

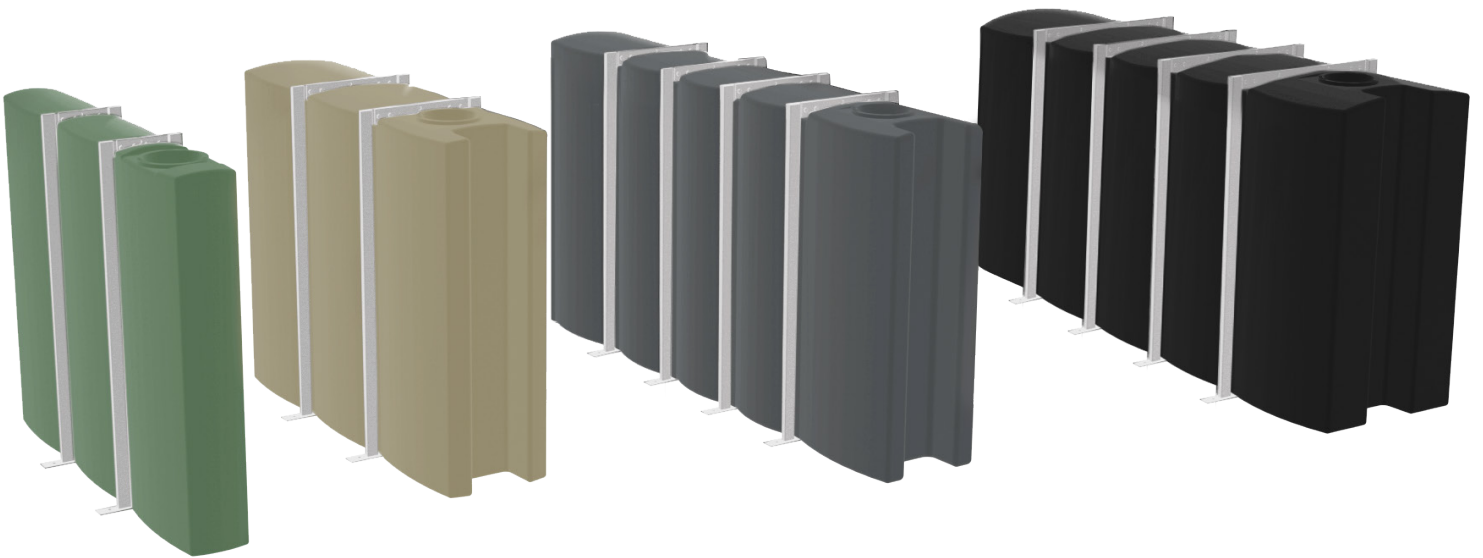


Doing Good From The Ground Up



The Compact Home System.

StormSlim® Installation, Engineering & Maintenance Guide





Doing Good From The Ground Up

Drawing Notes

Contractor to confirm all levels and dimensions and locate and mark all services and drains on site before commencing work.

Contractor to notify a chartered professional engineer if any of the design requirements outlined in this drawing package are not achievable.

Tank Location – Proximity to Nearby Structures

The location of the tank is the responsibility of the contractor and the tank owner. The contractor is to follow the limitations of the diagrams shown or notify a chartered professional engineer for a site-specific consultation.

The tanks are not able to be buried. They are designed to be placed on a concrete pad as detailed later on in this guide.

If the site requires a buried tank, refer to our StormLite® range of underground tanks.

Soil Conditions

This design assumes site soils will meet the requirements of NZS3604.2011.

Classification of “Good Ground”. Contractor to confirm site exhibits these properties or notify chartered professional engineer for consultation.

Basecourse

Basecourse material to be either;

Crushed stone or gravel washed, with angular particle sizes no larger than 20mm (i.e., Gap7, 10 or 20).

Or if crushed stone/gravel is not available, specific quarry aggregate mix required as below, *naturally rounded gravel* - clean naturally rounded aggregate with particle sizes no larger than 20mm.

