

One Standard

- quality and professionalism from start to finish.

bioCycle™ are not a Concrete Company that has decided to manufacture a Wastewater System. We started the Wastewater Recycling Revolution back in the late seventies and have continued to lead the industry in all aspects.

bioCycle™ **are innovators not imitators**
bioCycle™ **is the best choice**



InfoPak

What you need to know about wastewater treatment for your home



**Australian
Standard**

AS/NZS 1546.3:2008 Lic SMK20266
AS/NZS 1546.1:2008 Lic SMKB2010 for SA, VIC & WA
AS/NZS 1546.1:2008 Lic SMKH01568 for NSW
SAI Global

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Introduction

bioCycle™ is pleased to provide this guide to drainage and wastewater disposal on non-sewered sites.

If you're building a new home, one of the first things you have to decide about is your new homes drainage and effluent disposal. Or if its time for an upgrade of your sanitation in an existing home, you need to choose a system which will give you years of trouble-free service.

Throughout Australia, very strict government controls apply to sewage and grey water disposal, and each home must have a system which meets all the standards and regulations applying to the site.

bioCycle™ has prepared this booklet to help you understand your drainage and effluent disposal options in non-sewered locations.

bioCycle™ will be pleased to provide you with personalised advice on the most cost-effective and efficient solutions for your particular site.

bioCycle™ is a national market leader in providing sewage and wastewater treatment systems for homeowners. We operate through Australia as well as exporting our technology and expertise to four continents.

bioCycle™ manufactures and distributes bioCycle™ – Australia's number one name in aerobic wastewater treatment systems, with over 40,000 already installed throughout the country.

Please don't hesitate to contact our friendly and experienced staff at any time if you have any queries about any aspect of your new homes drainage requirements.

John A Watkins
Chief Executive Officer

Telstra Small Business Awards 2006

bioCycle™ placed second outright in the Panasonic Australia award category at the Telstra small business awards for 2006.

The Panasonic Australia Business awards category is open to businesses with between 20 and 50 employees.

In receiving the finalist certificate, John acknowledged that through constant improvement in technology and company systems, bioCycle™ takes the mantle of being the leading wastewater treatment system in Australia seriously, at the same time as protecting the environment with sustainable and safe water treatment solutions.



Quality Policy

The bioCycle™ range of products has a reputation for longevity and reliability around Australia and this is a reputation that we are committed to maintaining and improving over time.

The challenge for all of us is to ensure that we have the consistency in all aspects of our operations to ensure that this reputation is maintained and reinforced in the mind of our customers

We work to support the efforts of our employees at all stages of the manufacturing process and where possible, we utilise the ideas and creativity of our employees to solve problems as they arise.

Our quality policy is a function of this attitude of consistency

We are committed to ensuring that all staff are aware of the need to support the efforts of each other in order to achieve Customer satisfaction and we strive to create a culture where this behaviour is encouraged.

We work with our suppliers to ensure the most effective parts and sub assemblies are utilised in our systems and we are constantly looking for ways to improve on this.

We are all charged with the responsibility and the authority to stop the process if a serious threat to quality is identified. We support initiatives from any source to improve our practices wherever this is required.

We are committed to certification of our wastewater treatment systems to Australian Standard 1546.3 and maintenance of that certification into the future.

In summary, our success is contingent upon our commitment to Quality and consistency in all aspects of our operations. I invite all employees in joining with me to ensure that bioCycle™ is the most successful and respected brand for wastewater treatment systems in Australia.

A copy of this policy is present in all bioCycle™ offices around Australia.

John A Watkins

Chief Executive Officer



LEADERS IN WASTEWATER TREATMENT



STANDARDSMARK LICENCE

SAI Global hereby grants:

Jowa Group Pty Ltd

ABN 46280853308

34-38 Patpa Drive, SHEIDOW PARK, SA 5158, Australia

StandardsMark Licence

Manufactured to:

AS/NZS 1546.3:2008 - On-site domestic wastewater treatment units - Aerated wastewater treatment systems

& AS/NZS 1546.3:2001 - On-site domestic wastewater treatment units -Aerated wastewater treatment systems

"the StandardsMark Licensee" the right to use the STANDARDSMARK as shown below only in respect of the goods described and detailed in the Schedule which are produced by the Licensee or on behalf of the Licensee* and which comply with the appropriate Standard referred to above as from time to time amended. The Licence is granted subject to the rules governing the use of the STANDARDSMARK and the Terms and Conditions for certification and licence. The Licensee covenants to comply with all the Rules and Terms and Conditions.

