

**7.1.3 Describe the facilities in the Institution for the management of the following types of degradable and non-degradable waste**

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WASTE DISPOSAL POLICY

Indira College of Engineering and Management is one of the prime institutions in Maval region offering Engineering and Management Education at UG & PG level.

Policy Mission:

1. To ensure that waste management is performed in accordance with all waste legislative requirements, including the duty of care, and to plan for future legislative changes and to mitigate their effects.
2. To minimize waste generation at source and facilitate repair, reuse and recycling over the disposal of wastes in a cost effective manner.
3. To provide clearly defined roles and responsibilities to identify and co-ordinate each activity of the waste management.
4. To ensure the safe handling and storage of wastes on campus.
5. To provide appropriate training for teacher, resident, staff, students and other stakeholders on waste management issues.
6. To promote holistic approach of waste management in the campus.

Organization and Management:

The duties and supervisory arrangements for this policy lie with a variety of manpower within the Campus.

❖ Advisory Committee

- a) Chairperson / Principal
- b) Deputy Director – Admin
- c) Institute Faculty Coordinator
- d) External Expert (to be appointed by Chairperson / Principal).
- e) Head of Department's

✦ Functions of Committee

- a) Committee will coordinate the provision of a central waste & recycling contract services for use by all facilities on the campus.
- b) Ensuring that all contractors are appointed with proper profile validation and it should be government certified.
- c) Ensuring that all contractors are enlightened to comply with the Duty of Care.





+ Functions of Institute Faculty Coordinator

- a) Provision of advice and guidance to the college on waste management.
- b) Setting Environmental Performance Indicators for waste management and generating annual reports.
- c) Monitoring and auditing the management systems for all wastes, to ensure safety and legal compliance.
- d) Provision of appropriate training for all personnel who have responsibilities for waste management.
- e) Investigation of any incidents or spillage relating to all type of hazardous and general waste management.

+ Functions of Deputy Director – Admin

- a) Overseeing the day to day delivery of general waste and their recycling services.
- b) Operational monitoring of waste management systems across the campus.
- c) Monitoring the performance of the contractor against the contract agreements.
- d) Liaising with the Coordinator to establish standard procedures for managing waste on the campus.
- e) Disposing of waste responsibly (at Academic, Admin office and Hostel), through the appropriate waste disposal system (segregation of waste).
- f) Reporting any problems with waste collection schemes to Principal and/or Coordinator.

+ Functions of Head of Departments

- a) Nominating a 'responsible person' within their department to coordinate waste disposal for any hazardous or laboratory wastes.
- b) Informing the Institute Faculty Coordinator, about the nominated 'responsible person' and updating the Coordinator if and when the 'responsible person' changes. The tenure of the person will be minimum two year

Plan of Action:

1. It will be mandatory for all the members of the committee to report changes/additions in hazardous waste generation and steps taken to reduce generation of waste per unit of production.

2. The waste could be recycled / reused or disposed of by manageable or common treatments. It should be adapted in order of preference from the most favorable (top) to the least (bottom).



3. Inventories of 'end of life' consumer products such as e-waste are also required to be made.
4. Prevention and minimization of waste have to be attempted first by promoting implementation of recovery of resources such as chemicals in chemistry labs i.e. solvents, other reagents and by-products as well as re-generation of spent catalysts.
5. Exploring ways of reusing, recovery and recycling of nonhazardous waste in an environmentally sustainable manner.
6. For the waste which cannot be recycled / reused, safe and environmentally sound disposal will be adopted depending upon waste category.
7. Waste Treatment plant will be established and the degradable and non-biodegradable waste will be segregated and treated according to their physical nature.


Principal
Shree Chanakya Education Society's
Indira College of Engineering & Management
Parandwadi, Pune.



GREEN COVER POLICY

Indira College of Engineering and Management is one of the prime institutions in Maval region offering Engineering and Management Education at UG & PG level.

