



INSTALLATION INSTRUCTIONS

THANK YOU FOR CHOOSING **eco sac**®

THE NEW GENERATION RAINWATER STORAGE SYSTEM by Waterplex®

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 by a licenced plumber or an accredited installer in accordance with the installation instructions. Please refer to the Warranty document in the Home Owner's envelope.

- THE MAXIMUM FILL HEIGHT OF THE BLADDER IS 600MM FROM THE BASE OF THE BLADDER DETERMINED BY SETTING THE OVERFLOW INVERT NO HIGHER THAN 600MM FROM THE BASE OF THE BLADDER.
- All Installations must conform to the Plumbing Code of Australia & NZ AS/NZS 3500 and HB230-2008 Rainwater Tank Installation Handbook.
- All down pipe installations must be designed, installed and tested in accordance with AS3500.5.
- Do not under any circumstances use a knife or sharp object to open the box with the bladder in it or cut the cardboard.
- The fail-safe relief flap is a critical component of the eco 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 frame must not touch any part of any building structure.
- Ensure the outlet fittings and the vent pipe fitting 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.
- If the eco sac® is not installed on a concrete base, a recessed concrete paver (minimum 200mm x 200mm x 25mm) must be placed under each leg so that the frame is not on the ground. The paver must be installed so that the top of the paver is level with the eco sac base.
- There must be no cross connection between the overflow pipe and the inlet pipe. The overflow pipe work must allow for the unrestricted flow of water from the bladder to the storm water. No inline mosquito filters or other products that might restrict flow are to be used in the pipe work
- The bladder material is not UV stabilised. If the bladder is exposed to direct sunlight it must be protected by a cover

INSTALLATION INSTRUCTIONS

ALL INSTALLATIONS MUST CONFORM TO THE PLUMBING CODE OF AUSTRALIA & AS/NZS 3500 AND HB230-2008 RAINWATER TANK INSTALLATION HANDBOOK.

1. OPENING PACKAGING

- Lie the carton flat on the ground.
- Cut the straps.
- **Do not under any circumstances use a knife or sharp object to open the box containing the bladder or cut the cardboard.**
- Lift the lid off the base of the box.
- Check the components against COMPONENT CHECK LIST.
- Immediately report any damage or discrepancy to the supplier by phoning 02 9113 5593.
- Ensure the protective plastic sleeve around the bladder is not opened until the bladder is placed inside the assembled framework and geo-tech fabric harness.
- Do not drag the bladder across any surface even when wrapped in its plastic sleeve

2. SITE PREPARATION

- Clear the site of any sharp objects and rake the area thoroughly to create an even and clean base for the **eco sac®** to rest on. A bed of crusher dust or sand may be added to assist in site preparation.
- The **eco 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 the higher bladder to lower bladders.
- If the bladder is being installed as part of other building works and it is being installed early in the building process, ensure that the frame, geo textile and bladder tank are completely protected from any building activity or debris.
- Where there is a risk that a damaged or leaking bladder tank may cause damage to another part of the property, then some form of spill containment or diversion is recommended to remove the risk of damage (such as bund walls).

3. RAINWATER INLET PIPES

- As the **eco sac®** frame may inhibit movement around the sub-floor area, it is advisable to install the inlet pipe work first. If the frame will not inhibit movement, complete Section 7 **Frame & Bladder Installation** first, then complete Section 3 **Rainwater Inlet Pipes** and continue from there.
- 90mm or 100mm PVC pipe may be used for inlet pipes.
- Multiple downpipes may be connected together before connection to the **eco sac®**. Ensure that there is at least one overflow for every two downpipes. **When** two downpipes are connected to the system a second fail safe relief point should be added just above the point of overflow to protect the bladder tank in significant rainfall events where the overflow cannot cope with the amount of rain. See diagram 5. The **eco sac®** has a 100mm over-pipe inlet fitting. This may be reduced to 90mm if necessary using the 100mm butt pipe and 100mm-90mm reducer provided.
- Suspend the inlet pipes from the floor structure with sufficient brackets to ensure they will not distort when full.
- If pipes are to be laid on the ground, ensure a suitable bedding of sand and cement is used to avoid future movement of pipes. The **eco sac®** system is designed so that there should be no moving pipe work and this should be reflected in the installation of the downpipes.
- If a charged system is being used to fill the bladder, the delivery pipe should rise to the overflow height before it enters the bladder. The overflow should then be installed at the top of the rise no higher than 600mm above the base of the bladder tank.