Certificate No:SMKH20266

Issued: 4 November 2010

Expires: 22 November 2015

Originally Certified: 4 November 2010

Current Certification: 4 November 2010

Duncan Lilley
Global Head – Assurance Services

Alex Ezrakhovich
General Manager – Certification Services



COPY

* For details of manufacture, refer to the licensee

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Key Features:

- *Cheapest system on the market to purchase, maintain and operate*
- *Single tank with mono cast wall*
- *Child safe: lid secured to tank with screws*
- *FREE on-site inspection*
- *Approved by the Director General of Health – Australia*
- *Proudly Australian owned and operated – all monies stay here*
- *Fully fitted systems on display North and South and 1/3 scale working model at our Head Office.*

bioCycle™ is the Number 1 Rated Wastewater Company in Australia

Apart from our exceptional warranties, quality of product and national reach, here are some of the simple reasons why the bioCycle™ System is rated “Number 1” in Australia and why more people choose to buy their Wastewater System from our Award Winning Company over any single competitor.

1. **bioCycle™ employ their own in-house engineer**
Our engineer (and manufacturing division) is always working with the latest technologies, researching future technologies and designing and testing all aspects of the bioCycle™ system. This gives you peace of mind knowing what you buy is the best and latest system designed – built under strict engineering guidelines.
2. **bioCycle™ systems are made as a single tank system with a mono cast integral wall**
bioCycle™ pioneered this technology back in the early 1980’s and have been successfully installing them around Australia ever since. Our mono cast tank and walls ensure there is no leaking between the septic and aeration sections.
3. **A Davey DCS40 Pump, to disperse irrigation line**
bioCycle™ will assess and recommend that size pump will suit your system installation best. With over 30 years experience in Wastewater Treatment, we believe that the Davey DSC40 pump (or equivalent), is the correct pump for most installations. Larger pumps (dearer to run and replace) are available when absolutely necessary for higher pumping – only if the system requires it.
4. **A HI-Blow HP100 Blower, for air distribution**
bioCycle™ has experimented with all other brands and have found these to be the best. They are the most reliable on the market, the cheapest to run and service. Compare the price of competitor brands to purchase and repair. (All blowers need to be serviced every 3 years after the initial warranty expires.)
5. **bioCycle™ has its own alarm panel and electrical control unit**
Manufactured at our Head Office/Factory in South Australia by our own electrician because we want our system to be simple to install and easy to operate – just part of our commitment to staying Number 1 in Australia.
6. **The irrigation kit is not included in the original purchase price.**
bioCycle™, in some cases if given the site and soil report can quote the required irrigation. Otherwise the plumber / installer doing the installation will supply the irrigation in accordance with the Local Councils irrigation requirements.



LEADERS IN WASTEWATER TREATMENT



Factory Backed Warranties:

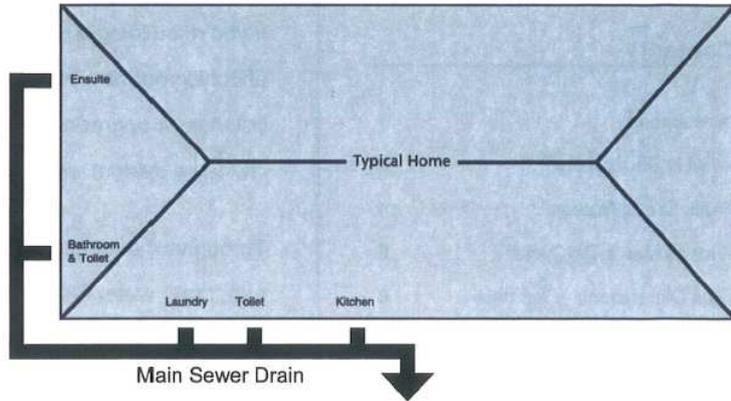
- *20 year warranty on tank*
- *3 year warranty on internals*
- *3 years warranty on Blowers*
- *2 years warranty on Electrical Controls and Pumps*

bioCycle™ treated water can be used for lawns!

