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DEWATS for Aravind Eye Hospital, Pondicherry

PROJECT BRIEF

Aravind 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 lowcost, easy-to-operate DEWATS for the residential blocks in the campus, to treat domestic wastewater.

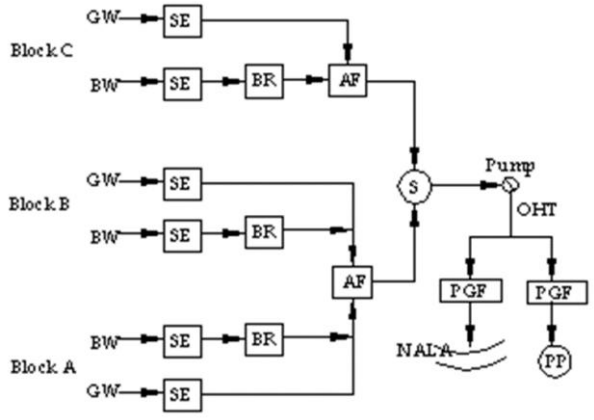
PROJECT OUTCOMES

- 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 an 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 stabilisationand 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

SALIENT FEATURES

Funding Agency & Implementing Agency:
Aravind Eye Hospital
Supporting Organization:
Centre for Scientific Research,Pondy Auro Services
Capacity: 307 KLD
Area: 2,292m^2
Capital Cost: Rs. 91.83 lakhs
Operation Cost: Rs. 2.19 lacs p.a.
Year of commissioning: 2003

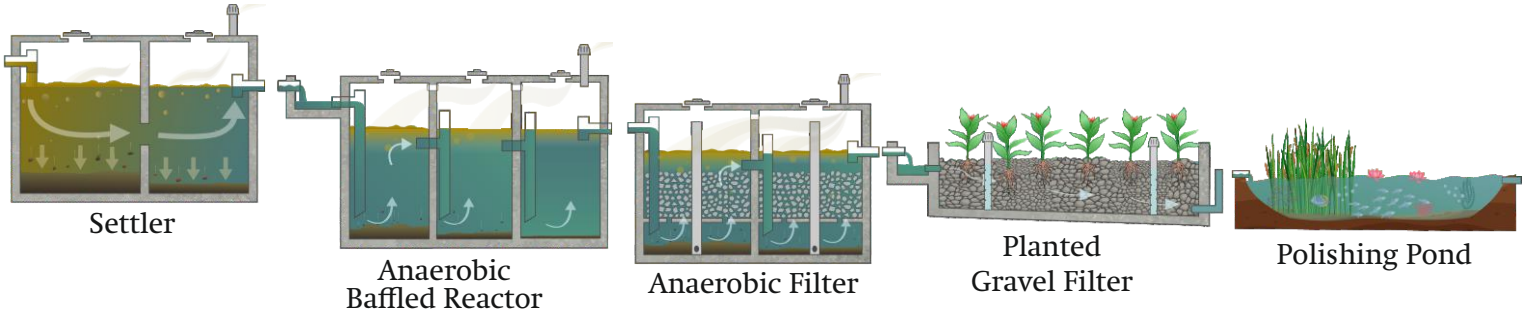
PROJECT SPECIFICATIONS

Source : Domestic sources from hospital campus
Design Capacity : 307m^3/day
Users: 750
Peak Flow: 8 hours
Influent Quality: BOD: 1,053 mg/l
COD: 320mg/l
Effluent Quality: BOD: 18 mg/l
COD: 7 mg/l
Efficiency: 95%

MODULES ADOPTED

Settler
Volume: 163m^3
Area of Construction: 107m^2
Anaerobic Filter
Volume: 365m^3
Area of Construction 375m^2
Filter material used Cinder
Planted Gravel Filter
Volume: 634m^3
Area of Construction: 1,210m^2
Filter material used: Pebbles
Plants used:
Canna indica
Polishing pond
Volume: 300m^3
Area of construction: 600m^2

PROCESS FLOW DIAGRAM



OPERATION AND MAINTENANCE

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

Operational 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 7.5hp that run 8hours 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	63	10	28

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