4. DOWNPIPE CONNECTIONS & FILTRATIONS

- A leaf catching rainhead **must** be installed on each downpipe supplying water to the **eco sac®**. A first flush diverter is also recommended for each downpipe (refer diagram 1). Refer to HB230-2008

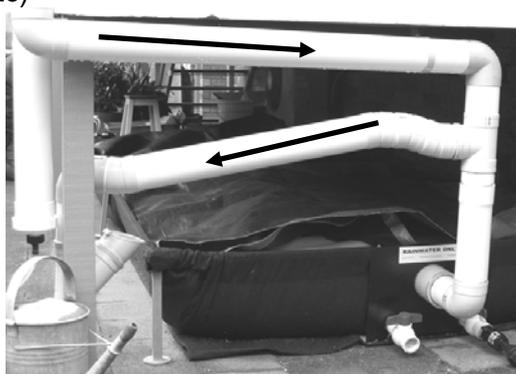
Rainwater Tank Installation Handbook. The quality of the water is only as good as the area from which it is collected.

5. OVERFLOW

- The maximum fill height of the **eco sac®** is 600mm. The over flow must be installed as part of the pipes that fill the bladder. There is no separate overflow fitted to the **eco sac®** bladder tank itself. The fill height of the bladder tank is determined by the height of the invert of the overflow relative to the base (i.e. lowest point along the length) of the bladder. The invert of the overflow must be no higher than 600mm above the lowest point of the bladder to ensure that the bladder is not overfilled thereby voiding the warranty.
- There must be no cross connection between the overflowing water and water being delivered to the bladder.
- The overflow pipe work must allow the unrestricted flow of rainwater to the storm water outlet. Where more than one downpipe has been connected to deliver water to the bladder tank, a second fail safe relief point should be added just above the point of overflow to protect the bladder tank in significant rainfall events where the overflow cannot cope with the amount of rain. See diagram 5.
- Ensure that there is **at least one overflow for every two downpipes** that enter the bladder.
- Overflowing water must not have to "push up" before overflowing to stormwater. The overflow should be a "T" junction in the delivery pipe at the required overflow height (i.e. no more than 600mm).
- 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 allow for some form of overflow (for example, a gully trap might be installed with an air gap at the point at which the stormwater enters the ground).
- Ensure there is no fixed form of filtration located inside any pipe work (or any other form of potential flow restriction) as it will restrict the overflow of water and may become blocked with debris causing the bladder tank to overflow. (i.e. in line mosquito filters etc)



Not Recommended: Over flowing water should not have to rise vertically before overflowing



Over flowing water can flow freely to storm waste.

The above photos are shown for indicative purposes only

6. FAIL-SAFE RELIEF FLAP VALVE

- The supplied relief flap valve is a critical component of the **eco sac®** system which 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. However, no fixed filter should be on pipe work before a gully trap. Use the supplied relief flap for mosquito protection
- The relief flap must be installed past the overflow point preferably on the exterior of the building, below the maximum fill height of the bladder (refer diagrams 1 and 5).
- A second fail safe overflow point should be installed just above the primary overflow where two or more downpipes are supplying water to the **eco sac®** to ensure that it does not overflow during significant rainfall events. See Diagram 5.

7. FRAME & BLADDER INSTALLATION

THE FRAME MUST NOT TOUCH ANY PART OF THE BUILDING STRUCTURE

- Thread the steel lengths marked 'SIDE' through the side pockets of the geo-tech fabric harness and steel lengths marked 'ENDS' through the end pockets (refer to the enclosed fabric & frame template).
- Push the side rails into the corner legs and middle legs, align the pre-drilled holes and fix them in place with the Phillips-head wafer self-drilling screws.

