

ADOBE LOOS & WORMS

Organic Waste & Wastewater Treatment Systems

WHAT TO DO WITH GREY WATER?

RE-USE SYSTEMS

A Greywater Re-Use System is a grey water system designed to treat domestic wastewater excluding toilet waste. Councils are increasingly reluctant to allow homeowners to dispose of grey water without treatment. The days of being allowed to spray wastewater untreated onto the garden have ended. Each State and Council have their own regulations and you will need to contact your local council to establish what they will permit alongside a waterless toilet. The following explains the situation primarily in NSW. Please note however that there are variations from State to State & from Council to Council.

Primary treated wastewater must be disposed of in sub-surface trenches or evapo-transpiration (ETA) beds. Septic tanks are the main example of systems that treat only to the primary level. Secondary treated water can be disposed of below ground, for example, by drip irrigation lines under mulch. Disinfected secondary treated water can be disposed of at ground level and in some cases by spraying in pre-designated areas. Aerated water treatment systems (AWTS) treat to secondary level. Such systems include a disinfection unit, most commonly using chlorine. These systems typically cost around \$8,000 plus in ground installation. There are then annual inspection and maintenance fees plus wear and tear on the pumps and aerators and electricity costs totalling some \$800-1,000 or more per year.

In order to satisfy the Australian Standards (AS1547) requirements a grey water re-use system which cleans waste-water via a grease trap and gravity fed sand filtration can be used. You can use the Greywater Re-Use System for disposal of the water via trenches or ETA beds. Suggest the Greywater Re-Use System to your geo-tech engineer and/or council.

Your council will probably ask you for a site plan. You may need to engage a Greywater Re-use Design consultant or geotechnical engineer to test your soil and produce a plan for distribution of the treated water. Make sure the consultant or engineer allows for the lower volume of water associated with a waterless toilet. This should result in trenches only 65% of the length of trenches for septic systems handling both black (toilet) and grey water.

We have found that some consultants & engineers have not had experience with composting toilets and so may not want to design a system around a waterless toilet. You should check before engaging anybody that they are happy to work with you in designing a system which is based on waterless toilets.

The Greywater Re-Use System is explained overleaf. If your council or geo-technician/consultant will not allow the installation of Greywater Re-Use System then you can still propose a waterless toilet with treatment of grey water via a conventional grease trap and pump well into trenches. The alternative to this is a small septic tank just for grey water.

The Greywater Re-Use System provides a simple and low cost effective means of treating grey water. Not only is the equipment low cost, but also, if your site is suitable, the only excavation work required to install the system will be the trenching. The ongoing costs will be less than those of a standard septic system.

The filtration tank, which is less than 1 cubic meter in size, consists of a pine bark coarse filter on top of a fine sand filter. The coarse filter removes large particles & fats from the kitchen, and lint from the washing machine normally caught in a grease trap. Compost worms can be used in this layer. The filtered material and bark will compost over time and should be removed every 6-12 months and replaced with fresh bark, available from your local garden nursery. The pine bark is separated from the sand by filter cloth. The sand filter traps still finer materials, polishes the water and reduces the organic content of the water. The final stage of primary treatment is flowing over the bio-film on the 20mm aggregate at the base of the Greywater Re-Use System tank. If your distribution area is down hill from the filtration tank your engineer/consultant should be able to design a distribution system without the use of a pump. If this is not the case you will need a pump well.

The 200 litre pump well is located in the ground alongside the filtration tank. We can also provide an alarm system to alert you to a non functioning pump if required.

The Greywater Re-Use System is a primary treatment system and therefore you will need to distribute the treated water into shallow subsurface irrigation trenches as specified by the engineer/consultant. Make sure the calculations of size do not include an allowance for toilet water, which would make them unnecessarily large and expensive. Your plumber can lay the treated water application area (distribution system) in accordance with the site plan.



