

DEWATS FOR PANCHAVATI PAVILLION (CONVENTION CENTRE), BANGALORE

PROJECT BRIEF

Panchavati – The Pavilion, is a contemporary space on Kanakapura Road, Bangalore. Spread across 20,000 m², nature and modern architecture have come together to produce a multifaceted venue that can host nearly 2,000 guests. Semi-open pavilions, open-air courtyards and an amphitheatre, surrounded by trees, beautiful landscaped lawns and paved boulevards leading to tranquil waters, make Panchavati a private and understated, yet exquisite location for the Big Fat Indian Wedding, cultural performances, corporate functions and unique product launches.

PROJECT OUTCOMES

- Efficient management of wastewater, which is collected from the functions, leading to a prevention of contamination of the environment.
- Research/Demonstration unit for Karnataka Pollution Control Board (KPCB) and CDD Society showcasing DEWATS.

SYSTEM IN BRIEF

The wastewater streams are conveyed from the wedding hall, kitchen, dining hall and toilet blocks; and are collected in a common register near the treatment system and conveyed for treatment. Wastewater from the kitchen is made to pass through a grease trap before connecting to a common register. This system also has Balancing Tank to regulate the wastewater inflow to the system

- 1. Settler:** is a sedimentation tank for retaining articles by settling over a specific time frame.
- 2. Integrated Anaerobic Baffle Reactor with filters:** ensures anaerobic degradation of suspended and dissolved solids by mixing fresh wastewater with an active sludge blanket
- 3. Planted Gravel Filter:** is used as tertiary treatment unit to reduce the nutrients
- 4. Pressure Sand Carbon Filter:** is used as an advance treatment unit.

SALIENT FEATURES

Source: Kitchen, Toilets and Wash Area

Design Capacity: 60 m³/day

No of users: 2,364

Peak flow: 5

Influent quality: BOD 300mg/l
COD 900mg/l

Effluent Quality: BOD : 10mg/l
COD : 49 mg/l

PROJECT SPECIFICATIONS:

Funding Agency: Avani Leisure

Implementing Agency: CDD Society

Construction Period: 2 months

Construction Cost: Rs. 50 lakhs

Year of Commissioning: 2017

MODULES ADOPTED

Settler

Volume: 59.40 m³

Area of construction: 26.03 m²

Balancing Tank:

Volume: 41.64 m³

Area of construction: 26.03 m²

Anaerobic Baffle reactor

Volume: 55.44 m³

Area of construction: 39.47 m²

No. of chambers: 6

Anaerobic Filter

Volume: 16.63 m³

Area of construction: 30.76 m²

No. of chambers: 4

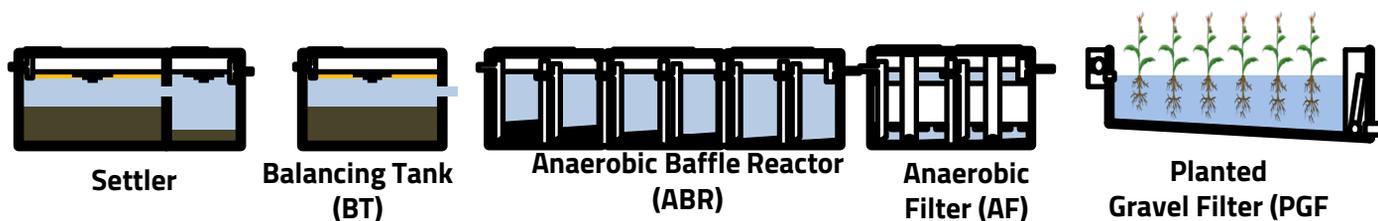
Planted Gravel Filter

Area of implementation: 231.53 m²

Plants used: Canna Indica, Cyperus Papyrus

Built up area: 353.82 m²

PROCESS FLOW DIAGRAM



OPERATION AND MAINTENANCE

The wastewater treatment plant is operated and maintained by an operator.

Regular maintenance:

- Wastewater flow checking in all units and clearing the blockages in all chambers (registers).
- Regular operation of pumping of wastewater from Balancing tank and also for reuse purpose is needed.

Periodical maintenance:

- Removal of sludge in settler and baffle reactor chambers once in two to three years.
- Replacement of filter media should be done in once in five years in the filter chambers.
- Trimming of plants in the Planted Gravel Filter should be done when the plants are overgrown

REUSE OPTIONS

- The treated wastewater is being used for gardening and irrigation.

LEARNINGS:

Optimization and improvising the system's design to suit the irregular patterns of water usage in the community hall.

PERFORMANCE OF DEWATS

Sample points	COD mg/l	BOD mg/l	TSS mg/l
Date of sampling 23/01/18			
Settler out	246	160	161
Integrated ABR& AF out	88	32	<5
Planted gravel filter out	45	12	<5
Sand and carbon filter out	49.5	10	<5