



Harvesting Rainwater from Existing Properties.

Rainwater harvesting can be applied to most buildings, regardless of size and purpose; however, due to certain practical issues, it is a technology that is generally best suited to new-build properties, as the system can be easily designed in at the start of the project. Having said that, it is some times desirable or necessary to incorporate it into an existing building.

With any existing property, there are certain potential problems from the point of view of collecting rainwater, and it is important to consider these points before anything else:

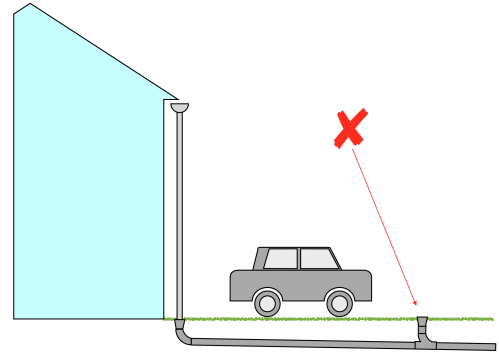
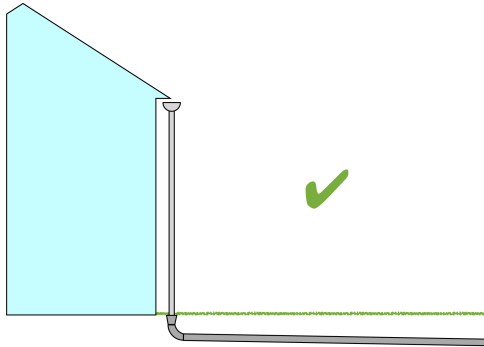
- it is conventional to install an underground storage tank. This could be very disruptive and expensive on an existing site and may even entail re-routing of some services.
- it will probably also necessitate re-laying some of the stormwater drainage. Fitting a tank and filter unit into an existing drainage scheme frequently involves changing the levels of some of the pipework.
- the drainage system supplying a rainwater harvesting scheme should only carry water from roof surfaces. If the existing drainage also takes water from trafficked areas, or worse still, from 'grey' water sources such as baths, basins etc. (not uncommon, particularly on older properties), then the drainage may require serious alterations.
- some changes to the rainwater downpipes and / or the internal plumbing will be required.

An alternative to underground storage is to use a tank located at or above ground level. This can either be within the building or external, but in either case, further problems may arise. It will only be practical if it is possible to direct some of the existing rainwater downpipes to where the tank is;

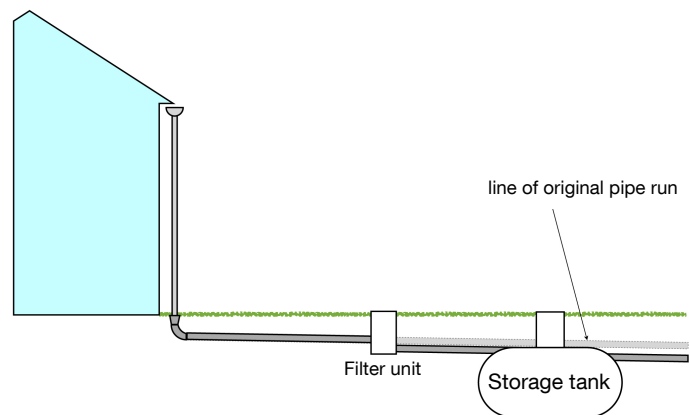
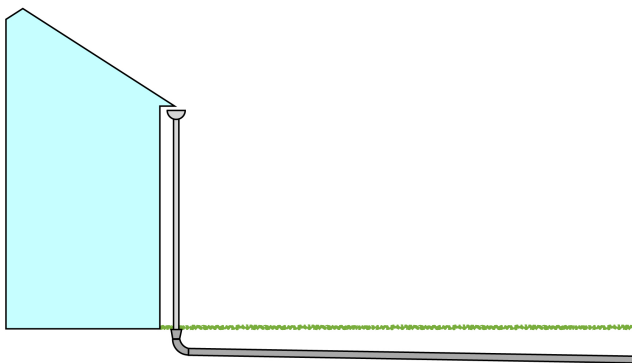
- the location of rainwater downpipes and their proximity to the storage tank may limit the amount of roof surface that can be harvested from.
- depending on pipe and tank locations, it could result in unsightly pipes running across the face of the building in order to get the water into the tank.
- external pipework can be susceptible to freezing in extreme cold weather.
- if tank is within the building, then pipes from the rainwater downpipe filters will need to penetrate the walls of the building.

