Introduction

Overview:

Design objective:- "To provide an economical, hydraulically efficient, easy to install and simple to maintain device, that aids in improving storm water quality by the removal of litter and sediment pollutants, which have historically been transported to a sensitive aquatic ecosystems".

The SQID ® (Storm water Quality Improvement Device) range of products is designed with durability and UV stability built-in. Constructed of polyethylene and stainless steel, these products are designed to last. Once manufactured and installed, these products contribute no more pollution to the environment, and are made of 100 percent recyclable materials.

Authorities have begun to act to ensure that storm water pollutants are captured at the source. With this in mind, the SQID ® range of litter and sediment traps (LST) were developed.

The SQID® litter and sediment traps would become an integral part of a storm water treatment plan that councils are being urged to implement. (See: Modern urban storm water quality management plans and guideline, March 2001, Queensland Government Environmental Protection Agency.) It is envisaged that this will help reduce the impact of urban development on the ecosystem. This will greatly improve the likelihood of sustainable development. Developers will also benefit by installing the SQID ® systems, as this may facilitate development plans if they are seen to be ecologically sound.

The systems are primarily designed to capture and maintain sediment and pollutants from areas such as industrial areas, car parks, courtyards, driveways and curbside channeling. There are many various applications that the SQID ® systems may be useful.

Uses and Applications:

Model 36060 (see photo), 600x600x325 mm has been designed for catchments with areas where sediment and litter is a problem. These may include driveways, shopping centers, car parks, runoff collection points, Field Gully pits in parks etc., high-density developments and wherever water runoff is collected and where pollutants may be a problem. These may also be useful in field gully curb inlet pits where there is a lower flow rate of water.

These have been designed specifically to capture pollutants and sediment from slower flows of water before going online to larger volume

Model 39060 (see photo), 900x600x325 mm is designed primarily for council field gully curb inlet pits with less than 5 percent gradient, recess pits, gully pits, and new developments were sediment's and litter are an issue during and after development, and all intensive urban development.

Industry (such as sawmills, landscaping supplies, paper industries and other manufacturers) will benefit by using the SQID ® systems as a guard against spills, or "floating pollutants" from polluting the waterways avoiding expensive fines and litigation by ignoring pollution control.

There are many and varied field gully pit traps, but most applications can be retrospectively fitted with a SQID ®.

Environmental benefits:

The benefits to the environment are immeasurable. Many of these have been discussed in lengthy papers and reports by environmental agencies over time. Some of these include the reduction of discarded and trimmed vegetation that depletes the oxygen levels in water as it decomposes, thus contributing to the blue green algae problem. Cigarette butts are stopped the source. These cause immeasurable damage to the ecosystem as they have life expectancy far exceeding that of natural components. Plastic bags, broken bottles, discarded wrappers, and all forms of litter otherwise known as gross pollutants to stop to the source. All these bonds have been found to be trapped by the SQID ® systems.

It has been found with field observation and experiments that as the litter and sediment is trapped, there is a tendency for Pollutants such as nutrients, trace metals, free oil and grease as well as smaller particles below 2 mm to be entrapped in the litter is well, thus reducing further pollutants to the ecosystem.(See Figure 1) s of water.

Pollutant Description	*Possible Pollutant Source*
Gross Pollutants (Litter and Debris)	Pedestrians and vehicles Waste collection processes Large vegetative matter Lawn Clippings
Sediment	Soil erosion – wind and water Pavement and vehicle wear Atmospheric deposition Organic matter Car washing Weathering of buildings & structures
Oxygen Demanding Substances	Organic matter decay Atmospheric deposition Animal faeces
Nutrients	Organic matter Atmospheric deposition Animal faeces

(Figure 1 Pollutant Table).

Cost benefits:

Apart from being a relatively cheap product, the other cost benefits include the reduction of blockage risks further down the line, and the reduction in the need for replacement pipes due to the scouring effect that larger particle size, e.g. broken roadway, being carried down at high velocity inside the pipes chipping away at the concrete and PVC.

Cleaning and maintenance:

As is the case with any intervention device, there is a degree of maintenance needed. The smaller devices are designed with handles, and can be easily removed and emptied, with the debris being put in landfill sites. The larger devices can be cleaned out by hand, or with a small adaptation on the end of the road sweeper swinging arm device, can be cleaned by road service crew.

There are also other products available to facilitate speedy maintenance and cleaning of these devices. Please see your representative for further details.

It is recommended that after a significant storm event, the devices are emptied, however, these devices are built-in with an overflow mechanism that allows them to function as a bypass unit when the filtering device is 100 percent blocked. (See technical details for further information).

Installation:

These devices can be retrospectively fitted into most existing pits and gullies with minor adaptations. Your representative will be only too happy to talk to you about the procedures and may also arrange to have them fitted for you.