

## NAAC CRITERION- 7

### 7.1.2 The Institution has facilities for alternate sources of energy and energy conservation Measures

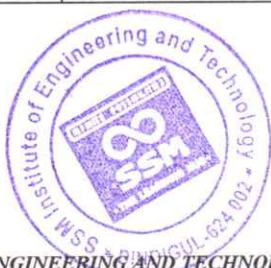
#### WATER CONSERVATION

##### Source of Water, Storage and Distribution:

Table shows the source of water, location of storage along with their application.

Table-8: Source of Water, Location of Storage and Application

Type of Water	Source	Application
Fresh Water	Product RO Plant	Drinking application
Bore Water	Total No. of Bore-7 (Running only 3 bore) 2 Nos (650 ft depth each) 1 Nos (750 ft depth) Canteen nearby: 1. Temple (main gate): 1 . Main Auditorium:1.	Utensil Cleaning, Bathing, Cloth Washing & RO Plant
Open Well	1 (60 ft depth) Near Boys Hostel: 1.	Gardening, Boys Hostel, Girl's hostel use
Rain Water Harvesting System (RWHS)	Size of the Tank: Length:1 00 feet (30.48m) Breath: 60 feet (18.29m) Depth: 13 feet (3.96m) Volume of the Tank: 2207.61 m <sup>3</sup> Average Annual Rainfall: 700 mm  <b>Total volume of rain water harvested:</b> 22,07,610 Litres (2207.61 m <sup>3</sup> ) Area: 557.47 m <sup>3</sup>	Used to increase the ground water To store building run-off only



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## Rain Water Harvesting:

- Rain water harvesting facility is available in the campus near the main canteen.
- Rain water that runs off from the roofs, roads, open grounds etc., are collected and recharged in the ground .
- The roof area is so arranged to collect the rainwater and then passed through proper piping system, and then bring back to the RWH pits which are located close to each pit
- The building run off are collected through each pit mostly located in each building.
- Common area and road run-offs are properly collected and routed to nearby water body.

The specifications of the integrated Rain Water Harvesting (RWH) system is given below;

S. No.	Description	Data
1	Size of the tank	Length: 100 feet Breadth: 60 feet Depth: 13 feet
2	Volume of the tank	2,207.6 m <sup>3</sup>
3	Average Annual Rainfall	700 mm
4	Area	557.47 m <sup>2</sup>
5	Installation	2018



Fig.1. Rain Water Harvesting in SSMIET



Fig.2. Rain Water Harvesting Charging Pit





### Bore Well /Open Well Recharge:

- Bore wells are constructed at different places within the college campus.



Fig.3. Bore Well in SSMIET Campus

### Sewage Treatment Plant:

- SSM-IET has implemented conventional wastewater treatment (with a capacity of 160 kLs/day).
- All the sewage waters are collected in main tank with a capacity of 120 & 60 kL.
- It is then agitated using raw sewage pump (2 HP motor of two no's are used) for specified period of time and then let it out to filter tank.
- From the main tank; the treated water is then passed to Aerator tank having 5.5 kW/7.5 HP blower used to deliver dissolved oxygen at 4-6 bar pressure.
- However, this motor is operated based on the quantity of the sewage collected.
- If the quantity is less (during lean period of college operation), this motor is turned off manually. Urea + TFA (Trifluoroacetic Acid) urea acts as an effective catalyst for sludge removal and processing is being added at regular interval.
- Sludge Treatment and Usage: All the sludges are settled in the tank and pumped back to main tank.

- Once the quantity of the sludge is appreciable; then it will be taken out and used as manure for gardening.