We therefore recommend that before proceeding any further, the practicalities of these issues need to be assessed. The following suggestions may assist in this process.

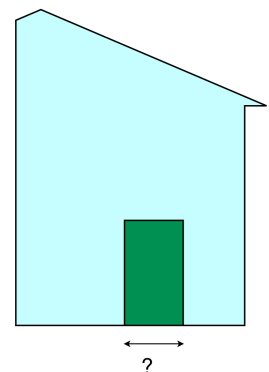
1. Is the tank to be above or below ground? If above ground go to item 5, If below ground go to 2.
2. Assess where storm drain runs are and ensure that they **only** carry rainwater. Do not collect water from driveway gullies, paving etc.



3. Assess the location of any other services that may be in the location where you wish the tank to be - e.g. cables, water pipes etc.
4. Assess where the tank is able to overflow to. Note that the overflow from the tank will be at a slightly lower level than the inlet, so it is unlikely that the existing drain that is tapped into can be used unless altered.

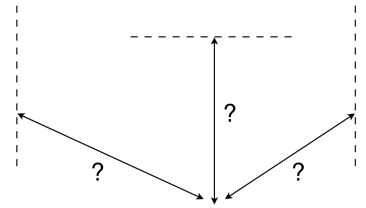


5. Is the tank to be inside or outside of the building?
6. If inside, how high and wide is the smallest access? (i.e. we need to know how large a tank can fit through the doorway):

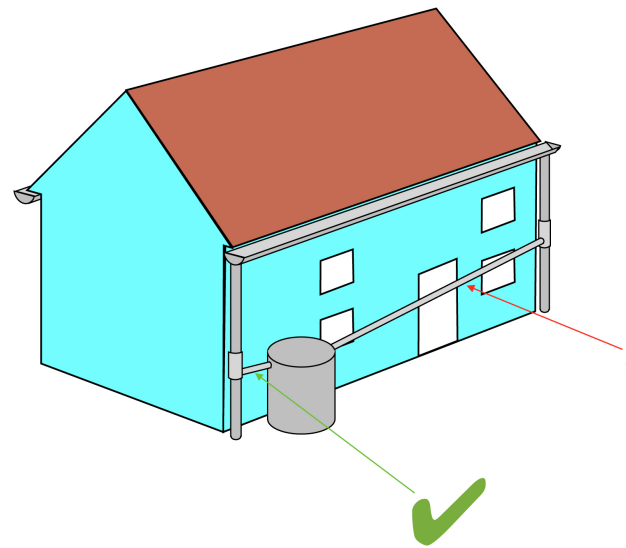


7. If outside, there needs to be somewhere that is near to the tank but within the building to locate the pump and other controls.

8. Approximately how much physical space is available for the tank? (including height)

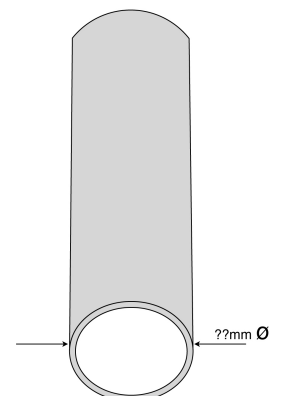


9. Given the proposed location of the tank, how many rainwater downpipes are there that can easily be collected from? It is sometimes not possible to get water from some downpipes for practical reasons. This may limit the area of roof that can be harvested. It is important to consider the location of the tank in relation to the downpipes.

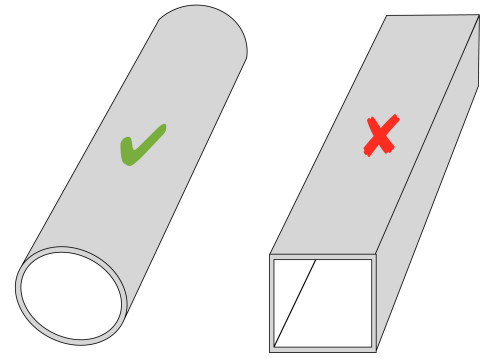


10. What is the height of the guttering above ground level (or the base of the tank). There needs to be sufficient height above the level of the top of the tank for the filter unit to fit in the downpipe. Ideally there should be at least one metre between the level of the gutter and the level of the tank top.