7. **On-time delivery of your new bioCycle™ system to your property**
bioCycle's™ modern fleet of truck-cranes makes delivery to your property anywhere in Australia an efficient and dependable service – allowing your local installer to plan exactly when they want the bioCycle™ system delivered, avoiding delays and cost for you.
8. **Reclaimed water usage signs as per health departments requirements**
Not something that we would advertise but an important part of our **quality commitment** to you.
9. **12 months service included in the price (in some states)**
not added on to the purchase cost, bioCycle™ has the largest service division in Australia and service all types of systems, not just our own, because we cover all areas.
10. **bioCycle™ is a South Australian Owned, Australian Operated company**
With all profits staying in South Australia – meaning more jobs for Australians around the country. No foreign partners.
11. **Our site inspections are done by Plumbers – not ‘smooth talking’ salespeople**
When we do our FREE on-site inspections we draw up your plans (we are plumbers) and forward to/liaise with council on your behalf for a smooth application approval – all FREE. There are no hidden costs.
12. **Stylish surface level design, comprehensive user manual and system information documents**
We want your bioCycle™ system to be simple to use, and almost unnoticeable, therefore we have designed the top of the system to be as unobtrusive in your garden as possible – with landscaping you wont even know it is there, our user manual and system information document are produced with the same thought and professionalism that we use to build the bioCycle™ system – **simple, easy and comprehensive.**

“bioCycle™ One Standard – quality and professionalism from start to finish”

What is 'Wastewater' and what do I need to know about it?



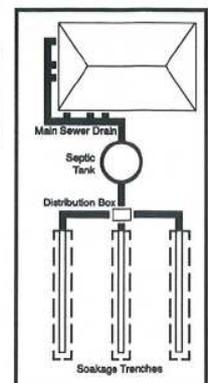
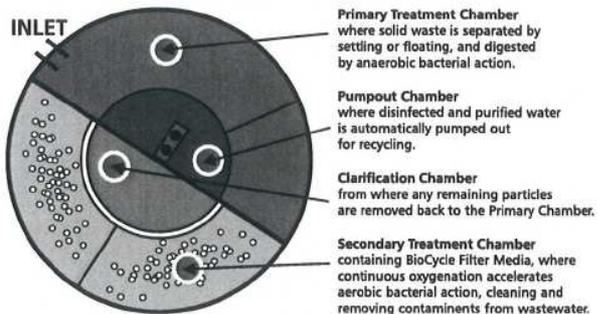
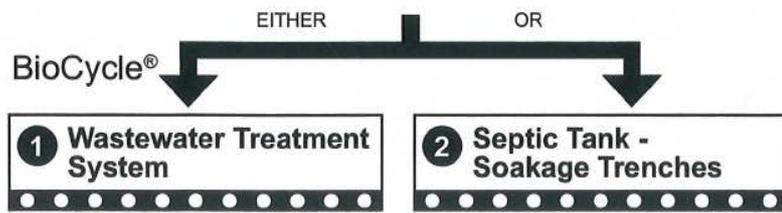
Wastewater is the generic term for all the effluent and grey water produced inside your home. It includes outflow from your:

- Toilets
- Baths and showers
- Hand basins
- Bathroom/laundry floor drains
- Laundry troughs
- Washing machines
- Kitchen sinks
- Dishwashers

This wastewater is heavily contaminated, not just by sewage but also food residue from the kitchen, grime and grease from the laundry etc. It must be disposed of through an approved system. Wastewater empties into drainpipes running under the floor of your home, which all connect to an underground Main Sewer Drain running around the outside of your house.

A lot of water passes through

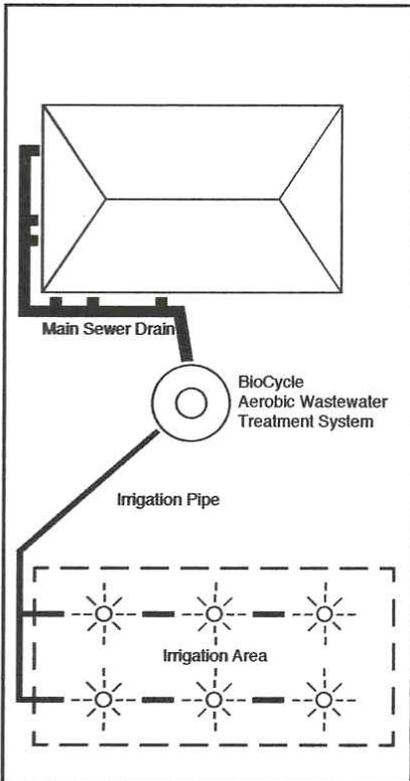
these pipes – the average household uses 150-200 litres per person every day. The Main Sewer Drain leads away from the house with a gradient so the wastewater and solids flow through it by gravity. If you live in a city or township, the Main Sewer Drain will usually connect to the municipal sewer running past your property. If you're building in a non-sewered area, the drain will usually end at one of the following:



