



## INSTALLATION INSTRUCTIONS

THANK YOU FOR CHOOSING reo sac™

THE REVOLUTIONARY REINFORCED RAINWATER STORAGE SYSTEM

Before you begin, please take time to review the installation instructions and cross-check the components against the component check list enclosed.

### IMPORTANT

**To validate the Warranty and ensure correct operation, the system must be installed in accordance with the installation instructions. Please refer to the Warranty document in the Home Owner's envelope.**

- FOR WIDTHS OF 1.1M AND 1.3M THE MAXIMUM FILL HEIGHT OF THE BLADDER IS 500MM FROM THE BASE AT THE LOWEST POINT OF THE BLADDER. THE OVERFLOW HEIGHT IS DETERMINED BY SETTING THE OVERFLOW INVERT NO HIGHER THAN 500MM FROM THE BASE AT THE LOWEST POINT OF THE BLADDER.
- FOR WIDTHS OF 1.5M AND GREATER THE MAXIMUM FILL HEIGHT OF THE BLADDER IS 600MM FROM THE BASE AT THE LOWEST POINT OF THE BLADDER. THE OVERFLOW HEIGHT IS DETERMINED BY SETTING THE OVERFLOW INVERT NO HIGHER THAN 600MM FROM THE BASE AT THE LOWEST POINT OF THE BLADDER.
- All Installations must conform to the Plumbing Code of Australia & NZ AS/NZS 3500 and HB230-2006 Rainwater Tank Installation Handbook.
- Do not under any circumstances use a knife or sharp object to open the box with the bladder in it or to cut the cardboard.
- The supplied fail-safe relief flap is a critical component of the reo sac™ system and as such, must be installed to prevent over filling of the bladder in the event of a blockage in the stormwater system beyond the overflow.
- The bladder or mounting plate frame must not touch any part of any building structure.
- Ensure the outlet fittings are tight and have not loosened during transport or installation of the bladder. When tightening the ball valves, ensure that the outlet fittings attached to the bladder are not rotated or over-tightened as this may compromise the seal of the outlets.
- If the reo sac™ is not installed on a concrete base, concrete pavers must be used to support the legs of the mounting plate frame. The pavers must be installed so that the top of each paver is level with the reo sac™ base.
- There must be no cross connection between the overflow drain and the inlet stormwater drainage system. The overflow pipe work must allow the unrestricted flow of water from the bladder to the stormwater.

# INSTALLATION INSTRUCTIONS

ALL INSTALLATIONS MUST CONFORM TO THE PLUMBING CODE OF AUSTRALIA & AS/NZS 3500 AND HB230-2006 RAINWATER TANK INSTALLATION HANDBOOK.

## 1. OPENING PACKAGING

- **Do not under any circumstances use a knife or sharp object to open the box containing the bladder**
- Check the components against the COMPONENT CHECK LIST.
- Immediately report any damage or discrepancy to the supplier by phoning the number of the last page of the instructions.
- Ensure you do not open the protective plastic sleeve around the bladder until it is ready for installation and you have laid out the geo-tech fabric ground sheet.

## 2. SITE PREPARATION

- Clear the site of any sharp objects and rake the area thoroughly to create an even and clean base for the **reo sac™** to rest on. A bed of crusher dust or sand may be added to assist in site preparation.
- The **reo sac™** **must** be installed level along its length and across its width.
- **Note:** To achieve maximum capacity, multiple bladders must be installed on bases that are at the same level. If that is not possible, then ensure higher bladders fill first and overflow to lower bladders and use check valves to prevent one bladder automatically “transferring” water from one to another bladder.

## 3. RAINWATER INLET PIPES

- 90mm or 100mm PVC pipe may be used for inlet pipes.
- Multiple downpipes may be connected together before connection to the **reo sac™**.
- **reo sac™** has a 100mm in-pipe inlet fitting. This may be reduced to 90mm if necessary using the 100mm butt pipe and 100mm-90mm reducer provided.
- When two 90mm downpipes are joined together, increase the pipe diameter to 100mm from that point.
- Suspend the inlet pipes from the floor structure with sufficient brackets to ensure they will not distort when full.

