Natural Decentralised Waste Water Treatment Systems

Treatment of domestic and non-toxic industrial waste water
Integration of anaerobic and aerobic processes
No mechanical parts within the system
Full odour control, low energy requirement
No input of chemicals
No complex maintenance procedures

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- Separates the liquid from the solid
- Retention time is only 1.5 to 2 hours.
- Pollution reduction is around 30%
- Effluent moves from top to bottom through identical sized chambers
- Retention time is ~ **24 hours**.
- Pollution reduction is around 80%
- Effluent moves through filter material (cinder) from top to bottom.
- Retention time is around **20 hours**.
- Total pollution reduction is around **90%**.
- CPCB standards are met, but the effluent still has an odour.
A vertically positioned tube with a funnel shaped bottom element.
Inside the tube a natural occurring self-purification effect from the effluent takes place during the continuous swirling movement.
Pollution reduction is 95%.
A vortex system mimics a natural occurring phenomena in nature

Thereby **effectively eliminating odour.**

**meeting statutory discharge requirements** with a pollution reduction up to almost 95%

A naturally occurring self-purification with oxygenation of the effluent takes place due to the continuously swirling motion of the vortex.

The system can be **scaled - up or down**, according to varying waste water volumes

is **exceptionally energy efficient at a fraction of the energy cost** compared to conventional operated treatment plants
Vortex description

1. Acrylic tube
2. Inlet tube
3. Funnel
4. Diaphragma outlet
5. Top cover with vent gaps
Citadyne vortex, 10 m³
Domestic effluent
Acrylic tube - 8mm
60 cm dia / 1.8 m height
1.5 HP submersed pump
Counterclockwise inlet
Diaphragm outlet
Flow rate approx. 10 m³/hour
A vortex system mimics a natural occurring phenomena in nature.

The spiral movement of water has a direct impact on the dissolved oxygen content and supports the release of gases which cause bad odors in anaerobic treated waste water.

As a consequence of increased oxygen content the Chemical Oxygen Demand (COD) and Biological Oxygen Demand (BOD3) drop drastically. Reduction of Kjeldhal Nitrogen, coliforms and colloid formation are also observed.
Vortex systems: 120 m² / hour
Prefabricated ferrocement
1 meter dia / 2 meter height
VBHC Bangalore 740 m³/d
‘And justify the light on Nature’s face’