Typical soakage trench configurations for different block sizes
(NOTE: Not to scale. Actual design dependent on local regulations)



LEADERS IN WASTEWATER TREATMENT



Typical site layout

bioCycle™ Aerobic Wastewater Treatment Systems – the Preferred Solution

bioCycle™ aerobic wastewater treatment systems efficiently separate the solid waste then treat the wastewater in a series of accelerated and controlled biological processes, to a level of purity unattainable by conventional septic systems.

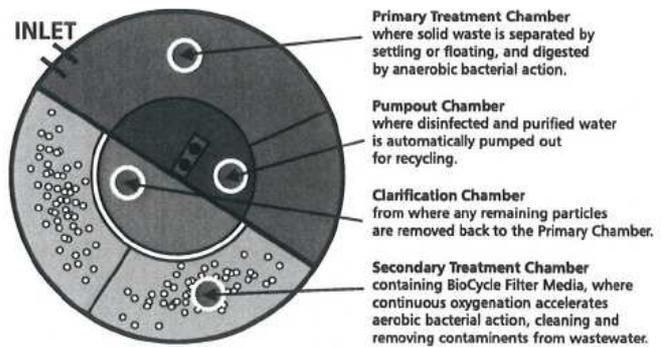
This non-drinking water – clean, odour free and disinfected to international health and environmental standards is installed in a excavated hole adjacent to the home's main sewer drain. It also requires electrical connections.

Internally, the tank is divided into chambers in which the treatment processes occur. Wastewater from the home moves through the systems

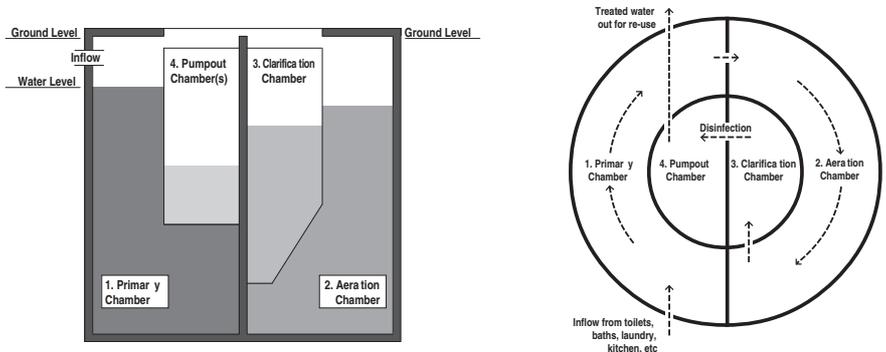
chambers by displacement. Treated water in the final chamber is automatically pumped out for irrigation – recycling it to benefit you and your property.

Aerobic systems are the preferred choice for many homeowners because they are environmentally responsible. Unlike other options, this method does not literally waste your wastewater, nor does it allow untreated waste to be released into the environment. Or to soak into the sub-soil, polluting our precious groundwater.

Local councils throughout Australia are increasingly showing a preference for aerobic systems in non-sewered areas.

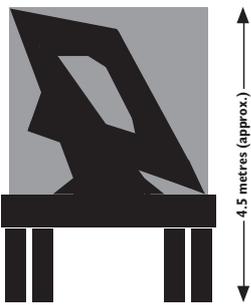


bioCycle™ Aerobic Wastewater Treatment Systems are contained in tanks approx 2.5m tall and wide. The tanks are placed in an excavated hole adjacent to the home and connected to the main sewer drain. The cross section and Top View (below) diagrams show displacement and process flows within the tank.