## 4. DOWNPIPE CONNECTIONS & FILTRATIONS

- Some form of first flush diversion and primary filtration should be installed on each downpipe supplying water to the **reo sac™**. (Refer to diagram 1). Refer to HB230-2006 Rainwater Tank Installation Handbook.

## 5. OVERFLOW

- The maximum fill height of the **reo sac™** is 600mm (or 500mm in the case of 1.1m and 1.3m widths). The fill height is determined by the height of the overflow relative to the lowest point of the base of the bladder. The invert of the overflow must be no higher than 600mm (or 500mm in the case of 1.1m and 1.3m widths) above the lowest point of the base of the bladder to ensure that the bladder is not overfilled. Over filling will void the warranty.
- There must be no cross connection between the overflow drain and the inlet stormwater drainage system.
- The overflow pipe work must allow the unrestricted flow of rainwater to the stormwater outlet.
- Ensure there is a minimum of one overflow for every two downpipes that enter the bladder.
- When two 90mm downpipes are joined together, increase the pipe diameter to 100mm from that point. If the stormwater in-ground overflow pipe diameter is 90mm, then run the overflow from the bladder at 100mm and install a gully trap with an air gap at the point at which the stormwater enters the ground.

## 6. FAIL-SAFE RELIEF FLAP VALVE

- The supplied relief flap valve is a critical component of the **reo sac™** system. It prevents the bladder over filling in the event of a blockage in the storm water system. The flap valve is not required if a gully trap with an air gap is installed as described in Section 5 above.
- The relief flap valve must be installed below the overflow point, either on the exterior of the building or the pipe to the exterior (refer diagrams 1 and 5).

## 7. MOUNTING PLATE FRAME & BLADDER INSTALLATION

### THE MOUNTING PLATE FRAME OR BLADDER MUST NOT TOUCH ANY PART OF THE BUILDING STRUCTURE

- Push the four metal lengths into the corner legs, align the pre-drilled holes and fix them in place with the Phillips head wafer screws, creating the square mounting plate frame.
- Place the mounting plate inside the now constructed square frame and using the pre-drilled holes in the mounting plate, centre and fix the mounting plate to the frame using two of the hex head self-tapping screws provided (there are no pre drilled holes on the frame for the mounting plate). Refer diagram 3.
- Place the 520mm support bar at the lowest point on the inside edge of the frame and behind the mounting plate. Attach it to the inside of the legs using the remaining two hex head self-tapping screws (there are no pre drilled holes in the legs). Refer to diagram 3 and the photos below).



- Where there is no concrete or solid paver base for the **reo sac™** frame to be placed on, pavers should be used to support the mounting plate frame legs. Ensure that the concrete pavers are recessed so that the top of each paver is level with the base of the bladder. This is required in order for the reo sac™ warranty to be valid.
- Lay out the geo-fabric so that the inlet and outlet holes in the fabric are at the mounting plate end.
- Keeping the bladder inside the plastic bag, place the bladder on the geo-tech fabric at the mounting plate end of the frame. Ensure no sharp instrument is used to cut the bag. Remove the bladder from the plastic bag.
- Partially unroll the bladder exposing the inlet and outlet fittings to enable connection through the mounting plate. Place the inlet and outlets through the geo-fabric and then through the mounting plate ensuring that the geo-fabric is between the mounting plate and the **reo sac™**. The bladder should not be fully unrolled until installation is complete.

## 8. INLET CONNECTION

- The inlet fitting is designed to fit 100mm DWV PVC pipe.
- As with all glued connections, the pipe and fitting must be primed and glue applied to both surfaces.
- Be careful to ensure a consistent and water tight seal is achieved between the inlet and the 100mm delivery pipe (or 100mm butt pipe if a reducer to 90mm is being used).
- 100mm or 90mm PVC pipe (in the case of one inlet downpipe connected to the **reo sac™**) can be used to connect to rainwater supply using standard fittings and reducers.

