



Plumbing & Drainage

RainHarvesting



Introduction



Rainwater Harvesting is the methodology of the collection and re - use of rainwater which falls onto roofs. Rainwater Harvesting may provide an independent water supply during water restrictions (hose pipe bans). The rainwater is of an acceptable quality for volume water use to appliances in your home, like washing machines and toilet cisterns as well as for irrigation. Dependant on how many appliances and WC's you connect to and whether you use the stored water for irrigation, installing a rainwater harvesting system can supply 50% or more of your water demand, particularly in the summer time when the use of mains water is at its peak. As an example a typical garden sprinkler can use upwards of 1000 litres per hour. In these periods as much as 95% of your water use could be supplied by a suitably designed and installed Rainwater Harvesting system.

On commercial developments the demand for mains water usage can be much higher as the vast majority of water typically used for office blocks, schools or commercial buildings is required to flush urinals and toilets as well as watering landscaping areas and washing down vehicles and car parking areas. Again a Rain Harvesting System could provide in excess of 80% of the water required, replacing mains supply.

In areas with combined sewer systems harvesting rainwater will attenuate (store water) reducing storm water runoff which is especially important, because excess runoff during heavy storms may lead to the discharge of raw sewage from outfalls when treatment plant capacity cannot handle the combined flow.

There are two types of Rainwater Harvesting systems.

Direct Feed Systems - Like the majority of domestic and commercial systems, the **Brett Martin Rainwater Harvesting system is a direct feed system**. Direct feed systems do not require a loft tank and generate much better pressure than header tank systems, this makes them more suitable for washing machines, car wash equipment and garden hose / sprinkler applications.

Header Tank Systems - These systems require a header tank to be installed in the loft. They are also equipped with a top up mains supply if rainwater storage is low. The control system is simple and inexpensive. However the pressure may be too low for some modern washing machines and garden hoses / sprinklers.

How do the systems work.

Rainwater is collected from a building via its guttering and downpipes which is then subsequently stored either underground or above ground in a storage tank or vessel. Depending upon which system is chosen the stored water is distributed to WC's, Washing Machines or Garden use via a submersible pump in the tank.

The combined Home and Garden system features a wall mounted control panel that controls the pump and provides a Mains water top up facility to the tank which is activated by a float switch in the tank when the water level is low. The Garden system features a submersible pump that is activated on demand.

Brett Martin's NEW Rainwater Harvesting range offers a direct feed system with two options. Home & Garden and a Garden only system.

The main advantages of rainwater harvesting are that it,

- Saves money by reducing your mains water usage.
- Provides an independent water supply during water restrictions.
- Helps to reduce flood risks and possible sewage overflow by holding back excess rainwater from the stormwater management system.
- Gains "Code for Sustainable Homes" rating points for your property.
- Rainwater is better for your garden as it has a balanced ph and is free from harmful chemicals.



Designing your system

Before beginning any Rainwater Harvesting project we recommend you contact us to help plan and assess your best options in ensuring you design and indeed finally install the best possible system for your project, that includes sizing the system and storage tank in accordance with BS 8515 : 2009 the code of practice for Rainwater Harvesting systems.

The chart below uses the integrated approach prescribed in BS8515 :2009. It assumes an average annual rainfall of 950mm and a standard tiled or slated pitched roof. If you want further advise on your specific project or property then in the first instance, please contact one of our sales team.



Choosing the correct volume Brett Martin Harvesting system for your property.



Roof Size	Tank Volume (litres)				
Area m ²	1200	1500	2000	3500	6000
35	●	◐	◐	◐	◐
40	○	●	◐	◐	◐
55	○	○	●	◐	◐
95	○	○	○	●	◐
165	○	○	○	○	●

*Please note that larger volumes can be supplied by connecting multiple tanks together.

● Home System ○ Garden system ◐ Combined system

Filter and Overflow Unit

Mounted on top of all but the 6000 litre unit is the filter and overflow chamber . This chamber houses the main rainwater filter and overflow for the system. The chamber is unique in that it offers three 110mm inlet pipe options and the option of a 110 or 160mm main channel connection. The filter system shown below features a 200mm circular high grade 316 stainless steel filter sits inside the bright green polyethylene housing, this is then fitted inside the main chamber. The filter has a 15° fall across its face which supports self cleansing. The filter itself has been independently tested and is proven to handle flows from roof areas up to 500 sq metres . The filters function is to prevent silt, leaves and debris from entering the storage tank that may be flushed into the guttering system from the roof. Also inside the top chamber is an overflow that controls the stored water level within the tank and prevents back flush and the filter flooding.