- Smooth out the geo-tech fabric harness. See photo (right) of full **eco sac®** showing how the bladder fills out in the frame and geo textile



- Place the mounting plate at the front centre of the frame ensuring that the base is under the geo-tech fabric harness with the inlet and outlet holes lining up with the holes in the geo-tech fabric harness. Using the pre-drilled holes in the mounting plate, fix the front of the mounting plate to the frame using the two hex head self drilling screws provided (no holes are predrilled in the metal length).
- Where there is not a concrete or solid paver base for the **eco sac®** to sit on, place pavers under each of the frame legs. Dig out the material and recess a concrete paver (minimum 200mm x 200mm x 25mm) under each leg. The top of each paver should be level with the bladder base. This is a requirement in order for the **eco sac®** warranty to be valid.
- Keeping the bladder inside the plastic bag, place the bladder in the geo-tech fabric harness 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 for connection.

8. INLET CONNECTION

- The inlet is a 100mm female fitting 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 inlet 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 **eco 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 harness and the mounting plate.
- To hold the two outlet fittings in place, screw the two 32mm brass lock-nuts onto 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 onto 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 IN FRAME

- Unroll bladder fully and ensure it is lying flat and centred within the frame with the sides and ends curving up against the geo-tech fabric harness.
- Extend the bladder to its full length to prevent 'bunching' at the inlet/outlet end of the frame.

11. AIR VENT WITH MOSQUITO PROTECTION

- A 25mm diameter 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 diameter x 100mm long vent pipe with mosquito protection over the air vent.
- **Check the lock nut on the **eco sac®** air vent connection is tight and has not loosened during transit.**

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 overflowing 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 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 bladders 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.

14. PROTECTING YOUR ECO SAC

- The material the **eco sac**® is made from is **not** UV stabilised so the bladder must not be exposed to any sunlight. If the bladder is exposed to direct sunlight the warranty on the bladder will be void. **eco sac**® shaped protective covers are available to protect the bladder from sunlight or general debris. Alternatively cover the bladder with a tarpaulin or similar ensuring that the bladder is not restricted from filling to full capacity
- If the eco sac is under a deck and the deck needs to be oiled, painted or cleaned with heavy cleaning agents, the bladder must be protected from any stains, oils, tannins or similar falling on to the bladder. If liquids do fall through and stain your eco sac, this will reduce the longevity of your eco sac and it will void the warranty