- The detailed specifications of the STP plants located inside the college is being



represented below:

Specification of the Sewage Treatment Plant (STP) to treat the Sewage

Location	Main Plant	Near Ladies Hostel
Collection Tank	120 kL	60 kL
Aeration – I Tank	200 kL	100 kL
Bar Screen Chamber	8 kL	6 kL
Deep Settler - I & II	60 kL	40 kL
Water Cleaning Sump	60 kL	30 kL
Treated Water Tank	60 kL	30 kL
No. of Sludge Bed	6 Nos (1.5 m x 1.5 m x 1.3 m)	6 Nos (1.2 m x 1.2 m x 1.3 m)
Application of sludge	Used as Manure	

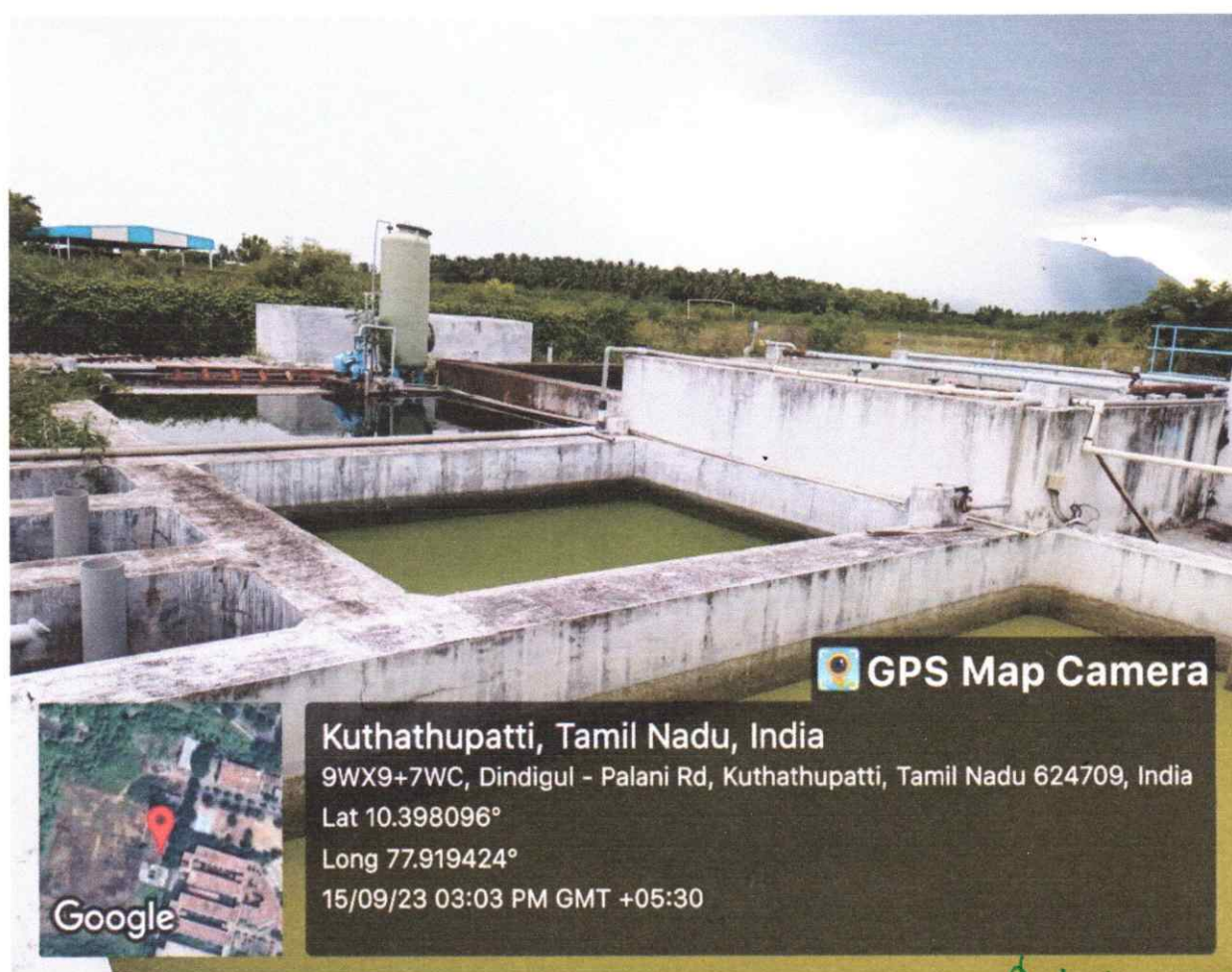
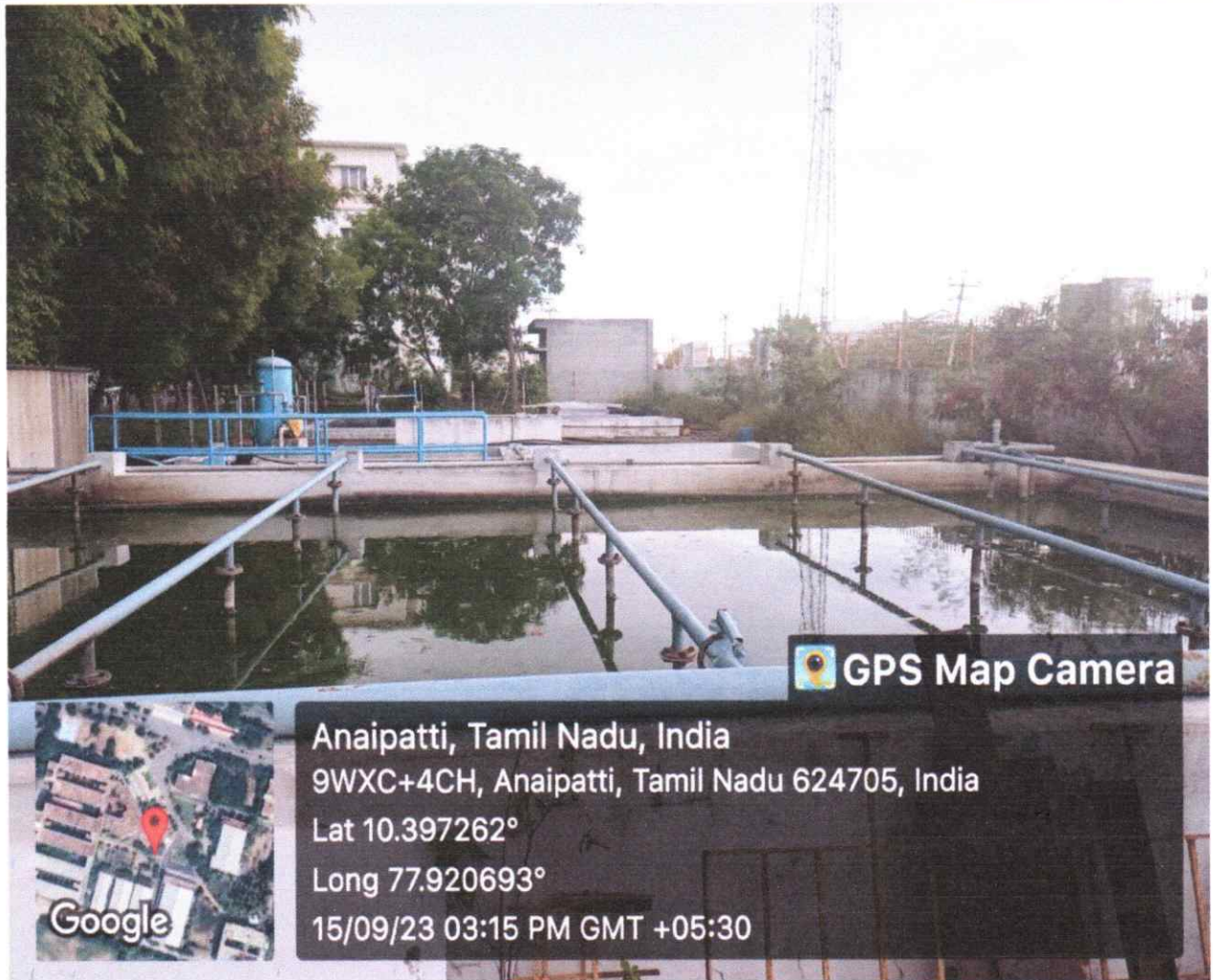