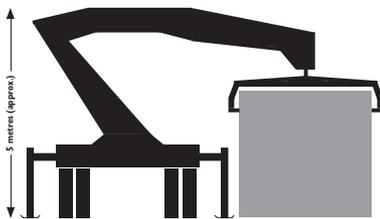




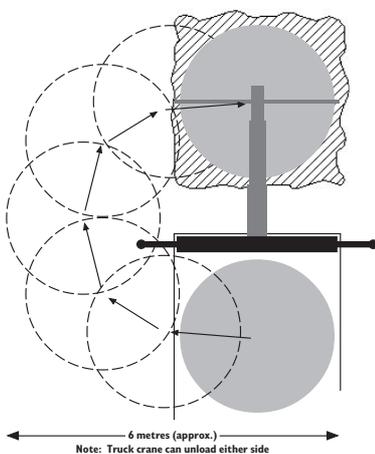
Crane Truck - Loaded with two bioCycles



Truck Crane - Loaded (rear view)



Truck Crane - Unloading (rear view)



Truck Crane: Access Guide

bioCycle™ residential systems weigh approximately 5 tonnes.

When determining the location of the system, always ensure there is a suitable adjacent area of flat, firm ground for the delivery truck to obtain access and be stable during craning.

Always ensure there is a suitable adjacent side space for the tank to be unloaded, and that there are no overhead obstructions such as power lines or trees.

The Truck will normally reverse into the excavation.

The following conditions apply to all deliveries:

- Standard delivery charge includes max. 45 minutes site time. Additional time will be charged for.
- If there is no safe access to the excavation for craning in, the system will be unloaded and left at the closest accessible point. Any additional charges will be the customer's responsibility.
- Delivery and unloading are at the drivers discretion.



FOR SAFETY ADVICE AND TO ENSURE THE SYSTEM'S WARRANTY IS NOT AFFECTED, ALWAYS CONSULT BIOCYCLE™ (PH 08 8381 9100 OR 1300 363 399) BEFORE ATTEMPTING TO MOVE OR INSTALL A BIOCYCLE™

bioCycle™ will not be responsible for any problems, malfunction, damage or any other consequences which result directly or indirectly from failure to comply with any of the instructions above. Measurements are approximate and provided as a guide only.

Why choose a bioCycle™?

bioCycle™ is Australia's number one name in aerobic wastewater treatment systems – and we've gained that reputation through the quality and reliability of our products, the 'smartness' and simplicity of our technological process and the excellence of our service.

We use only the highest quality materials and electrical components including pumps, blowers and electrical controls.

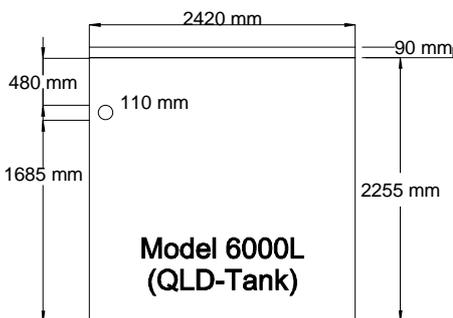
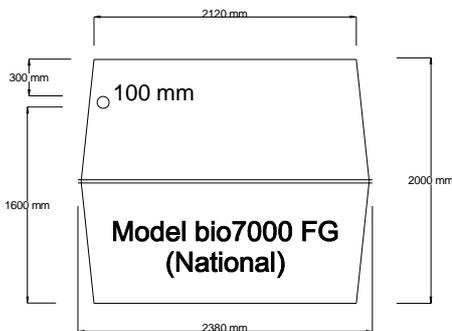
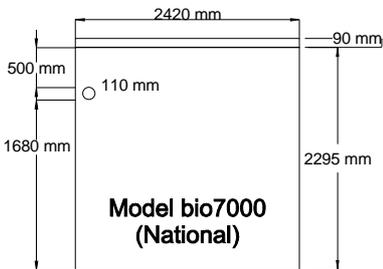
bioCycle™ systems are manufactured from high-grade concrete, reinforced with stainless steel fibres. Most models also have an integral centre concrete wall, increasing the overall strength of the tank.

Our standard models are single-tank concrete systems because:

- Concrete tanks are immensely robust and durable, providing a long working life.
- Aerobic treatment systems are buried and therefore subject to immense pressures from soil movement as well as internal pressures from tonnes of water. Concrete provides maximum resistance to these pressures.
- The weight and rigidity of properly-installed concrete tanks provide stability and resistance to movement or 'floating'.
- Single-tank systems are generally simpler and quicker to install than two-tank systems, which require more extensive excavation and plumbing connections.



