Green Infrastructure Fact Sheet
Tree Boxes and Tree Trenches

ILLUSTRATION: Jeffery Mathison

Tree boxes and tree trenches are types of bioretention systems. These systems collect and filter stormwater through layers of mulch, soil, and plant root systems where pollutants are retained, degraded, and absorbed. Tree boxes and tree trenches are generally designed to manage stormwater runoff from frequent, small-magnitude storms, but may provide stormwater detention from large storms or prolonged periods of rainfall.

For more information:

Green Infrastructure Primer

www.de.gov/greeninfrastructure

LOCUST STREET TREE TRENCH, WILMINGTON The Locust Street tree trench utilizes adjacent public open space to divert storm water flow, while capturing street flow in the trench itself.

PHOTO CREDIT: Delaware Center for Horticulture

Benefits:

- Remove pollutants and nutrients from stormwater runoff by filtering them through the soil and absorption by the tree
- Reduce stormwater runoff by collecting and retaining water that would otherwise be discharged into sewer systems or surface waters of streams or rivers
- Increase tree canopy and enhance the aesthetic value of the community

Site and Design Considerations:

- Bioretention systems are not suitable in areas with high water table or within designated floodplains.
- Tree boxes and tree trenches should be located to avoid interference with underground utilities, particularly water and sewer lines.

Maintenance:

- Provide regular irrigation and weed control until trees are well established.
- Prune trees once they are established to prevent safety hazards to pedestrians, overhead utility lines, or adjacent buildings.
- Remove any accumulated trash or debris.
- Monitor vegetation for damage by insects and other pests.
- Control invasive species.
- Remove trees that are in decline.

Resources:

Delaware Department of Natural Resources and Environmental Control Post Construction Stormwater BMP Standards and Specifications
http://www.dnrec.delaware.gov/swc/pages/sedimentstormwater.aspx

New Jersey Cooperative Extension Green Infrastructure Practices: Tree Boxes
https://njaes.rutgers.edu/pubs/fs1209/

City of Lancaster Green Infrastructure Plan Fact sheet – Tree Trench
http://www.dcnr.state.pa.us/cs/groups/public/documents/document/dcnr_004822.pdf