

New Products:

Drainage & Wastewater Systems, Permathene Baffles

Ausdrain Drainage Systems

Ausdrain Modules provide a permanent non-clogging void between the building structure and the soil profile allowing an uninterrupted flow of excess water to designated outlets. The smooth surface of the modules protects the waterproof membrane and the 30mm void enables efficient discharge of water and ventilation to the slab surface.

Installation of Ausdrain Modules and Filter Fabric is both fast and simple. Pallet sized panels of interlocked modules can be pre-assembled and delivered to site, saving valuable time and labour on large scale projects. The modules can be easily interlocked on-site for use in vertical applications.

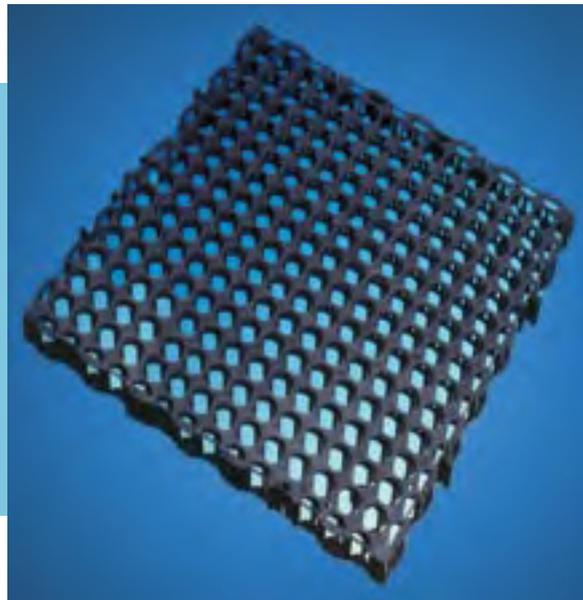
The use of Ausdrain Modules and Filter Fabric in conjunction with a waterproof membrane creates a complete waterproofing and drainage system.

Ausdrain Stormwater System

1. *Bio-Remediation*
2. *Infiltration*
3. *On-Site Detention*
4. *Rain Harvesting*

Ausdrain EnviroTank Modules are a high compressive strength module that is light-weight and easy to install. They are used extensively in the areas of on-site stormwater management, septic tank dispersal and environmental management.

The modules are assembled as 600 x 400 x 450 crates and can be stacked on top of and beside one another to form structural underground tanks. Generally, the tank will be surrounded by a geotextile fabric to allow the retained water to infiltrate back into the ground. Alternatively, the tank may be surrounded by a water proof polyethylene liner to enable water containment that can be slowly discharged to stormwater drains via an orifice plate or pumped for re-use as irrigation or for household purposes. This system has been widely accepted by councils and government departments to provide a cost-effective means of dealing with on-site stormwater issues and to reducing peak flows.



Applications:

- Roof Gardens
- Planter Boxes
- Podiums
- Paving
- Civil Works
- Golf Courses
- Race Courses
- Sports Fields

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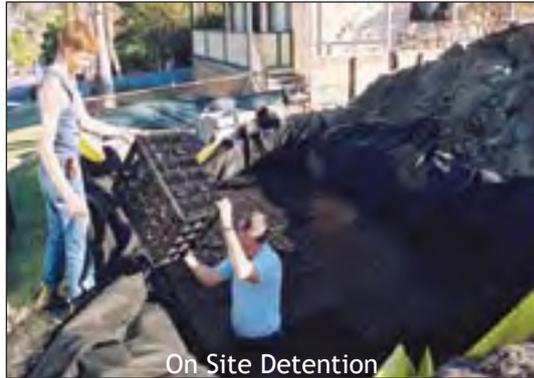
- Kennedy's Point - Turbidity Barrier



Bio Remediation



Infiltration



On Site Detention



Rain Harvest

In recent drought affected times, the water re-use capability of the system has provided a viable solution to stormwater reticulation.

The EnviroTank Modules are also extensively used for septic tank dispersal or as "leach drains" to replace the use of gravel trenches. The Leach Drain provides an open void space that is up to three times greater than gravel. This enables grey water to be efficiently dispersed along the length of the drain and bio-remediated into the surrounding soil.

