5 THINGS YOU NEED TO KNOW TO INSTALL YOUR OWN SOAKWELLS LIKE A PRO

WITH THE RIGHT ADVICE AND A LITTLE BIT OF HARD WORK, YOU CAN INSTALL YOUR OWN SOAKWELLS AND SAVE $$$

SUMMARY

Installing your own soakwells is not a technical job, but it is a lot of hard work and needs to be done right to justify the effort and avoid issues in the future. The last thing you want to do is dig it all up again in a year and start again! You also don't want to risk damage to your home from flash flooding if the soakwells are to fail. This booklet will give you a few pointers to make sure you install your own soakwells like a Pro, and complete a job that will protect your home from stormwater damage for a lifetime.

TABLE OF CONTENTS

WHAT ARE SOAKWELLS AND WHY DO I NEED THEM?

Soakwells are basically large underground water tanks that collect rainwater from impervious surfaces such as the roof of your home and sealed outdoor areas like your driveway and paved area around your home, which is called your rainwater catchment area. This rainwater is fed downthe gutters and downpipes, or through grates in the ground, down to the soakwells below ground.

Unlike water tanks, soakwells are not enclosed and actually allow the water to drain and infiltrate back into the soil around the soakwell, providing valuable ground water to recharge the water table. This is especially important in Perth, where we are facing a water shortage. Ground water systems are vital for meeting our water needs, making up around 46% of water supply in Perth.

