through the process of phytoremediation, vegetation contributes to the treatment and removal of pollutants and filtration of the water. Strategically sited and designed bioretention systems filter and infiltrate over 90 percent of the site's annual stormwater runoff volume.



The Steel Yard

From http://web.uri.edu/riss/the-steel-yard/ and http://www.asla.org/2011awards/183.html:

The Steel Yard's landscape and drainage systems are woven into the site to minimize contaminated soil export while also naturally filtering and infiltrating stormwater to reduce runoff to Providence's combined sewer system. Through a system of "stormwater moats" (bioretention swales) and permeable pavements, the Steel Yard functions to capture, transport, store, and ultimately infiltrate 90% of the annual rainfall on site. The moats were planted with water-loving

species not only to filter stormwater and prevent erosion, but also to establish vegetation across the site in areas not conflicting with events or fabrication.

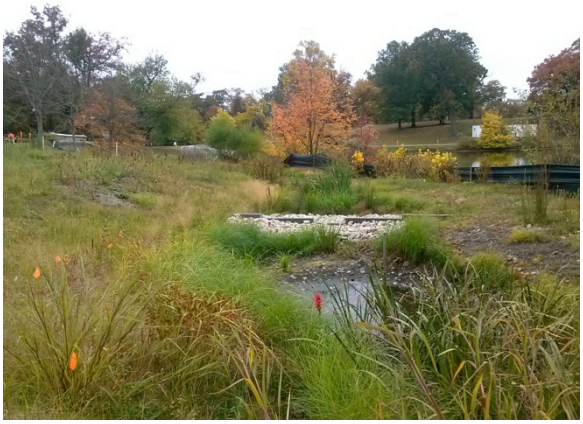
Southside Community Land Trust

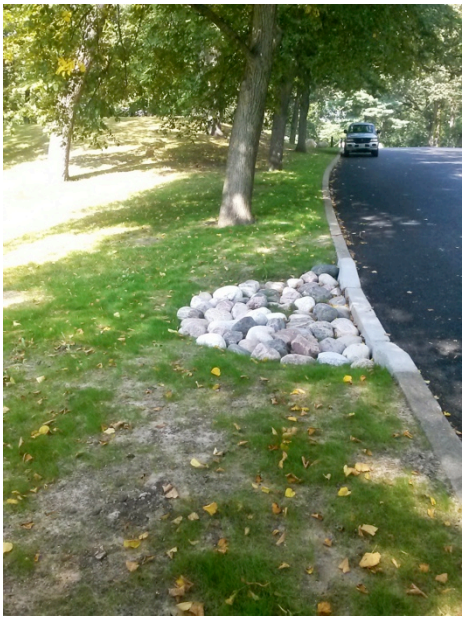
From http://www.epa.gov/region1/eco/uep/ri/success.html:

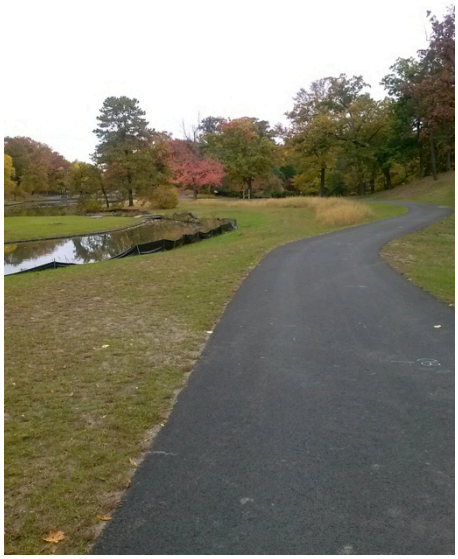
A 55-gallon recycled industrial barrel installed at the Southside Community Land Trust's Somerset Community Garden by students from Feinstein High School in Providence. Students installed the gutter system on the shed, converted the industrial barrel to a rain barrel and built the wooden stand to increase water pressure.

Roger Williams Park

Rain gardens, retaining walls and bioswales capture stormwater runoff in Roger Williams Park.