Policy Mission:

1. To establishing viable committee, within the organization structure of the institute.
2. To sweep away wasteful inefficiencies and using conventional sources of energies for its daily power needs, correct disposal handling, purchase of environment friendly supplies and effective recycling program.
3. To incorporate the strategies into the institutional planning and budgeting processes with the aim of developing a clean and green campus.
4. To work with all stakeholders and the local community to raise awareness and seek the adoption of environmental good practice and the reduction of any adverse effects on the environment.
5. To conduct environmental and energy audits from time to time.

Organization and Management:

The duties and supervisory arrangements for this policy lie with a variety of manpower within the Campus.

❖ Advisory Committee

- a) Chairperson / Principal
- b) Deputy Director – Admin
- c) IQAC Coordinator
- d) Institute Faculty Coordinator
- e) Student Representative
- f) Parent Representative
- g) Industry Representative (Alumni Student).

+ Functions of Committee

- a) Seek views of all the Stakeholders to make the green campus initiative functional throughout the year.
- b) Conduct the Campus environmental impacts to identify the targets for improvements.
- c) Conduct an Annual Green, Environment and Energy Audit.



- d) Develop a strategic plan and create student teams to carry out specific tasks of the strategic plan.
- e) Establish public/private partnerships with personnel from federal, state, and local environmental agencies, utilities, and the business community.

Plan of Action:

- **Clean Campus Initiatives**

- a) Generating mass awareness on cleanliness and hygiene amongst students and staff members by holding regular cleanliness drives. The idea is to motivate them to contribute in a proactive manner.
- b) Activities under 'Swachh Bharat Abhiyan' will be a key component of all the community work being done by NSS, NCC and Green Society volunteers of the college.
- c) Staff Members will be encouraged to participate in the cleanliness drive in the college campus.
- d) Events such as poster and slogan competitions, essay writing, spoken word poetry, speeches, and skits on 'Swachh Bharat' will be organised.
- e) Rallies on themes connected with 'Swachh Bharat Abhiyan' in and around the college campus will be conducted to create mass awareness.
- f) Remove all kinds of waste material like broken furniture, unusable equipment etc.
- g) Administer of the pledge by students and staff members to maintain cleanliness of the college campus and its surrounding areas on an annual basis.
- h) Conduct workshops on the 3Rs: Reduce, reusing and recycling of waste.
- i) Commit to manage waste and maintain clean campus especially during college events.

- **Landscaping Initiatives**

- a) The campus landscape, like its buildings, can be seen as the physical embodiment of a college's values. It is a vital part of the life of a campus, providing space for study, play, outdoor events, relaxation and aesthetic appreciation.
- b) Green campus landscapes also manage runoff, help recharge groundwater, and clean and cool the air on campus. The landscape serves as a visual representation of the campus community's commitment to sustainability.
- c) As campus landscapes are so visible and accessible, landscaping initiatives are a great way to build awareness around the environment.

Cleanliness Drive



INDIRA COLLEGE OF ENGINEERING AND MANAGEMENT

Parandwadi, Pune - 410506, Ph. 02114 661500, www.indiraicem.ac.in

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Notice No- /2021

Date: 30/11/2021

Subject: Cleanliness Drive by Sport Dept /NSS/Admin Dept

This is to inform you that "Swachha ICEM Abhiyan" is organized under Cleanliness Drive on 3rd December 2021.

All faculty and staff members are hereby requested to keep all scrap in corridor of your respective department floor.

Admin will collect scarp accordingly.

Dr. Sunil B. Ingole

Principal
Shri. Ganesh Education Society's
Indira College of Engineering & Management
Parandwadi, Pune.



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IQAC Case :-	IQAC/374
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Ref. ICem / Sports / 2020-21 / 620

Date - 03.12.2021.


ICEM Swachha Abhiyan Report

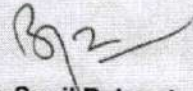
As per instructions of Principal Sir following activities were planned & implemented in the Month of Jan & Feb 2021 at ICEM.

- Scrap (Furniture & papers) in corridor of all departments & floors were collected.
- All departments are now scrap free as per our Visits & discussions with HOD.
- Scrap material & waste papers were sold to Vendor with proper approval process.
- Entire Campus was cleaned & well maintained with the help of housekeeping team.