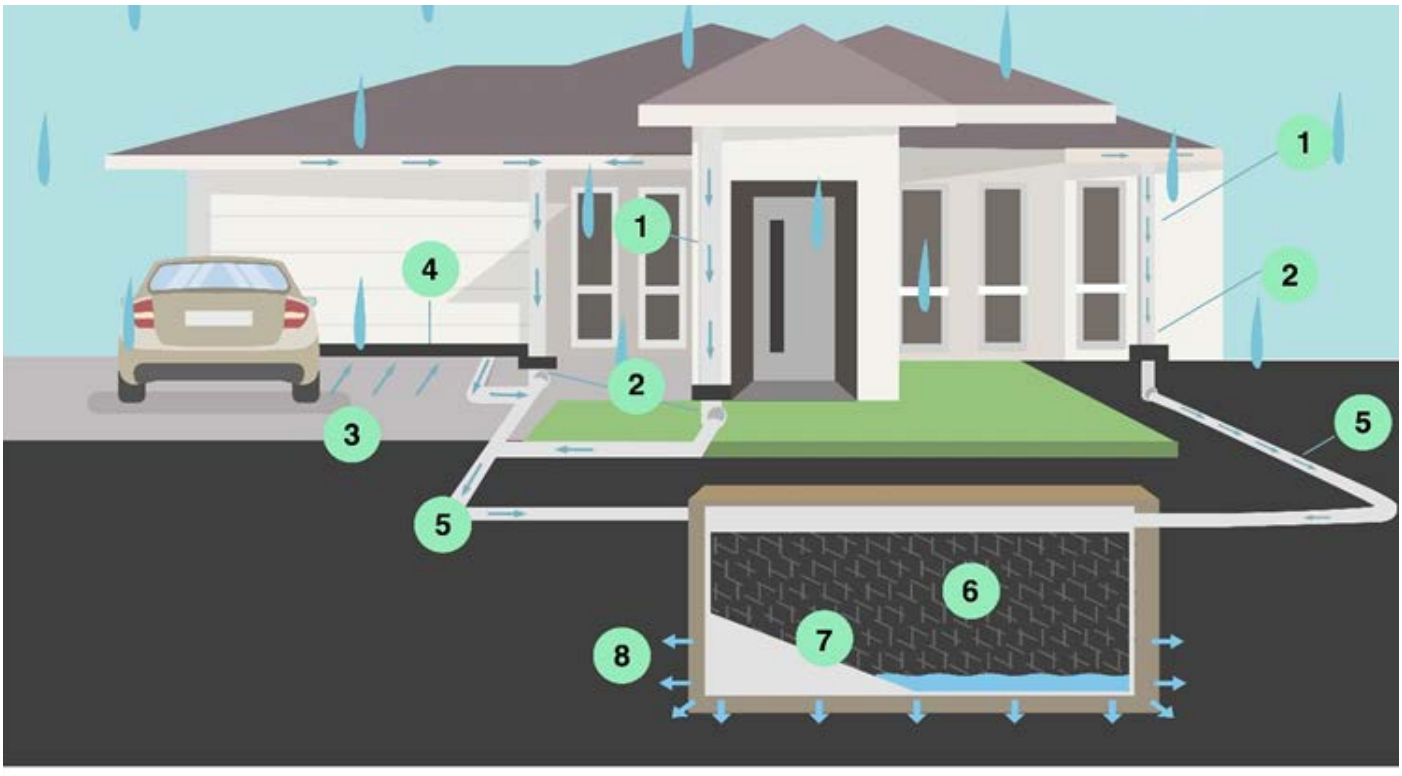


Figure 1: Soakwells for residential homes allow rainwater caught by impervious surfaces to infiltrate back into the ground.

Feeding the rainwater caught by the impervious surfaces of your property below ground, also protects your home and garden from flooding during the sudden heavy downpours that we experience here in Perth.

This is important in Perth's Mediterranean climate where we experience hot, dry Summers with wet Winters, which makes stormwater pollution a very fundamental problem. BOM's Neil Bennet has said 'Perth has a greater annual rainfall than London, though this is concentrated in Winter'. Coupled with the sandy soils that become hardened and impermeable during Summer, the sudden heavy downpours in Winter can quickly lead to flooding as the rainwater is not able to drain.

