



Towards Sustainability...

THE - Impact Rankings 2022

6 CLEAN WATER AND SANITATION



Ensure availability and sustainable management of water and sanitation for all

6.3.1 – Report on Waste Water Treatment :

Sewage is the wastewater released by residences of the hostels, staff quarters and academic buildings. Pathogens or disease-causing organisms are also present in sewage. E. coli are used as an indicator of disease-causing organisms. Sewage also contains ammonia and phosphorus. Untreated sewage water is tested and found the Ammonia levels varies from 15 to 45 mg/l, and phosphorus level is from 6 to 20 mg/l in. Basic idea of Wastewater treatment is to remove the suspended and aerating (stirring up) the wastewater, to put oxygen back in.

At VIT we have excellent waste water treatment facility through sewage treatment plant (STP) with the following details. (Vellore Campus)

Wastewater generated	: 3379 kLD
Total STP Capacity	: 5500 kLD
9 different capacities in kLDs of	: (400, 800, 300, 450, 600, 600, 350, 2 *1000)

- In addition to this we are adding 3000 kLD for the treatment of future demand.
- Water meters are fixed with all the inlet and outlets of the STPs for continuous monitoring.
- In order to conserve the energy STPs are equipped with 5 star (IE5) rated high energy efficient pumps.

The total water requirement for a particular day during normal campus operation is 5412 kLD. The wastewater generation from the campus is about 3379 kLD, which is treated in the sewage treatment plants of 9 different capacities of STP and is being recycled for flushing, input to the chiller plant, vehicle washing and gardening. The details of water requirement and the water balance chart is shown in table below;

Table 1: Average water demand details (Vellore Campus)

Project component	Occupancy Rate [37907]	Litres per capita per day (LPCD)	Water requirement for Non-Flushing [90 Ltrs]	Water requirement for Flushing [45 Ltrs]	Total water requirement (Its.)
Total Resident Staff Population [90 +45]	1229	135	110610	55305	165915
Total Non Resident Staff Population [15+30]	1956	45	29340	58680	88020
Students (Days Scholars)[15+30]	7784	45	116760	233520	350280
Students (Hostlers)[90+45]	19305	135	1737450	868725	2606175
Visitors & Maintenance Staff [15+30]	1433	45	21495	42990	64485
Canteen [30 +40] (Seating Capacity)	6200	70	186000	248000	434000
Water Requirement for Green belt development, Input to the chiller plant (this will be after RO plant) and vehicle washing			-	1703000	17,24,000
Total			2201655	3210220	54,11,875
			2202 kLD	3210 kLD	5412 kLD

From the above table it is very evident that per capita demand for resident staff quarters got reduced from 135 LPCD [Litre per capita demand] to 90 LPCD when the flushing water is taken from treatment plant instead of fresh water.

6.3.1 Sample Images of Sewage Treatment Plants Located at Various Parts of the Institution



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