DEWATS FOR IDEPL GARMENT FACTORY, HINDUPUR

PROJECT BRIEF
IDEPL Garment Factory-Hindupur India, was initiated in 2014, with 3,000 employees. The aim of the project is to ensure the well-being of employees and addressing their statutory requirements.

PURPOSE
- Safe disposal of wastewater generated from toilet units from the factory
- To provide a sustainable solution to the problem of water scarcity

SYSTEM IN BRIEF
The wastewater streams are conveyed from the kitchen and toilets present in two workshop blocks. The streams are connected to DEWATS. The DEWATS modules consists of:

1. **Settler**: a sedimentation tank for retaining articles by settling over a specific time frame.
2. **Anaerobic Baffle Reactor**: ensures anaerobic degradation of suspended and dissolved solids by mixing fresh wastewater with an active sludge blanket.
3. **Anaerobic Filter**: ensures fixed digestion of the suspended solids.
4. **Vortex**: helps in the digestion of organic components through aeration
5. **Sand Carbon Filters**: helps in polishing the treated water.

The treated wastewater is collected in the collection tank and partially used for irrigation. The remaining amount is discharged safely into the Nallah (drain)

The water from the collection tank is passed through activated carbon and pressure sand filters for tertiary treatment.

SALIENT FEATURES

- **Source**: Toilets, Bathrooms, Laundry and Kitchen
- **Design capacity**: 100 m³/d
- **No of users**: 3,000
- **Peak flow**: 8 hours
- **Influent quality**: BOD 298 mg/l; COD 165 mg/l
- **Effluent Quality**: BOD: 10 mg/L; COD: <50 mg/L

PROJECT SPECIFICATIONS
- **Kind of Project**: CBS-DEWATS with Simplified Sewer System
- **Funding Agency**: IDPL
- **Implementing Agency**: Project Management Unit
- **Estimated Cost**: Rs. 80 lakhs
- **Commissioned**: March 2015

MODULES ADOPTED

- **Settler**
  - Volume: 120 m³
  - Area of construction: 50 m²
- **Baffle reactor**
  - Volume: 152.28 m³
  - Area of construction: 131 m²
- **Anaerobic Filter**
  - Volume: 48.90 m³
  - Area of construction: 70 m²
- **Vortex**
  - Diameter: 600 mm
  - Area of construction: 6 m²
  - Number: 2
- **Collection tank**
  - Volume: 132 m³
  - No. of tanks: 2
- **Filtration**
  - Activated carbon and Pressure Sand filter- 1 no. each

Built-up Area: 310 m²
OPERATION AND MAINTENANCE

The wastewater treatment plant and the conveyance system is operated and maintained by a trained gardener. A regular schedule is followed for maintenance and involves removal of sludge from the biogas digestor once a year and from the Anaerobic Baffle Reactor once every three years. The filter media in the Planted Gravel Filter is washed once in five years. The collection tank is cleaned once a year.

Periodical maintenance includes:

(a) Removal of sludge from the Settler and Anaerobic Baffle Reactor
(b) Replacement of filter media in the in filter chambers and Planted Gravel Filter once in 5-6 years
(c) Maintenance of Vortex pump
(d) Periodical cleaning of Sand and Carbon Filters.

REUSE OPTIONS

Treated water is reused for gardening, agriculture and flushing purposes.

PERFORMANCE OF DEWATS

<table>
<thead>
<tr>
<th>Sample points</th>
<th>COD, mg/L</th>
<th>BOD, mg/L</th>
<th>TSS, mg/L</th>
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<tbody>
<tr>
<td>Date of sampling: 26-05-2016</td>
<td></td>
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<tr>
<td>Settler Inlet</td>
<td>298</td>
<td>165</td>
<td>130</td>
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<tr>
<td>Vortex Inlet</td>
<td>74.7</td>
<td>16.8</td>
<td>6</td>
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<tr>
<td>Final Effluent</td>
<td>53.9</td>
<td>10</td>
<td>2</td>
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