Tank Dimensions

Tank Size	Height (mm)	Width (mm)	Length (mm)	Slab Width (mm)	Slab Depth (mm)	Slab Length (mm)
1000 Litre	1800	360	2285	790	150	2400
2000 Litre	1800	640	2285	1073	200	2400
3000 Litre	1800	640	3400	1073	200	3500
5000 Litre	1800	1000	3400	1433	200	3500

Seismic Frame Specification

All fabricated according to AS/NZS 5131:2016.

All welding according to AS/NZS1554.1:2014.

Galvanising and spot repairs to comply with AS/NZS 2312C3 and AS/NZS 4680.

All members grade 350/C350/C350LO BAR.



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Tank Base Layout

Note: Ensure base is level.

Following this installation instruction will meet the seismic requirements for the areas below.

Part of Zone 1 (not all, see below). Zone 1 is defined by the map in <http://www.seismicresilience.org.nz/topics/seismic-science-and-site-influences/faults/earthquake-risk-zones/>. Auckland sits in Seismic Zone '1'.

Note that IL2, design life 25 year (return period factor R=0.75) is used for the design.

For soil class 'D' this is limited to the following areas in Seismic Zone 1:

NI: Northland / Auckland / North of Bombay hills

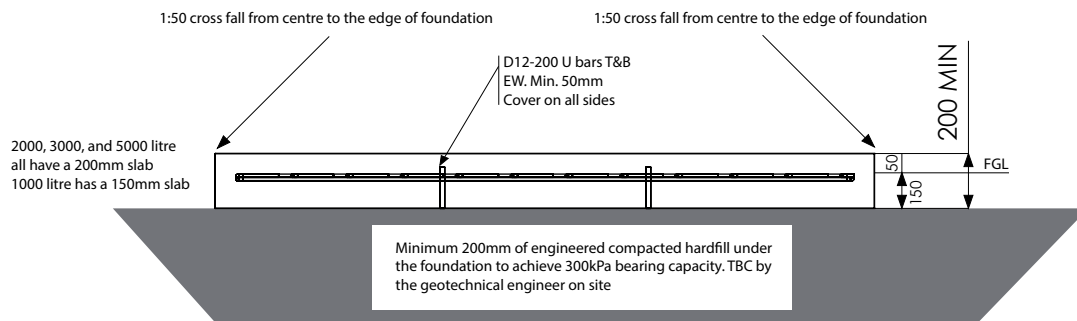
SI: Oamaru / Dunedin / Mosgiel / Balclutha

For Soil Class 'C' you can add:

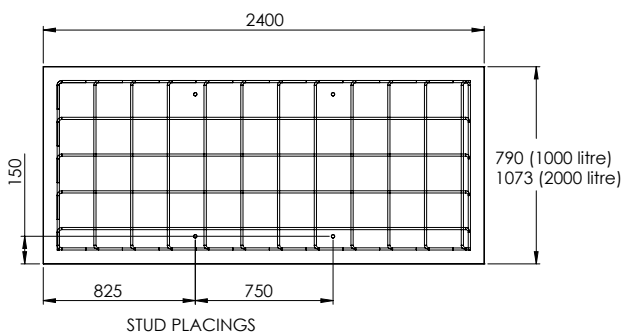
NI: Thames / Huntly / Ngaruawahia / Hamilton

SI: Akaroa / Timaru / Waimate / Bluff / Oban

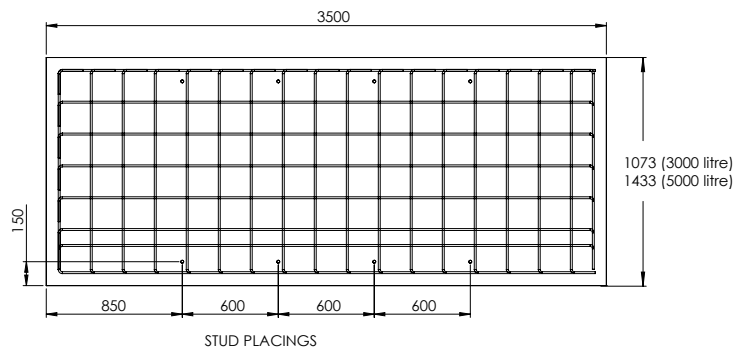
Any installations outside these areas will require specific design from a Chartered Engineer.