Pump Well Price:	\$ see price list
Filtration Tank Price:	\$ see price list (excluding sande/incl GST) <i>Sample bags of sand and gravel are supplied</i>

Kym Mogridge PO Box 751 BEGA NSW 2550	www.wormsloos.com.au	Ph (02) 6494 1051 Fax (02) 6494 1051 Mobile 0427 277 249 E-mail: info@wormsloos.com.au
---	--	--

Greywater Re-Use System

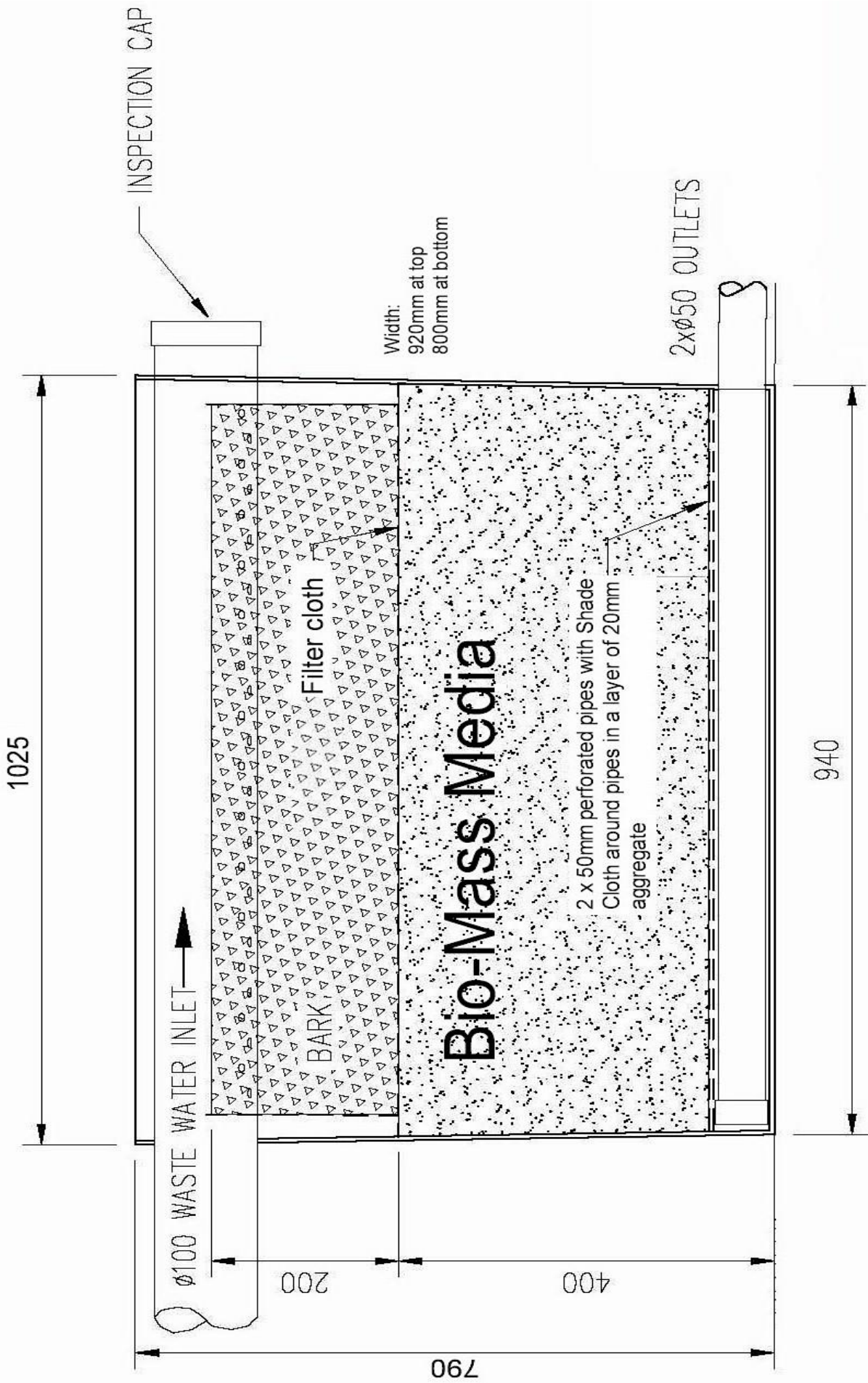
SPECIFICATIONS

FILTRATION TANK:

