

DEWATS™ for Sanitation Workers Facility, Devanahalli, Karnataka

PROJECT BRIEF

Devanahalli is a town located 35 km away from Bangalore city. It has a population of ~30,000. We setup a sanitation facility for sanitation workers, along with a DEWATS™ in the town. The sanitation facility comprises of: 2 urinals for gents, 4 cubicles for men, 4 cubicles for woman, showers and changing rooms. The toilet is maintained by Devanahalli Municipal Council.

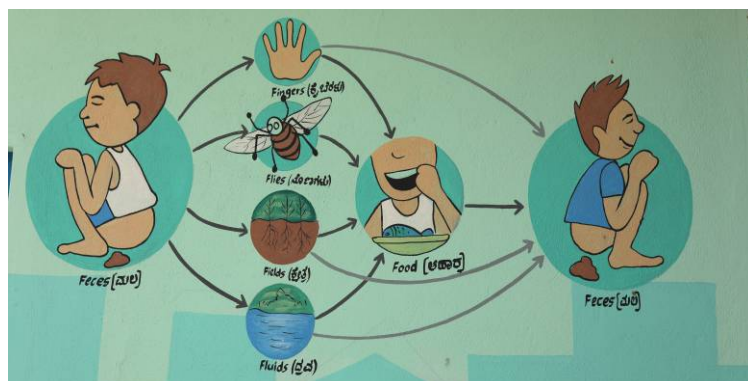
PROJECT OUTCOMES

- Efficient management of wastewater generated at the public toilet.
- To protect the environment from direct pollution.

SYSTEM IN BRIEF

Wastewater from domestic sources from the Public Toilet building is conveyed to the treatment unit through a sewer network. The Treatment system consists of 4 modules:

- **Settler:** is a sedimentation tank for retaining articles 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 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.
- **Soak Pit:** arrangement is used for percolation of secondary treated water for recharge of ground water.



SALIENT FEATURES

Source: 2 urinals for gents, 4 cubicles for men, 4 cubicles for women, washbasins and showers
Design Capacity: 3 m³/d
No. of users: 100
Peak Flow: 9 hours
Influent quality:
 BOD: 400 mg/l
 COD: 800mg/l
Effluent Quality: After secondary treatment
 BOD: <30 mg/l
 COD: <100 mg/l
Efficiency: 75-80%a

PROJECT SPECIFICATIONS

Funding Agency: Oracle
Implementing Agency: M/s ARC Industries, Bangalore
Construction cost: Rs. 2.95 lakhs
Construction period: 4 months
Start of operation: January 2021
Current status: Commissioned & operational
Area per beneficiary: 0.79 m²
CapEx per beneficiary: Rs. 2,950 (including DEWATS™)
OpEx per beneficiary: Rs. 366

MODULES ADOPTED

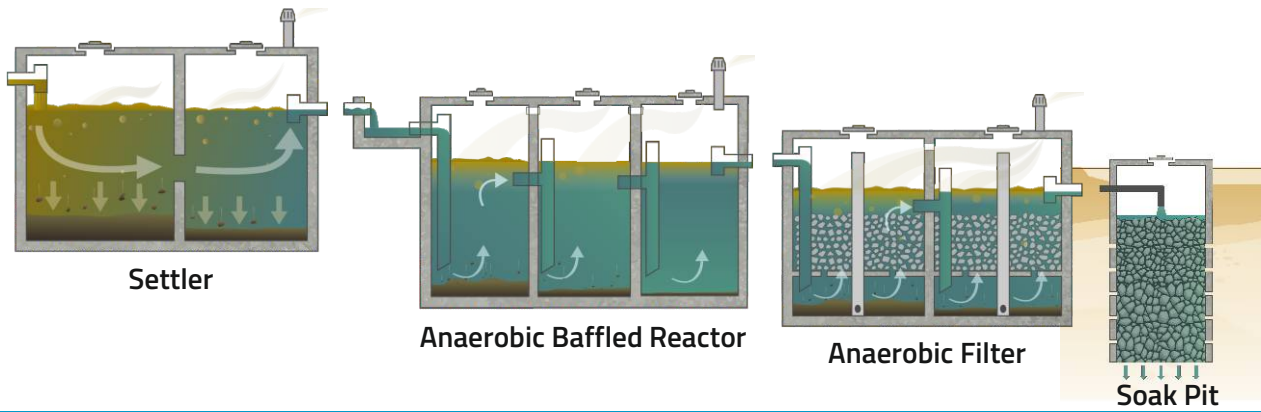
Settler - Volume: 3.54 m³
 Area of construction: 8.12 m²

Anaerobic Baffled reactor - Volume: 1.29 m³
 Area of construction: 8.99 m²
 No. of chambers: 1

Anaerobic Filter - Volume: 3.72 m³
 Area of construction: 17.98 m²
 No. of chambers: 2

Percolation Tank - Volume: 17.66m³
 Area: 7.07 m²
 Built up area: 78.75 m²

PROCESS FLOW DIAGRAM



OPERATION AND MAINTENANCE

- The public toilet and wastewater treatment plant is operated and maintained by the client. OpEx costs are in the range of Rs. 34,000 - 40,000 per year.
- A regular schedule will be followed for maintenance and includes periodic check of all modules, removal of sludge in baffled reactor and other required tanks.
- The filter media in the anaerobic filter will be washed once in five / seven years.

REUSE OPTIONS

- (After Secondary Treatment), the treated wastewater will percolate into the ground




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