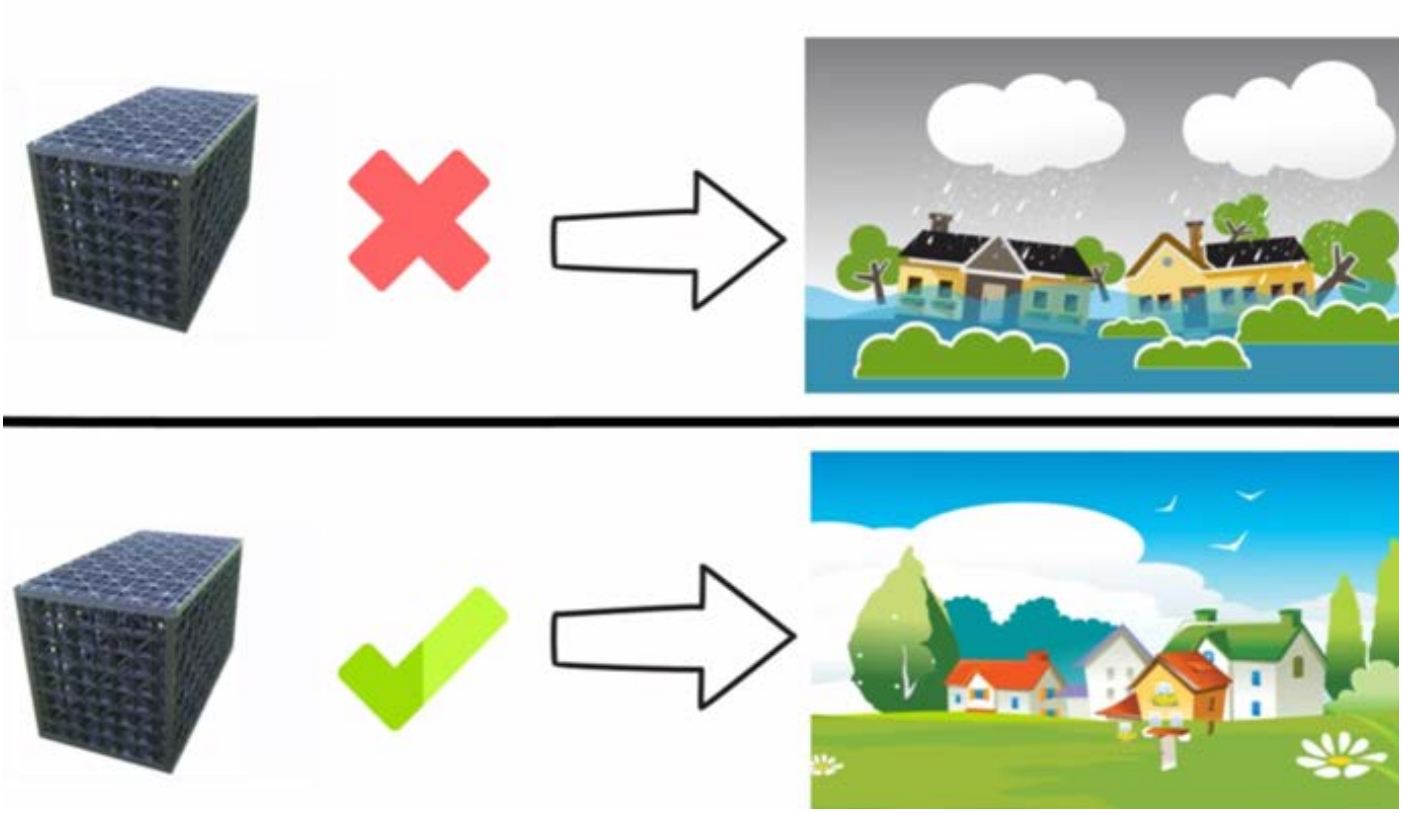


Figure 2: While soakwells are not required by law, they can help to prevent surface runoff of rainwater and stormwater pollution, which is your legal obligation as a home owner.

IS IT THE LAW TO INSTALL SOAKWELLS?

In WA, it is your legal obligation as a home owner is to retain your storm water on your property. This basically means that you need to have an efficient method in place to prevent surface runoff of stormwater into surrounding properties and roads. This is called stormwater pollution and can lead to serious consequences in urban areas, such as flooding, soil erosion and rain damage.

While soakwells are an efficient method to prevent surface runoff of stormwater in most areas of Perth, it is not actually the law to have soakwells. There are other ways to achieve this, such as above ground rainwater tanks. In fact, in some areas of Perth where there is a high-water table or clay type soils, soakwells are not recommended at all as they will not drain efficiently. Your local council has set out a series of guidelines on stormwater management, specific to your area, which will help you decide on how best to prevent stormwater runoff. It is not the law to follow these guidelines, but it is highly recommended as a lot of research has gone into the best methods for preventing stormwater pollution in your area.

'While soakwells are not required by law in WA, they can help to prevent surface runoff of rainwater and stormwater pollution, which is your legal obligation as a home owner'

Susannah Piek - Simply Soakwells

Stormwater pollution in Urban areas is a result of large areas of impervious surfaces such as roofs, roads, carparks and concrete surfaces, with a corresponding reduction in permeable surfaces such as forested land and grass fields, which leads to increased surface runoff of stormwater. This surface runoff collects oil and other harmful chemicals from urban surfaces and discharges into drains, streams, lakes and reservoirs, causing pollution. Changing weather patterns have also led to higher

frequency of stormwater surge around the world, and conventional drainage systems are often unable to cope with the substantially increased volumes, resulting in down-stream flooding and higher degree of pollution.

