DEWATS FOR HARVEST INTERNATIONAL SCHOOL, BANGALORE, KARNATAKA

PROJECT BRIEF

Harvest International School is an independent, co-educational, preparatory day school, which offers the CBSE curriculum with a choice of international curriculum. It is located at Kodathi Village off Sarjapur Road, Bangalore East.

PROJECT OUTCOMES

• To improve deteriorating environmental and hygienic conditions due to absence of wastewater treatment or appropriate disposal within the school campus.
• Reuse of treated wastewater for gardening in order to conserve freshwater.

SYSTEM IN BRIEF

Treatment system consists of 4 modules: Settler, Baffled Reactor, Planted Gravel Filter.

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. **Planted Gravel Filter**: a tertiary treatment unit, which helps in removal of odour and colour of the wastewater by aerobic processes.

PROJECT SPECIFICATIONS

**Source of wastewater**: Kitchen, Toilets, Urinals  
**Design capacity**: 25 m³/d  
**No of users**: 1,000  
**Peak flow**: 5 hrs  
**Influent Quality**: BOD 73mg/l, COD 166.65 mg/l  
**Effluent Quality**: 21.6 BOD mg/l, COD 56.9mg/l

SALIENT FEATURES

**Kind of Project**: SME-DEWATS  
**Implementing Agency**: CDD Society  
**Supporting Organization**: CDD Society  
**Construction Period**: 6 months  
**Construction Cost**: Rs. 18 lakhs  
**Start of Operation**: 2011

MODULES ADOPTED

**Settler for 25 m³ capacity**  
**Volume**: 29.54 m³  
**Area of construction**: 18.70 m²  
**Anaerobic Baffle Reactor**: 15 m³  
**Volume**: 37.04 m³  
**Area of construction**: 26 m²  
**No. of chambers**: 6  
**Anaerobic Filter**: 15 m³  
**Volume**: 14 m³  
**Area of construction**: 9.41m²  
**No. of chambers**: 2  
**Planted Gravel Filter**: 15 m³  
**Volume**: 24 m³  
**Area of construction**: 59.09 m²  
**Filter material used**: Aggregates  
**Plants used**: Canas Indicas, Colacasia  
**Collection Tank**: 25 m³  
**Volume**: 24.19 m³  
**Area of construction**: 19.44 m²  
**Built up area**: 135.4 m²
REUSE OPTIONS

All the treated wastewater is reused for landscaping, gardening and irrigation.

OPERATION AND MAINTENANCE

The wastewater treatment plant is operated and maintained by a trained member of the school.

Regular Maintenance:
Wastewater flow checking in all the units, clearing blockages in all chambers (registers), removal of dead plants and litter inside the PGF.

Periodic Maintenance:
- Removal of sludge in the settler and the baffle reactor chambers once in three years.
- Replacement of filter media in the filter chambers and PGF once in five years.
- Plants in PGF have to be trimmed, when needed.

TREATED WASTEWATER QUALITY

<table>
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<tr>
<th>Sample points</th>
<th>COD mg/l</th>
<th>BOD mg/l</th>
<th>TSS mg/l</th>
<th>E. Coli CFU/100ml</th>
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<td>Date of Sampling: 6\6\2014</td>
<td></td>
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<tr>
<td>Settler inlet</td>
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<td>54</td>
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<td>PGF out</td>
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<td>21.5</td>
<td>610</td>
<td>617.5</td>
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