Tank Dimensions and Installation Instructions



Systems weigh approximately 5 tonnes. Delivery involves a truck crane placing the system into a prepared excavation. When determining the location of the system, always ensure there is a suitable adjacent area of firm ground for the delivery truck to gain access and be stable during craning (see our leaflet 'Crane Truck Access Guide', and if in any doubt phone the number below). If craning into the hole is not possible due to accessibility – or if the excavation is incomplete (if bioCycle™ is not carrying out the installation) – waiting charges will be incurred or the tank may be left at the closest practical spot to the excavation, at the driver's discretion. Any additional costs for moving and installing the system will be the customer's responsibility.

EXCAVATION DETAILS:

Square, with vertical sides.

AREA: Minimum 3m x 3m at ground level.

DEPTH Ideally the bioCycle™ should be positioned so the top of the lid of the tank is 50-100mm above the ground level, with the inlet drain laid to the resulting invert depth.

The overall depth of the excavation is determined by the depth below the ground of the inlet drain at the point where it enters (or will enter) the bioCycle™.

The depth from this point to the base of the excavation must equal the equivalent distance on the bioCycle™ i.e. the "invert to base" figure as per the diagrams above.

Thus the overall depth of the excavation is equal to the invert to base figure PLUS the depth of the inlet drain PLUS the drain diameter (as per typical example right).

If the inlet drain must be so deep that the top lip of the tank will be below ground level, Riser(s) must be added (see further explanation and illustration below).

BASE: Must be level, firm, dry, free from broken rock etc. If necessary; over-excavate, slightly backfill with gravel and spread evenly to provide a suitable level base.

BEFORE BACKFILLING:

The three main chambers (Primary, Aeration and Clarification) should be progressively filled with water, adding around 400mm of water to each chamber in turn, until the water level is about 300mm below the main inlet point.

The weight of this water stabilises the tank and prevents movement or floating after installation.

Any lifting holes must be plugged before back filling.

Take care to leave the invert uncovered if the inlet drain has not been connected before back filling.

RISERS:

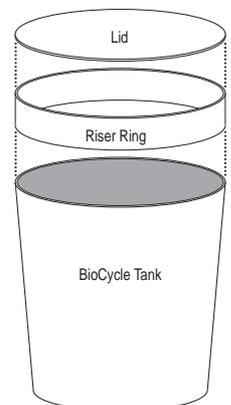
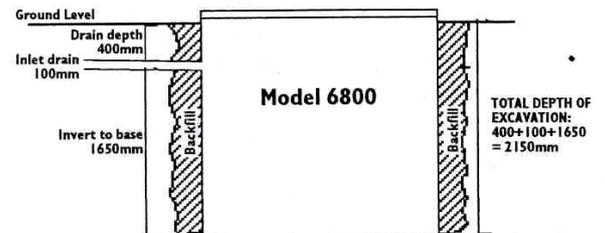
If the depth of the inlet drain results in the top lip of the tank being below ground level, tank Riser(s) must be added until the necessary ground clearance is obtained. If this is necessary and the Riser(s) have not been pre-ordered, it will involve additional delivery costs and site work at the customer's expense.

PLUMBING AND ELECTRICAL CONNECTIONS:

These must be carried out by Licensed Tradespeople (Electrical Circuit Diagram supplied).