Steel and Stud Placement for 1000 and 2000 Litre Slabs



Steel and Stud Placement for 3000 and 5000 Litre Slabs



Steel Work

All reinforcing to be laid as per the structural specification from the slab engineer.

- All reinforcing shall conform to AS/NZS 4671.
 - All hook laps and bends shall be made without fracture in accordance to NZS 3101.
 - Grade 300 bars may be re-bent once only.
- All reinforcing has been designated as follows:
 - 500 Deformed HD20
 - 300 Deformed D20
 - 500 Plain HR20
 - 300 Plain R20

Reinforcing is represented diagrammatically and not necessarily in true projection.

Splices in reinforcing shall be made only in the position shown on the drawings or as otherwise approved by the engineer.

All reinforcement shall be fixed and tied where necessary in its specified position.

For plain round bars lap length is to be twice the lap length of deformed bars.

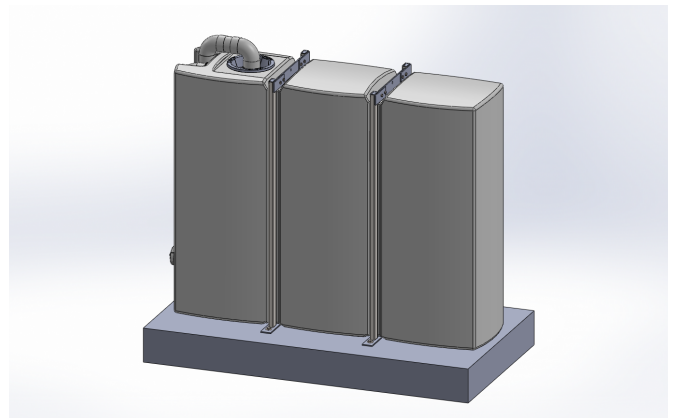
Lap lengths for deformed bars in tension shall be no less than the following.

Tank Placement

Tank frames should always be fitted and fixed down to the concrete slab.



The tank and frames must be fully fixed down and plumbed, as per the instructions below, before filling the tank. Filling the tanks prematurely will void the warranty.

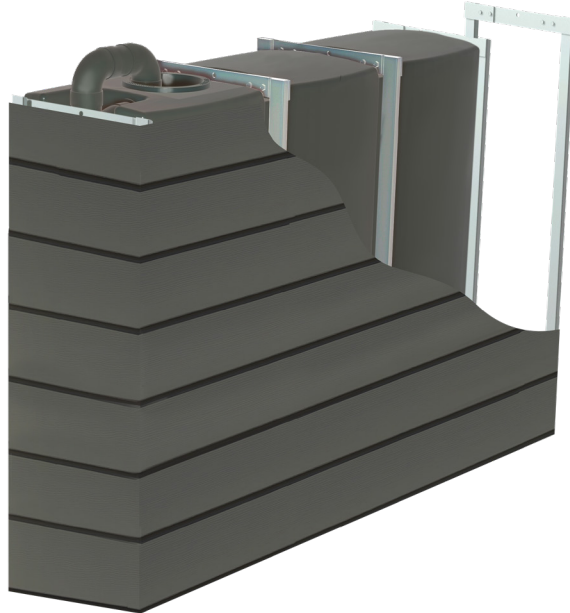


Installing Tank on Base

1. Install back upright frames to the base
2. Ensure that the tank will be in the centre of the slab as per the drawing
3. Tank frame anchoring details
 - a. Use M16 Class 8.8 Threaded Rod Embedded 95mm for the 2000, 3000 and 5000 litre tanks and 80mm for the 1000 litre tank
 - b. Drill 18mm Ø hole 95mm for the 2000, 3000 and 5000 litre tanks and 80mm for the 1000 litre tank
 - c. Anchor stud with Ramset Epcon C6 Resin
 - d. Blow out all drilling dust
 - e. Follow Ramset guidelines for correct stud bedding
<https://ramset.co.nz/Product/Detail/390/Epcon-C6-Plus-600ml>
4. Install the tank so that the frames fit into the grooves in the tank
5. Install the top and front frames
6. Plumb tank according to the specific site design

