



Rainwater Harvesting

System Design & Products



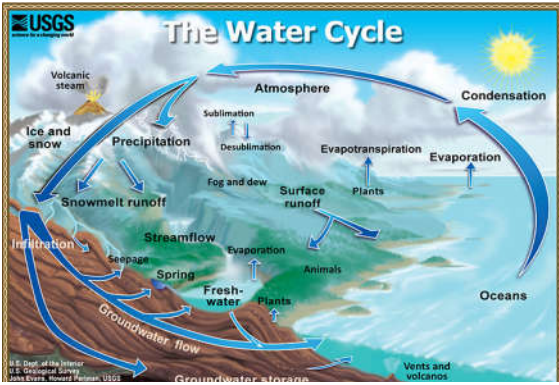
Capture 100 % of collectable rainwater!

Let us explain how?

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Rainwater Harvesting - Overview

Rainwater harvesting is a technology used to collect, convey and store rain from relatively clean surfaces such as a roof for later use. This is water that would otherwise have gone down the drainage system or into the ground. The water is generally stored in a rainwater tank or directed into mechanisms that can recharge groundwater. Rainwater harvesting can provide water for human consumption, reduce water bills and lessen the need to build reservoirs which may require the use of valuable land.

Rainwater harvesting has been practiced for over 4,000 years throughout the world. It has provided drinking water, domestic water, water for livestock, water for small irrigation and a way to replenish groundwater levels. Traditionally, rainwater harvesting has been practiced in arid and semiarid areas. It has become an integral part of societies in remote places where piping water moreover, reliance on wells is not an option. Rainwater harvesting in urban areas and cities can have diverse benefits. Providing supplemental water for the city's requirements, increasing soil moisture levels for urban greenery, increasing the groundwater table through artificial recharge, mitigating urban flooding and improving the quality of groundwater are a few of the many benefits. In homes and buildings, collected rainwater can be used for irrigation, flushing toilets and washing laundry. In hard water areas rainwater is superior to city water for non-potable use.

With proper filtration and treatment, harvested rainwater can also be used for showering, bathing, or drinking. Rainwater harvesting is also effective in reducing stormwater runoff pollution into the watershed. When rain falls, it is clean, but it immediately picks up pollutants from rooftops and pavement. This pollution is carried into storm drains and then into streams. Collecting stormwater from rooftops and directing it to storage tanks so it can be used in and around a building decreases the volume and rate of stormwater runoff, thus protecting local bodies of water from pollutants



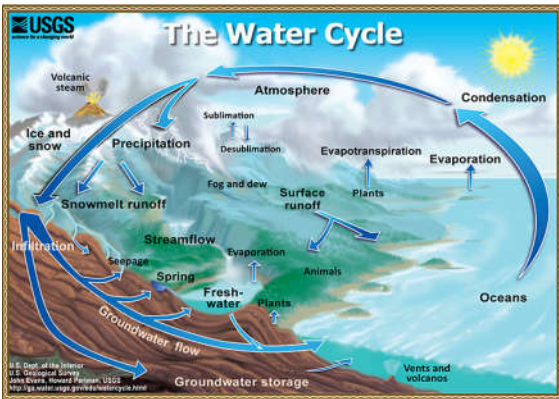
Sustainability

Rainwater harvesting is one of the most promising alternatives for supplying water in the face of increasing water scarcity and escalating demand. The pressures on water supplies, greater environmental impact associated with new projects as well as deteriorating water quality in reservoirs already constructed, constrain the ability of communities to meet the demand for freshwater from traditional sources. Rainwater harvesting presents an opportunity for augmentation of water supplies allowing for self-reliance and sustainability. Sustaining the environment contributes to the overall conservation of our precious natural resources, up pollutants from rooftops and pavement. This pollution is carried into storm drains and then into streams. Collecting stormwater from rooftops and directing it to storage tanks so it can be used in and around a building decreases the volume and rate of storm water runoff, thus protecting local bodies of



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Rainwater Harvesting: Advantages and Benefits

Advantages of Rainwater Harvesting

Rainwater harvesting systems are simple to install, operate, and maintain. It is convenient in the sense that it provides water at the point of consumption and operating costs are negligible. Water collected from the roof catchment is available for use in potable (per local approval) and non-potable applications such as toilet and/or urinal flushing, laundries, mechanical systems, custodial uses, and site irrigation. Since rainwater is collected using existing structures, i.e., the roof, rainwater harvesting has few negative environmental impacts.