## 9. OUTLET CONNECTION

- Position the two outlets and the 100mm inlet fitting through the geo-tech fabric ground sheet and the mounting plate so that the geo-tech fabric ground sheet is between the bladder and the mounting plate.
- To hold the two outlet fittings in place, screw the two 32mm lock-nuts on to the outlets until the lock-nuts are against the edge of the mounting plate.
- Using Teflon tape to seal the pipe, screw the two poly ball valves on to the outlet fittings.  
**Important: Ensure that the outlet fittings are tight and have not loosened during transport or installation of the bladder. When tightening the ball valves, ensure that the outlet fittings attached to the bladder are not rotated or over-tightened as the seal of the outlets may be compromised.**

## **10. POSITIONING OF BLADDER ON THE GROUND SHEET**

- Unroll bladder fully and ensure it is lying flat and centred on the geo-tech fabric ground sheet.
- Extend bladder to full length to minimise 'bunching' at the inlet/outlet end.

## **11. AIR VENT WITH MOSQUITO PROTECTION**

- A 25mm air vent is situated in the centre of the top of the bladder to release air in a rapid-filling rain event.
- Push the provided 25mm vent pipe with mosquito protection over the air vent. If there is insufficient height for the pipe, shorten it to suit the available height subject to the following note.
- **Important: Ensure that the stormwater overflow point is below the top of the air vent so that water will not be able to overflow through the air vent.**
- Check the lock nut on the **reo sac™** air vent is tight.