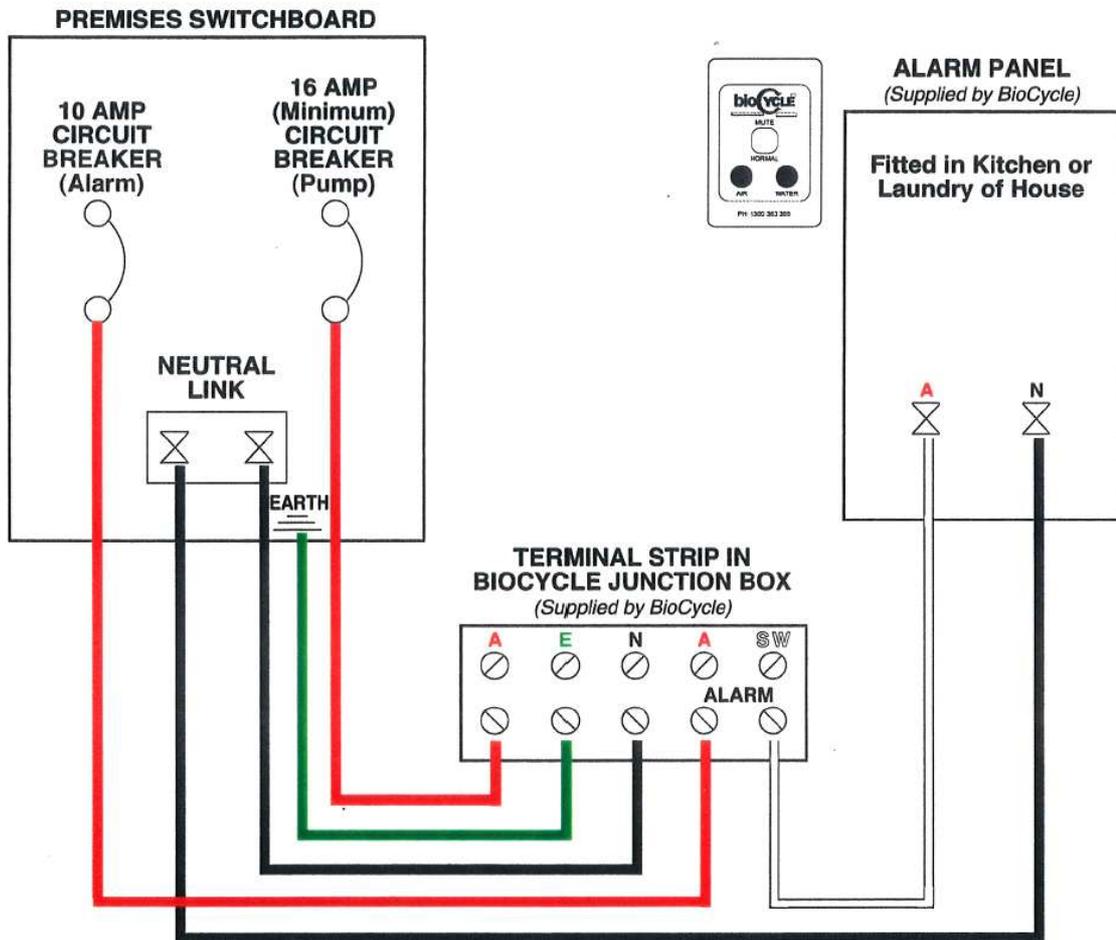
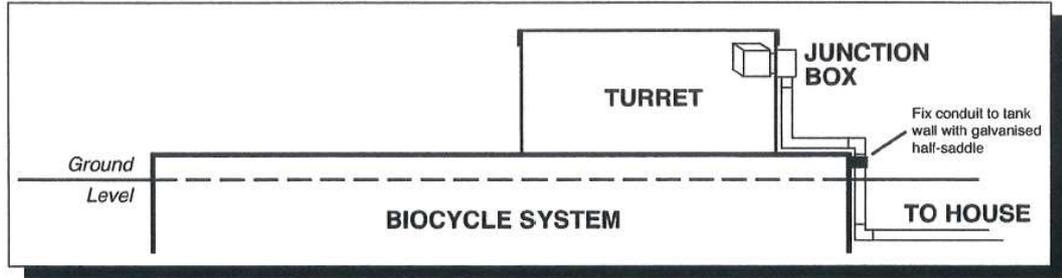
IRRIGATION:

Must be laid out and connected BEFORE the electrical system is switched on, as pump may operate immediately.



Electrician Installation Guide & Circuit Diagrams – Residential Systems

NOTE: All electrical connections must be carried out by a licensed tradesperson.



