

Rain Gardens for the Disconnected Downspout

What they are and how to build one

What is a Rain Garden

- A simple way to manage stormwater from a roof or other hard surface
- Filters pollutants, slows runoff and reduces pressure on sewer infrastructure
- Shallow depression filled with plants tolerant of periodic flooding
- Water drains within 24-36 hours keeping mosquitoes from breeding

Find a suitable location

- 6' – 10' from basements and 2' from crawl spaces or slab foundations
- 5' from neighboring property lines
- 3' from sidewalks and retaining walls
- Do not dig into the root zones of existing trees
- Specifications may differ outside Portland City Limits
- Do not site in naturally low spots where water does not drain
- Not compatible with septic systems or drain fields
- Not recommended for slopes greater than 10% in slide prone areas
- Permits may be required for large projects, near wetlands, floodplains or open water
- Some jurisdictions require permits to disconnect your downspout or install a rain garden. Check with your local building department

Sizing and Drainage

- At least 10% of the square footage of roof section or other impervious surface
- Do a perc test to determine infiltration rate of water - 2" per hour is recommended
- Provide an area for water to overflow
- Increase holding capacity by amending soils with compost
- Improve drainage by adding drain rock under the surface

Construction

- Side walls should slope gently - a low bowl shape is ideal
- The depth can be as little as 6" or as great as 12"
- Add a "splash stone" at the inlet to reduce erosion
- Place river rock near the overflow to filter silt and disperse the water
- A drift of river rock will add interest when the facility is dry
- Use soil from the hole to assure positive drainage away from the house
- Protect from compaction during and after construction.
- Call for a utility locate before you dig. Dial 1-800-332-2344 or 811

Plants

- Choose wetland plants that tolerate periodic flooding like rushes and sedges
- Plants at the top of the depression will be drier and have the best drainage
- Consider winter interest plants like red twig dogwood or willow
- Remember that rain gardens are dry in the summer, so plants must be drought tolerant

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Maintenance

- Water new plants for the first 2-3 years until they become established
- Clean away accumulated leaves and that may fill up the depression
- Mulch as needed to prevent erosion, control weeds and replenish organic matter

Resources and more information

- Receive up to 100% discount on stormwater charges in the City of Portland through **Clean River Rewards**. Publications and technical assistance may be found at: www.cleanriverrewards.com
- Find **sample plans of rain gardens** in various locations including plants at: www.welcometherain.org
- Newly updated City of **Portland's Stormwater Management Manual** Of particular interest is Chapter 2 on Stormwater Facility Design. The facility most resembling a rain garden in the manual is the "Vegetated Infiltration Basin". The specifications for a residential rain garden within the city limits are not quite as stringent as those listed for commercial properties, as no permit is required, and the overflow only needs to be directed onto the surrounding landscape. REQUIREMENTS MAY DIFFER OUTSIDE OF CITY OF PORTLAND. www.portlandonline.com/bes/index.cfm?c=35122
- Interactive map of **Oregon Landslide areas** <http://www.oregongeology.org/sub/Landslide/Landslidehome.htm>
- The **Portland Plant List** includes lists of native, invasive and nuisance plants. Great descriptions of natives and their habitats available online at: www.portlandonline.com/Planning/index.cfm?a=59039&c=45132
- In Washington County and the Tualatin River Drainage area, the Stormwater Management Utility is **Clean Water Services**. Their website is: www.cleanwaterservices.org
- **Clean Water Hero Program** through Clean Water Services provides up to three hours of free on-site technical assistance to help you create a sustainable stormwater landscape www.cleanwaterservices.org/EducationAndOutreach/CleanWaterTips/CWHProgram
- Find out more about rain gardens or register yours and get a free sign at the **East Multnomah Soil and Water Conservation District**: <http://emswcd.org/raingarden>
- Other resources out of state include: www.raingardens.org and www.raingardennetwork.com

Disclaimer: The information in this handout is provided only as guidelines. Every site is different and not all are suitable for rain gardens. Inquire with your local planning department to see if permits are required. Contact a professional soil engineer or landscape architect if you have any concerns about slope or the stability of your soil. Plan-it Earth Design is not liable for property damage due to inappropriate installation of rain gardens.