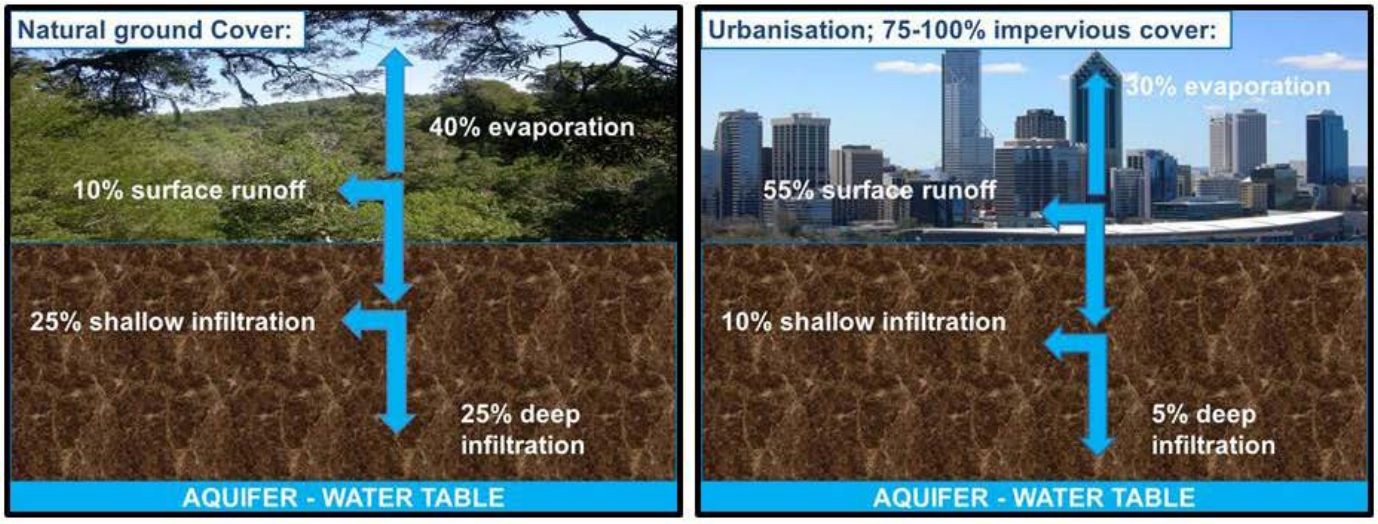
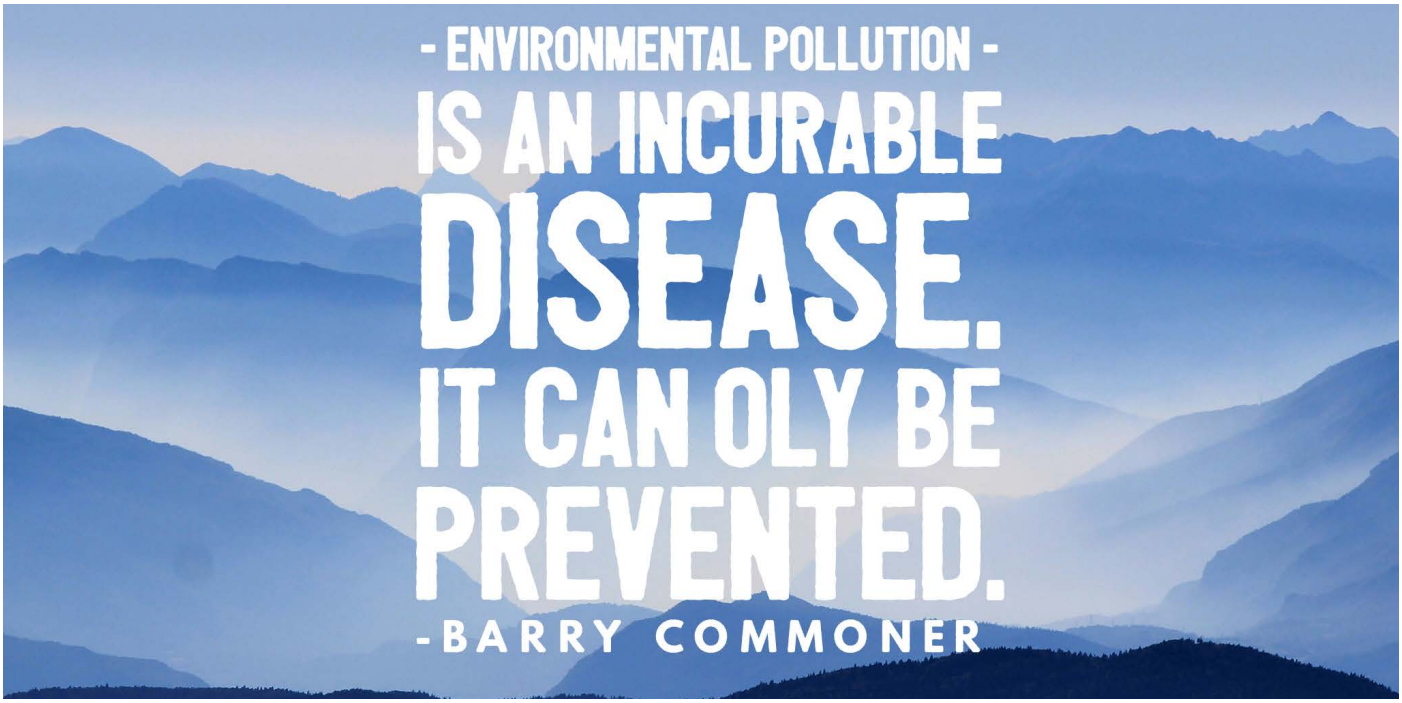


