Sustainable Stormwater Management
When it rains, water runs over pavement and other hard surfaces, picking up pollutants. Sustainable stormwater management mimics natural conditions by allowing rain to be filtered by vegetation and soak into the ground. This reduces the need for infrastructure to convey and clean stormwater before it enters waterways.

Pollutants In Stormwater

**Particles** - From vehicle exhaust and other sources, unburned hydrocarbons, soot, dirt, leaves, etc.

**Vehicle Wear and Tear** - Copper from brake pads, zinc, cadmium, rubber from tires, lead weights and metal bits.

**Vehicle Spills, Leaks and Illegal Dumping** - Liquids with dissolved metal pollutants, motor oil, antifreeze and other petroleum products, solvents and dry materials that can release pollutants like phosphorus and nitrogen.

**Animal Waste** - Fecal bacteria

**Garden Products** - Chemicals from fertilizers, herbicides and insecticides.

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There are a variety of creative and effective ways to manage stormwater onsite to help restore beneficial natural processes, enhance property, and save money.

Stormwater that isn't properly managed flows over streets and other hard surfaces washing pollutants into rivers and streams. Directing runoff to natural systems allows stormwater to soak into the ground to reduce volume, while plants and soil filter pollutants and improve water quality.

**Green Streets** manage stormwater close to its source. They use soil and vegetation to slow stormwater, filter pollutants, and let water soak into the ground.

**Stormwater planters** are landscaped chambers that collect and filter stormwater runoff. Infiltration planters have an open bottom that allows water to soak into the ground. Flow-through planters have an impervious bottom.

**Ecoroofs** are lightweight, low-maintenance vegetated roofs that soak up rain and reduce stormwater runoff. Ecoroofs naturally insulate buildings to reduce energy use and also reduce the heat island effect that warms the air over cities.

**Trees** help reduce stormwater runoff volume and flow rate. Mature trees intercept at least 30% of the rainwater that falls on the canopy. Trees also filter stormwater, provide wildlife habitat, and cool the air and stormwater.
Walking Tour

1 Mature Canopy Trees - PSU Park Blocks
Portland's Park Blocks are the City's oldest parks. Landowner and tanner Daniel H. Lownsdale donated the land for public use in 1852. The City began landscaping in 1877 by planting 104 Lombardy poplars and European and American elms. There are now over 300 trees in the South Park Blocks. In 2004, PSU students estimated that South Park Block trees contribute $3.4 million dollars in aesthetic and environmental value to the city. Other researchers have found that a mature tree, such as one of the large elms in the Park Blocks, can absorb up to 350 gallons of stormwater a year. The Park Blocks show how visionary thoughts can make significant impacts in the future.

2 Ecoroofs over Cob structures
Students built these from refurbished local materials and cob, a mixture of sand, clay, and straw similar to adobe. The project features an herb garden, permaculture garden, cob oven, dome shelter, and two ecoroofs. Food for Thought Café will use the oven and garden. Students use the dome structure to study natural building materials and structural design.

3 Roof Garden - Native American Center - 71 SW Jackson Street
The Native American Student and Community Center is a place for Native Americans throughout the region to gather, celebrate cultural traditions and discuss issues facing their communities. Tribal medicinal and ceremonial native plants in a "Sky Catcher" rooftop garden add beauty and insulation to the building while capturing and treating stormwater runoff. The roof garden is open to the public and is ADA accessible.

4 Creative Downspout Disconnect and Stormwater Planter
Stephen E. Epler Hall - SW 12th and Montgomery
The plaza outside Stephen Epler Hall demonstrates an artful and interesting stormwater management system. Roof runoff from the building flows to river-rock splash boxes, then into granite block lined channels, or runnels conveying stormwater to a system of vegetated stormwater planters. The runnels also collect runoff from surrounding pavement and planters from the King Albert Hall roof. The planters filter stormwater before it collects in an underground storage vault. After additional sand and UV filtering, the water is pumped into the sanitary system for toilet flushing on the first floor of Stephen Epler Hall. Some of the water irrigates the landscape around the building. The system saves over 100,000 gallons of potable water each year.

5 Green Street
SW 12th Avenue between Montgomery and Mill Street
When it rains, street runoff that isn’t properly managed carries dirt, oil, chemicals and other pollutants into rivers and streams. Four infiltration planters on SW 12th show a more natural stormwater management approach. Stormwater flows into the planters where vegetation and soil filter pollutants before it soaks into the ground.

6 Stormwater Flow-through Planters
Helen Gordon Child Development Center - SW 12th and Mill and SW 13th and Market
Stormwater from the Center’s outdoor playground drains to a flow-through planter on Mill Street next to the parking garage. The planter at the Center entrance on 13th manages roof drainage from the building. These planters are examples of effective stormwater management in dense urban areas.

Points of Interest
A Naturescaped planting strip
10th and Montgomery
Naturescaping is landscaping with native plants, which require less water and little or no fertilizers or pesticides.

B Kiosk w/ Ecoroof - moves around campus
PSU students built this kiosk to provide a place for students to exchange information and to demonstrate the benefits of an ecoroof.

C Community Garden - 13th and SW Mill
PSU tore down an old apartment building on this site to make way for a garden that is an outdoor growing, learning, and community space for PSU students. The project removed impervious area and replaced it with soil and plants that absorb rainwater.

Nearby Ecoroofs - No public access
E1 Broadway Building, 621 SW Jackson Street
E2 Hamilton West Apartments, 1212 SW Clay Street
E3 Mosaic Condominiums, 1400 SW 11th Avenue
E4 Museum Place Lofts and Townhouses, 1030 SW Jefferson Street