**DEWATS AT AISHWARYA EMPIRE TOWNSHIP, RAIPUR, CHHATTISGARH**

**PROJECT BRIEF**

Aishwarya Empire is spread over 18 acres of prime land between old Raipur and New Raipur - next to St. Xavier's High School, Avanti Vihar Colony, Telibandha. The Township is designed on eco-friendly principles. With beautifully landscaped gardens it encloses sundecks, avenue plantations, natural water, forest, fountain, sculptures and nature trails. The demand for water is higher, in order to maintain the greenery within the Township.

An eco-friendly decentralised treatment system for treating the wastewater is required. DEWATS System is selected due to Low Maintenance cost as well as its efficiency to work without any electrical or mechanical energy.

**SALIENT FEATURES**

- **Source:** Toilets
- **Design capacity:** 81 m3/d
- **No of users:** 1,760
- **Peak flow:** 8
- **Influent quality:**
  - BOD: 350mg/l
  - COD: 700mg/l
- **Effluent Quality (after secondary treatment):**
  - BOD: 29mg/l
  - COD: 82mg/l
- **Efficiency:**
  - BOD – 91.7%
  - COD – 88.2%

**PROJECT SPECIFICATIONS**

- **Funding Agency:** Sankalp Homes, Raipur
- **Implementing Agency:** Sankalp Homes, Raipur
- **Construction Period:** 10 months
- **Construction start date:** May 2018
- **Construction end date:** February 2019
- **Current status:** Commissioned & operational
- **Construction Cost:** Rs.32 lacs
- **Operation Cost:** Rs.70,000 p.a.

**PROJECT OUTCOMES**

- Efficient management of wastewater which is collected from the Apartment building.
- To meet the regulatory norms of PCB of wastewater treatment and reuse.
- To protect the environment from direct pollution
- To treat and reuse the treated wastewater for non-human contact purpose

**SYSTEM IN BRIEF**

The wastewater from toilets is conveyed to treatment unit through sewer network. Treatment system consists of 3 modules:

- **Settler** - 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.

**MODULES ADOPTED**

<table>
<thead>
<tr>
<th>Module</th>
<th>Volume</th>
<th>Area of construction</th>
<th>No. of chambers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Settler</td>
<td>145.6 m3</td>
<td>41.6 m2</td>
<td></td>
</tr>
<tr>
<td>Anaerobic Baffle Reactor</td>
<td>230.73 m3</td>
<td>60.72 m2</td>
<td>4</td>
</tr>
<tr>
<td>Anaerobic Filter</td>
<td>210.67 m3</td>
<td>55.44 m2</td>
<td>2</td>
</tr>
</tbody>
</table>
OPERATION AND MAINTENANCE

- The wastewater treatment plant is operated and maintained by the client.
- A regular schedule will be followed for maintenance, like periodic check, removal of sludge in baffled reactor and other required tanks.
- The filter media in the Anaerobic Filter will be washed once in 5-7 years.

REUSE OPTIONS

- The treated wastewater will be discharged into the open Nallah.

LEARNINGS

- Designing the DEWATS in order to reutilize the super surface area for multi-level parking.
- Challenge to convince the client to adopt decentralized treatment option within city limit.
- Decentralized treatment proved to be the best solution for such type of mega townships by avoiding large conveyance system and electro-mechanical parts.