

Comparing Earthworks and Tanks

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CHARACTERISTICS	EARTHWORKS THAT <i>PLANT THE RAIN</i>	TANKS THAT <i>TANK THE RAIN</i>
Water uses	Provides large quantities of high quality rainwater to garden and landscape	Provides water for drinking, washing, fire control, flushing toilets (but first consider water-less composting toilets), and supplemental irrigation. Water quality will vary with catchment surface, tank construction, screening, maintenance, and first flush system. Rainwater has very low hardness.
Water collection areas	Can collect water from roofs, streets, vegetation, bare dirt, greywater drains, air conditioner condensate, etc.	Need a relatively clean collection surface (typically a metal, tiled, or slate roof) located higher than the tank
Water storage capacity	Very large potential to store water in the soil	Storage capacity limited by the size of the tank
Cost	Inexpensive to construct and maintain. Can build with hand tools, though earth-moving equipment can speed up the process	Much more expensive than earthworks to construct and maintain. Cost varies with size, construction material, above- or below-ground placement, self-built or prefab, etc.
Location	Do not locate within 10 feet (3 m) of wall or building foundation. May be difficult to fully implement in very small yards with adjacent large roofs	Can locate within 10 feet (3 m) of wall or building foundation, but you must be able to walk around entire above-ground tank to check for, and repair, leaks. Tanks increase water-storage potential in very small yards.
Time period water is available	Water available for limited to extended periods after rainfall depending on soil type, mulch, climate, and plant uptake	Water is available for extended periods after rainfall.
Maintenance	Earthworks work passively; require some maintenance after large rainfalls	Maintenance required; must turn valve to access water and may need pump to deliver water
Erosion control	Very effective for erosion control	Can assist with erosion control
Greywater collection	Very effective at harvesting greywater from household drains	Not appropriate to harvest greywater in tanks due to water-quality issues. Never store greywater in a rainwater tank.
Water quality impacts to environment	Pollutants in greywater and street runoff intercepted and bioremediated in the soil stay out of regional waterways	Less impact than earthworks to the broad environment
Impacts on urban infrastructure and flooding	Can capture large volumes of water, reducing need for municipal water, stormwater drains, stormwater treatment, and decreasing flooding	Can capture low to moderate volumes of water, reducing demand for municipal water, stormwater drains, stormwater treatment, and decreasing flooding
Groundwater recharge	Can directly recharge shallow groundwater tables. Use of rainwater and greywater in earthworks instead of municipal/well water for irrigation reduces groundwater depletion.	Not an efficient use of tank water. However, use of cistern water instead of municipal/well water reduces groundwater depletion.