

Rainwater harvesting (RWH) is the practice of collecting and storing rainwater for use in the home and garden. Options for rainwater harvesting systems include small-scale rain barrels, large capacity storage cisterns, raingardens, bioswales and infiltration galleries. The system can be chosen based on budget, property size and end-use of captured rainwater. When designing and installing RWH systems, it is important to consider provincial standards and municipal regulations. Always check with your local jurisdiction to ensure compliance with these regulations and consult a certified plumber if intending to use rainwater for household plumbing. Many regional governments are encouraging their residents via incentives to divert and store rainwater to meet sustainability goals and to take the pressure off aging and overburdened stormwater infrastructure.

Effort Scale:

Easy	1	2	3	4	5	Hard	Requires design, installation and maintenance of rainwater
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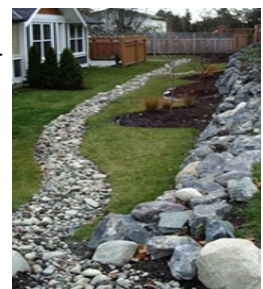
Sustainable rainwater management practices allow us to use rain as a resource. This helps urban watersheds mimic the function of natural systems. Using methods such as raingardens, green roofs, bioswales helps to slow and clean rainwater, either capturing it for use in buildings and landscaping or slowly releasing water back to the water table through a process of diffusal. Rain barrels and cisterns can be used to collect rainwater for reuse. The larger your system is, the more water will be kept out of the stormwater system. In Victoria, most of the rain falls in the spring and fall, but as watering needs for gardens and food production are highest in the summer, it is beneficial to have a larger storage capacity or a combination of systems. The collected non-potable water can be used to water gardens and lawns or indoors in toilets and urinals. More sophisticated RWH systems include the construction of bioswales, green roofs and raingardens.

Rain Barrel: A rain barrel is a specialized container designed to collect and store rainwater from the downspout of a roof. One or more barrels can be joined together to form a bigger system. These barrels typically range in capacity from 15 to 65 gallons and can be purchased from garden centres and home improvement stores, or DIY rainbarrels can be constructed using a food grade container made to hold liquid.



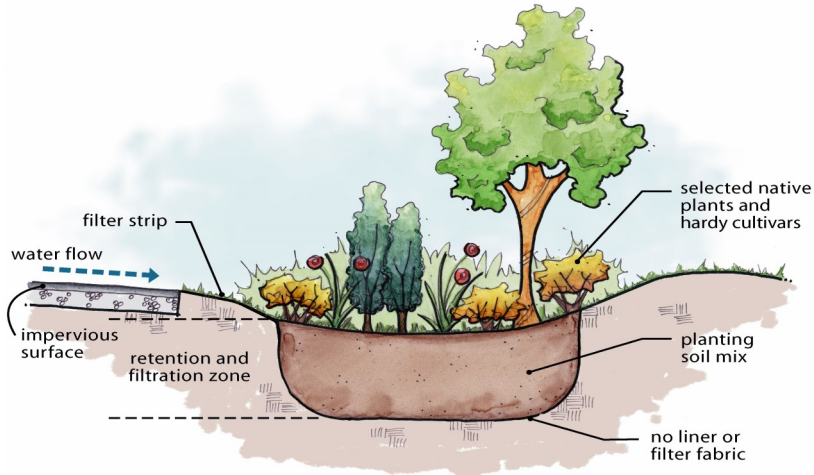
Cistern: A cistern (or holding tank) collects rainwater and has a larger storage capacity than rain barrels. Cisterns hold anywhere from 400-5,000 gallons and generally need to be purchased from businesses specializing in water systems and irrigation. They can be elevated, placed at ground level, or buried underground. A dispersal or irrigation system allows for the reuse of this water. Rainwater collected from a rooftop can be a high quality water source for the garden as it can contain important trace minerals. It contains none of the chlorine found in centralized water supplies and is the perfect temperature for plants, which makes it ideal for use in the garden

Bioswale: A bioswale is a sloped channel that is designed to filter and slow down rain and runoff coming from a chosen area. Types of bioswales include simple grassed channels used to reduce the rate of water flow; dry swales using buried perforated piping and gravel or drainage rock; and wet swales designed to mimic a natural wetland (less popular due to standing water). To minimize maintenance, bioswale designs often use native plants that are both drought resistant and able to handle large amounts of seasonal water.



Green Roof: A green roof is a conventional roof that additionally supports a waterproof membrane, a growing medium and soils that support living vegetation. Also known as living roofs, vegetated roofs, or eco roofs, these systems are usually planted with perennial, self-sustaining and drought resistant plants to minimize maintenance. Proper consultation with a professional is recommended to ensure roof stability and system success.

Raingarden: A raingarden is a beautiful landscape feature designed to capture and filter rainwater that flows off hard, impervious surfaces such as roadways, driveways and rooftops. A shallow basin is filled with sand and compost and then planted with deep-rooted native shrubs, grasses and wildflowers that absorb and filter stormwater run-off. These plants' extensive root systems filter stormwater by removing any pollutants and sediments before they enter our groundwater and waterways. Raingardens and similar systems such as bio-swales, infiltration galleries and bio-retention ponds mimic natural process, recharging aquifers and reducing run-off and potential flooding that may damage surrounding man-made structures.



Why Use Native Plants? Native plants are well adapted to soil and climate conditions; they require very little care or watering once established and add beauty to any garden. In addition to helping prevent erosion and improving water quality, native plants provide essential food and habitat for local wildlife. Furthermore, their seeds and nectar provide a valuable food source for birds, butterflies, bees and other insects.



Permeable Paving: Constructed from a range of sustainable materials and using many different techniques, permeable pavements generally consist of a base such as bare soil or a seeded ground-cover overlaid with bricks or another porous yet sturdy material that allows the movement of stormwater through the surface. In addition to reducing runoff, this effectively traps suspended solids and filters pollutants from the water.

Additional Resources:

- CRD Rainwater Management:** <https://www.crd.bc.ca/education/low-impact-development/rainwater-harvesting>
- City of Victoria Rainwater Rewards Program and Standards:** http://www.victoria.ca/EN/main/residents/water-sewer-stormwater/stormwater/rainwater_rewards_program.html
- City of Nanaimo Rainwater Harvesting Best Practices Guidebook:** <http://rdn.bc.ca/events/attachments/evID6235evattID1344.pdf>
- Build Your Own Rainbarrel:** <https://www.portlandoregon.gov/bes/article/378190>
- Vanisle Water Systems (large cistern purchase in Victoria BC):** www.vanislewater.com
- Puget Sound Raingarden Project in Seattle:** <http://www.12000raingardens.org/>



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