Cladding Options

Extra frames are available as an add on if the intention is to clad the tank.

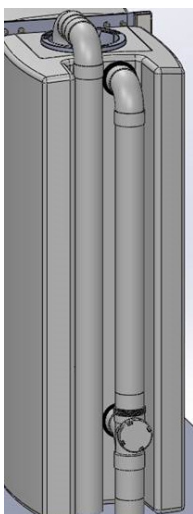


Tec screws can be used to attach timber/panels etc to the steel frames. Ensure that the correct length screws are used to avoid going through the steel and into the tank. No more than 20mm longer than the thickness of whatever is being attached.

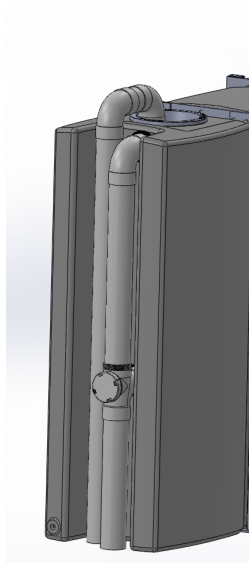
Cladding can be directly fixed to the steel frames or a timber frame can be fixed to the steel frames. Additional frames can be used to extend the cladding to make a closed off area for the storage of bins etc.

Plumbing Options

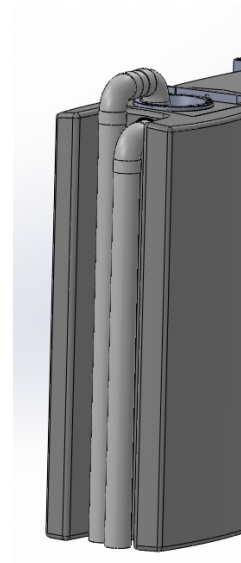
Detention



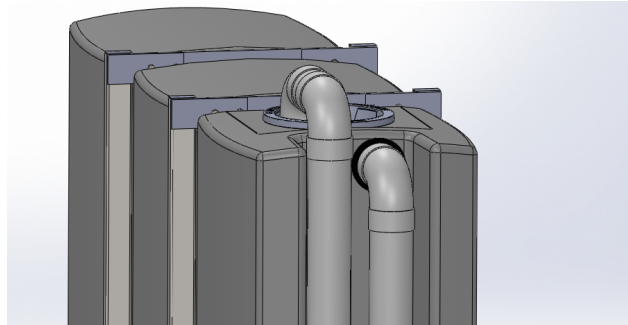
Dual Retention/Detention



Full Retention



Plumbing Options



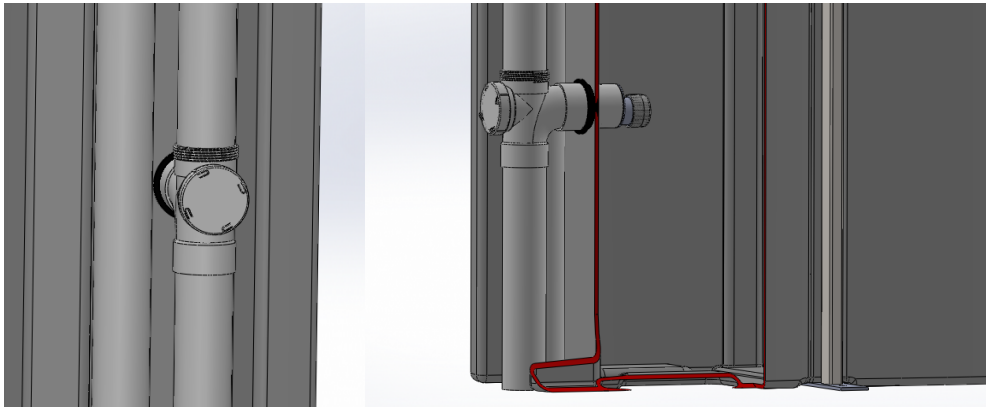
A 25mm (1" BSP) threaded female socket is provided at the base of the tank ready for connection if required, not to be used to join multiple tanks.