The combined Home & Garden system is designed to supply stored rainwater to internal appliances like washing machines and WC's via a 32mm pressure pipe system connected to the main submersible pump located inside the systems robust hdpe storage tank. As well as appliances inside your home this system can also supply rainwater to your garden by simply branching off the pressure pipe from the pump to a tap or hose connection. The Home & Garden system uses a wall mounted "Top up" Controller (shown right) which controls the submersible pump located inside the tank. The pump has a floating intake filter attached, which consists of a ball float attached to a short length of suction pipe, this has a stainless steel filter attached, which sits just below the top water level in the tank and when the pump is in operation this ensures the cleanest water is supplied. There is also a float switch fitted in the tank which detects the tanks water level and if it is too low the switch will open a solenoid valve located on the control panel, this solenoid is connected to your mains water supply and when opened will supply mains water to the tank via a tundish with a type A air gap, which is also located on the control panel. Filling the tank with mains water like this prevents stagnation and dry running of the pump and hence the name Top Up Controller.

Range

1500 litre (Low profile unit)
1200 litre
2000 litre
3500 litre

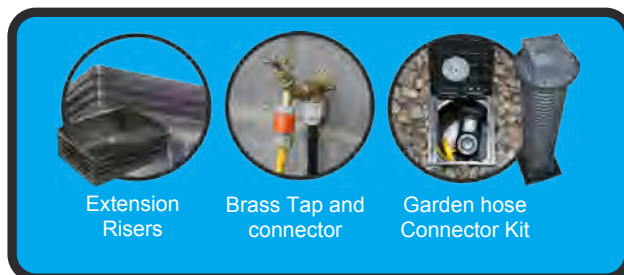


* 6000 litre system available see page 6.





System Options : Available for system at extra cost.



The Garden system specification is very similar to the Home & Garden system detailed on previous pages. The main difference is that it does not have a mains controller and rainwater from the tank is supplied via a self priming submersible pump located within the tank. All Garden systems feature a 20mm pressure pipe system rather than a 32mm system, which terminates with a simple pipe connection located on the external wall of the tank. To fully install, simply connect the specially marked mdpe pipe from the tank to either a garden tap or hose connection. All Garden systems come with 10 metres of pump power cable and a standard 230v 3 pin plug which will need to be plugged into the mains supply. This will provide power to the pump and your system will be ready for use.

Range

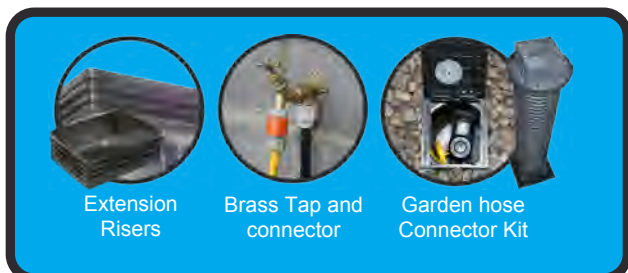
1500 litre (Low profile unit)
1200 litre
2000 litre
3500 litre



* 6000 litre system available see page 6.



