



soakage
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are
regulated
to
prevent
pollution

SOAKAGE TRENCHES

(infiltration trenches)

Soakage trenches are shallow lined trenches backfilled with sand and coarse stone. The trench surface can be covered with grating, stone, sand, grass or similar vegetation. They accept stormwater runoff from roofs, parking lots, and other impervious surfaces, and can be placed under any ground-level porous surface such as yards and landscaped areas. Stormwater runoff flows through an inlet pipe into an underground concrete collection box that removes sediment and debris (for roof runoff a washer or equivalent technology - above or below ground - may be used). The runoff then enters the trench through a perforated pipe that allows it to drain through the backfill material and soak slowly into the underlying soil. It is usually not necessary to have an overflow mechanism to a secondary disposal or conveyance system.

Soakage trenches can pollute groundwater if not properly sited, designed, and operated. They are regulated under the federal Underground Injection Control (UIC) program. Contact the Oregon Department of Environmental Quality for requirements.

Benefits

Soakage trenches reduce runoff flow rate, volume, and temperature and recharge groundwater. With a sufficient amount of sand or soil for filtration, they may be used to meet pollution reduction requirements.

Vegetation

Grasses, small plants, or shrubs can be used over the soakage trench. Trees or other deep-rooted plants may damage the piped conveyance system.

Maintenance

Inspect soakage trenches periodically and after major storm events to ensure proper operation and structural stability. Maintenance needs include controlling erosion and debris accumulation; cleaning, repairing, or replacing the piping and fabric

filter as needed; removing sediment from the silt basin or collection box, and replacing clogged aggregate. With proper construction and maintenance, a soakage trench can last up to 30 years.

Cost

Soakage trenches usually cost between \$20 and \$30 per cubic foot.

Safety and Siting Requirements

- Soils must have a tested infiltration rate of at least two inches per hour. The bottom of the trench must be at least four feet from the water table or any rock layer, hardpan, or other impervious underground layer.
- A soakage trench, sized to City of Portland standards, can serve a maximum of 15,000 square feet of impervious area.



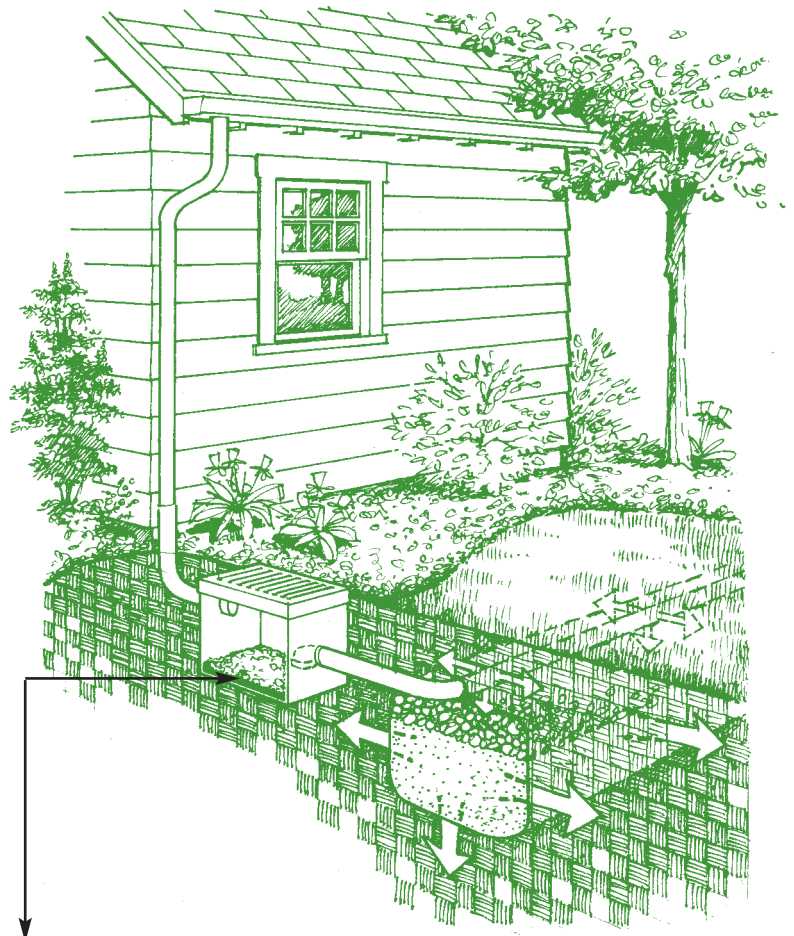
- Install soakage trenches on slopes of less than 20%.
- Place the soakage trench at least 10 feet from the building foundation or basement and five feet from any property lines.
- Install the trench in native soil level with and parallel to the site contour.
- Portland's Stormwater Management Manual provides details on sizing, placement and design of soakage trenches.

Permits

- All soakage trenches, with the exception of those that drain residential rooftops only, must be registered with the Oregon Department of Environmental Quality before receiving any City permits.
- The City's Bureau of Development Services (BDS) must approve soakage trench siting and sizing.
- New or altered plumbing connections require a plumbing permit from BDS.
- For soakage trenches sited on slopes of greater than 20%, City approval requires a stamped and signed geotechnical report addressing slope stability.

Examples

Because they are subsurface facilities, there are no installed examples to view.



note:

Silt basin/collection box or an equivalent washer is optional but recommended for roof runoff.

Silt basins are highly recommended for all other surfaces.



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www.cleanriverspdx.org or 503-823-7740

For Clean River Rewards information www.CleanRiverRewards.com or 503-823-1371

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