



# HYBRID

TOILET SYSTEM

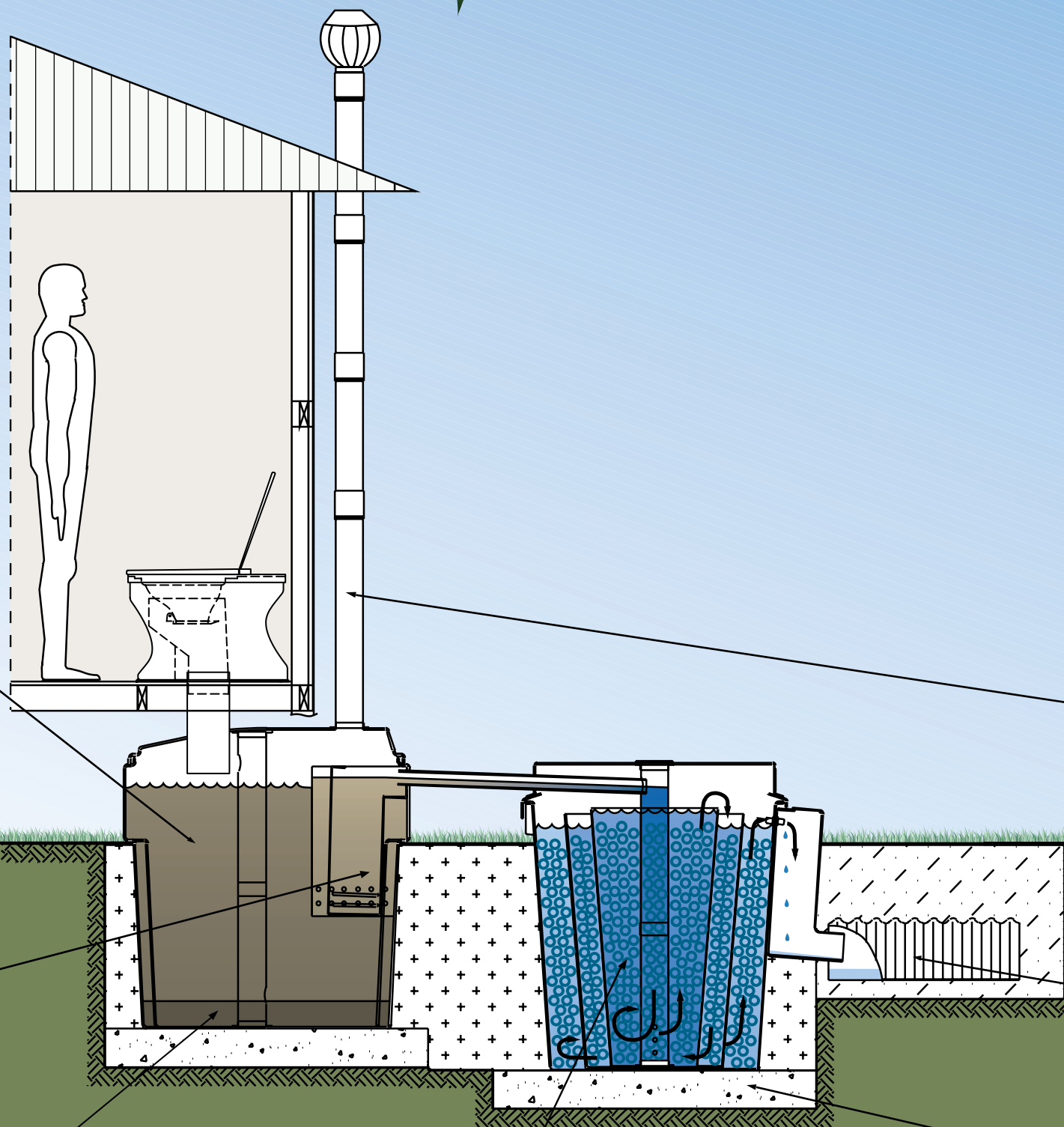
## PEDESTALS

Waste is delivered via the moulded pedestal and Safety Dropper Tube. The design and shape of the pedestal is such that it minimises soiling. The MicroFlush Pedestal has the look of an average domestic toilet and is extremely tough and durable. This pedestal incorporates a flush-cleansed bowl using only about 300mls per flush.



## PRIMARY TANK

The waste enters the primary tank which is full of water. It then begins to liquify. Bacterial action (anaerobic) breaks the solid waste down to 5% of its original mass and settles in the primary tank as sludge. The sludge continues to accumulate and pump-out is indicated by the red zone on the Sludge gauge supplied in each kit. Dependant upon usage, this should take 4-7 years.



## SEPARATION CHAMBER

The separation chamber allows liquid to pass to the second treatment tank without transfer of solids. Gas bubbles generated during the breakdown process can pick up solids and potentially carry over solids to the second tank. This is eliminated by the slots in the side of the twin separation chambers.

## SLUDGE

Sludge removal can be carried out either by mechanical pump service (local authority) or by manual means. Waste management and removal instructions are contained in the owner's manual.

## SECOND TANK

As the waste enters the primary tank, water is displaced and transfers to the second treatment tank via connecting pipework and enters via the centre column. The liquid is forced to travel the longest path possible before being discharged to ground. This gives the ability to attain up to 135 days retention and treatment before discharge. A plastic pipe media is used to create a maze in the second tank where a bio film is formed. The retention time achieved in the Hybrid system results in high quality effluent discharge.



## SYSTEM SIZING

Choosing the correct size system for the site is critical even though the hybrid system can accept 100% overloads for short periods. To ensure correct sizing, we use information from the customer. Where usage numbers are estimates only, door counters should be fitted to existing units to collect data before ordering. We strongly recommend that door counters be used with public Hybrid installations so that usage can be monitored.

Management programs are also available to assist with data collection. Data collection can be obtained by either using standard door counters or by using a PLC system which allows for additional functions. To calculate the annual usage, multiply the size of the system by 3.5. This gives you the daily design loading. Then simply multiply by 365 to give an annual design usage rate. Example: 10 Person annual usage = 12,775 uses. Most importantly, the usage during peak periods and the duration of that peak will have direct influence on the size of the system required. The Hybrid Toilet System is available in sizes from 6 Person to 150 Person.

\*Larger systems available on application.

## VENTILATION

Ventilation for the system is achieved using two options:

1. Standard rotary ventilator on 100mm PVC pipe.
2. A 12 Volt DC powered rotary ventilator. This fan can be operated by either solar power or 240 Volt / 12 Volt DC adaptor.

## DISPOSAL

Once the effluent has been treated, the resultant liquid is discharged to ground or to a holding tank for disposal. The outlet chamber normally sits above ground to prevent water or root intrusion back into the system. The discharge volume of each system is directly related to the size of the system. If usage is at design loading, the system will discharge 1 litre of liquid per day per person (designed in accordance with AS/NZS 1547.2000).

## HOLD-DOWN

The primary, second and holding tanks are held in place using a concrete slab and dynabolts or duckbill anchoring devices. Anchoring prevents the tanks from being pushed out by ground water. This complies with Australian Standard AS 1546.1.