

TREATMENT PLANT APPROVAL 05/2024
Plumbing and Drainage Regulation 2019, part 4



Approval

1. The **ECO Design GRS** (“the System”) described in the Specifications and Drawings in the attached Schedule and manufactured by **ECO Design Sustainable Housing** (“the manufacturer”) (ABN 33 190 648 366) (“the manufacturer”) has been assessed in accordance with the *Queensland Plumbing and wastewater Code Version 1 2024*.
2. Approval is granted for the system as an “**Low-level**” quality wastewater treatment system, subject to compliance by the manufacturer with the requirements of the *Queensland Plumbing and Wastewater Code - Schedule 1*, and the *Queensland plumbing and Drainage Regulation 2019* and the conditions of approval detailed below.
3. As no changes have been made to the system, this approval replaces the previous Treatment Plant Approval (TPA) TPA 05/2021 Amendment 1 issued on 22 December 2023.
4. This approval, the conditions of approval and the Schedule comprise the entire Chief Executive Approval document.
5. Any modification by the manufacturer to the design, drawings or specifications scheduled to this approval must be approved by the Chief Executive.

Conditions of approval

6. The manufacture, installation, operation, service, and maintenance of the system must be in conformity with the conditions of this Treatment Plant Approval.
7. For the system to meet the requirements of an “**Low-quality effluent**” greywater treatment system, the system must produce the following effluent quality —
 - (a) 90% of the samples taken must have a BOD₅ less than or equal 240 g/m³; and
 - (b) 90% of the samples taken must have total suspended solids less than or equal 180 g/m³.
8. Each system must be serviced in accordance with the manufacturers details supplied in the owner’s service and maintenance manuals.
9. Each system must be supplied with:
 - (a) a copy of this Treatment Plant Approval document;
 - (b) details of the system and ancillary equipment;
 - (c) instructions for authorised persons for its installation;
 - (d) a copy of the owner’s manual to be given to the owner at the time of installation; and
 - (e) detailed instructions for authorised service personal for its operation and maintenance.
10. This approval does not extend, apply to, or include the land application system used in conjunction with an approved system installed on premises.
11. Wastewater effluent from an ECO Design GRS can only sub-surface irrigation as a means of disposal.
12. At each anniversary of the Treatment Plant Approval date, the manufacturer must submit to the Chief Executive a list of all systems installed in Queensland that they have received an installation and commissioning certificate for during the previous 12 months.

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13. Where the Chief Executive is notified of any system failures that they believe are a result of poor design or faulty manufacture, the Chief Executive may randomly select several installed systems for audit. The Chief Executive will notify the National Association of Testing Agencies (NATA) accredited laboratory nominated by the manufacturer, which systems are to be audited for Biochemical Oxygen Demand (BOD₅) and Total Suspended Solids (TSS). The sampling and testing of the selected systems, if required, is to be done at the manufacturer's expense. The following results must be reported to the Chief Executive:
- (a) Address of premises.
 - (b) Date inspected and sampled.
 - (c) Sample identification number.
 - (d) Biochemical Oxygen Demand (BOD₅).
 - (e) Total Suspended Solids (TSS).
14. The Chief Executive may, by written notice, cancel this approval if the manufacturer fails —to comply with one or more of the conditions of approval; or within 30 days, to remedy a breach, for which a written notice been given by the Chief Executive.
15. This approval may only be assigned with the prior written consent of the Chief Executive.
16. This approval expires on **30 April 2029** unless cancelled earlier in accordance with paragraph 14 above.

Lindsay Walker



Director
Plumbing, Drainage and Special Projects
Date approved: 29 April 2024

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SCHEDULE

ECO Design GRS Greywater Treatment System.

Attachment 1 – ECO Design GRS Greywater Treatment System - Operators manual.

Attachment 2 – ECO Design GRS Greywater Treatment System - Schematic diagrams.