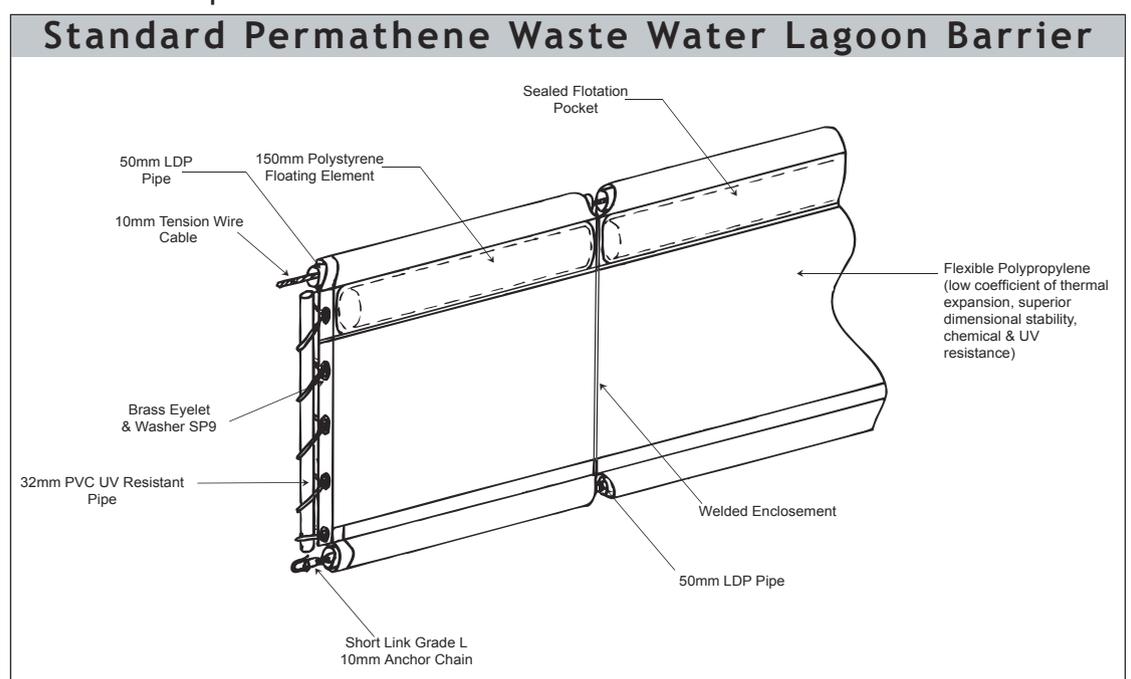
**Interested in finding more about Ausdrain and other drainage solutions?
Please visit www.permathene.com**

Permathene Baffles

Permathene specialises in custom built silt and debris containment booms, as well as turbidity floating barriers and pond baffles. Baffles are commonly used to improve the hydraulic and treatment efficiency of ponds. There are several ways in which baffles can be built. They can be constructed from concrete, rocks or earth as a part of the original design. However this can limit opportunity to control the process, for which the pond has been designed.

Permathene manufactures baffles in a strong impermeable membrane (PVC or polypropylene), or a combination of impermeable membrane, slit film or monofilament geotextile and marine grade flotation devices. Standard manufacture in sizes from 1 m to 20 m curtain depth and standard boom lengths from 3 m to 15 m (other sizes available upon request). Flotation is by closed cell polyethylene logs. These logs are completely enclosed within sleeves by means of fusion welding to prevent any water from entering. All fittings made from metal are corrosion resistant galvanised steel, stainless steel, brass or aluminium.

Applications include waste water treatment, stormwater retention ponds, sediment control, enclosure and separation, oil and spill containment systems, mining and agriculture.



Permathene News:

Permathene would like to present 4 new staff members:



Nikolai Vakhroushev (Sales Engineer) joined Permathene in May 2005 and has technical expertise in a variety of sectors, including environmental engineering, facilities and infrastructure management, project management and construction.

German born, he worked in Russia, Kazakhstan and New Zealand. Graduated as a geologist and geochemist he spent almost eight years working around North Siberian Oil fields (Nizhnevartovsk, Surgut). As a consultant in 1990 he was involved in an adaptation of fluid mechanical engineering manuals (Workbench) to Russian markets for British company Scientific Software Intercomp Ltd.

