

Rota-Loo Greywater System

Niimi Absorption Trench and Reed Bed Filter System

(Approval number CA 041/94)

In a household you have Greywater and Blackwater. Greywater is the material that comes from kitchen sinks, laundries, showers etc, Blackwater is the product that comes from a flush toilet.

The combination of Rota-Loo Composting Toilet and Rota-Loo Greywater System will provide the same function as an approved all waste septic system, except that it is not possible to reuse the effluent coming out of a septic tank but it is possible with the Rota-Loo systems.

The size of the systems shown in the charts may vary according to the water consumption and geological conditions, it may be necessary for you to use the services of a professional consulting engineer to determine the size of the system you require.

Option 1 – Niimi Absorption Trench

The principle of this systems is to keep the waste water in an aerobic state near the surface of the soil where soil microbes and other soil fauna (worms etc) live. This soil fauna is very efficient in digesting nutrients and pollutants in domestic wastewater to reduce the concentrates to negligible and often undetectable levels.

Layout

Greywater from the building to a 2,500Lt holding Tank – Distribution box – two or more Niimi Trenches.

Items Supplied

2,500Lt Holding Tank (1550mm high by 1880mm wide x 120kg), distribution box (to fit 1 inlet and two outlets), plumbing fittings for distribution box and a set of detailed plans for construction.

The holding tank is used as a surge tank and to catch any material that may have been washed down the sink. Material will fall to the bottom of the tank and any fats etc will float to the top, the "clear" water from the middle of the tank will then flow into the Distribution box.

The distribution box is used to determine which trench is being used and which one(s) are being rested. The trenches should be swapped over every six months.

Sizing – See Table (Guide only)

The amount of Niimi Trenching required will be determined by the number of bedrooms in the house and the soil type or as determined by a qualified designer. The trench is between 300-400mm wide and 10-15m in length, the trenches should be at least 2m apart. If the specified length of the trenching is greater than the total of the two trenches (10-15m each), additional trenches can be connected to the distribution box.

The trenches should follow the contour of the land and the bottom of the trench should be level.

The location of the trenches should not be located in a heavy traffic area. The liquid in the trenches will be processed by the soil fauna, so there will not be any liquid for above ground watering etc. Local water loving plants (shrubs and grasses) are planted ontop of the trenches.

Maintenance

In general there is very little on-going maintenance. Desludging of the holding tank should be done at least once every three years.

Option 2 - Reed Bed

The Reed bed system uses the principles of transpiration and evaporation to process the Greywater, Which is more efficient process than Niimi Trench system on its own. There is no liquid left after this process for above ground watering

Layout

Greywater from the building – 2,500Lt holding Tank – Reed Bed(s) – Distribution box – Niimi Trenches.

Items Supplied

As per Option one.

Sizing – See Table (Guide only)

The number of bedrooms in the house determines the size of the reed bed. You can have a single Reed bed that equals the area specified or you can have a multiple small Reed beds that have a combined total of the specified Reed bed area. There is no set width or length of the Reed Bed but it should be three times greater in length than width. The Reed bed(s) should be located in a sunny position.

The bottom of the Reed bed should be horizontal or a 1:40 slope, the fall between the individual Reed beds should be equivalent 1:40 slope. The Reed beds can be curved to suit the contour of the land, within reason.

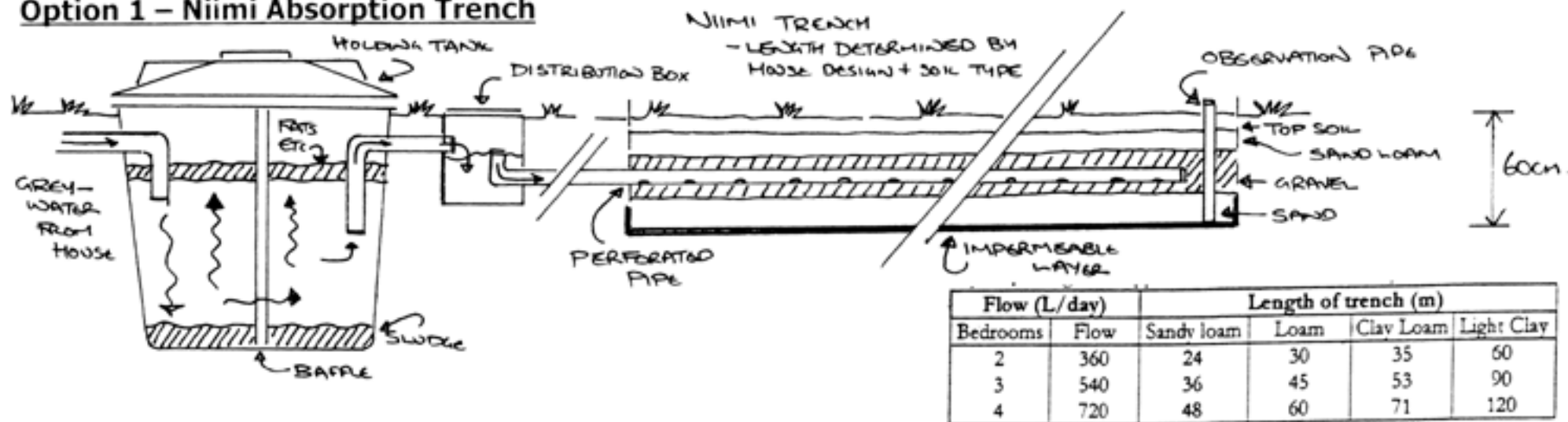
The type of Reeds will be site specific (a list of Native Reeds is supplied in the installation manual, please check with your local Native nursery for more information). The maximum space between Reeds should be 45cm.

Any liquid left after processing in the Reed bed will then flow into the distribution box and then into a Niimi trench, see "Sizing Table". Since the Reed bed is exposed to natural elements the Niimi trenches are also used as an overflow for when it rains.

Maintenance

Each year you will need to harvest the Reeds by one third and if the house is left unoccupied for long periods, some watering of the reeds may be needed to keep the reeds alive. Desludging of the holding tank should be done at least once every three years.

Option 1 – Niimi Absorption Trench



Option 2 - Reed Bed