- ◆ Material: Medium density grade polyethylene
- ◆ Properties: U.V stabilised
High stress resistance
High fracture resistance
- ◆ Thickness: Average 5 mm
- ◆ Construction: Rotational moulding
All surfaces are continuous with no welded or joined seams
Ribbed structure for additional strength
- ◆ Dimensions: Height: 790 mm
Length: 940mm btm – 1025mm top
Width: 800mm btm – 920mm top

PUMP WELL / SECONDARY TREATMENT TANK:

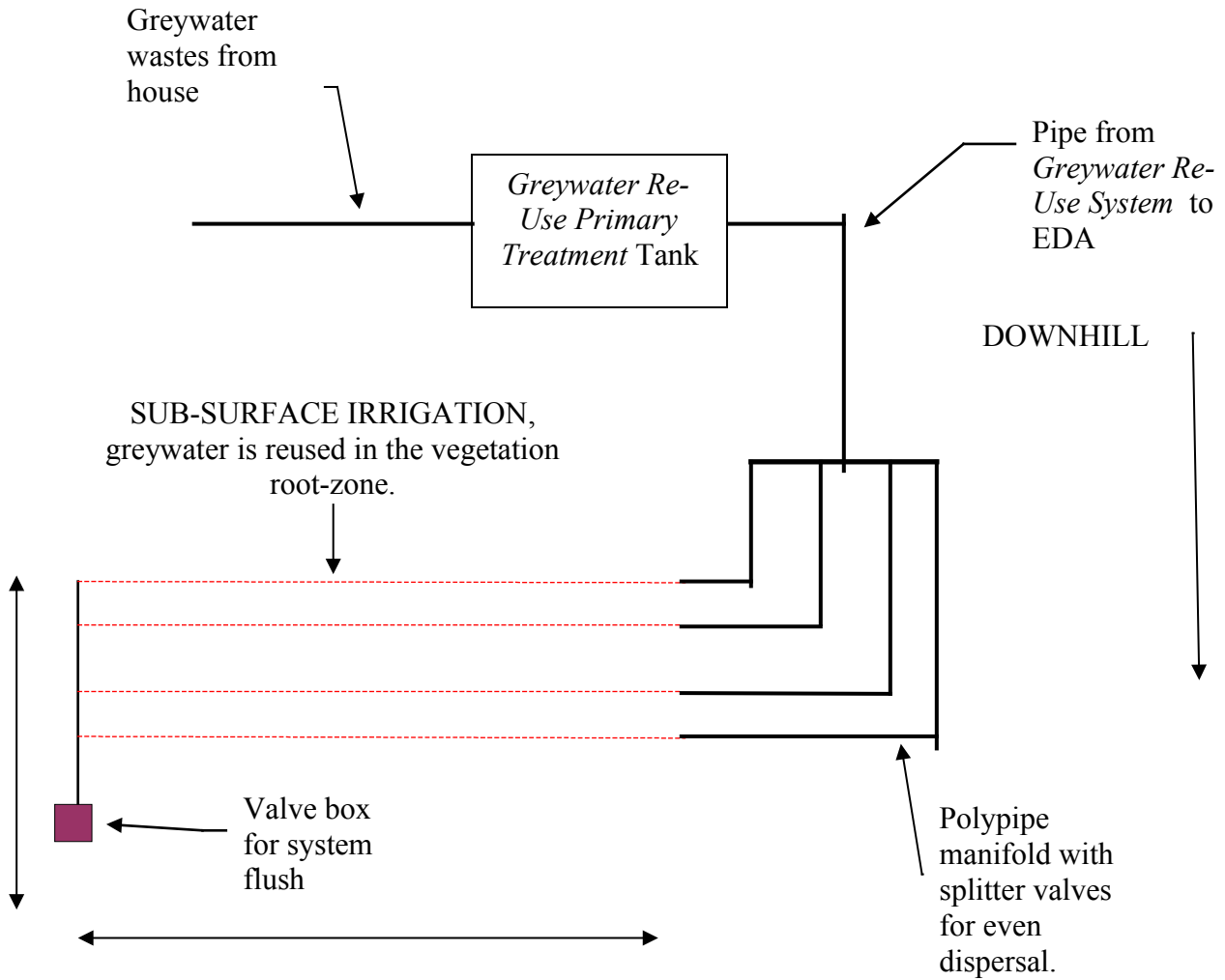
- ◆ Material: Medium density grade polyethylene
- ◆ Properties: U.V stabilised
High stress resistance
High fracture resistance
- ◆ Thickness: Average 5 mm
- ◆ Construction; Rotational moulding
- ◆ Pump: Davey D15 Vagma Automatic
- ◆ Dimensions Height - 900 mm
Diameter - 600mm