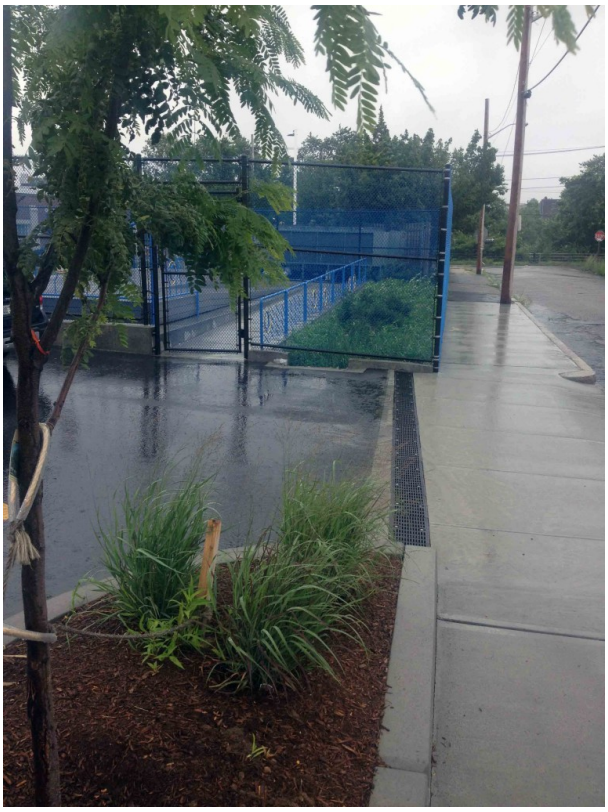




Paul Cuffee School

From http://www.morrisbeacon.com/blog/?p=473:

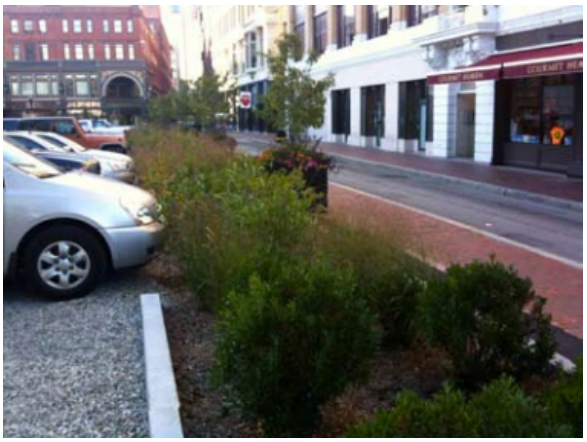
The Paul Cuffee School on Promenade Street in Providence sits near the Woonasquatucket River (the river is behind the railing just past the stop sign in the bottom photo). This bioretention system directs stormwater into an area of plants and gravel.



Grant's Block

From http://web.uri.edu/riss/grants-block/ and http://www.morrisbeacon.com/media/portfolio-projects/implementation/grants-block/grants%20block.pdf:

The Grant's Block Parking Improvement project retrofitted an existing parking lot in Providence's urban core with sustainable stormwater management techniques, maintaining parking capacity and improving quality of place adjacent to several high-profile new businesses in the neighborhood. The context-sensitive site design incorporated permeable parking spaces that encourage stormwater recharge, as well as drywells that treat and recharge surface runoff. The project also features bioretention pockets along the parking perimeter, which not only provide stormwater function by filtering and infiltrating runoff, but also introduce greening aesthetics in the urban core.



Save the Bay Center

From: http://web.uri.edu/riss/save-the-bay-center/#more-482 and http://usa.sarnafil.sika.com/downloads/repository/submittal/literatures/save_the_bay_pro_prof_08_08_lo_res.pdf:

The Save The Bay Center, the headquarters of “Save The Bay”, incorporates a green roof as well as several other stormwater and energy saving technologies. The plantings on the roof capture and absorb rainwater. Any remaining stormwater runoff from the rooftop flows to a bermed area along the north side of the building where it is absorbed by plants or evaporates. The entire site is located over a capped brownfield. This limits the ability of vegetated areas and permeable pavements to infiltrate rainfall, as the depth to the impervious cap is shallow. However, bioretention swales and ponds are used to filter and treat runoff from larger storms.

The Bay Center parking lot is comprised of four small, flat, crushed bluestone parking lots that are surrounded by small bioretention ponds and swales. Since the crushed stone has limited permeability, runoff from the parking areas enters the series of bioretention basins, which eventually flow to the largest basin, which is lined with an impermeable membrane. Here, water that is not absorbed by plants eventually evaporates, with overflow directed to a constructed wetland. A reserve parking area is maintained as a grassy lot. Pervious netpave pavers are installed at the entrance and walkways surrounding the building. These interlocking grids are filled with sand and gravel so as to allow water to infiltrate.