Ensure any swarf or filings are removed from tank prior to filling, these could potentially cause an orifice blockage if left in the tank.

1. Use 121mm hole saw to drill holes for 100NB inlet, outlet and overflow (168mm for 150NB).
2. Insert Wallace Seal (one is provided and can be found under the lid).
3. Insert mesh and fittings plus a length of pipe as shown below with the orifice already made up.

You will need a 65mm end cap, an in-pipe reducer 100mm to 65mm plus a short length of 65mm. Pipe to go into the reducer leaving enough length for the end cap and mesh.

The mesh is available from APD and comes with two screws for fixing onto the end cap



Warning Correct hole saw sizes must be used for the Wallace Seals provided to avoid leaks.



100mm Wallace Seal= 121mm Hole Saw
150mm Wallace Seal = 168mm Hole Saw



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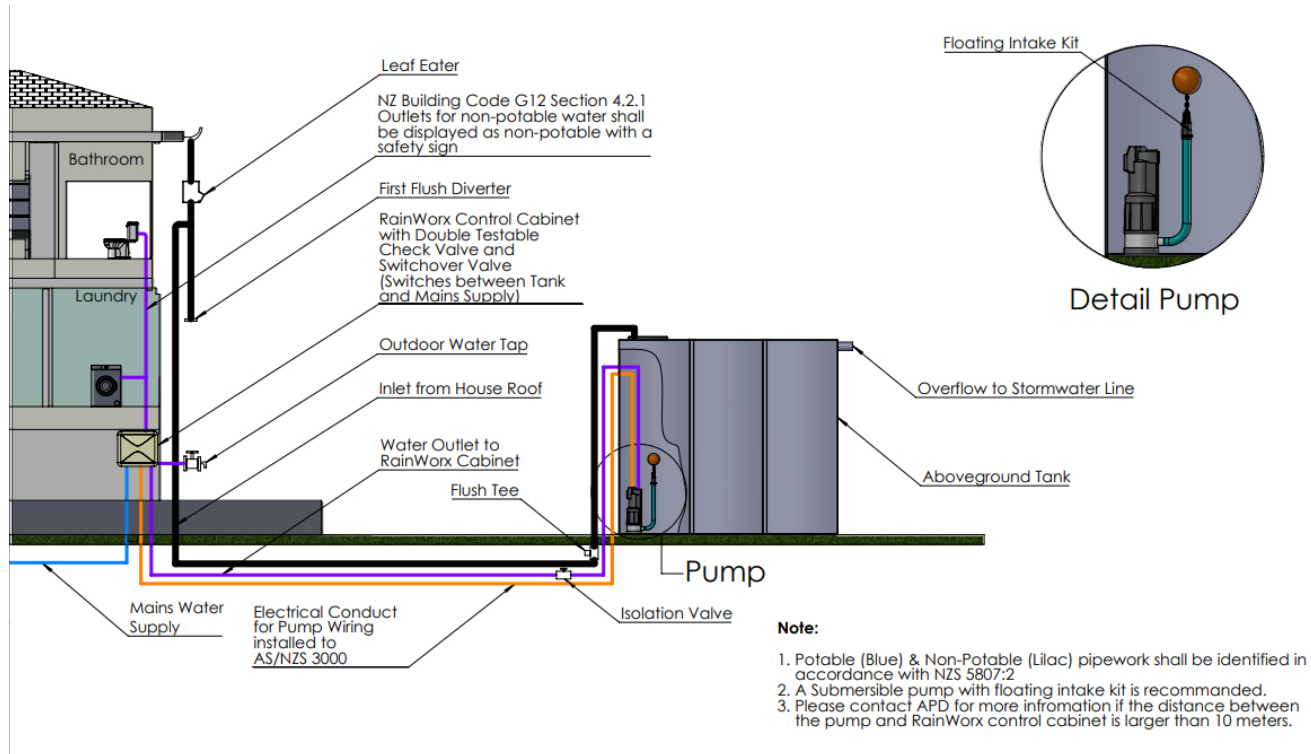
Joined Tanks

