NAWATECH

Natural Water systems and treatment Technologies to cope with water shortages in urbanised areas in India

Indradhanushya Environment & Citizenship Centre

Treatment process: Physical and biological.

Process: Screen followed by soil scape filter.

Treatment capacity: 50 m^3/d

Volume of treated water: 40 m^3/d

Intended reuse: Land application in the Indradhanushya premise and Sachin Tendulkar Jogging Park.

-: EXPECTED EFFICIENCY :-

Sr. No.	Parameter	Unit	Inlet	Expected efficiency
1.	pH	-	6.51	
2.	Total Suspended Solids (TSS)	mg/l	120	82% - 88%
3.	Biological Oxygen Demand (BOD_3) at 27^0C	mg/l	140	85% - 95%
4.	Chemical Oxygen Demand (COD)	mg/l	220	85% - 95%
5.	Phosphates as PO_4	mg/l	3.76	
6.	Total Oil & Grease	mg/l	15	
7.	Total coliforms	MPN/100 ml	+1600	99.99%
8.	E. coli	CFU/ml	10^5	99.99%

(This % reduction is based on previous similar kinds of treatment systems installed for domestic wastewater)

Indo-EU Science & Technology Research Collaboration Project

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More information on: www.nawatech.net

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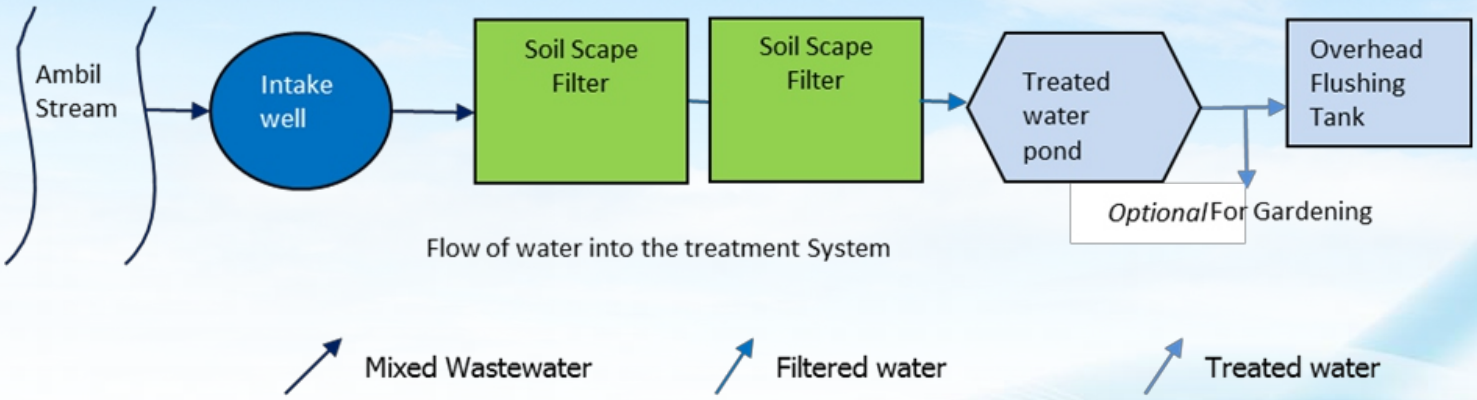
Indradhanushya Environment Education and Citizenship Centre is a public facility of the Pune Municipal Corporation (PMC) to create awareness among the people about environment and sustainable development.

The Ambil stream is a fresh water stream flowing through the heart of the city and encircling the premises of Indradhanushya Center. Due to rapid development in the catchment, the Ambil stream is now carrying domestic wastewater to the Mutha River. Indradhanushya Centre is located approximately 340 m before the confluence.

Eco-filtration Bank (EFB) system is proposed for the treatment of polluted Ambil stream water and reuses it for irrigation and flushing in the Indradhanushya premises. The EFB is comprised of screen, intake well, soil scape filtration and treated water pond. About 50 m^3/ day water from the Ambil stream is tapped to yield 40 m^3/day clean water for gardening and toilet flushing. This treatment system demonstrates the utilization of contaminated stream water for non-consumptive uses thereby reducing the pressure on freshwater demand.



Screen

- Treatment process: Physical
- To separate non-biodegradable and floating material Ambil stream
- Hydraulic retention time: Nil

Intake well

- Function: collection and conveyance of wastewater with gravity benefit
- Diversion of required quantity of wastewater from Ambil stream for further treatment.

Soil scape filter

- Treatment process: Physical and Biological
- Main treatment unit, physical adsorption and biodegradation, biotransformation and bioconversion.
- Waste water passes through biologically activated soil (Organotreat) filtration medium supported by sand and gravel for attached growth of bacteria. It is combination of bioremediation and phytoremediation technique. The biodegradable organic matter is consumed by bacteria present in specialized layer of Organotreat. Then the green plant in the system absorbs the mineralized products of organic matter.
- Hydraulic retention time: Nil but filtration time ranges from 10 - 30 min
- Efficiency: $BOD_3$85-95%|COD 85-90% |TSS 82-88%|Fecal coliform 99.9%

Treated water tank

- Function: storage
- Temporary storage of treated water before use for gardening & flushing purposes

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More information on: www.nawatech.net
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