Urban Rainwater Harvesting - Project Survey Questionnaire

Halsted Rain aboveground rainwater harvesting systems are designed for small and medium sized installations in residential and light commercial property. They are ideally suited to retrofit in a confined space. The storage tanks should be installed on a solid or compacted surface vertically against a wall. Advice on alternative configurations is available on request.

The following guidance and project survey questionnaire is to help prospective installers specify their requirement. It should be noted that rainfall patterns and usage of water vary considerably between properties and therefore planning the project with site specific data is recommended. The Super Slim Wall Tank and Slim-line Tower Tank systems are modular in design and allow tank units to be added if further capacity is required and space allows.

1. A project should be designed as part of an overall approach to water conservation that aims to reduce waste, WC flush volumes and regulate flow rates.

2. We would always encourage the collection and reuse of as much rainwater as possible however it is not uncommon for rainwater harvesting systems to be a compromise between space constraints, the available budget and utility required.

3. Recovered rainwater is not suitable for human consumption.

4. Rainwater must be conveyed in a dedicated water pipe, which is clearly marked, to prevent rainwater entering the mains supply.

5. Protect the quality of the collected rainwater by;

   a. Maintaining the roof and gutter line in good condition.
   b. Filtering before diverting rainwater to the storage tank to remove leaf litter and other debris.
   c. Sizing storage capacity so the tank periodically overflows to the main drain during storm weather which flushes away any debris floating in the tank.
   d. Regularly use the rainwater.
   e. Ideally, site the tanks on a north or westerly facing wall or otherwise shade from direct sunlight.

6. Finally, install an integrated purpose designed rainwater recovery system that is easy to install and maintain.

An entry level Super Slim Wall Tank system can typically save 20% of mains water used in an average household and as much as 80% in small commercial applications when typically most water is used for toilet flushing. This equates to a potential saving of more than 30,000 litres per year. A larger Slim-line Tower Tank system can save up to 50% of mains water used in residential property.

To help size and calculate indicative water savings for your project, we have provided the questionnaire overleaf. Please note rainwater supply should be for the down pipe catchment which can be less than the total roof area and demand is calculated for the appliances that will be connected to the harvesting system.

For further information and local stockists:
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Project Survey Questionnaire

Project Name

Project Location Post Code

Rainwater Collection from Roof

Annual Rainfall   mm

Roof Type (Drainage Coefficient)
Pitched   0.8
Flat   0.5
Grass 'Green' Roof   0.3

Total Roof Area Catchment   m²

Partial or Effective Catchment*   m²

*Effective Catchment i.e. area of the roof connected to the downpipe(s) that will supply the tank

Water Demand from Appliances Approved to Use Rainwater

Persons in the Property

Toilets   (22*) litres per person/day

Washing Machine   (16*) litres per person/day

Garden Tap   (8*) litres per person/day

*Average household use as a guide, only calculate demand for appliances it is feasible to connect to the tank

Potential to Use Rainwater*   litres per day

*Occupancy multiplyed by demand per person for connected appliances

Installation

Distance Tank to proposed Down Pipe connection   m

Length and height tank outlet to proposed pump location   /   m

Length and height pump to proposed appliance connection*   /   m

*Maximum horizontal length and vertical height water will be pumped to an appliance

Water Pressure Requirement
Fit for Purpose Low Pressure Low Energy

Mains or above   bar or flow rate

A rule of thumb for wall tank systems is to size the tank at 2% of the
annual rainfall at the location, or of the annual water demand for connected appliances,
always using the lowest figure of the two.

The corresponding percentage for a Tower Tank system is 5%.

Tank size (litres) = effective collection area x drainage coefficient x annual rainfall x 0.02/0.05

Or

Tank size (litres) = persons in the household x water demand per person/day x 365 x 0.02/0.05