

# DEWATS FOR KAMAL SOLAR FACTORY, BANGALORE

## PROJECT BRIEF

Established in the 1998, Kamal Solar Factory manufactures water heaters. The company's commitment to quality and excellence at every stage is recognized through the prestigious ISO 9001:2008 certification for quality systems. They have qualified trained technicians and a service department that continue to contribute to the growth of company.

## PROJECT OUTCOMES

- To ensure wastewater is being disposed off safely in compliance with safety standards.
- To reuse treated wastewater for gardening purposes and conserve fresh water

## SYSTEM IN BRIEF

The wastewater streams are channeled from all the sources of the factory and collected in a common register near the treatment system, which consists of: Prefabricated Settler, Anaerobic Baffle Reactor followed by constructed Planted Gravel Filter and Collection Tank (where water is stored).

- **The Settler:** is a sedimentation tank for retaining particles by settling over a specific time frame
- **The Anaerobic Baffle Reactor:** ensures anaerobic degradation of suspended and dissolved solids by mixing fresh wastewater with an active sludge blanket.
- **The Planted Gravel Filter:** is used as a tertiary treatment unit where aerobic and facultative degradation of dissolved organic matter occurs.

## SALIENT FEATURES

**Source:** Toilets, bathrooms, urinals and Canteen

**Design capacity:** 7.5 m<sup>3</sup>/d

**No of Users:** 100

**Peak flow:** 8 hours

**Influent Quality:** BOD - 140 mg/l

COD - 200 mg/l

**Effluent quality:** BOD - 15 mg/l

COD - 30 mg/l

**Efficiency:** 98%

## PROJECT SPECIFICATIONS:

**Kind of Project:** SME- DEWATS for Domestic Wastewater

**Implementing Agency:** L&S Architects

**Supporting Organization:** CDD Society

**Construction Period:** 2 months

**Start of Operation:** 2012

## MODULES ADOPTED

### Settler

Volume: 3.5 m<sup>3</sup>

### Anaerobic Baffle Reactor

Volume: 7.5 m<sup>3</sup>

Area of prefab modules: 16 m<sup>2</sup>

### Planted Gravel Filter

Plants to be used: Reed Juncas, Colacasia

Area: 37 m<sup>2</sup>

### Collection Tank

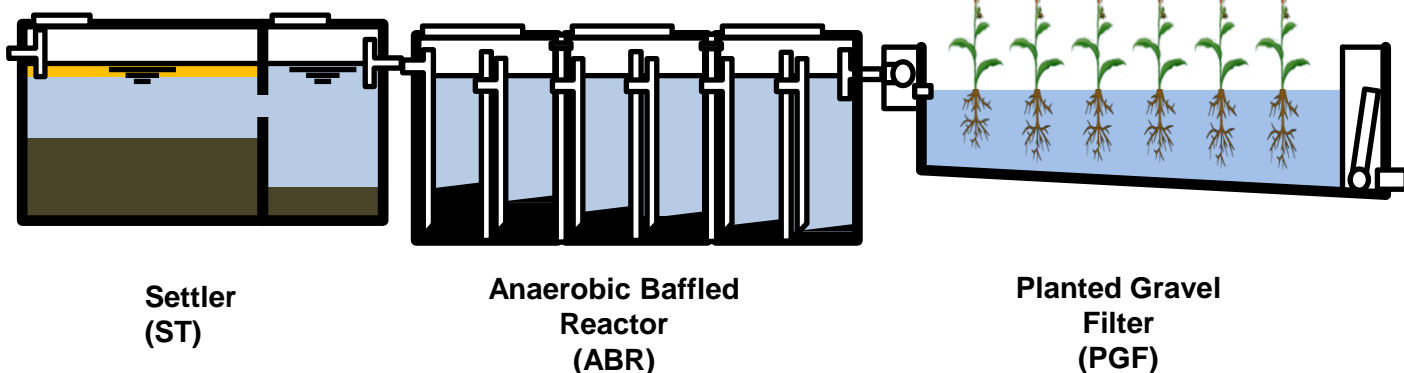
Volume: 2 m<sup>3</sup>

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## PROCESS FLOW DIAGRAM



## OPERATION AND MAINTENANCE

The wastewater treatment plant is operated and maintained by a maintenance person of Kamal Solar Factory.

- Regular maintenance activities involve: removal of scum and solid waste in the settler and Anaerobic Baffle Reactor
- In the Planted Gravel Filter, regular harvesting of plants is done
- Once in 2-3 years, desludging of the Anaerobic Baffle Reactor and Collection Tank is carried out
- The filter materials are cleaned and replaced once in 4 years

## REUSE OPTIONS

The treated wastewater is being reused for gardening

### Learnings:

1. First PreFab DEWATS installation for a project.
2. The system has been operational for more than 5 years with not much trouble

## PERFORMANCE OF DEWATS

Sample points	COD, mg/l	BOD mg/l	TSS mg/l
<b>Date of sampling 02/05/2014</b>			
<b>Inlet Settler</b>	197	138	12
<b>Inlet ABR</b>	101	64	10
<b>Outlet ABR</b>	98	51	14
<b>Outlet to drain*(PGF Out)</b>	30	13	4