ECO Design Greywater Recycling System System Design

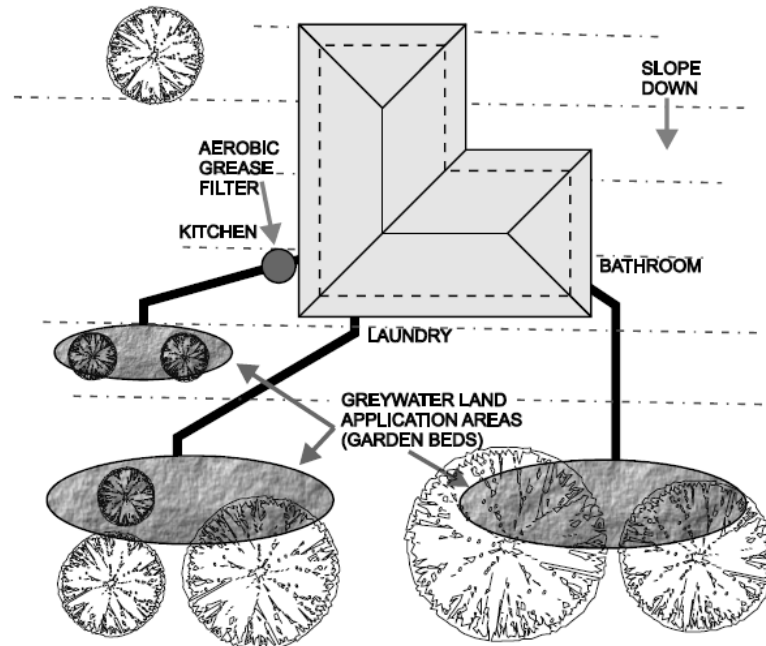


The ECO Design Greywater Recycling System (GRS) is a simple filtering and distribution system which reuses greywater immediately as it is produced for watering gardens. Greywater is distributed into the topsoil in garden beds by a shallow subsurface distribution system meeting the performance requirements for land application areas in AS/NZS 1547 - 2012. The system utilises the existing micro and macro organisms, flora and fauna in the topsoil to digest nutrients and pathogens in the greywater.

Kitchen greywater is filtered through the Aerobic Grease Filter (AGF) before flowing to its own garden irrigation area. The AGF is a carbonaceous filter and does not produce noxious odours as conventional grease traps do. The AGF requires approximately one hour maintenance per year and no desludging or pumpout is required.

The GRS distribution pipes and outlets are designed to prevent clogging by using large diameter pipe and outlets (50mm internal diameter) protected by an outlet housing which prevents roots entering the system. The GRS outlets require approximately one hour maintenance per year. All maintenance can be carried out by the householder and integrated into the regular garden routine.

The GRS is designed to decentralise the greywater load by having a separate area for each greywater source. The GRS can be installed in any soil type and incline with minimal site disturbance. The size of the land application area is determined according to the soil type and projected volume of greywater in litres per day calculated using the Design Loading Rate calculation from AS/NZS 1547 - 2012. The system is installed to a specific site installation plan and the ECO Design Greywater Recycling System Installation, Operation and Maintenance Manual.



ECO Design - Greywater Recycling System

Ph:0458-627-701

www.greywater.com.au

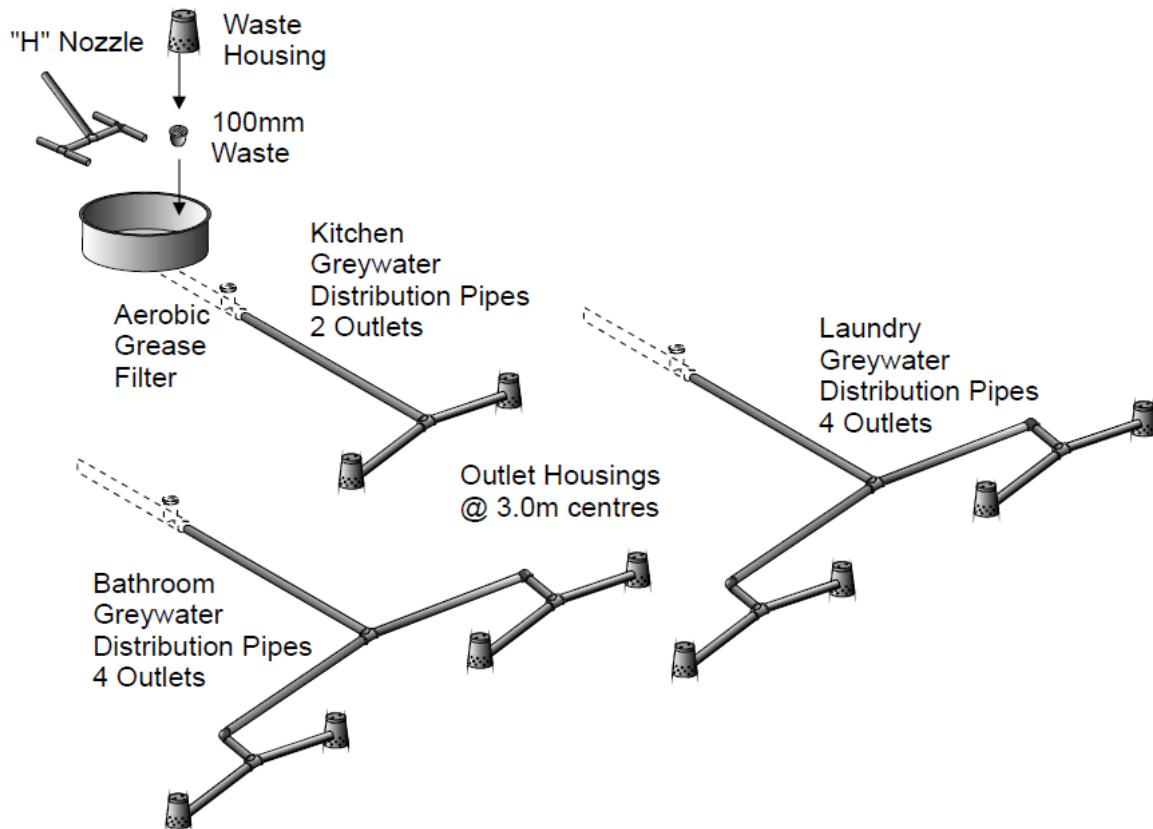
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1.

