

RWRS

Rainwater Recycle System



In commercial and residential developments, rain water is a valuable resource for re-use as it is not only an operating cost saving, it is also an environmentally sound design application for new developments.

Prior to its use, apart from an automated rainwater storage system, treatment of the water is essential to ensure that the water is clean and bacterial free for onward application.

PlugFLO

Treatment Systems



Application

Once treated and stored, recycled rainwater is suitable for:

- ✧Irrigation
- ✧Toilet flushing
- ✧Floor and utility washing

(with additional treatment, it can also be used for direct domestic application such as shower and consumption)

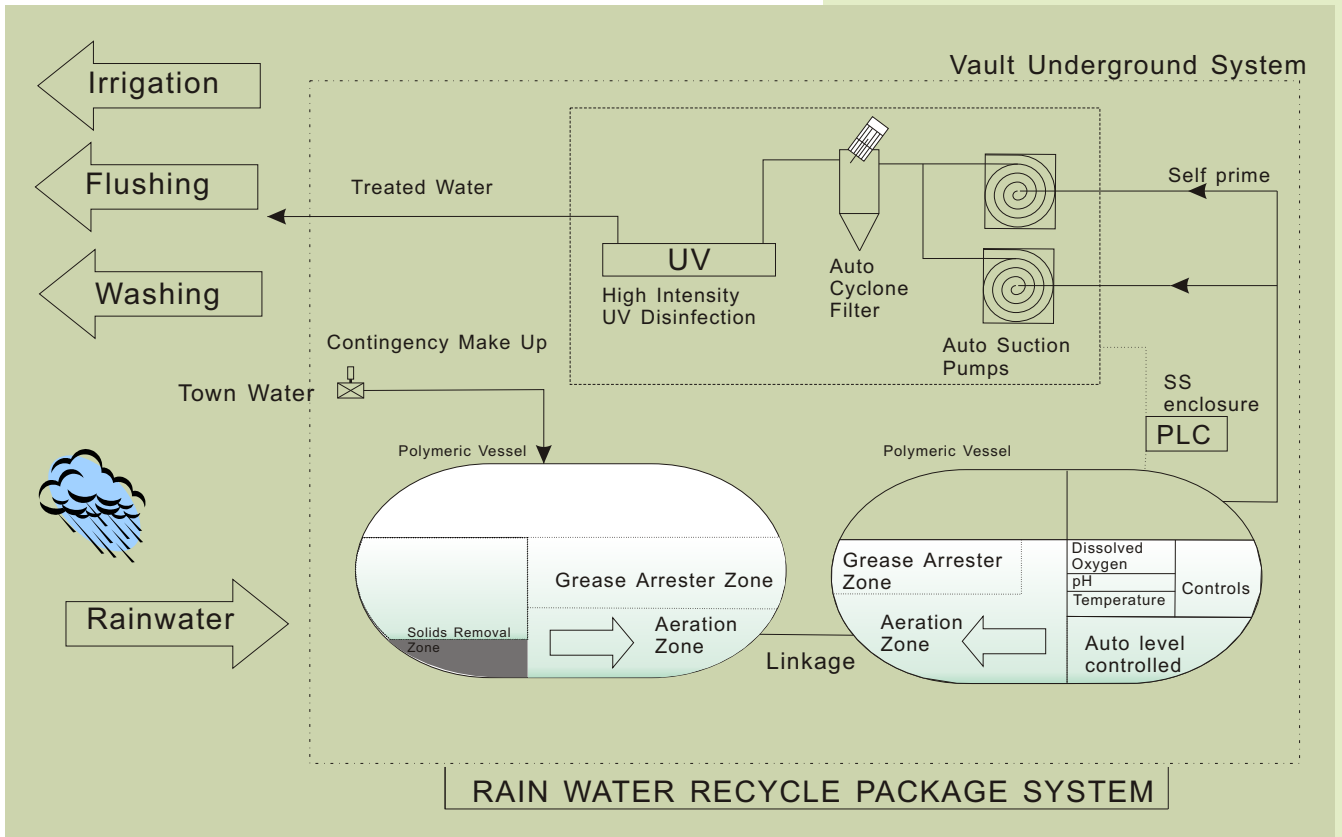
Project Case

Project Name: Rain Water Recycle System for;
Fire station with Ambulance & Police Post at Penny's Bay

Automatic rainwater storage, pretreatment, filtration and disinfection package plant to the following features;

- Storage : Two (2) x 14 m³, polymeric tank system
- Features : Grease / oil interception
- Solids removal
- DO /pH / Temperature feed back controls
- PLC logic storage control
- Automatic cyclone filtration
- Ultraviolet Disinfection (Medium pressure)

Plant Specification



Plant Specification:

The Rainwater Water Recycle System (RWRS) is a packaged design plant specifically designed to store, filter and disinfection the rain water for re-use. The complete package plant is prefabricated and dropped into an underground vault.



Plant Specification cont' d

Storage

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As extensive storage of rainwater may cause oxygen deficiency in the liquor, to prevent septicity, a high performance aeration system is incorporated in the tank system. Storage of water is logically controlled under programmable logic controller (PLC), ensuring that the system use contingency towns water for make up during non raining seasons and a automatic dump logic to ensure that the rainwater water is not stored too extensively.

The tank system is fabricated from polymeric materials not toxic for storage of water for consumption.

In the tank system, several compartments are incorporated to improve the efficiency of separation and aeration.

Chambers inside the tanks include :

Solids Removal Zone

Grease and oil separation zone

Aeration zone

Monitoring zone

Monitoring zone incorporate Dissolved Oxygen analysis, pH measurement and temperature measurement for feed back control under PLC. The control system allows storage and transfer restriction logics to maintain a fresh and treated rainwater supply at all times.



Filtration

Using auto priming pumps, the stored liquor is fed into an automatic cyclone type filter for filtration of solids and debris.

The cyclone filter incorporates high speed brushing of solids on the filter screen to ensure water is separated from any solids prior to onward disinfection.

The filter automatically dumps the solids under pressure / time controls.

Brand: PlugFLO



Ultraviolet Disinfection

Brand: Kathyon Photon Australia

Using as in-line high intensity ultraviolet (UV) disinfection equipment, the water is disinfected to application qualities. The UV system incorporates high intensity medium pressure disinfection of the rainwater and an intensity monitor is used to monitor the disinfection efficiency of the lamp. Lamp failure and low intensity lead to shut down of system.

The vessel is made from high quality stainless steel, polished to food grade standards.

Distribution and Pressure Control

At the final end of the system, a water buffer vessel is used to maintain constant pressure to users drawing the rain water.

The buffer vessel is fully automatic under pressure control instruments.

