

RAINWATER HARVESTING FOR REUSE

DESCRIPTION

Rainwater is simply water that falls as precipitation from clouds. Rainwater harvesting is the collection and conveyance of rainwater from a building's roof to storage in a rain barrel or a cistern for re-use in irrigation or other approved non-potable uses. Key components of a harvesting system include the roof surface, gutters and downspouts, gutter screen, cistern, and pumping and piping system.

Above-ground cisterns are easily implemented. However, care must be taken to prevent damage and leakage due to winter freeze/thaw cycles. These cisterns require both an overflow and a drain to allow for winterization and for facility cleaning. Above-ground cisterns may include:

- rain barrels that receive unfiltered runoff from downspouts and are not connected to automatic irrigation systems
- rooftop capture cisterns which provide irrigation pressure through gravity
- cisterns incorporated into a heated building allowing year round water use for non-potable purposes

APPLICATION

Depending on the jurisdiction, rainwater can be used for outdoor irrigation and toilet flushing.

Rainwater harvesting using a rain barrel typically does not require anything more than directing a downspout into a water storage container and then manually drawing water for irrigation.



CONSIDERATIONS

- Careful sizing of the cistern by a qualified irrigation or engineering professional is required to ensure the size and costs of installation are appropriate for the capture volume and non-potable demands
- Rain barrel and cistern overflows must be directed away from building foundations to avoid flooding or damage to the foundation during large rainfall events
- Rainwater harvesting systems must comply with building codes and local regulations and bylaws
- Cisterns located within a building envelope must be included on drawings submitted for the building permit

FUNCTIONS/BENEFITS

- Rainwater is relatively clean and free
- Control over water supply
- Self-sufficient and helps to conserve water
- Rainwater is not chlorinated, and therefore better for landscape plants
- Inexpensive to maintain



MAINTENANCE

Maintenance requirements include inspecting and maintaining the collection, storage, and distribution systems. Winterization should also be considered for outdoor rain barrels and cisterns.

- Inspect gutters, leaf screens, filters, pumping and piping systems, and the cistern for leaks, clogging and sedimentation
- Remove leaves and debris from gutters and leaf screens
- Clean filters
- Vacuum or flush cisterns to remove accumulated sediments when needed
- Empty outdoor rain barrel/cistern and take off irrigation hook-up prior to winter