11. What size are the downpipes? (i.e. external diameter) The outside diameter of the pipe must be the same size as the inside diameter of the filter. The filters are available in the following sizes; 68mm, 76mm, 80mm, 87mm, 100mm and 110mm.

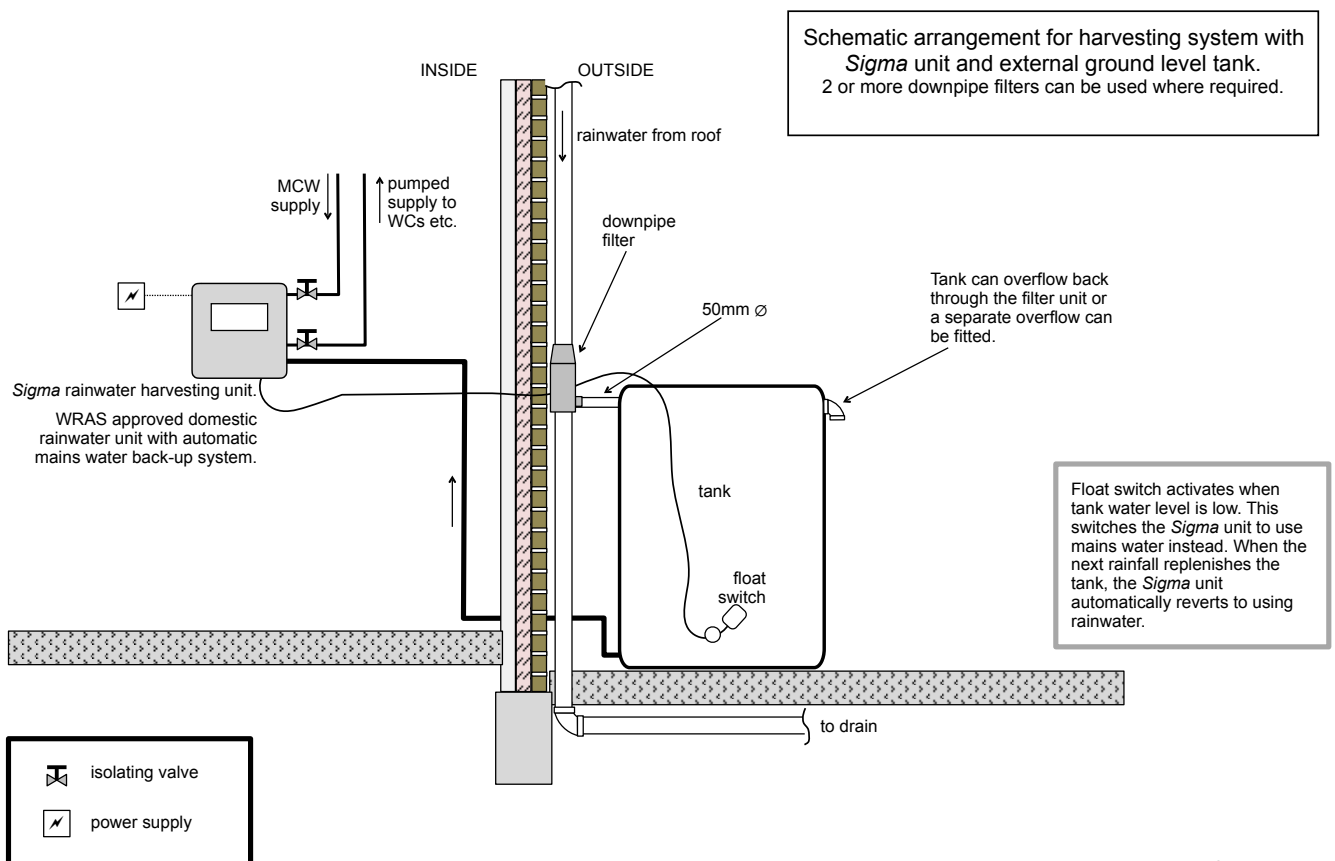


12. Note that for above ground tanks, the downpipes must be round, not square and ideally plastic. Cast iron pipes are not suitable.



An ideal scenario is one where there is one or more downpipes draining a significant portion of the roof, adjacent to a solid level base next to the building.

Within the building, but adjacent to the same area, should be a suitable location for any pumps and controls (e.g. a plant room or utility room). One such solution is illustrated below:



RH193 S