- The 25mm (1" BSP) threaded female socket at the base of the tank is NOT to be used to join tanks.
- Use a Ø100mm (or Ø150mm) connection pipe at the bottom AND top of the tank for joining.
- Each tank to have its own overflow connection.
- If possible, best practice is to have an inlet connection to each tank.



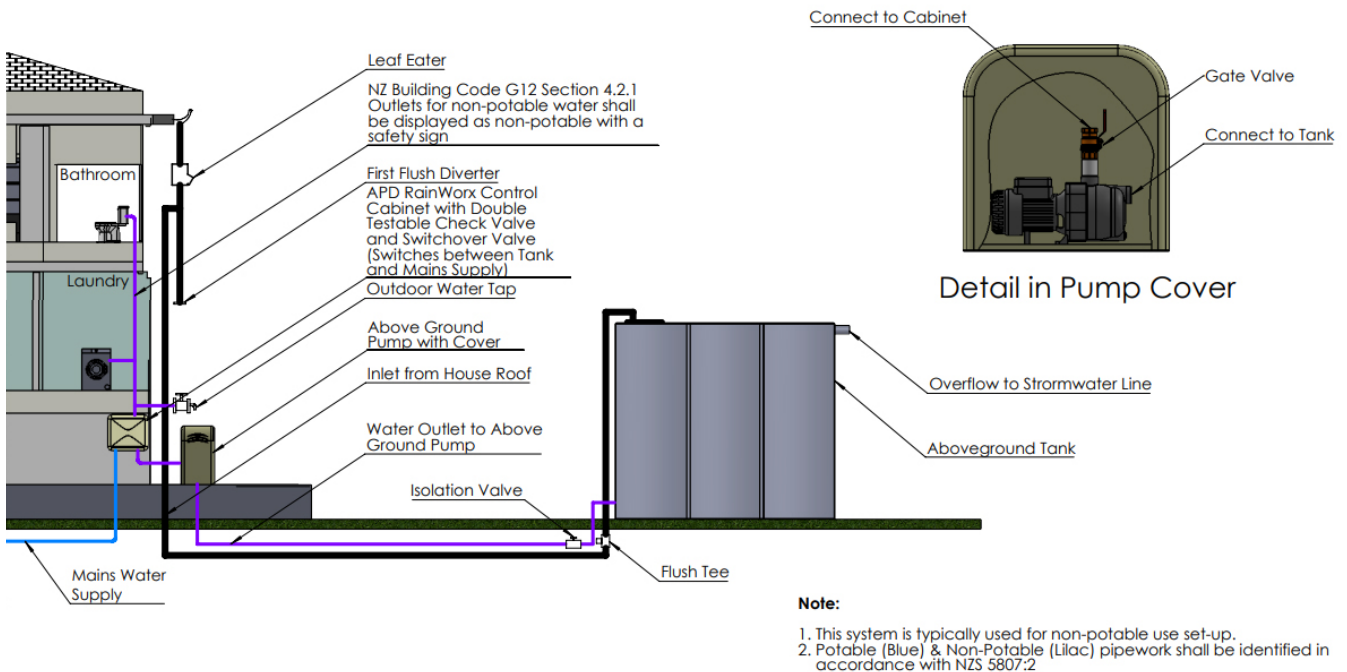
Water Reuse

RainWorx® above ground tank with submersible pump



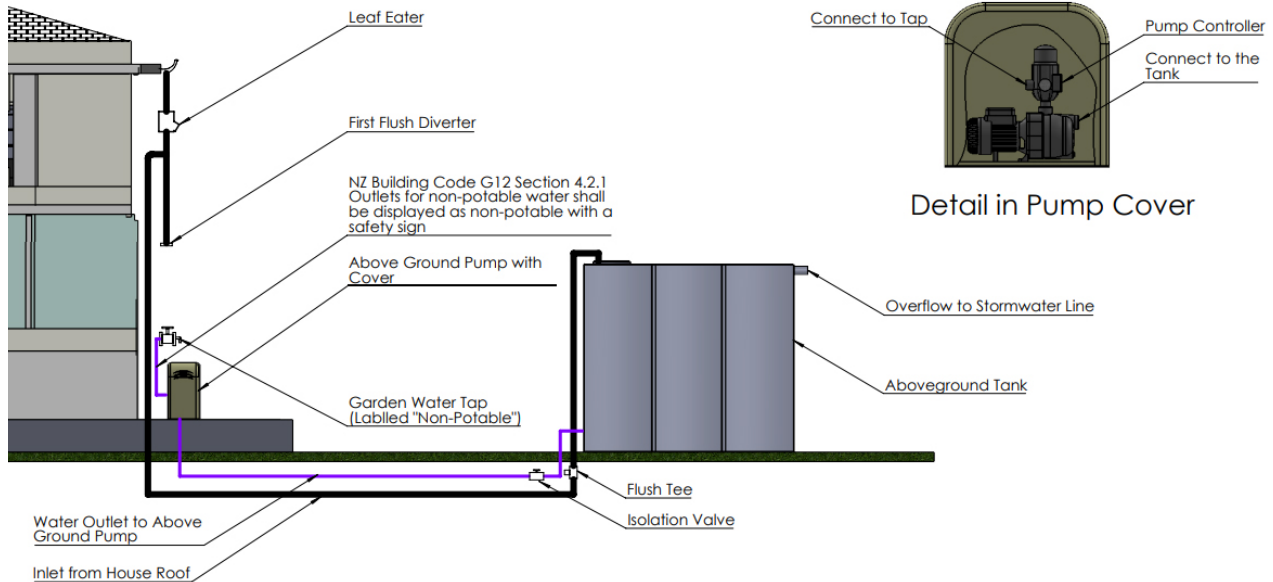
Water Reuse

RainWorx® above ground tank with above ground pump



Water Reuse

RainWorx® above ground tank garden tap use only



Inspection and Maintenance Procedure

- Open the lid.
- Remove and clean the mesh screen from under the lid if present.
- Using a torch, if necessary, inspect the mesh covering the outlet orifice(s), the orifice outlet and the level of silt build up in the bottom of the tank.

Outlet Mesh Screen and Orifice

- Ensure the mesh is not blocked with debris as this may affect the rate at which water can exit the tank. If the mesh and orifice are clear, no further action is required.
- If the mesh has debris covering it and depending upon the nature of the debris, it may be possible to remove by hosing off, or with a suction device or a long stick and clamp. If this is not practical then it may be necessary to access the back of the orifice from the inspection fitting by removing the screw cap. Do not try to enter the tank.
- Clear debris from the mesh and inspect the orifice(s) for any obstructions. If the orifice is obstructed, it may be necessary to remove the mesh.
- To remove the mesh, remove the screws and pull the mesh from the orifice endcap. Clean and remove all debris and other obstructions from the orifice. This can only be done by disassembling the inspection fitting from the outside of the tank by pulling the mesh etc back out through the Wallace Seal.
- Dispose of all debris and obstructive materials outside of the tank as leaving them in the tank may lead to a fresh blockage. Refit the mesh and secure with screws.



DO NOT inspect the tank if it is raining or has recently rained. Allow time for the water level to reduce to the minimum level.