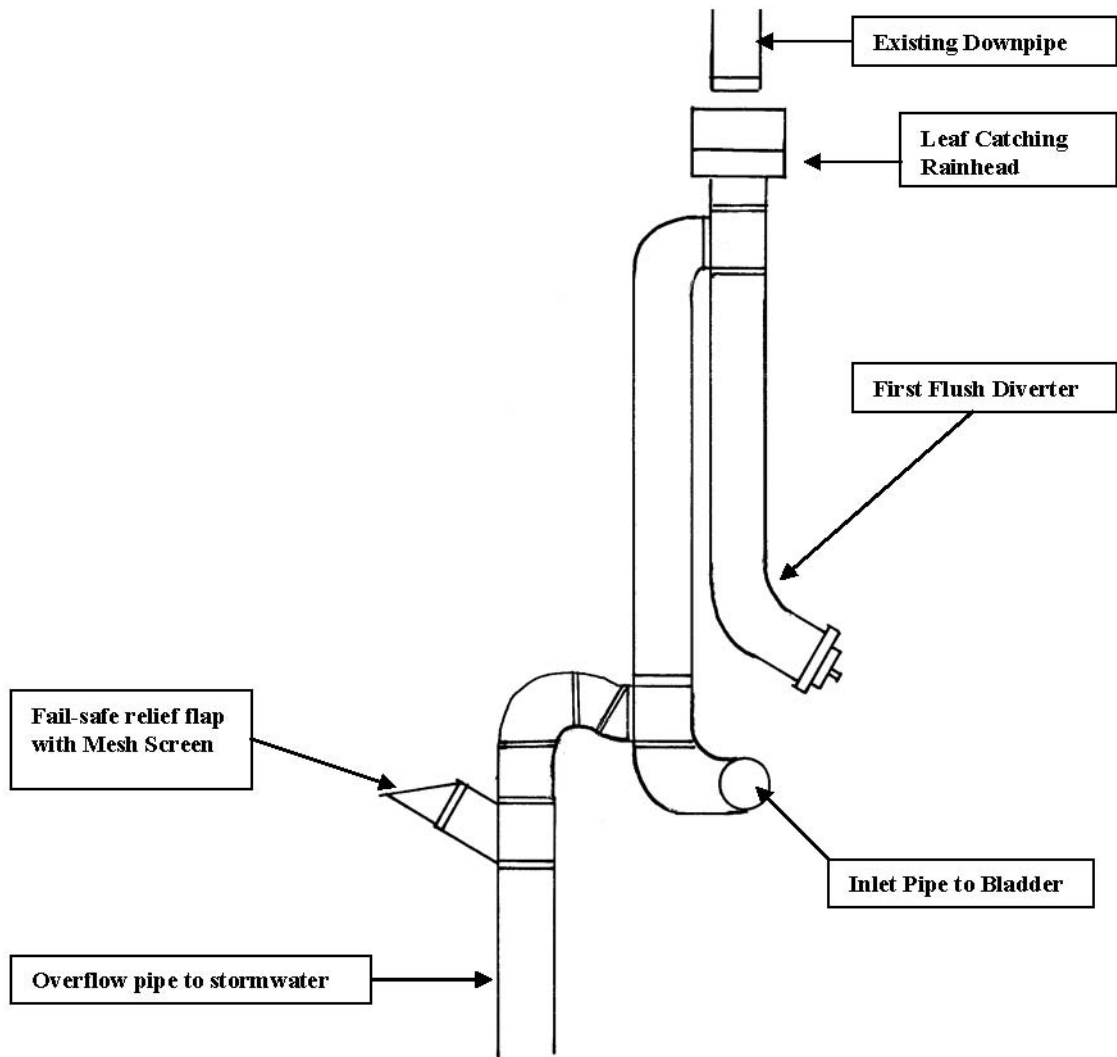
## **12. PUMP CONNECTION**

- All pumps should be installed in accordance with the manufacturer's instructions.
- The pump should be installed at, or where possible, below the outlet level to ensure 'flooded suction' when there is water in the bladder.
- Ensure the area is flat and free of debris.
- A suitable concrete paver should be used as a base to locate and secure the pump.
- Ensure an appropriate power outlet is provided.
- Connect high pressure poly pipe to one of the ball valves. The second ball valve is for any additional bladders connected to the system, or for a float chamber in the case of a mains water controller in a single bladder installation.