Diagram 1: Down pipe schematic of Inlet with Overflow and Fail Safe Flap Valve

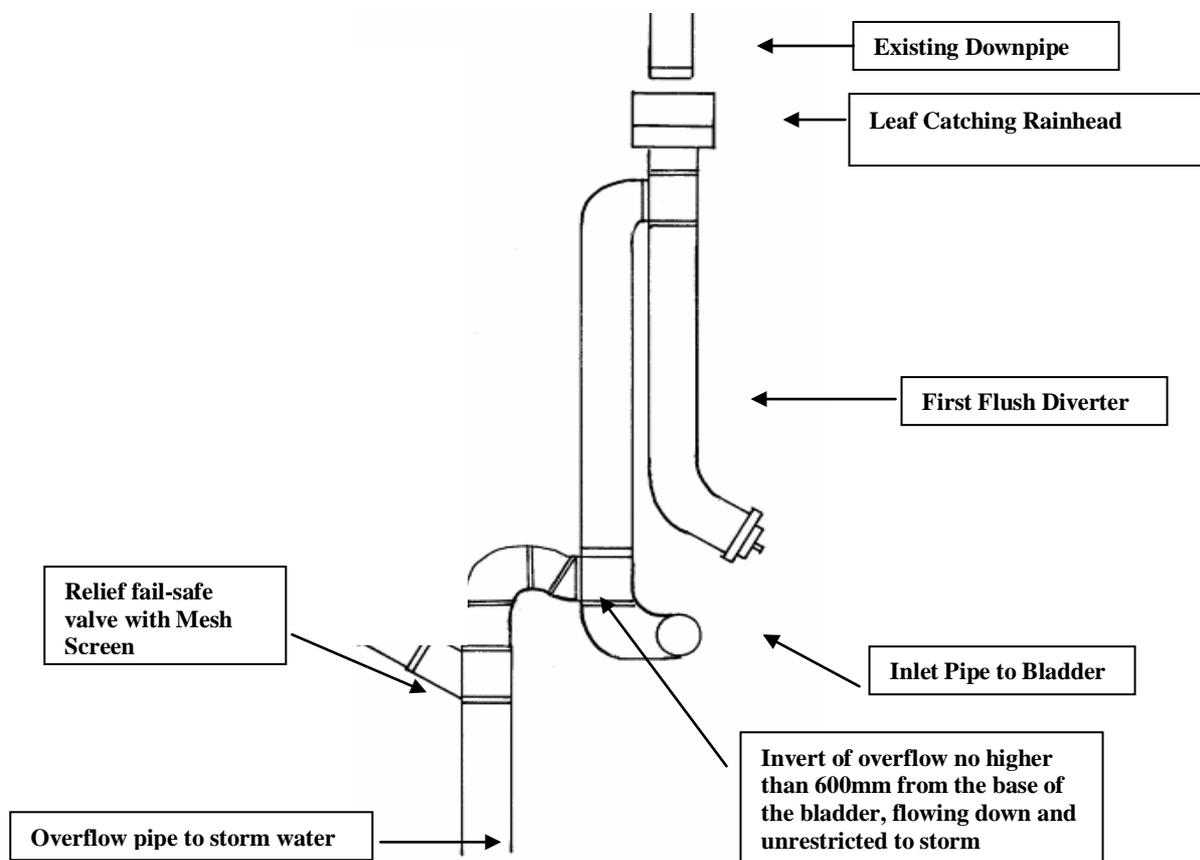


Diagram 2: eco sac® Layout & Framework– Top View

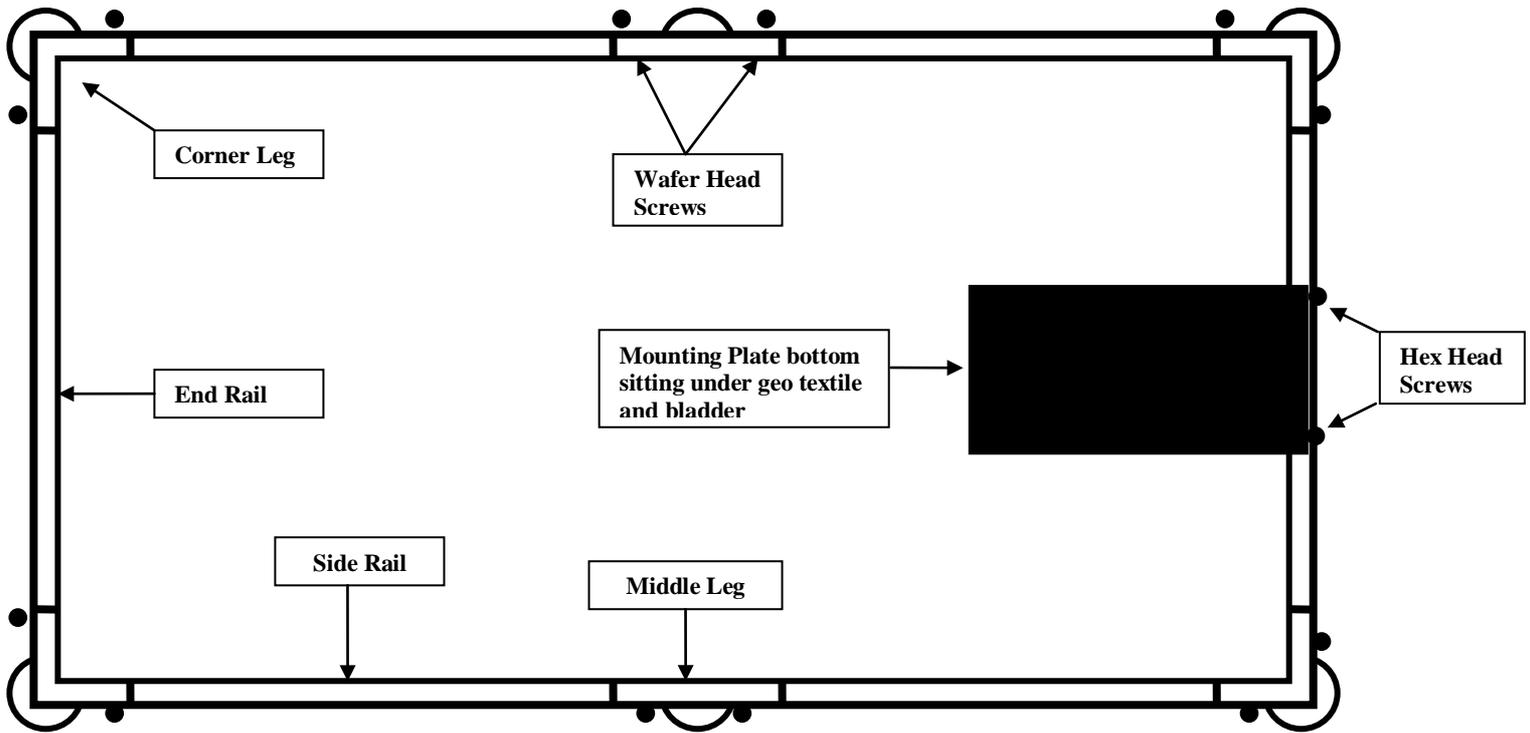


Diagram 3: eco sac® Layout & Framework - End View