Figure 3 : Soakwells offer property owners an efficient method to reduce stormwater run-off and stormwater pollution in urban environments.

Soakwells offer an at-source management system to collect rainwater from your home roof and other impervious surfaces and allows stormwater to be filtered at source, ensuring that clear clean water is eventually discharged into drainage networks, while also protecting your home from flooding.



WHAT SOAKWELL IS RIGHT FOR MY DIY PROJECT?

There are three main types of soakwells on the market, but only one that is perfect for your home DIY project: When installed correctly, this soakwell will protect your home from flooding for a lifetime.

1. CONCRETE SOAKWELLS

* Strong but very heavy
* Plant machinery needed to install the larger concrete soakwells
  - NOT SUITED TO DIY PROJECTS
* Drain very slowly

2. PLASTIC (PVC) SOAKWELLS

* Light and easy to install
* Drain very slowly
* Not strong at all, will collapse and cause endless issues
  - AVOID AT ALL COST

3. POLYPROPYLENE SOAKWELLS

* Light and easy to install,
  - Come in a flat pack
  - Easily assembled on-site
  - No need for a crane
  - PERFECT FOR DIY PROJECTS
* Strong and durable
  - Trafficable to 30t/m^2 so they won't collapse even under traffic areas
  - Chemically inert and UV-stabilised for increased product life
* Highly efficient drainage
  - 65% surface drainage area
  - Drain 50% faster than concrete/plastic PVC soakwells
* Modular: Interlock vertically and position horizontally to create any shape and size
  - Cater for any volume requirements
  - Adapt to small and confined spaces
* Environmentally friendly
  - Made from 100% recycled and polypropylene

Figure 4: Polypropylene soakwells are the perfect soakwell for your home DIY project. These are just two examples of the polypropylene soakwells available in Perth: The Veristank^{R} (left) and the Drainwell^{TM} (right).

The best polypropylene soakwell on the market is the Drainwell DW1592 soakwell, which is manufactured here in WA. Contact Simply Soakwells if you would like any more information on the Drainwell soakwell and where to purchase them.

HOW DO I PLAN MY SOAKWELL INSTALLATION?

It is always best to check your local council guidelines before planning your soakwell installation. This will firstly clarify whether soakwells are suited to your property, and will then clarify the volume of soakwell required to service your catchment area. If you have a copy of the council approved site plan for your property, the stormwater details should also be on there, but if in doubt, a simple call to your local council will clear up any confusion.

As a rough calculation; the majority of local councils in Perth use a 1 in 20 year rainfall event to calculate the recommended volume of soakwell. Generally, this equates to the catchment area (m^2) multiplied by 12.5, as shown below.

Volume of soakwell (L) = Catchment area (m^2) x 12.5

So, if your home has a catchment area of 250m^2, you will need around 3125L (250 x 12.5) or 3.125m^3 of soakwell.

Once you have decided on the type of soakwell you are using, simply divide the total volume of soakwell required for your property by the volume of each individual soakwell module. The Drainwell soakwells are 132L each. Therefore:

 # Drainwell DW1592 modules = Volume of soakwell (L)/132

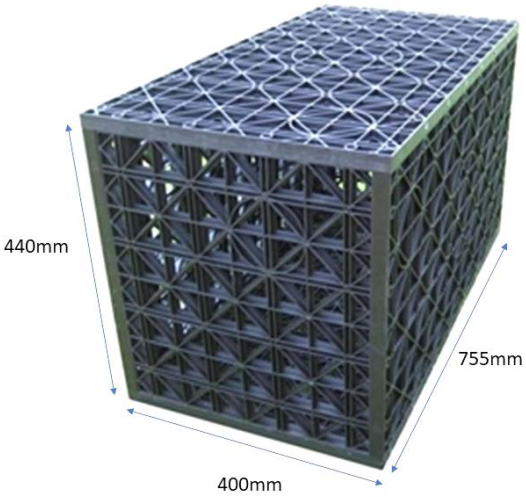


Figure 5: The Drainwell DW1592 module has a storage capacity of 132L or 0.132m^3 and dimensions (mm) of 440 (h) x 400 (w) x 755 (l).