Benefits of Using Rainwater:

1. It is free; the only cost is for installation and use.
2. It lessens demand on the municipal water supply.
3. It saves money on utility bills.
4. It makes efficient use of a valuable resource.
5. It diminishes flooding, erosion, and the flow to stormwater drains.
6. It reduces the contamination of surface water with sediments, fertilizers and pesticides from rainwater run-off resulting in cleaner lakes, rivers, oceans and other receivers of stormwater.
7. It can be used to recharge groundwater.
8. It is good for irrigation and plants thrive because stored rainwater is free from pollutants as well as salts, minerals, and other natural and man-made contaminants.
9. It is good for laundry use as rainwater is soft and lowers the need for detergents.¹
10. It adds life to equipment dependent on water to operate, as rainwater does not produce corrosion or scale-like hard water.
11. It can help achieve LEED® Green Building Credit under Water Use Reduction; Innovative Wastewater Technology; Stormwater Design: Quality Control; Stormwater Design: quantity Control; Water Efficiency Landscaping; and Innovation in Design.

Did you know: A rainwater system along with other sustainable systems can increase the value of a building.



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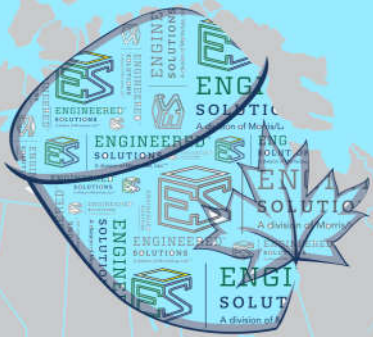
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Industrial, Commercial, Military, Residential and Supplemental Benefits of Rainwater

Benefits Uses	Industrial Application	Commercial Application	Military Application	Residential Application	
Water Conservation	Site Irrigation, Lawn & Garden	√	√	√	√
	Toilet and/or Urinal Flushing	√	√	√	√
	Janitorial Use	√	√	√	√
	Laundry	√	√	√	√
	Filling Pools and Hot Tubs	√	√	√	√
	Fire Protection, Reduce Insurance Cost	√	√	√	√
Reduced Municipal Water Consumption	Fleet and/or Car Wash	√	√	√	√
	Commercial Laundry	√	√	√	√
	Process Water	√	√	√	√
	Evaporative Cooling Tower	√	√	√	√
	Mechanical Equipment	√	√	√	√
	Reduces Monthly Water Bills	√	√	√	√
	Avoids Water Restrictions	√	√	√	√
	Reduces or Eliminates Water Treatment	√	√	√	√
	Adds Value to a Home or Building	√	√	√	√





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Industrial, Commercial, Military, Residential and Supplemental Benefits of Rainwater

Benefits Uses	Industrial Application	Commercial Application	Military Application	Residential Application	
Stormwater Runoff Reduction	Assists Storm Water Permitting	√	√	√	√
	Less Property Use for Site Detention	√	√	√	√
	Contained Storage, Reduces Mosquitos	√	√	√	√
	Decreased Soil Erosion from Runoff	√	√	√	√
	Reduced Flooding from Runoff	√	√	√	√
	Improved Water quality to Water Sheds	√	√	√	√
Can Offset "Roof Top Taxes" Imposed by Local and State Authorities	√	√	√	√	
Promotes Good Public Relations, Showing Positive Environmental Concern	√	√	√	√	
Decreases Dependency on Delivered Water Supply	√	√	√	√	
Can Serve as a Water Source if Primary Water Supply is Impacted Due to a Natural Disaster	√	√	√	√	
Redirect Tank Overflow as Groundwater Recharge	√	√	√	√	
Can Be Used as a Potable Water Supply	√	√	√	√	
Can Be Used in Developing Areas with Limited Water	√	√	√	√	



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Intewa Filters



Unlike other self-cleaning filters the INTEWA PURAIN filter allows the filtration of light rainfall of with 100% efficient collection. As 97 % of annual rainfall is mainly light rain, the overall efficiency is 98%. Heavy rainfall that contributes approximately 3% to water yield activates the self-cleaning function and the high energy from the resulting hydraulic jump is the optimal and natural way to rinse and clean the filters. With optimal efficiency moreover, low maintenance costs, this unique, patented, PURAIN filter is best demonstrated by nature and you can see how it works at almost any stream