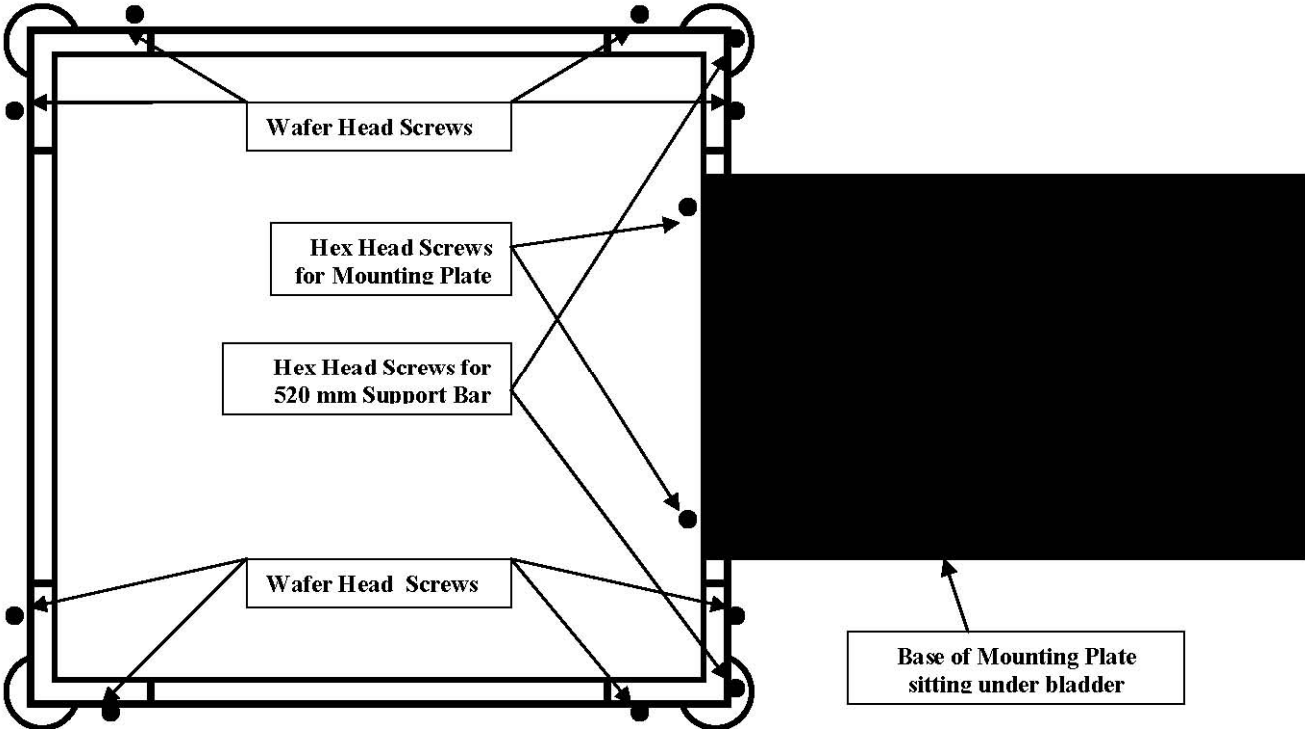
## **13. ADDITIONAL BLADDERS**

- Additional bladders may be connected to the first bladder and should be installed in a similar manner to the first bladder. Any additional bladders should be installed at the same level as the first bladder to prevent overfilling of either bladder. If additional bladders are to be installed at different levels, refer to Note 2: Site Preparation).
- Bladders installed on the same level can be connected by a manifold on the inlet pipe work (refer diagram 4).
- Connect a 32mm poly outlet pipe from the second tank outlet on the first bladder to one of the outlets on the additional bladder.
- Ensure any unconnected ball valve is turned to the 'OFF' position.
- Where a site requires two bladders to be installed at different levels, the first bladder should be installed to overflow into the second bladder (under no circumstances should the inlet pipes of the two bladder be connected using a manifold). To prevent a higher bladder "leaking" into a lower bladder, appropriate check-valves should be installed on the outlets of the lower bladder.

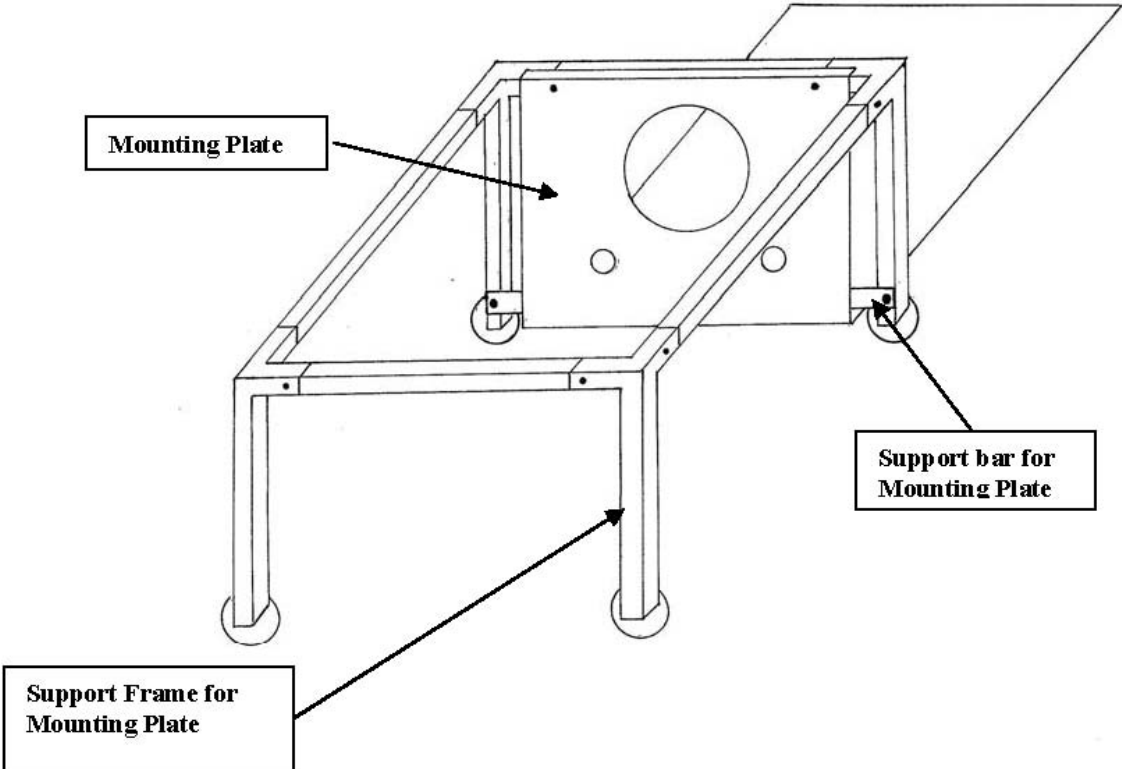
**Diagram 1: Downpipe schematic of Inlet with Overflow and Fail-Safe Relief Flap**