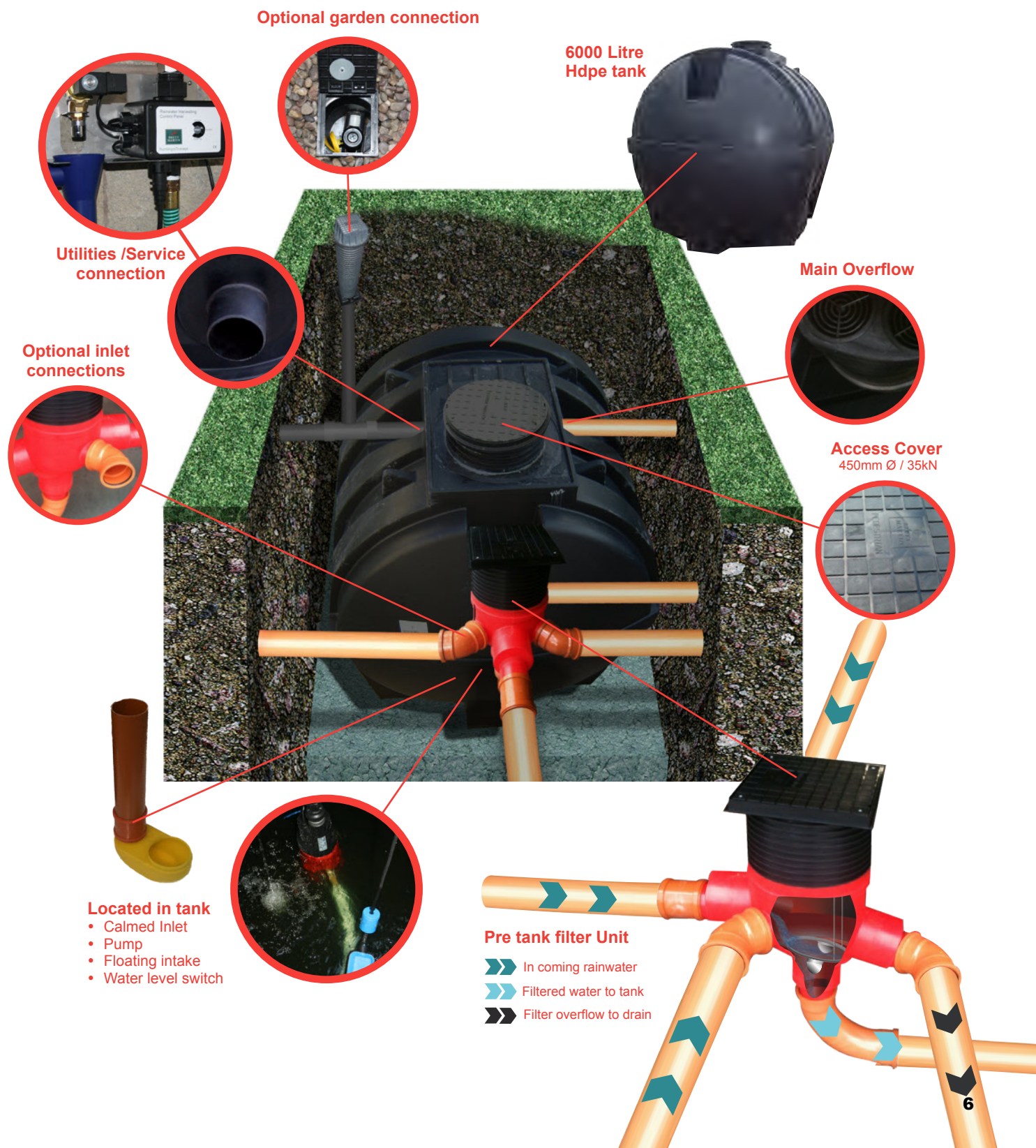
System Options : Available for system at extra cost.



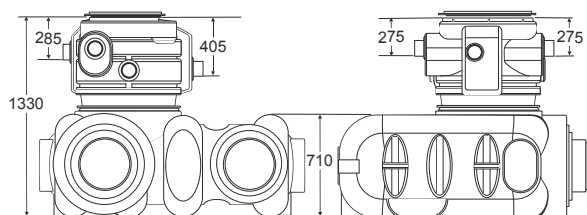


The 6,000 litre unit comes with a pre tank filter replacing the in tank filtration in the smaller units. The filter is positioned before the Hdpe tank and has 3 inlet connections that can be connected to multiple down pipes from a building, it will also facilitate a main connection from 110 or 160 mm industrial down pipes. Inside the tank is a self priming submersible pump with water level float switch and floating intake valve (Home range only), overflow and calming inlet, all accessible via the tank access, which on the 6000 litre unit is a circular 450 mm opening. The access opening comes with a 300 high chamber riser and a 35kn, PVCu access cover . As with the other smaller units there are two specifications Home & Garden and Garden only.

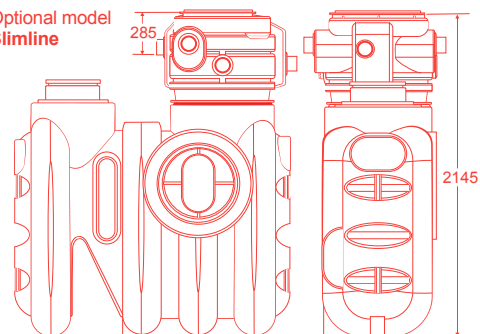
The illustration below features the 6000 litre Home & Garden range BMAPH4 unit, with an optional garden stop tap fitted.



