Activate Your Landscape with Passive Rainwater Harvesting

Landscaping with CO Native Plants Conference 2018

PASSIVE Rainwater Harvesting Techniques:

Swales – convey (move water through an area)
Berms – microbasins (retention vs. detention)
Terraces – stepped area to slow and distribute water
French Drains – below ground
Bioinfiltration Gardens/Rain Gardens:

- Use plants, soils, mulch and microbes to slow and treat stormwater runoff
- Modeled after natural ecosystems
- Keep water onsite for use AND
- Effectively reduce heavy metals, nutrients, bacteria and other pollutants AND
- Protect local streams and lakes AND
- Replenish groundwater supplies AND…

How to Plan Your Rain Garden:

- Locate in an area where rainwater runoff naturally occurs
    - Downspout
    - Driveway/sidewalk
- AVOID underground utilities! (water/electric, septic, gas)
    - Call 811 (free)
- Minimum 10 feet from house
- Minimum 35 feet from septic system
- 50 feet from water wells
- Do not place directly under trees
- Steep slopes are not ideal
- Consider where overflow will go (neighbor's yard, street OR into another rain garden)
- Size and shape will depend on site
- If you have a large area (over 300 square feet), it's typically easier to create several small, rather than one large
    - Bathtubs vs. Pool
- Plan to capture runoff from 1/2-inch rain event
- If water stands for more than 24 hrs, site is not appropriate

Determine Necessary Depth:

- Dig a hole ~ 8" x 8" and fill with water
- Measure initial water height with ruler

Deryn Davidson, CSU Horticulture Extension Agent, Boulder County – ddavidson@bouldercounty.org

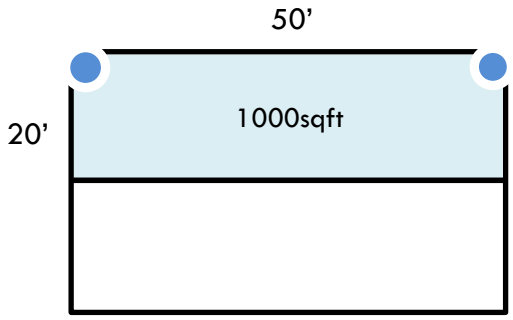
- After 4 hrs, measure new water depth and calculate change (infiltration rate)
    - Clay absorbs more slowly
    - Sandy absorbs more quickly
- Divide change in water level by 4 to account for lateral water movement (E.g. Change in water level of 4 inches/4 = 1 inch)

Determine Necessary Area (numbers used are an example):

- Measure roof length and width; multiply to find the area (50'x20'=1000sq.ft.)
- Rain garden depth determined = 6"
- Calculate surface area of garden: 1000sqft x 0.5 (amount of rain)/6 = 83 sq.ft.

Installation:

- Dig the garden
- Keep bottom as level as possible
- Create small berm (downhill side) to help capture runoff
- Materials:
    - Compost – ½ cubic yard per 100 square feet of surface area
    - 2-4 inch cobbles
    - Mulch – 1/3 cubic yard per 100 square feet of surface area
- Wetness zones
    - Lower plants can handle periods of standing water
    - Middle plants can handle periods of wet and dry
    - Higher plants prefer dry
- Mulch



Possible plant selection – natives work well

- Indian ricegrass
- Sand dropseed
- Blanket flower
- Purple prairie clover
- Prairie coneflower
- Golden columbine
- Sulphur flower

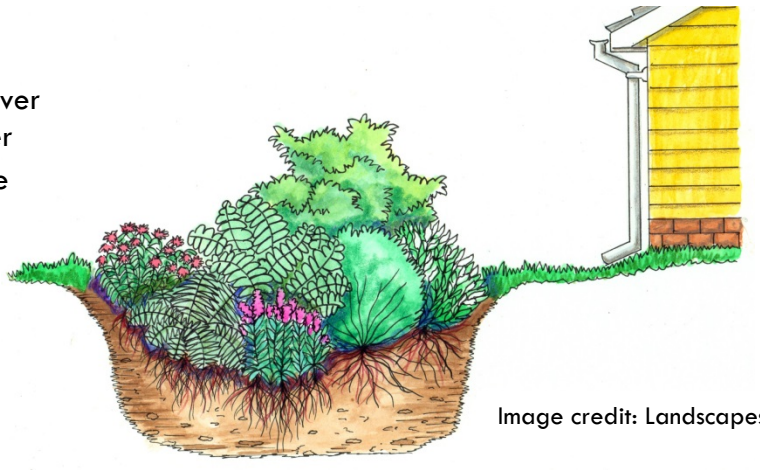


Image credit: Landscapes for Life

More information at www.stormwatercenter.colostate.edu