So, for a 250m^2 roof house, you will need 24 Drainwell modules (3125/132).

Once you have this number, work out how you are going to place the soakwells; as one, two or three large soakwells, double stacked or in a long trench. The Drainwell modules can be interlocked vertically and positioned horizontally to cater for all space and volume requirements. Plan the shape and size of your soakwell ahead and peg out the garden area required.

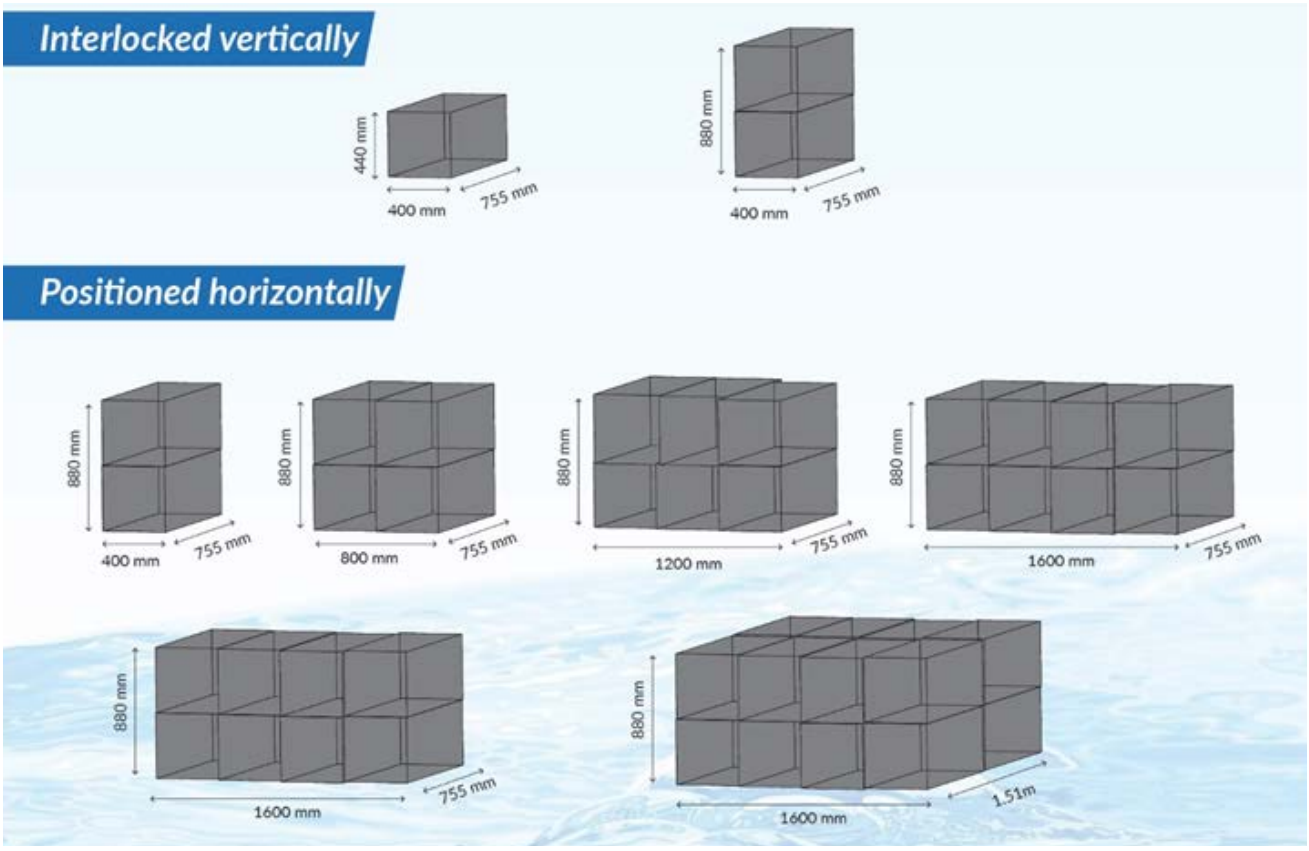


Figure 6: The Drainwell modules can be interlocked vertically and positioned horizontally to cater for all space and volume requirements.