Settled in New Zealand since 1996 participated in more than 300 engineering projects mostly around Auckland Urban area, took part in coastal management and environmental projects. Some of his works include initiative of organization of Environmental Fast Response Units for Excell Corporation, to deal with water and waste water problems, contaminated sites investigation and management, waterways cleaning, parks and reserves management.



Allen Reynolds (Sales Engineer) joined Permathene Ltd late last year ('04) and brings experience in a wide range of technical pursuits. Allen graduated as a geologist from Canterbury University and spent over three years in Australia engaged in mineral exploration. When the exploration boom subsided he returned to New Zealand and retrained into the environmental / resource management field, working for regional agencies in Canterbury, Westland and the Auckland region.

Subsequently he applied his experience and skills to the treatment and disposal of hazardous waste for a leading Auckland company. He then moved ('up the pipe' he jokes) to the field of industrial water treatment, for heating and cooling plant for a wide cross-section of industrial and commercial users. After some eight years his next role was in the successful introduction of a new stormwater treatment device to the New Zealand market, allowing particular contaminants to be targeted. Before joining Permathene he rounded out his experience with a period at a leading supplier of on-site wastewater treatment systems.



Nick Kastoumis (Business Development Manager, Sydney Office) joined Permathene Pty Ltd in April this year. Nick completed an Associate Diploma in Business studies and worked in finance administration. He subsequently worked in the construction industry and completed a BE (civil/structural), certificate in marketing and worked as a geotechnical engineer. He set up and ran his own construction business as a licensed builder for 4 years and then left this to get involved in geosynthetics sales. Before coming to Permathene he worked for Maccaferri Sydney 2.5 yrs where he served on the Geofabrics Australasia Innovation Committee.



Ljubica Radoicic (Sales and Marketing) joined Permathene in April 2005 Ljubica is from Serbia, has a degree in Philosophy and NZ Diploma in Marketing. She came to New Zealand in 1999 after spending time in the US and East Africa.

Before joining Permathene she worked for John Sands NZ (systems administrator in the marketing department) and Richmond Materials Handling where she worked in marketing/advertising/sales and had the role of administration manager.

Permathene are proud to announce new premises in Sydney, Australia:

**Permathene Pty Ltd
Studio 108**

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Rosebery, NSW 2018**

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Case Study:

Kennedy's Point, Turbidity Barrier

Kennedy's Point Waiheke Island is a bay used by ferrys carrying people and vehicles from Bucklands Beach and Auckland central to the Island. Due to the exposed nature of the bay the ferrys dock at, Auckland City planned for a new breakwater to be constructed in the bay to provide shelter to the vessels docking at Kennedy's point, for smooth loading and unloading of people and vehicles.

The plans called for the creation of a breakwater to extend 180 m from the shore to a depth of almost 4m. The method adopted was for large armor rock to be built up to a sufficient level, in this case about 2m above high tide mark, thus providing shelter from incoming waves.

Due to the sensitive environment of Auckland's Hauraki Gulf, a popular destination for tourists, pleasure boaters and fishermen, Auckland City Council was very conscious about protecting the sensitive marine ecosystem which Waiheke Island plays a major part in.

This large breakwater was made from rock placed on the sea floor to build up the structure and it was clear that this would create a lot of silt which is a potential killer for marine organisms. It was determined that before any works could begin the entire site had to be screened by a dedicated floating silt screen, which would hang vertically stopping any silt from leaving the construction zone.

As this is one of the first projects in New Zealand that a dedicated floating silt screen had actually been specified, Permathene was approached as a leading supplier of environmental products to offer solutions for this problem. Permathene supplied a dedicated floating silt screen made from the highest quality products.

This screen consisted of a 300 mm floatation device sealed in a PVC sleeve, the silt screen itself is made from a monofilament woven geotextile, with openings small enough to trap silt, but also allowing water to pass through the screen. The whole fence was held in place with anchor ropes tied to weights sitting on the sea floor. The screen extended over 3 m from the surface of the water.

The reason why monofilament is the superior fabric is because a woven slit film fabric (slightly cheaper) has a far lower flow rate, or sacrifices filtration. The monofilament both traps the silt (in this case any particles larger than .4 mm) and allows normal flow of tides and current.

This type of screen can be manufactured in almost any lengths and floatation devices also can be modified for various applications for lakes, rivers and open sea.

If you have works where the marine environment needs to be protected, please call our Permathene engineers for advice.

