

DEWATS for Arvind Eye Hospital, Pondicherry

PROJECT BRIEF

Arvind Eye Hospital is located on the east coast highway between Pondicherry and Cuddalore, and serves low cost, high quality eye care for economically weak people from across India. The requirement of the hospital was a low cost, easy-to-operate DEWATS for the residential blocks in the campus, to treat domestic wastewater.

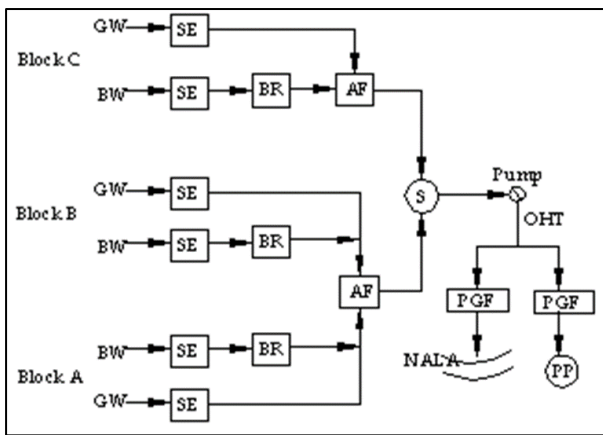
PROJECT OUTCOMES

- Accommodating and installing a low maintenance wastewater treatment plant in the space available
- Treatment of domestic wastewater to a level which complied with the State Pollution Control Board standards (then)
- Providing water needed for landscaping and beautification of the campus

SYSTEM IN BRIEF

Black and grey water streams are separated and treated in the Settler, Anaerobic Baffle Reactor, Anaerobic Filter, Planted Gravel Filter and Polishing Ponds.

The treatment takes place by sedimentation, anaerobic degradation, sludge stabilisation and facultative degradation of organic matter followed by pathogen removal by ultra-violet radiation in the polishing pond.



GW-Grey Water, **BW**- Black Water, **SE**-Settler, **BR**- Baffle reactor, **AF**- Anaerobic Filter, **PGF**-Planted Gravel Filter, **PP**- Polishing Pond

PROJECT SPECIFICATIONS

Funding Agency & Implementing Agency:

Arvind Eye Hospital

Supporting Organization: Centre for Scientific Research, Pandy Auro Services

Capacity: 307 KLD

Area: 2,292m²

Capital Cost: Rs. 91.83 lakhs

Operation Cost: Rs. 2.19 lacs p.a.

Year of commissioning: 2003

SALIENT FEATURES

Source : Domestic sources from hospital campus

Design Capacity : 307 m³/day

Users: 750

Peak Flow: 8 hours

Influent Quality: BOD: 1,053 mg/l
COD: 320 mg/l

Effluent Quality: BOD: 18 mg/l
COD: 7 mg/l

Efficiency: 95%

MODULES ADOPTED

Settler

Volume: 163 m³

Area of Construction: 107 m²

Anaerobic Filter

Volume: 365 m³

Area of Construction: 375 m²

Filter material used: Cinder

Planted Gravel Filter

Volume: 634 m³

Area of Construction: 1,210 m²

Filter material used: Pebbles

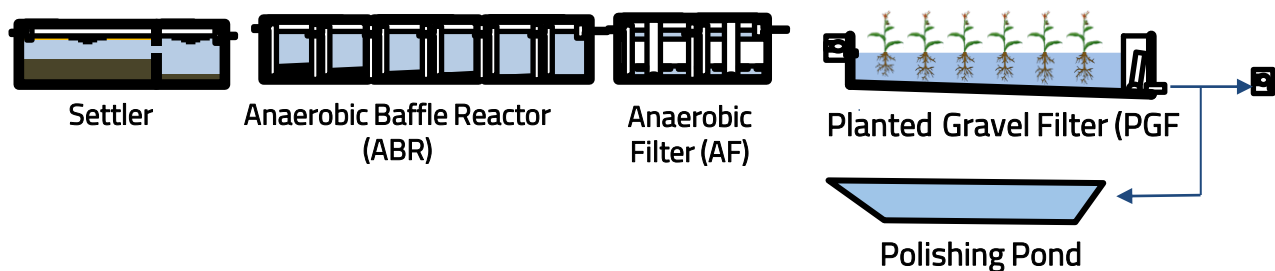
Plants used: *Canna indica*

Polishing pond

Volume: 300 m³

Area of construction: 600 m²

PROCESS FLOW DIAGRAM



OPERATION AND MAINTENANCE

The wastewater treatment plant is operated and maintained by the O&M team and the trained gardener of the hospital.

Operation Tasks

Regular operations includes pump operations, trimming of plants in PGF etc.

Operating charges are only that of electricity costs - include operating 4 motors of 7.5 hp that run 8 hours a day.

Maintenance tasks

A regular schedule is followed for maintenance, like periodical check of sewer line systems, removal of sludge in settler, baffle reactor and anaerobic filter.

The filter media of both planted gravel filter and anaerobic filter is washed once in four -five years.

REUSE OPTIONS

- Reuse of treated water for landscaping
- Sludge from the modules is transformed to manure through composting

TREATED WASTEWATER QUALITY

Sample points	COD mg/l	BOD mg/l	TSS mg/l
Date of sampling : 5-5-2017			
Settler Chamber	682	280	356
ABR Outlet	361	156	20
AF Outlet	110	58	44
PGF Outlet	10	63	28