Mallya Aditi International School, located in Yelahanka in Bangalore, is one of Bangalore’s prestigious schools. The school approached CDD for a wastewater treatment system which could be integrated into the landscape and is easy to maintain.

PROJECT OUTCOMES
• To prevent pollution of environment because of greywater contamination
• Treatment of wastewater to match KSPCB standards
• Provide water for landscaping and gardening

SYSTEM IN BRIEF
The treatment consists of following modules:
1. Balancing tank
2. Primary Treatment (Settler)

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.
5. **Sand Carbon Filters**: Before reusing the water the treated water from PGF is polished in pressure sand carbon filter

SALIENT FEATURES
**Source:** Toilets and kitchen (dish washing) area
**Design Capacity:** 17 m$^3$
**No of Users:** 570
**Peak flow:** 5 hours
**Influent Quality:** BOD: 300 mg/l  
COD: 605 mg/l
**Effluent Quality:** BOD: 9 mg/l  
COD: 29 mg/l

PROJECT SPECIFICATIONS:
**Funding Agency:** Mallya Aditi International School
**Implementing Agency:** Revlon Buildtech Pvt Ltd
**Supporting Agency:** CDD Society
**Construction Cost:** 16.5 lakhs
**Operation Cost:** Rs.5,000/month
**Duration of Construction:** 4 months
**Start of operation:** May 2018

MODULES ADOPTED
**Settler**
Volume: 7.92 m$^3$
Area of construction: 3.6 m$^2$

**Anaerobic Baffle Reactor**
Volume: 20.22 m$^3$
Area of construction: 10.12 m$^2$
No. of chambers: 4

**Anaerobic Filter**
Volume: 14.7 m$^3$
Area of construction: 10.3 m$^2$
No. of chambers: 3

**Planted Gravel Filter**
Area of implementation: 50 m$^2$
Plants used: Canna Indica, Cyperus papyrus

**Built up area:** 74.02 m$^2$
OPERATION AND MAINTENANCE

Operations:
- Check for free wastewater flow
- Removal of Solid waste at Screen
- Controlling pump outflow
- Check for swivel pipe level in the planted gravel filter
- De-weeding, removal of dead leaf litter and other litter
- Backwashing sand and carbon filter

Maintenance:
- Ensuring functionality of the vent pipes
- Checking Sludge Level

REUSE OPTIONS

The treated wastewater is used for landscaping and gardening in the school complex

LEARNINGS
- First time implementation of balancing tank system with cost effective flow control
- Challenges at site due to surface aquifer at 2m below ground level

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>
<th>E. Coli CFU/100ml</th>
</tr>
</thead>
</table>
| Date of sampling - 18th June, 2019
Balancing Tank Outlet | 31       | 7        | 12       |                   |
Settler Outlet         | 117      | 55       | 122      |                   |
AF Outlet               | 37       | 14       | 33       |                   |
PGF Outlet             | 42       | 10       | 15       |                   |
PSCF Outlet             | 24       | 8        | 5        | 620 MPN/100 ml    |