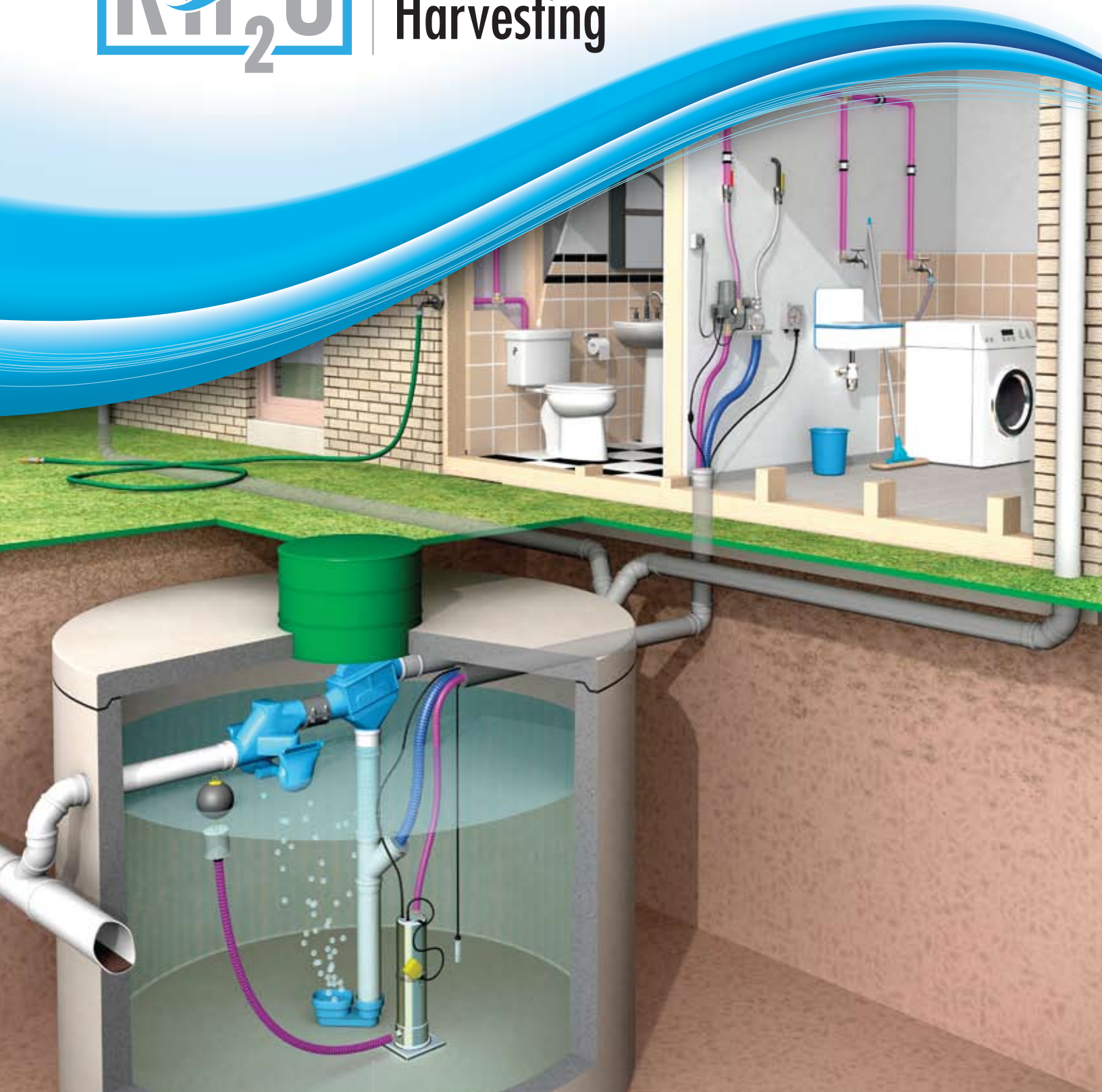




Residential Rainwater Harvesting



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The collection and storage of rainwater from roofs has been going on since ancient roman times. Rainwater is a valuable resource which plays as an essential part in sustainable development. Rainwater Harvesting is increasingly being included as a standard in the design of new buildings for such applications as: Toilet flushing, Irrigation, Laundry, Vehicle washing, Process water (heating/cooling, etc.)



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Buildings have a built-in collection system (roof, gutters, and downpipes) which delivers rainwater directly to the ground level. Diverting rainwater into storage tanks is an easy concept. However, once rainwater makes contact with a surface it loses its purity and becomes polluted. International Rainwater professionals have pioneered four basic design principles to ensure rainwater regains its cleanliness and can be safely utilized for reuse applications. These four principles have been transferred to four different products that require little to no maintenance:



1

Rainwater Filter:

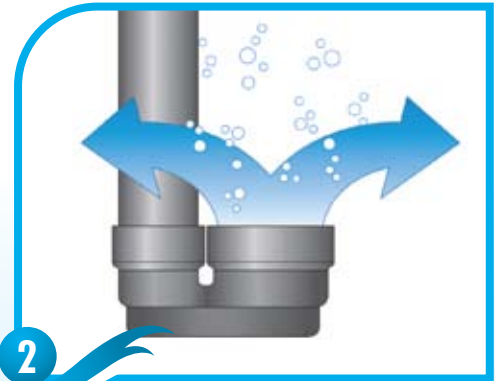
The first cleaning step in the rainwater system is the filter. The rainwater flows from the roof to the filter. Here dirt particles and debris are separated from the water. The cleaned water flows to the tank while the debris is sent to the storm sewer or infiltration area.



3

Overflow Siphon:

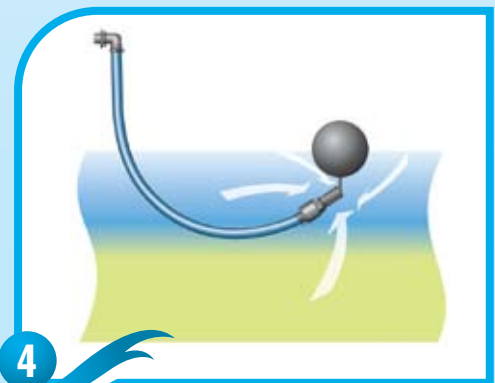
Any particles that are lighter than water (e.g. flower pollen) float slowly to the water surface. Removing this floating layer of surface pollutants through regular overflow from the tank is important in order to maintain high quality water and allowing the diffusion of oxygen at the water surface.



2

Calming Inlet:

The second cleaning step takes place in the storage system. Filtered rain water will still contain a small amount of particulate material that will settle to the bottom of the storage tank. The rainwater Calmed Inlet prevents any disturbance of this sedimentation layer and ensures that oxygenated water is introduced to the lower layers of the stored water in the tank. This oxygen rich water prevents anaerobic reducing conditions forming in the storage tank and ensures that the water stays fresh.



4

Floating Suction Filter:

Water is extracted through the floating pump intake that is suspended just below the water surface where the cleanest water resides. An air-filled ball float suspends the filtered intake for extraction by the pump. Depending on the pump configuration — submersible or jet pump — a check valve can be added to the floating pump intake.