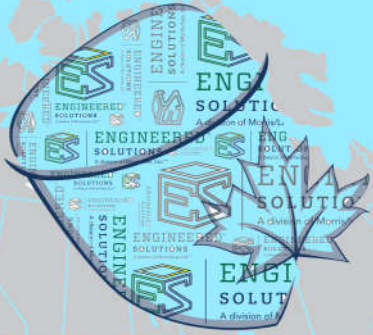


We have designed the PURAIN Rainwater filter, sometimes known as the hydraulic jump filter, for roof areas ranging from 60m² to more than 15000 m². This filter automatically cleans itself by means of the hydraulic jump. The design model for PURAIN Rainwater filters comes from nature. At almost every course in a stream, you can see how the hydraulic jump functions. The water flows over one of the stones, smooth and rounded by the action of the water over time. At the bottom of the dip, the waterflow changes to a subcritical flow in a process now commonly known as a hydraulic jump. This resulting increase in water power is similar to a strong eddy, and any impurities are then forced over the next level and washed away downstream



Already integrated into PURAIN 100 are the overflow skimmer and the non- return valve, which also, works as a small animal protection. We have designed the PURAIN Rainwater filter, for roof areas of more than 5.000 m².





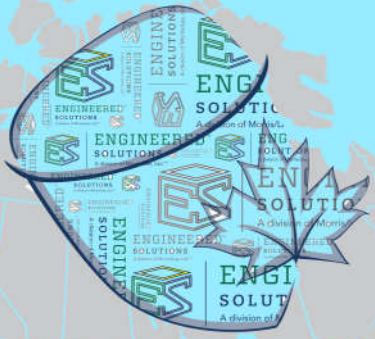
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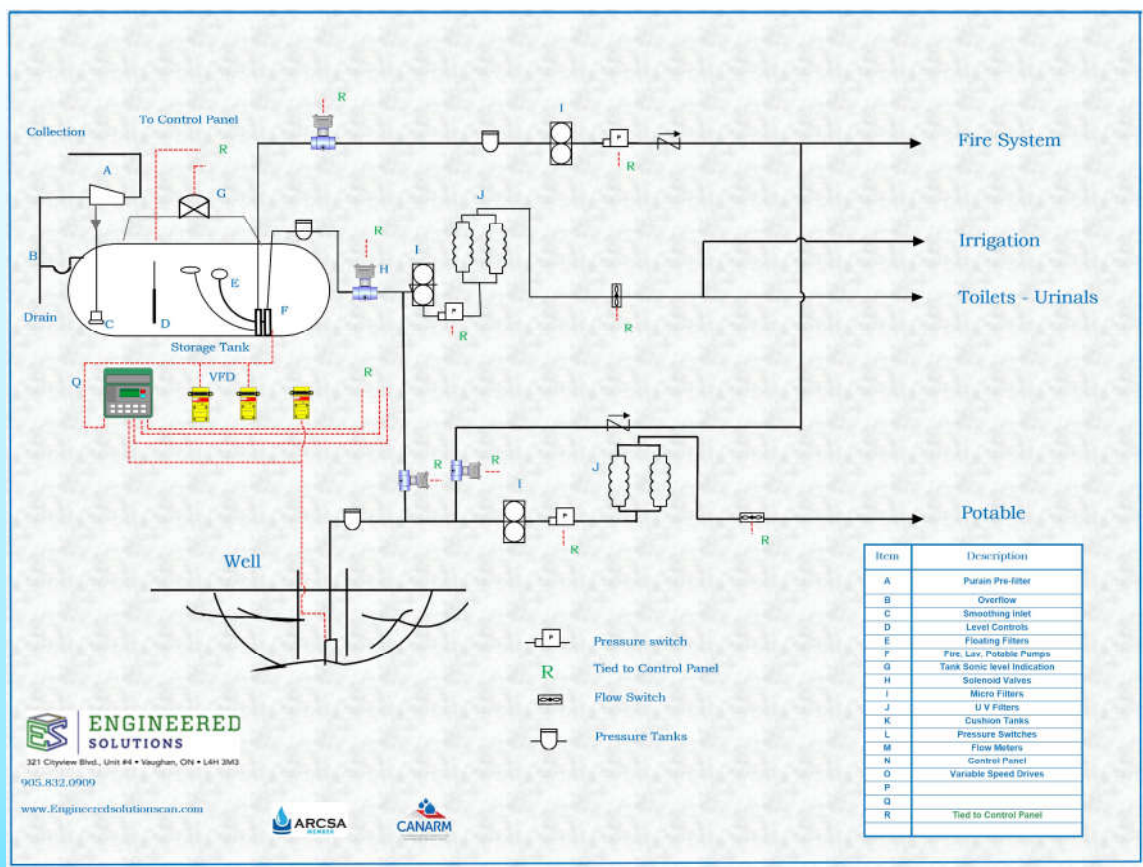
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Saving Water now for Later



Rainwater Harvesting Skid Packages or Systems

Designed to meet your needs



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