Greywater Re-Use Primary Treatment Tank

NCG GREYWATER REUSE SYSTEM

Schematic diagram for **General Grey Water Reuse System** using a Greywater Re-Use Primary Treatment Tank, gravity dispersal through Sub-surface Irrigation into an Effluent Disposal Area (EDA). The EDA is designed to re-use greywater in the root-zone of vegetation. Dispersal pipe can be one continuous length or manifolded as shown in diagram. This system can process the volume of **Greywater** created by up to <# here> persons where the soil type is of a <to be determined> composition. Designed to AS1547-2000.
(Diagram is not to scale)



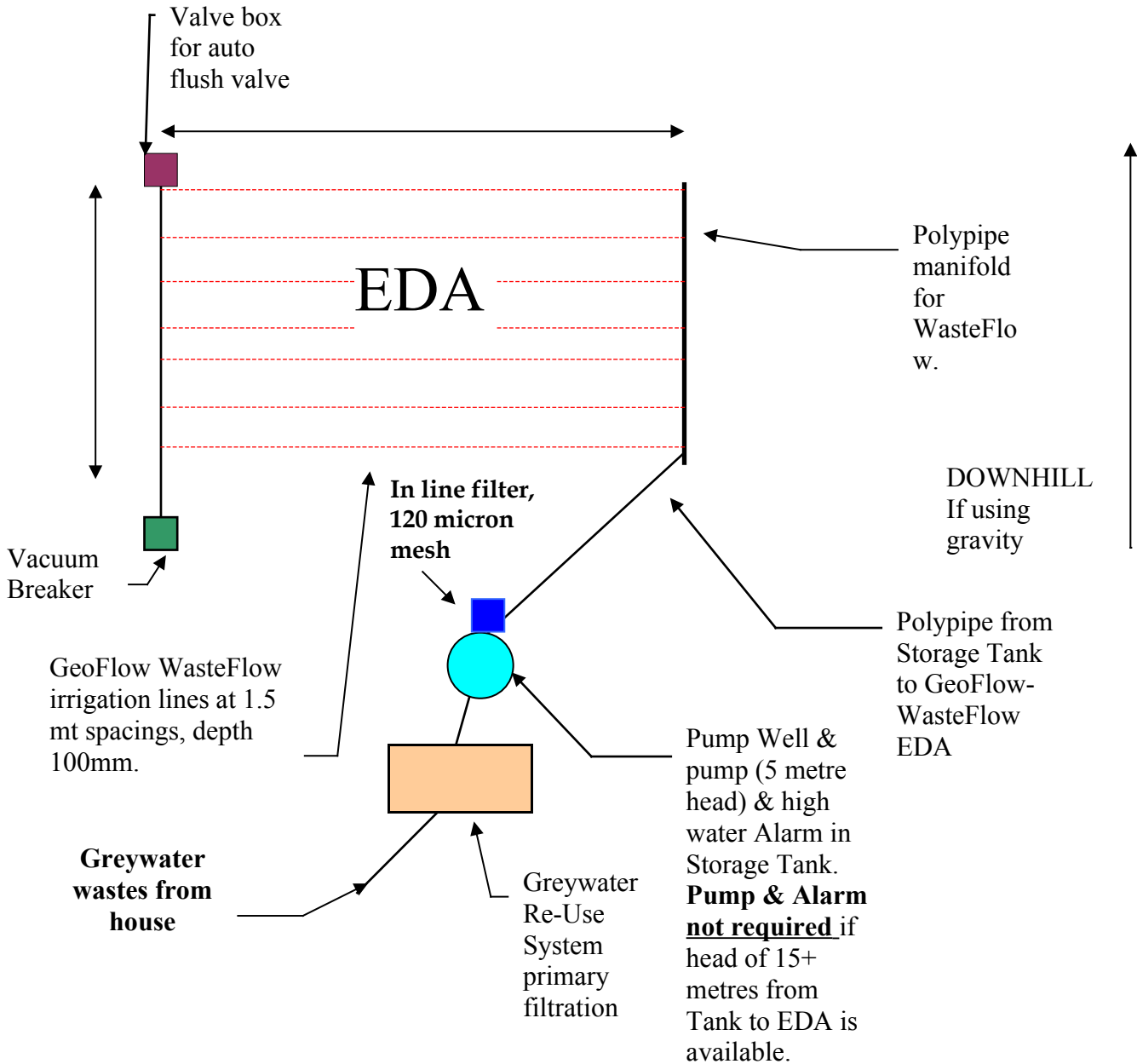
NCP GREYWATER REUSE SYSTEM