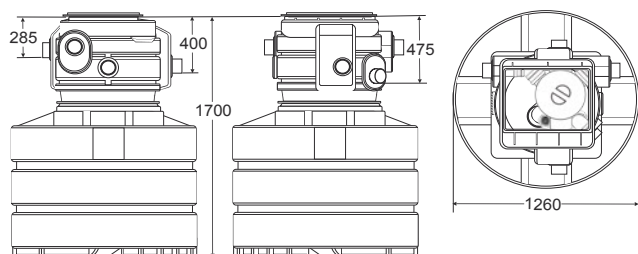
Home Range
BMAPHLP 1500 litre (Low profile unit)
Garden Range
BMAPGLP 1500 litre (Low profile unit)



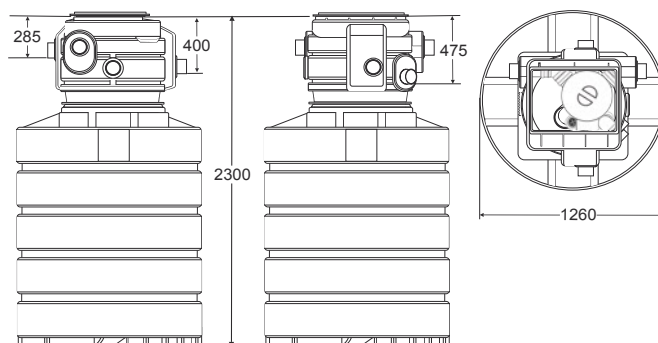
Optional model
Slimline



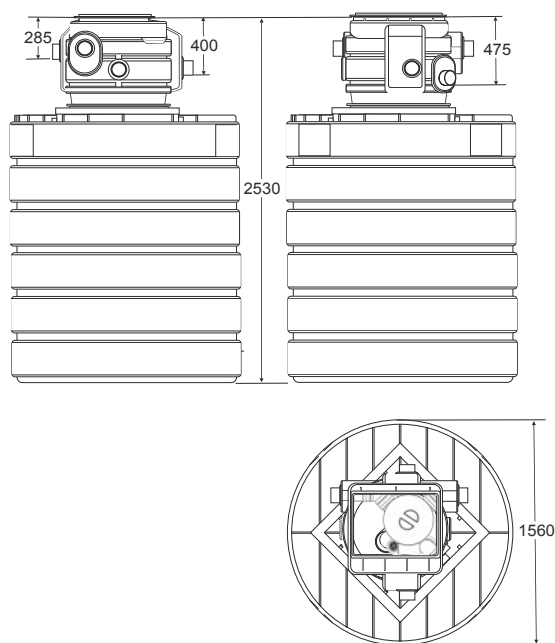
Home Range
BMAPH1 1200 litre unit
Garden Range
BMAPG1 1200 litre unit



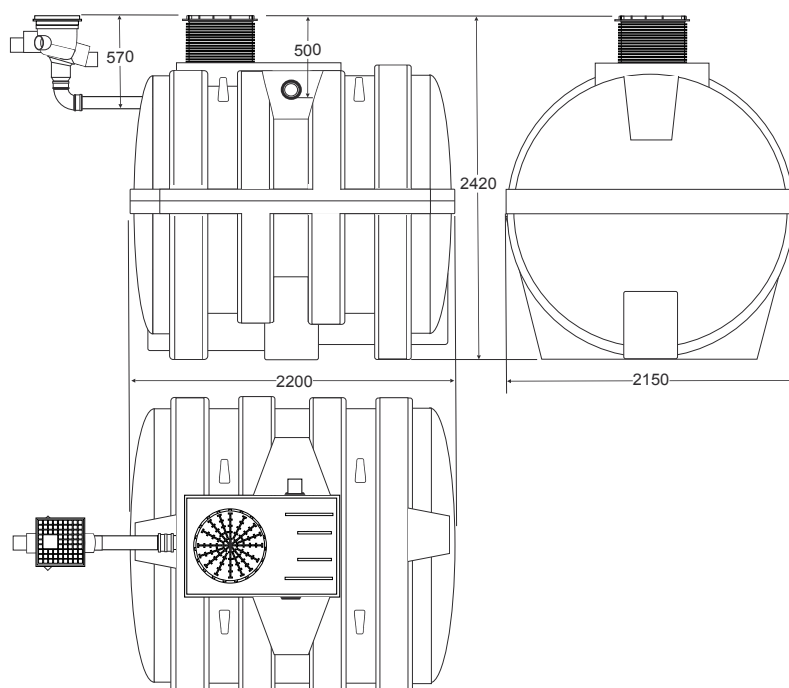
Home Range
BMAPH2 2000 litre unit
Garden Range
BMAPG2 2000 litre unit



Home Range
BMAPH3 3500 litre unit
Garden Range
BMAPG3 3500 litre unit



Home Range
BMAPH4 6000 litre unit
Garden Range
BMAPG4 6000 litre unit



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