

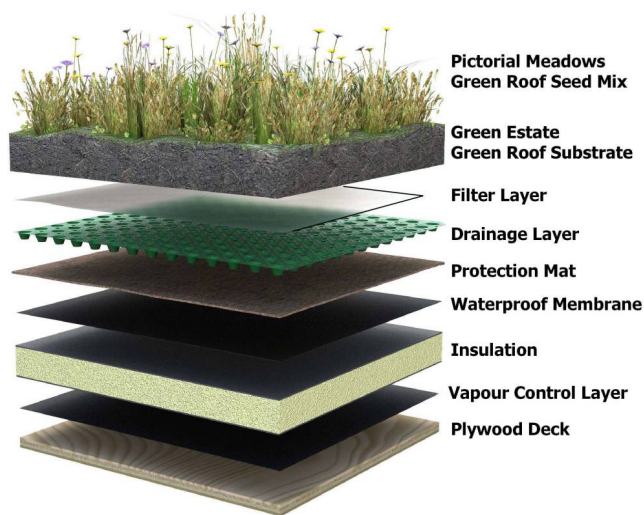
Stormwater Management | Methods to Reduce Stormwater Flow

Some simple technologies for minimizing stormwater runoff from buildings and paved surfaces include the installation of green roofs, use of pervious pavement or pavers instead of traditional concrete or asphalt, maintaining natural vegetated buffers in place, and installation of infiltration trenches.

GREEN ROOF

A green roof is a building roof that is partially or completely covered with vegetation and soil, or other type of growing medium. It can be applied to new construction or retrofitted to existing construction. A typical green roof includes vegetation planted in a substrate over a drainage layer and a root barrier membrane. Some green roofs are equipped with stormwater detention tanks with a recirculating system that allows for watering of the media during dry periods.

Photo credit: Roof Me



A green roof system is typically comprised of as many as nine layers. These include structural support, a vapor control barrier, thermal insulation, waterproofing, drainage, a filter membrane, growing medium and finally the vegetation itself.

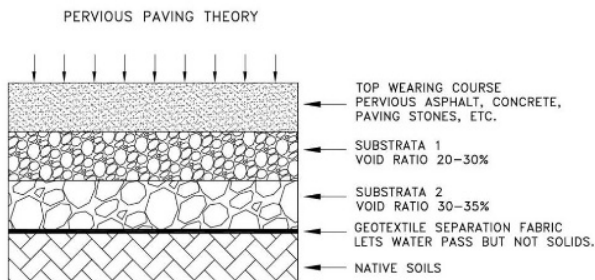
Illustration: greenerheights.wordpress.com

PERVIOUS PAVEMENT

Permeable pavement consists of a porous surface, base, and sub-base materials which allow penetration of runoff through the surface into underlying soils. The surface materials for permeable pavement can consist of paving blocks or grids, pervious asphalt, or pervious concrete. These materials are installed on a base which serves as a filter course between the

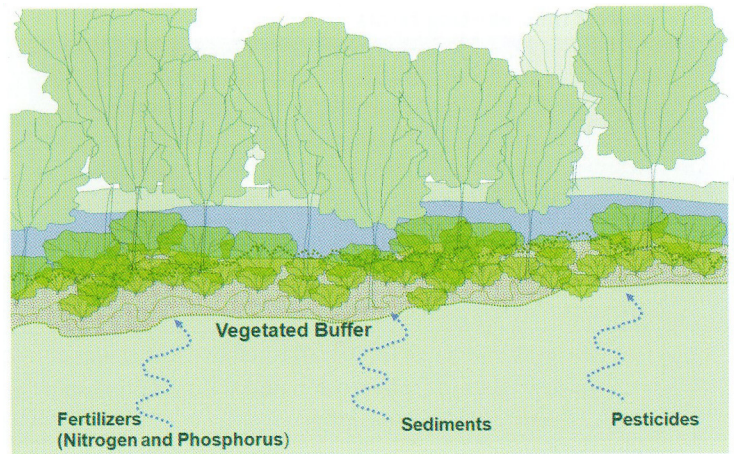
Pavers can provide an attractive alternative to concrete and asphalt driveways, walkways, and patios.

Photo: LakeGeorgeAssociation.org



VEGETATED BUFFER

Vegetated buffers are areas of natural or established vegetation allowed to grow with minimal to no maintenance. Natural, undisturbed buffers are particularly desirable along shorelines of waterbodies and wetlands, as well as along connecting habitat corridors. Buffers reduce the velocity of runoff, promote groundwater recharge, filter out sediments and contaminants, and provide shade to reduce the thermal impacts of runoff to receiving waters. Buffers also provide habitat for wildlife.



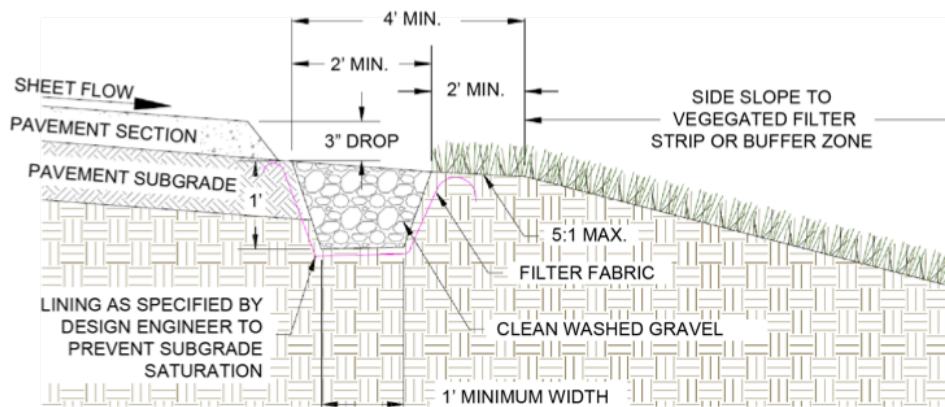
VEGETATED BUFFERS AND DETENTION SYSTEMS CLEAN STORMWATER RUN-OFF BEFORE IT ENTERS THE RIVER

INFILTRATION TRENCH

An infiltration trench is a stone-filled excavation used to temporarily store runoff and allow it to infiltrate into surrounding, natural soil. Typically, runoff enters the trench as overland flow after pretreatment through a filter strip or vegetated buffer. An infiltration trench is suitable for treating runoff from small drainage areas (less than 10 acres). Installations around the perimeter of parking lots, between residential lots, and along roads are most common. Infiltration trenches can also be incorporated along the center of a vegetated swale to increase its infiltration ability.



An infiltration trench intercepts and temporarily stores stormwater runoff and promotes infiltration. Photo credit: arlingtonva.us



Source: VA DCR, 2013