The polypropylene soakwells need to be wrapped in a good quality, non-woven geotextile fabric to allow the water to infiltrate out while preventing any sand or dirt entering the soakwell. Make sure you have enough geotextile fabric to wrap your soakwell(s).

OTHER THINGS TO CONSIDER WHEN PLANNING YOUR SOAKWELL INSTALLATION:

If possible, install one or two large soakwells in the front and back gardens and run all the down pipes into them, rather than one soakwell per downpipe. This lessens the chance of overflow as the catchment from each downpipe is evenly distributed throughout the soakwells.

The soakwells need to be installed 1.8m from house footings and boundaries to avoid rising damp, and with a minimum 300mm cover (preferable 500mm). Work out the size of your soakwell(s) and map out the area needed for the installation, and the depth of the hole required, before you start.

Consider other features in your garden such as trees with large roots, retaining walls and provision for any future pool or alfresco piers. Try and plan ahead here so that you don't have to move your soakwells when you get around to completing your landscaping.

Many coastal areas of Perth are prone to limestone, which will limit where you can install your soakwells. If you live in a rocky area, pot hole around your garden to find the areas of rock and hopefully areas of sandy soil where you can install your soakwells. If rock is an issue, you may need to look into hiring a rock breaker before you start your soakwell installation.

WHAT OTHER MATERIALS AND EQUIPMENT WILL I NEED?

Obviously, you will need a good shovel, and wheel barrow, and hopefully the help of a few mates to excavate the area for the soakwell.

In addition to your soakwell and geotextile fabric material, you will need a rubber mallet to assemble the soakwell and a 90mm hole saw or jig saw to cut the holes for the pipes. You will then also need PVC tape to secure the geotextile fabric wrap in place.

PVC TAPE

For the plumbing you will need a good PVC hand saw and PVC glue, as well as 90mm stormwater pipe, connections and fittings, such as 90°, 45° and 20° bends, T-junctions, downpipe grates and connectors, channel grates and paving grates. You will also need a spirit level to make sure the stormwater plumbing is sloping towards the soakwells.

PVC GLUE

DOWNPIPE CONNECTORS

DOWNPIPE OFF-SET GRATES

90MM STORMWATER PIPE

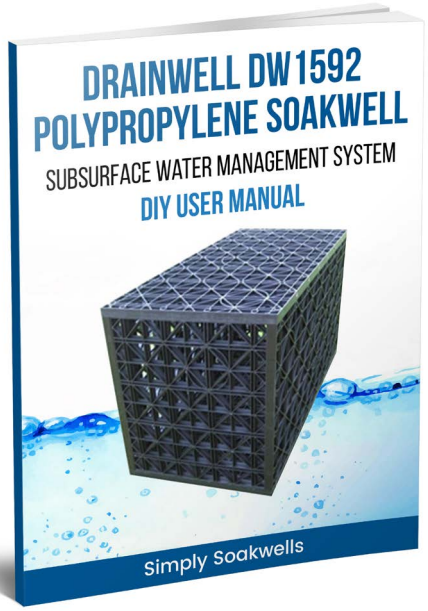
90MM CONNECTIONS AND FITTINGS

Plan your stormwater plumbing ahead so that you have the right amount of each plumbing fitting. Lastly, you will need a hose to wet the soil as you back fill to remove any air pockets. A compactor would be a worthwhile investment if you can hire one or borrow one from a friend. This is especially important before any paving is laid over the area.

Happy digging!

CONTACT US

Please feel free to contact Simply Soakwells for any more information or advice.... and be sure to request your free copy of our Drainwell soakwell DIY User Manual!



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