Fig.4. Waste Water Recycling Plant in SSMIET



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**Fig.5. Waste Water Recycling Plant in SSMIET**



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## RO Water Plant:



Fig.6. Reverse Osmosis (RO) waster Plant in SSMIET

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### Maintenance of Water Bodies and Distribution System in the campus:

- The campus consists of well-established water distribution network to provide adequate facilities for the users.
- The rain water is collected through Rain water harvesting and utilized effectively. The waters are distributed through well laid pipe network throughout the college campus.
- Water is purified through RO plant and supplied for drinking purposes.
- The treated waste water has also been distributed separately for the plantation and irrigation purposes.
- Routine inspections and maintenances are undergone properly on time for all pipe connections to avoid leakages or other issues.



Fig.7. Water used for plantation and irrigation purpose

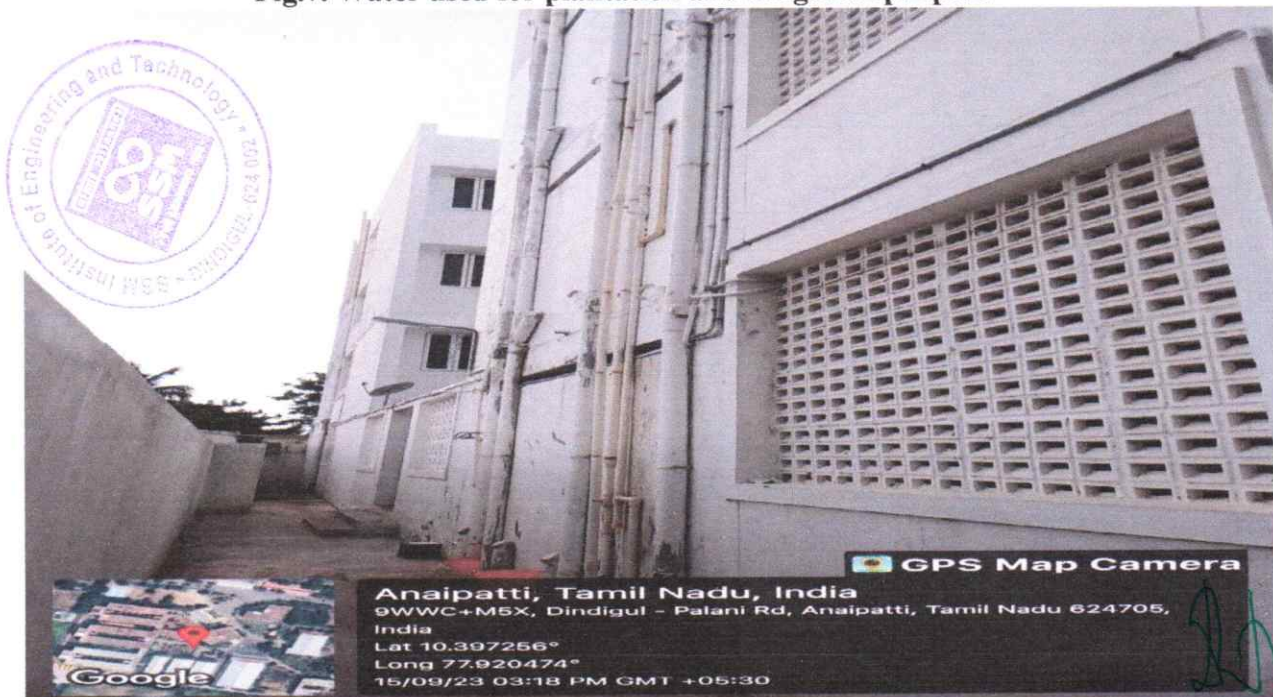


Fig.8. Water Distribution System in SSMIET





Fig.9. LAYOUT OF SSMIET WATER DISTRIBUTION SYSTEM



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