IMPORTANT NOTE:

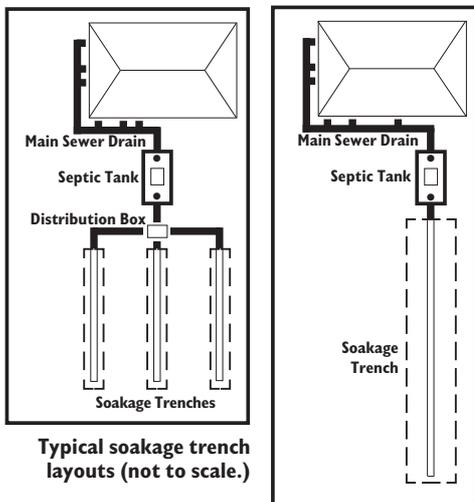
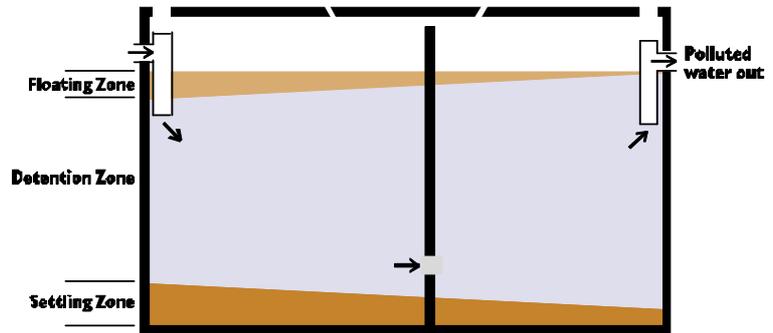
DO NOT FEED THE SYSTEM WITH ONE CIRCUIT AND LOOP THE TWO ACTIVE TERMINALS. If you only use one circuit to feed the system, under fault conditions the whole system will shut down and the alarm will not operate.

NOTE: We strongly recommend the use of Anaconda Flexi Conduit on all installations or similar UV resistant and mechanical damage resistant conduit.

THE WARRANTY WILL BE VOID UNLESS TWO CIRCUITS ARE USED.

bioCycle™ will not be responsible for any problems, malfunction, damage or any other consequences which result directly or indirectly from failure to comply with any of the instructions above. Current as January 1, 2012 and subject to change without notice

Why not a conventional Septic System?



Septic/Soakage Trench Systems are the old-fashioned method of dealing with wastewater disposal. They have significant environmental drawbacks, and many local Authorities and Councils throughout Australia have restricted or banned their use in new homes. Other Authorities are actively encouraging existing homeowners to replace old septic tanks with Aerobic Treatment Systems.

In a septic/soakage system, solid waste is separated and retained in the septic tank, and the untreated wastewater – still rich in contaminants – is dispersed through slotted pipe or tunnels buried in gravel filled trenches, allowing it to soak into the ground.

This primitive process not only wastes the water, but can also lead to long-term pollution of sub-surface water reserves. If the tank or the soakage trenches clog up over time, they can flood or produce seepage, leading to untreated sewage pooling above ground or flowing directly to stormwater drains or natural watercourses.

Excavation and associated costs are a major factor in the final price of septic/soakage systems. The amount of excavation required can vary substantially depending on the site and soil conditions, and the requirements of local Councils.

Many Councils insist on a Soil Protection Test (at the property owner's expense) before they will approve a septic/soakage system. If your site fails, an Aerobic Treatment System is usually your only alternative.

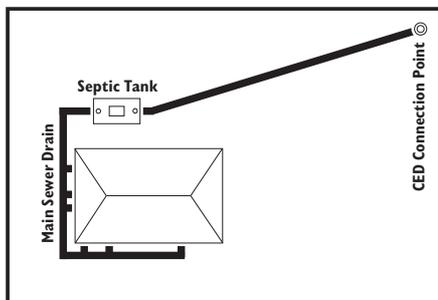
What are CED/EDS/STED Schemes?

If your new home is in a township or other area which has a CED (Common Effluent Disposal), EDS (Effluent Disposal System) or STED (Septic Tank Effluent Disposal) Scheme, you will usually have a Connection Point located somewhere on the perimeter or your property.

Your home's Main Sewer Drain leads into a septic tank on your property, where solids are separated and retained in the same way as a conventional septic/soakage system.

The untreated wastewater which flows out of the tank is piped through an underground drain to the CED connection Point, from where it is carried away by sewer pipes to a community treatment facility such as a wetland.

Obviously, the main cost factors in this type of system are the relative locations of your home and the Connection Point – the distance between them, the nature of the terrain and the type of soil or rock encountered during excavation.





LEADERS IN WASTEWATER TREATMENT



bioCycle[®] systems prevent damage to the environment

The system which services this settlement (above) of 13 holiday homes is located in one of the most ecologically sensitive zones in Australia—the banks of the River Murray—and ensures there is no pollution of this critical waterway by effluent from the homes.

contacts

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