



# DEWATS for Indian Institute of Public Health, Gandhinagar, Gujarat

## PROJECT BRIEF

The Indian Institute of Public Health in Gandhinagar needed a wastewater treatment facility for their new building comprising of an administrative block, research center and training institute.

JMC Projects Pvt. Ltd. Mumbai is responsible for the construction of the Utility Building and DEWATS Treatment unit for the institution.

## PROJECT OUTCOMES

- To meet the regulatory norms of the Gujarat Pollution Control Board (GPCB) for wastewater treatment and reuse
- To prevent pollution of environment because of greywater contamination
- Provide water for landscaping & gardening.

## SYSTEM IN BRIEF

The wastewater from sources is conveyed to treatment unit through sewer network. Treatment system consists of 4 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** - comprises of filter bed for treatment of dissolved organic matter. Wastewater comes in contact with active bacterial mass which grows on filter material.
4. **Planted Gravel Filter**: is used as tertiary treatment unit where aerobic and facultative degradation of dissolved organic occurs.

## SALIENT FEATURES

**Source:** Domestic sources from the IIPH campus

**Design Capacity:** 35 m<sup>3</sup>/day

**Peak Flow:** 8 hours

**Influent Quality:** BOD : 350 mg/l  
COD : 750 mg/l

**Effluent Quality:** BOD : <30 mg/l  
COD : <100mg/l

**Efficiency:** BOD – 91.5%  
COD – 86.6%

## PROJECT SPECIFICATION

**Funding Agency :** IIPH

**Implementing Agency:** JMC, Projects Pvt. Ltd. Mumbai

**Supporting Agency:** CDD Regional Office, Nagpur

**Construction Period :** 7 months

**Construction start date:** August 2014

**Construction end date:** February 2015

**Current status:** Commissioned & operational

**Construction Cost:** Rs. 20 lacs

**Operation Cost:** Rs. 60,000 p.a.

## MODULES ADOPTED

### Settler

Volume: 26.40 m<sup>3</sup>

Area of Construction: 16.53 m<sup>2</sup>

### Anaerobic Baffled Reactor + Anaerobic Filter

Volume: 56 m<sup>3</sup>

Area of Construction: 45.22 m<sup>2</sup>

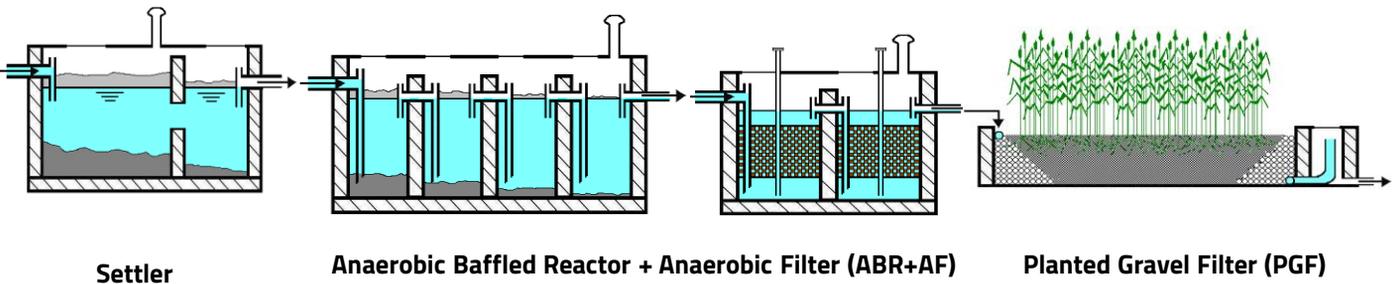
### Planted Gravel Filter

Volume: 43.2 m<sup>3</sup>

Area of Construction: 82.81 m<sup>2</sup>

**Built up Area: 145 m<sup>2</sup>**

**PROCESS FLOW DIAGRAM**



**OPERATION AND MAINTENANCE**

The wastewater treatment plant is operated and maintained by IIPH. A regular schedule is followed for maintenance, involving periodic check and removal of sludge in baffle reactor.

Regular harvesting of plants is done in the PGF and the filter media will be washed once every four/five years.

**REUSE OPTIONS**

Treated wastewater is reused for non-human contact purpose i.e. for green area irrigation.

**LEARNINGS**

- Selection of reputed company & contractor save monitoring & supervision time as well as ensure quality construction.
- O&M training to client is essential for ensuring effective operation of the plant.
- Trained team of maintenance worker ensures the efficient functioning of the project.

**PERFORMANCE OF DEWATS**

Sample points	COD mg/l	BOD mg/l	TSS mg/l
<b>Date of sampling 15/05/2018</b>			
Settler outlet	693	150	132
ABR+AF outlet	129	36	2
PGF outlet	59	23	2