ECO Design Greywater Recycling System Total System



The complete Greywater Recycling System (GRS) is connected to house drainage pipes to irrigate gardens by a shallow subsurface distribution system meeting the performance requirements of AS/NZS 1547 2012.



GREYWATER REUSE SYSTEM - COMPONENTS						
ITEM	DESCRIPTION	QTY	LENGTH	HEIGHT	WIDTH	L.M.
Distribution Pipe	HDPE	8	5.0 metres		56mm dia.	40.0
"T" Connector	HDPE	12	125mm	100mm	50mm dia.	
90 Degree Connector	HDPE	6	100mm		50mm dia.	
Outlet Housings	HDPE	10		250mm	300mm dia.	
Aerobic Grease Filter	250 litre open top tank	1		400mm	1200mm dia.	
Waste Drain	HDPE	1	100mm		100mm dia.	
Waste Housing	HDPE	1		250mm	300mm dia.	

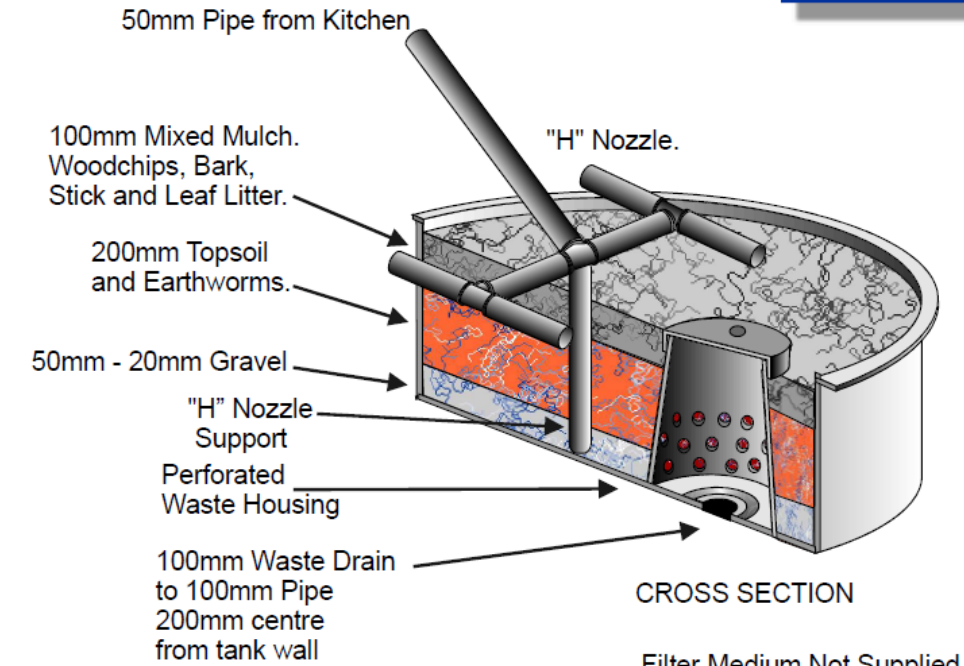
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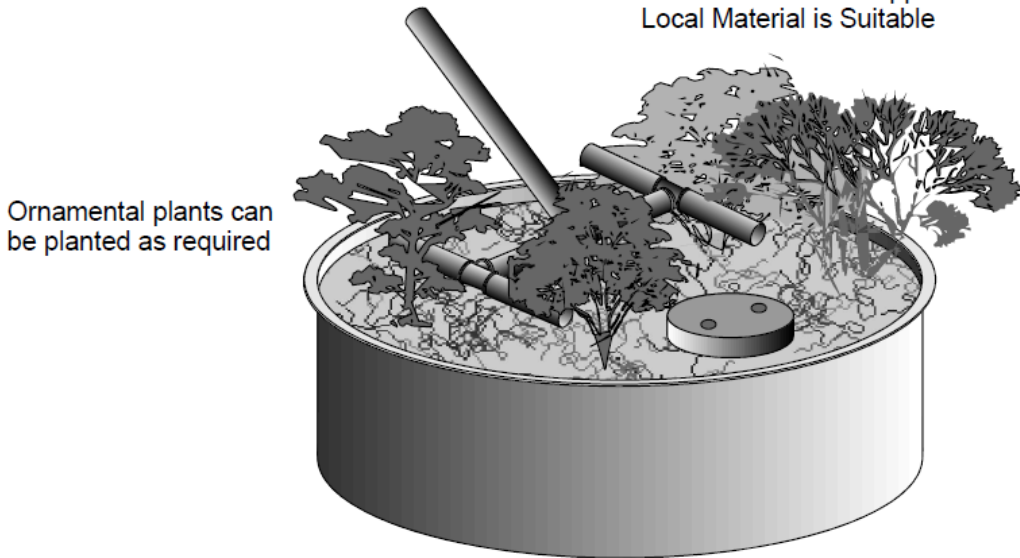
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2.