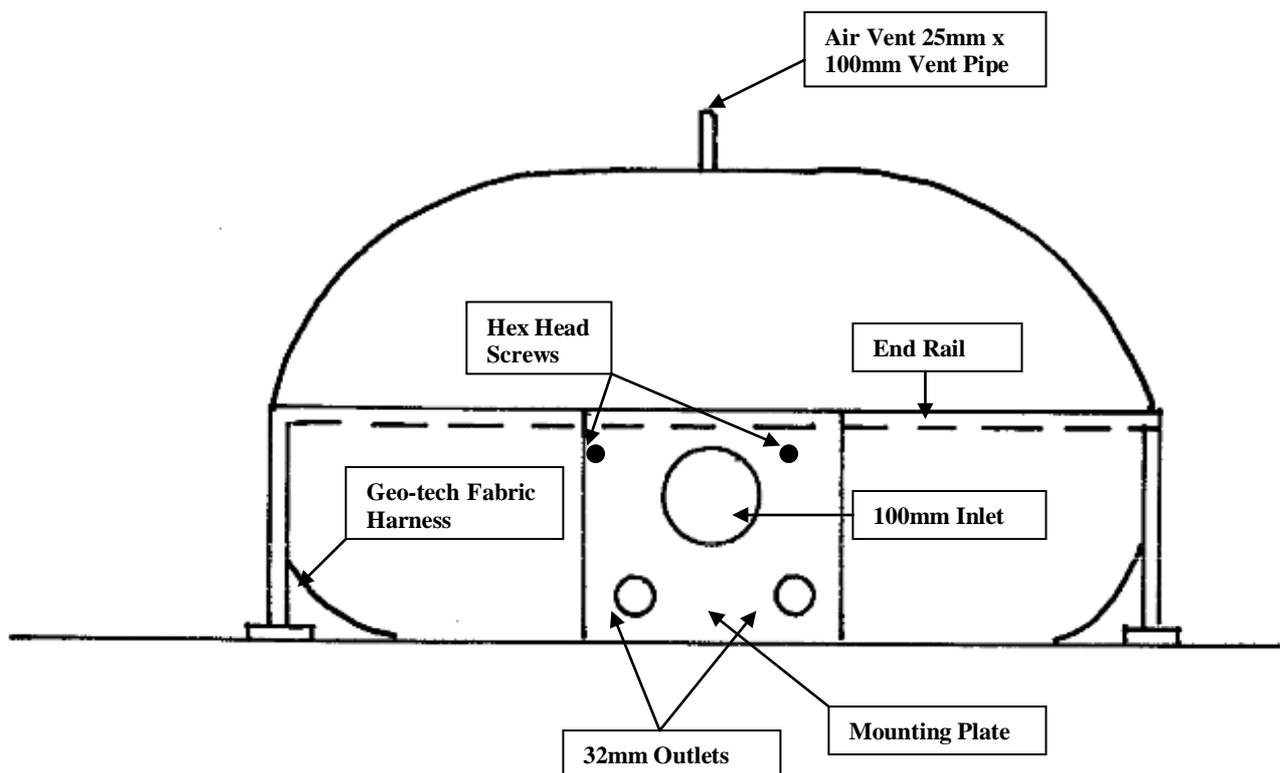


Diagram 4: eco sac® Multiple Bladder installation

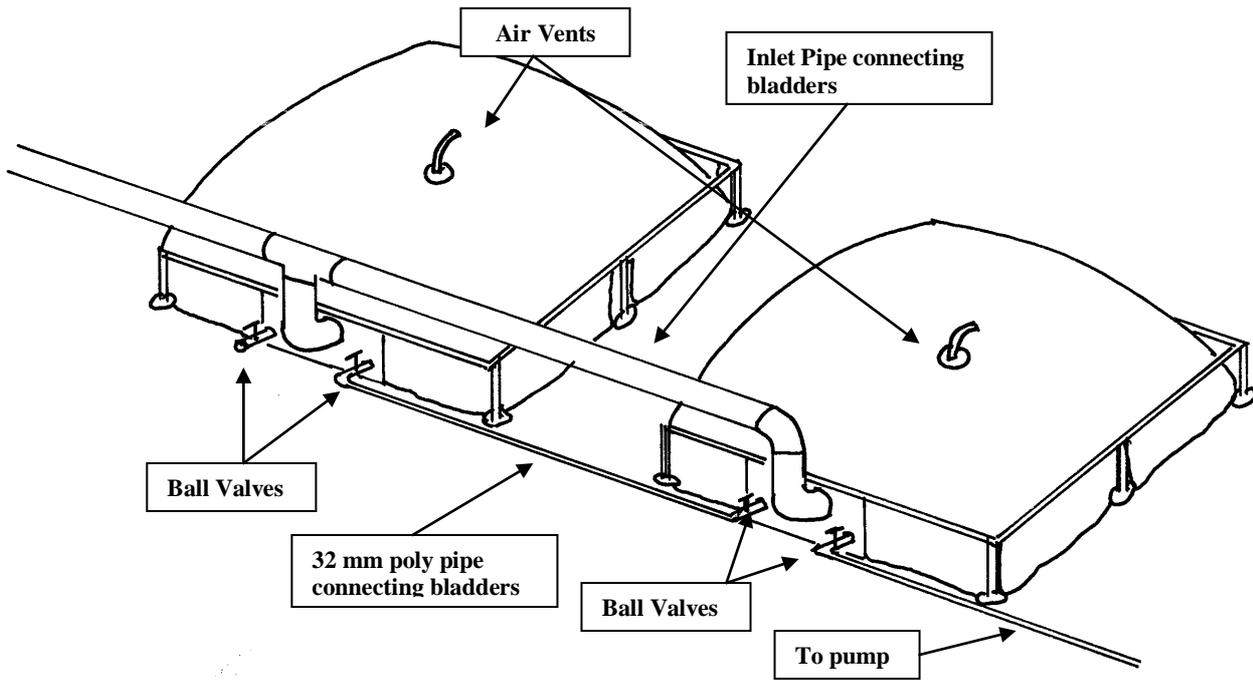
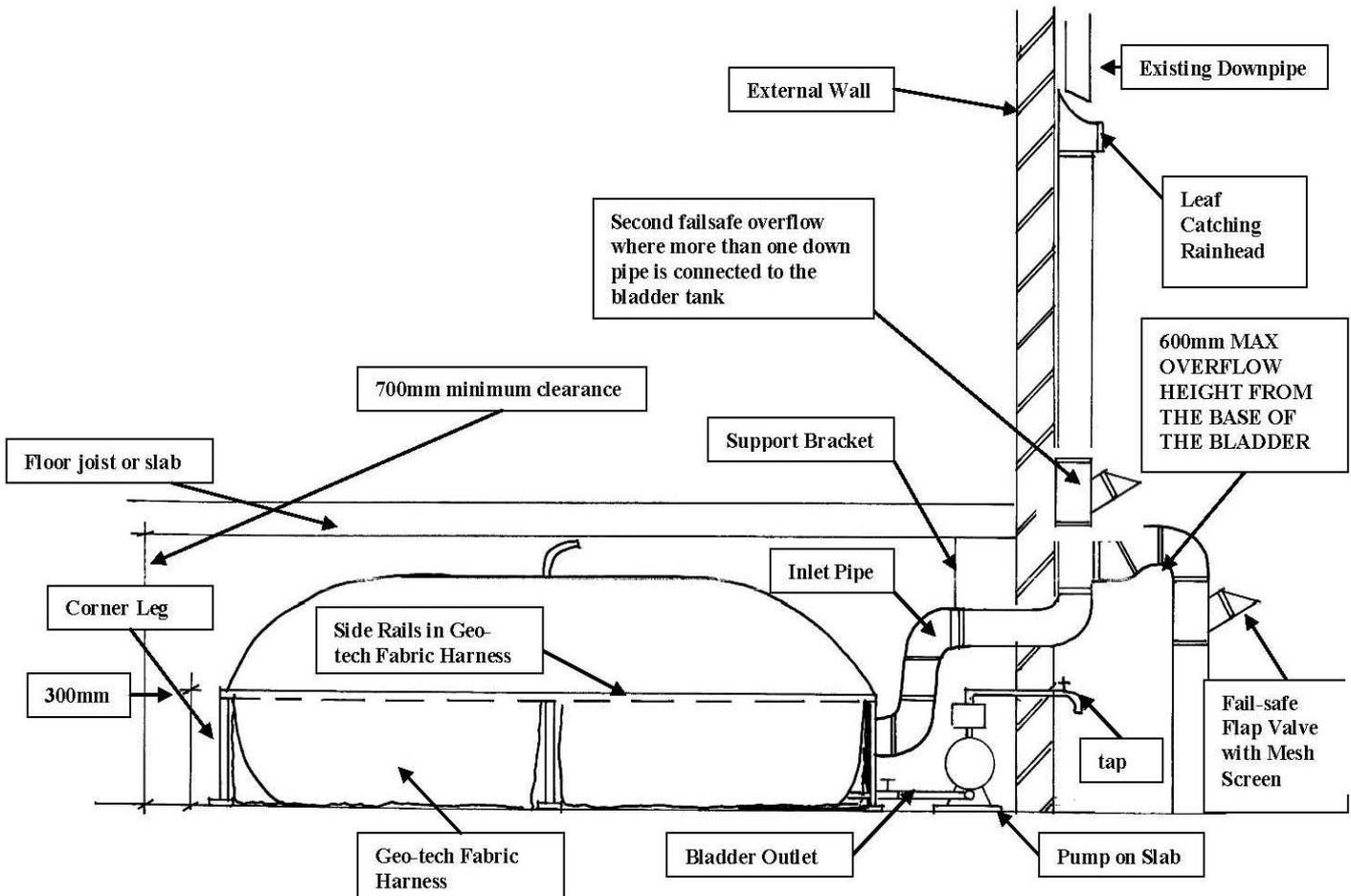


Diagram 5: eco sac® Side View



Accessories Available from eco sac®

The following products are available from **eco sac®** as accessories to the standard **eco sac®** kit:

- Protective covers
- Leaf catching rain heads with mosquito protection
- First flush diverters for downpipes
- Whole of house filtration
- A range of quality pumps and mains water controllers
- A float chamber for mains water controller sensors

If you have any questions relating to your **eco sac®** installation, please contact **eco sac®** for clarification by phoning +61 2 9113 5593 or email info@waterplex.com.au



www.waterplex.com.au

when it rains, it stores®