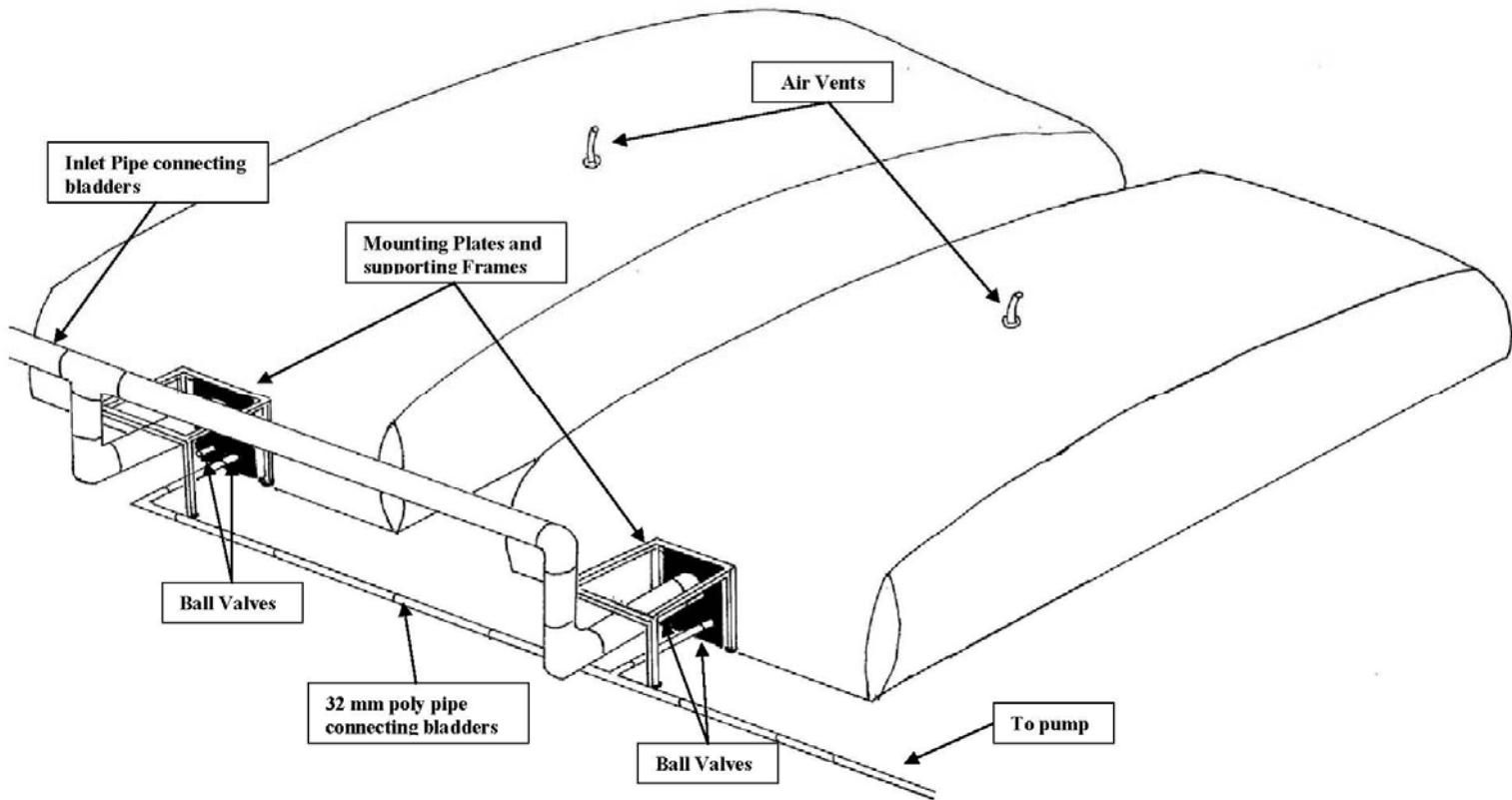
**Diagram 2: reo sac™ Framework – Top View**



