Bioswales

Bioswales are designed to remove pollutants and silt from surface runoff water. They consist of a marshy runoff course, gently sloped sides, and are filled with plants, compost and, in some cases, rocks.

The bioswale removes pollutants and silt by maximizing the time water spends in the swale, which aids in trapping and filtering pollution.

One of the most common locations for a bioswale is next to a parking lot. The parking lot collects pollution from cars when rainwater flushes into a bioswale. The bioswale then filters the water and releases cleaner water into the storm drain system or a local waterway.

Rain Gardens

OSU has numerous rain gardens for your viewing pleasure. The aesthetic is one of the many benefits of rain gardens but the main function is their impact on our living environment!

Rain gardens are vegetated depressions that catch rain runoff from impervious areas such as roofs, driveways, walkways, parking lots, and even some compacted lawn areas.

The rain runoff is captured in the gardens and allowed to soak into the soil. This prevents surges of rain water from flowing into storm drains or local streams which causes erosion, water pollution, flooding, and diminished ground water. The essential purpose of a rain garden is to improve the water quality in nearby bodies of water.

Green Roofs

Green roofs serve numerous purposes. Green roofs absorb rainwater, provide insulation, create a habitat for wildlife, and decrease urban air temperatures.

Reducing storm water runoff is a major benefit to adding a green roof to any building: a study presented at the Green Roofs for Healthy Cities Conference in June of 2004, cited by the EPA, found water runoff reduced by over 75% during storms. The rainwater runoff is both filtered of heavy metals and pollutants, and temperature moderated.

Green roofs can also extend the lifespan of a roof membrane by providing protection from harmful ultra-violet radiation and physical damage. Green roofs also offer a strong thermal barrier which keeps heat in and reflects and absorbs solar radiation during the summer resulting in lower energy usage year round.
Rain Collection

Collected rainwater is used in three locations on campus. The largest rainwater collection facility at OSU is at Kelley Engineering, where rainwater is collected from the rooftop. It then flows through infiltration gardens around the perimeter of the building, is stored in a 16,000 gallon tank and used for the building's toilet flushing.

Another rainwater collection tank on campus is at the OSU Pride Center. The Pride Center's collection tank was designed by an engineering student using an old composting bin. Rainwater is used for watering plants around the Pride Center’s permaculture garden.

Sewer Access Structure

A sewer access structure works to collect the pollutants that normally would flow directly into local streams and vegetation. The sewer access structure screens, separates and traps pollutants. The filtered rainwater then flows into the local water system.

Permeable Pavement

Permeable paving can be created using a number of different techniques, but the fundamental idea stays the same throughout: infiltration. Permeable pavement allows rainwater to flow through and into a series of subbase materials to suspend any solids and pollutants from the runoff before releasing the water back into the ground water system.

Normally, permeable paving is used on a path with bricks as pictured below. However, Oregon State University has begun implementing porous asphalt in parking lots. The surface looks just as any other parking lot would, but with a different mix of asphalt which allows water to flow through and infiltrate into the ground.