DEWATS™ AT AN INDIVIDUAL RESIDENCE

Richmond Town, Bangalore

PROJECT BRIEF

We have designed a DEWATS™ for a three-storied family home at Norris Road, Richmond town. The house is expected to be occupied by around 25 family members and visitors. The 3.5KLD DEWATS™ has been retrofitted within a preexisting solid block masonry tank which had been constructed by the owner to install a package Sewage Treatment Plant (STP).

PROJECT OUTCOMES

- Efficient management of wastewater leading to an improved sanitation situation.
- Safe disposal of wastewater and to cater for its future usage for gardening and flushing.

SYSTEM IN BRIEF

The wastewater streams are conveyed from the toilets and pantry of the warehouse to the DEWATS™, which consists of below modules:

1. **Settler:** is a sedimentation tank for retaining articles by settling over a specific time frame

2. **Integrated Anaerobic Baffle Reactor and Filters (ABRAF):** ensure anaerobic degradation of suspended and dissolved solids by mixing fresh wastewater with an active sludge blanket. The Anaerobic filter consists of up-flow chambers connected in series, partially filled with filter media. The biofilm formed on filter media traps and degrades finer suspended organic particles when wastewater passes through it. The treated water from the ABRAF flows into a collection tank before being disposed into the main sewer line.

SALIENT FEATURES

Source: Toilets, bathrooms and washbasins
Design capacity: 3.5 m^3/d
No of users: 25
Peak flow: 8 hrs
Influent quality: BOD: 300mg/l
COD: 600mg/l

PROJECT SPECIFICATIONS

Implementing Agency: Sri Anjaneya constructions
Construction Period: 5 months
Start of Operation: 2021
Status: Operational

MODULES ADOPTED

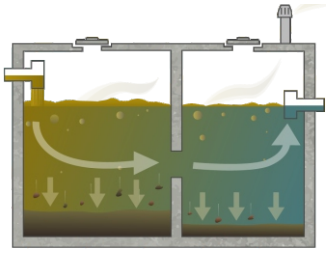
Settler
Volume: 3 m^3
Area of construction: 1.88 m^2

Anaerobic Baffle Reactor
Volume: 1.5m^3
Area of construction: 0.99 m^2
No. of chambers: 1

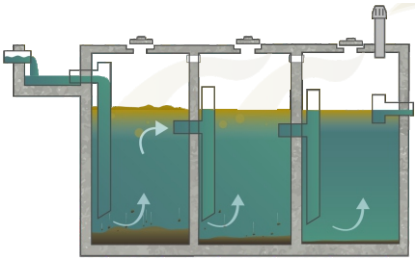
Anaerobic Filter
Volume: 3.85 m^3
Area of construction: 1.265m^2
No. of chambers: 2

Built up area: 10.73m^2

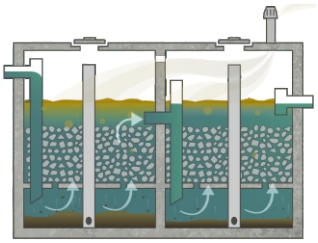
PROCESS FLOW DIAGRAM



Settler



Anaerobic Baffled Reactor



Anaerobic Filter

OPERATION AND MAINTENANCE

The wastewater treatment plant is operated and maintained by the residents or in house staff.

Regular Maintenance

- Wastewater flow checking in all units and clearing the blockages in all chambers (registers)

Periodical Maintenance

- Removal of sludge in settler and baffle reactor chambers once in 2-3 years.
- Replacement of filter media in the filter chambers once in 5 years.

REUSE OPTIONS

- The treated wastewater is being disposed into the sewer line. Necessary arrangements have been provided to enable reusing the treated water in the future.

IMPLEMENTATION OF DEWATS™

Tank before construction of DEWATS™

Completion of RCC wall construction

Fixing manhole covers

Consortium for DEWATS Dissemination Society

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