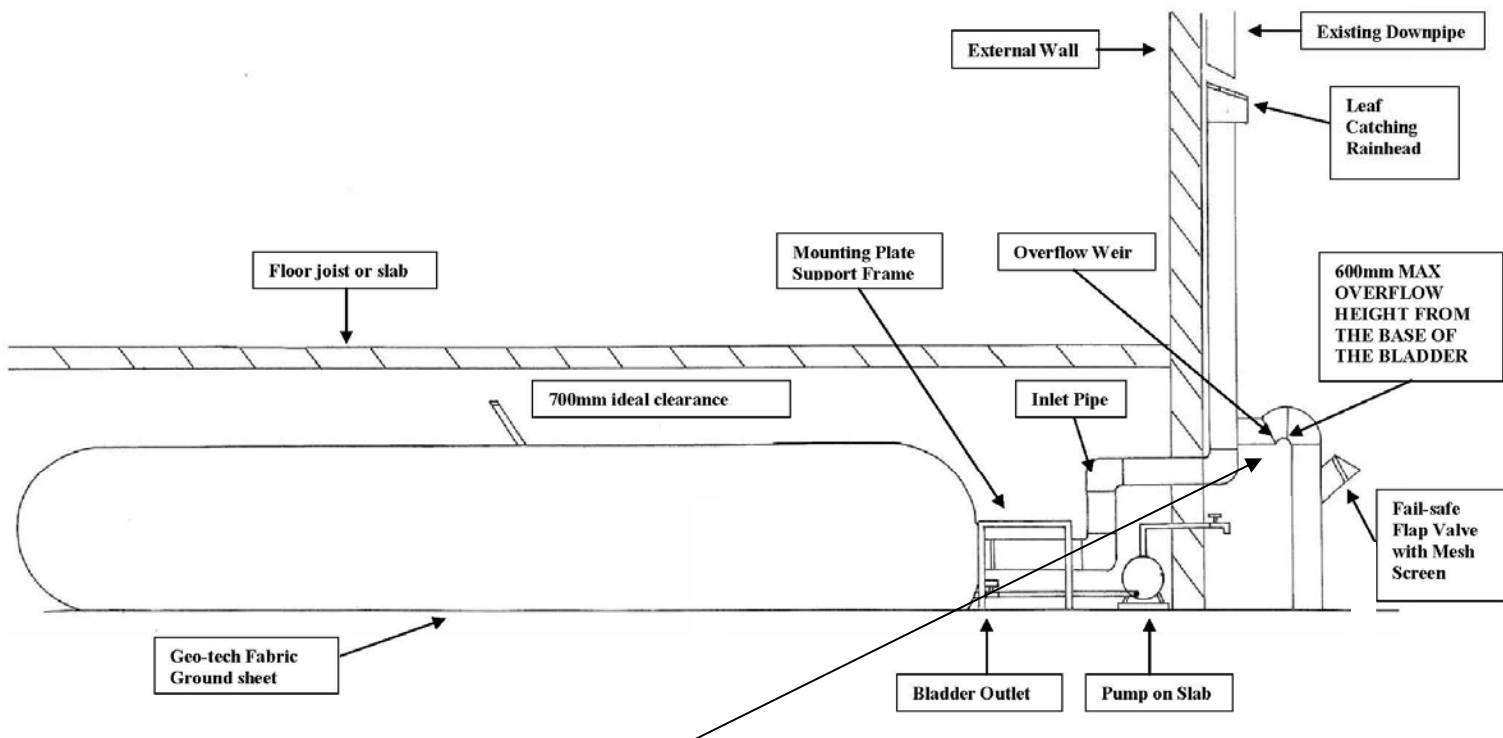
**Diagram 3: reo sac™ Framework**



**Diagram 4: reo sac™ Multiple Bladder installation**



**Diagram 5: reo sac™ Side View**



**Note that the maximum overflow height is 500mm for 1.1m and 1.3m width bladders**

## Accessories available from reo sac™

The following products are available from **reo sac™** as accessories to the standard **reo sac™** kit:

- Leaf catching rainheads with mosquito protection
- First flush diverters for downpipes
- A range of quality pumps and mains water controllers
- A float chamber for mains water controller sensors
- Wireless water level gauges

If you have any questions relating to your **reo sac™** installation, please contact **reo sac™** for clarification by phoning +61 2 9113 5593 or email [info@reosac.com.au](mailto:info@reosac.com.au)



[www.reosac.com.au](http://www.reosac.com.au)