ECO Design
Greywater Recycling System
Aerobic Grease Filter (AGF)

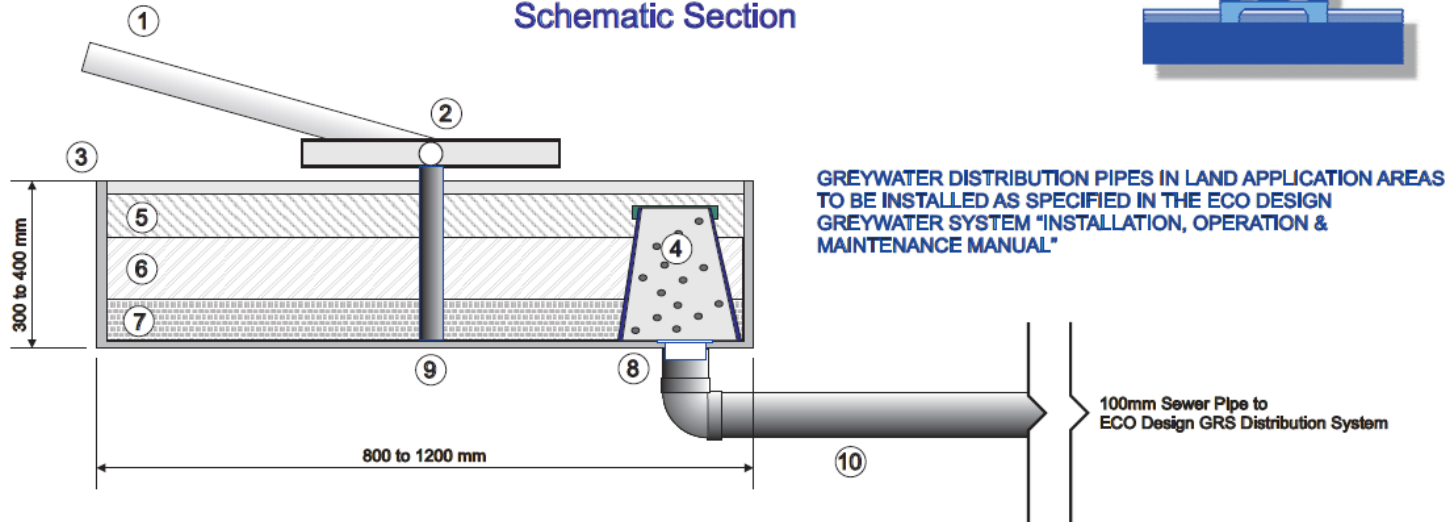


Filter Medium Not Supplied
Local Material is Suitable



250 litre HDPE Tank
1200mm diameter x 400mm deep

ECO Design Sustainable Housing Greywater Recycling System (GRS) Schematic Section



ITEM	COMPONENT	MATERIAL
1	GREY WATER WASTE PIPE	PVC
2	GREY WATER DISTRIBUTOR NOZZLE	HDPE PLASTIC
3	AEROBIC GREASE FILTER (AGF)	HDPE PLASTIC
4	AGF GREY WATER WASTE HOUSING	HDPE PLASTIC
5	MULCH	BARK OR LEAF LITTER
6	TOPSOIL	ORGANIC SANDY LOAM
7	GRAVEL	20MM
8	100MM WASTE GRATE	PVC
9	DISTRIBUTOR NOZZLE SUPPORT	HDPE
10	65MM to 100MM SEWER PIPE	PVC

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