

DEWATS AT PRISTINE TEMPLE TREE (APARTMENT), KENGARI, BANGALORE

PROJECT BRIEF

Pristine Temple Tree Apartment consists of 40 flats, a basement area for parking and landscaping area. A total of 15m³ of wastewater is estimated to be generated from the 40 flats. Pristine decided to implement DEWATS (Decentralized Waste Water Treatment System) as with DEWATS, all the wastewater can be treated at one location and (some of it, as required) reused for gardening or landscaping, helping conserve fresh water. The remaining wastewater is safely disposed into the nearby municipal sewer line to reduce environmental pollution.

PROJECT OUTCOMES

- Efficient management of wastewater collected from the apartment, leading to an improved sanitation situation
- Demonstration unit for CDD Society.
- Treating wastewater to meet Karnataka Pollution Control Board standards

SYSTEM IN BRIEF

The wastewater streams, conveyed from the toilet, bathroom, kitchen and wash area, are collected in a common register near the treatment system, which consists of 3 modules:

- 1. Settler:** a sedimentation tank for retaining articles by settling over a specific time frame
- 2. The Anaerobic Baffle Reactor:** ensures anaerobic degradation of suspended and dissolved solids by mixing fresh wastewater with an active sludge blanket
- 3. The Anaerobic Filter:** The AF acts as a fixed bed filter where wastewater is brought into close contact with active bacteria for removal of dissolved organic matter.
- 3. Planted Gravel Filter:** used as a tertiary treatment unit to oxygenate the partially treated wastewater

SALIENT FEATURES

Source: Toilets, bath, kitchen and Wash Area
Design Capacity: 15 m³/d
No of Users: 160
Peak flow: 8 hours
Influent quality: BOD: 300mg/l
COD: 600mg/l

PROJECT SPECIFICATIONS:

Kind of Project: Apartment
Funding Agency: Pristine Projects Pvt. Ltd.
Implementing Agency: Pristine Projects Private Limited
Construction Period: 3 months
Construction Cost: Rs. 17 lakhs
Start of Operation: May 2019
Current Status: Commissioned (currently treating around 10KLD of wastewater)

MODULES ADOPTED

Settler
Volume: 11.5 m³
Area of Construction: 7.73 m²
Anaerobic Baffle reactor
Volume: 13.2 m³
Area of Construction: 9.20 m²
No. of Chambers: 3
Anaerobic Filter
Volume: 15.84 m³
Area of Construction: 10.71 m²
No. of chambers: 3
Planted Gravel Filter
Volume: 17.3 m³
Area of construction: 30.43 m²
No. of units in Planted Gravel Filter: 2
Built up area: 58.07 m²

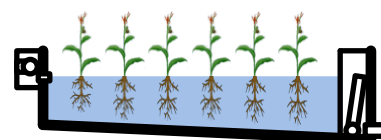
PROCESS FLOW DIAGRAM



Settler



Anaerobic Baffle Reactor (ABR) and Anaerobic Filter (AF)



Planted Gravel Filter (PGF)

OPERATION AND MAINTENANCE

The wastewater treatment plant is operated and maintained by a trained member.

Regular maintenance:

- Wastewater flow checking in all units
- 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 three years
- Filter media in the Planted Gravel Filter to be cleaned or replaced once in 5 years

REUSE OPTIONS

The treated wastewater is safely being disposed into the nearby sewer.

LEARNINGS

CDD has tried to improve the efficiency of the Anaerobic Baffled Reactor by adding "JEEVAMRUTHAM" in ABR chambers to enrich the growth of the microorganisms to treat the wastewater.

PERFORMANCE OF DEWATS

Sample points	COD mg/l	BOD mg/l	TSS mg/l	E. Coli CFU/100ml
Date of sampling 12/09/2019				
Outlet ABR	193	100	67	NA
CT	125	55	118	NA
PGF (Final)	98	32	40	<1,000



Construction Stage



Water Sampling after Commissioning