Schematic diagram for **Grey Water Reuse System** via Sub-Surface Irrigation using a Greywater Re-Use Primary Treatment Tank, Pump Well, Pump & optional High Water Level Alarm (gravity if head >15metres), and GeoFlow-WasteFlow in the Effluent Disposal Area (EDA).

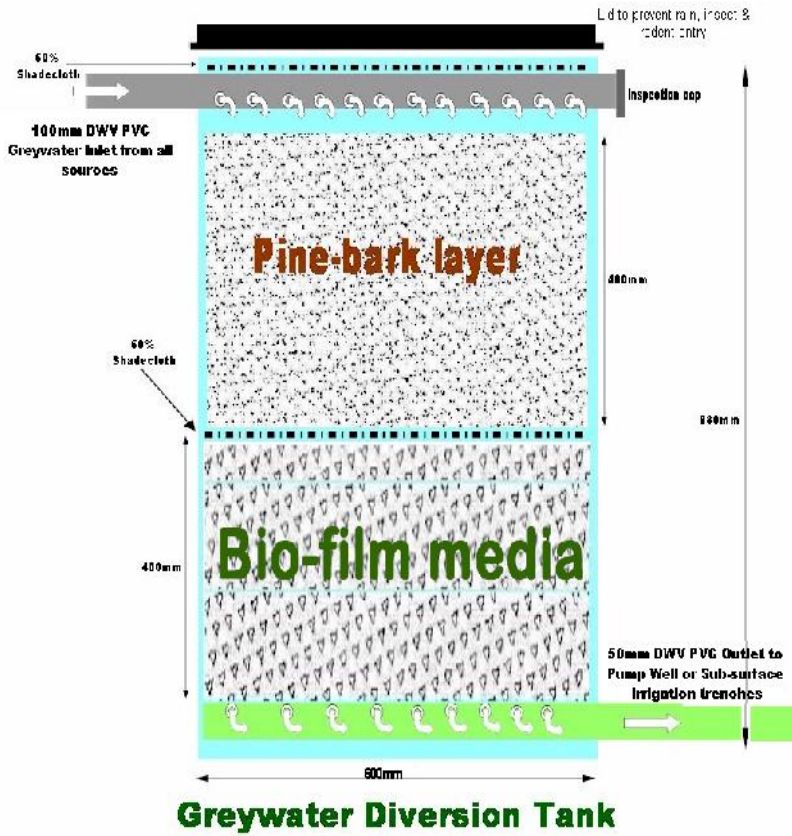
This system can process the volume of Greywater created by up to <# here> persons where the soil type is of a <to be determined> composition. Designed to AS1547-2000.

Please note that GeoFlow-WasteFlow Irrigation lines (with RootGuard) are buried 100mm below ground level in small 100mm trenches and do NOT require any aggregate or geo-textile fabric for installation.

(Diagram is not to scale)



GREYWATER DIVERTER



GREYWATER PUMP