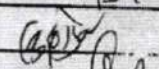
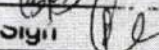
This activity will be continued on every 1st week of month.

Submitted to Principal Sir.


Prof. Atul Gore
Coordinator


Dr. Sunil B. Ingole
Principal ICEM
Indira College of Engineering
& Management, Parandwadi, Pune.



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Ref. No: ICEM/Admin/2020-21/ 620

Date: 03/12/2020

Swacchata Abhiyaan_ICEM

Month

Sr. No.	Name of Department / Description of Scrap removed	Yes/No	HOD
1	Admin	Nil.	
2	Civil	- Monday	
3	Computer	- on monday	
4	Mechanical	- on Monday	
5	Canteen	Nil	
6	Hostel	Nil	
7	Library	Nil	
8	Stores	ok yes	
9	Workshop	Nil	
10	MBA	Nil	
11	MCA	Yes.	
12	FE	Nil	

Prof. Atul Gore

Mr. Nilesh Khadkare



Principal
Indira College of Engineering
& Management, Parandwadi, Pune

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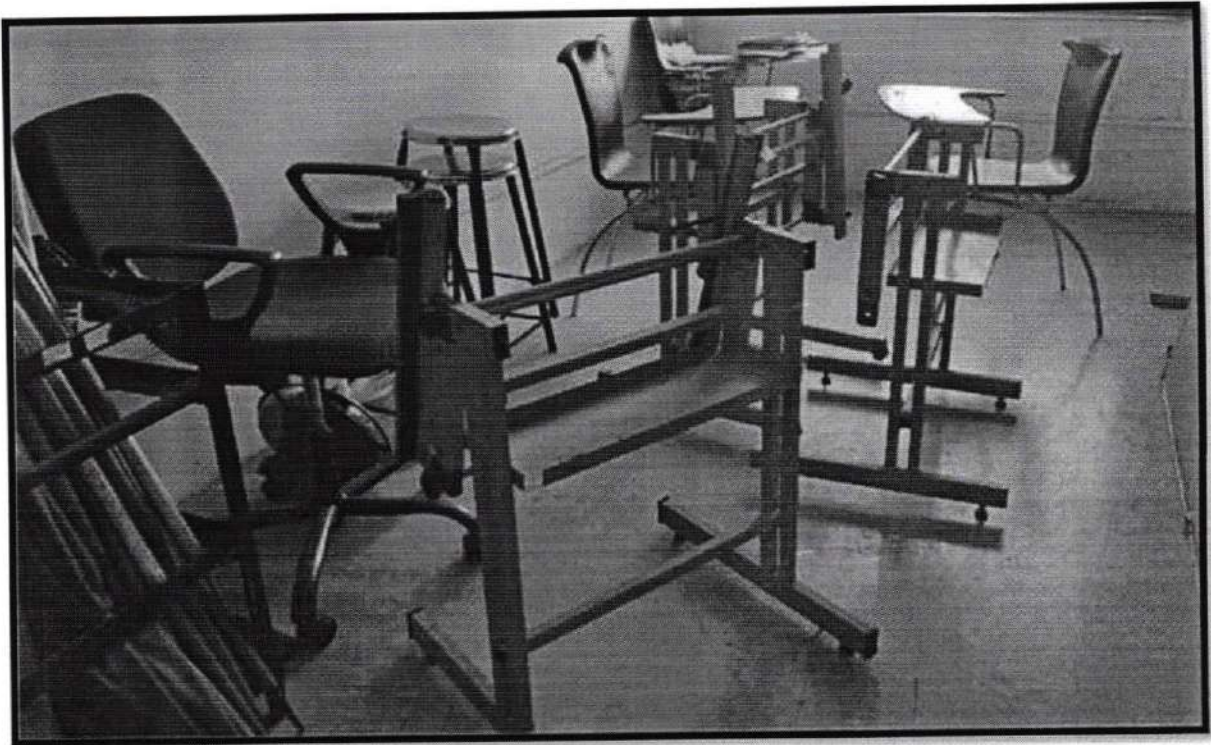


Photo 01: Scrap Waste collated in Civil Department

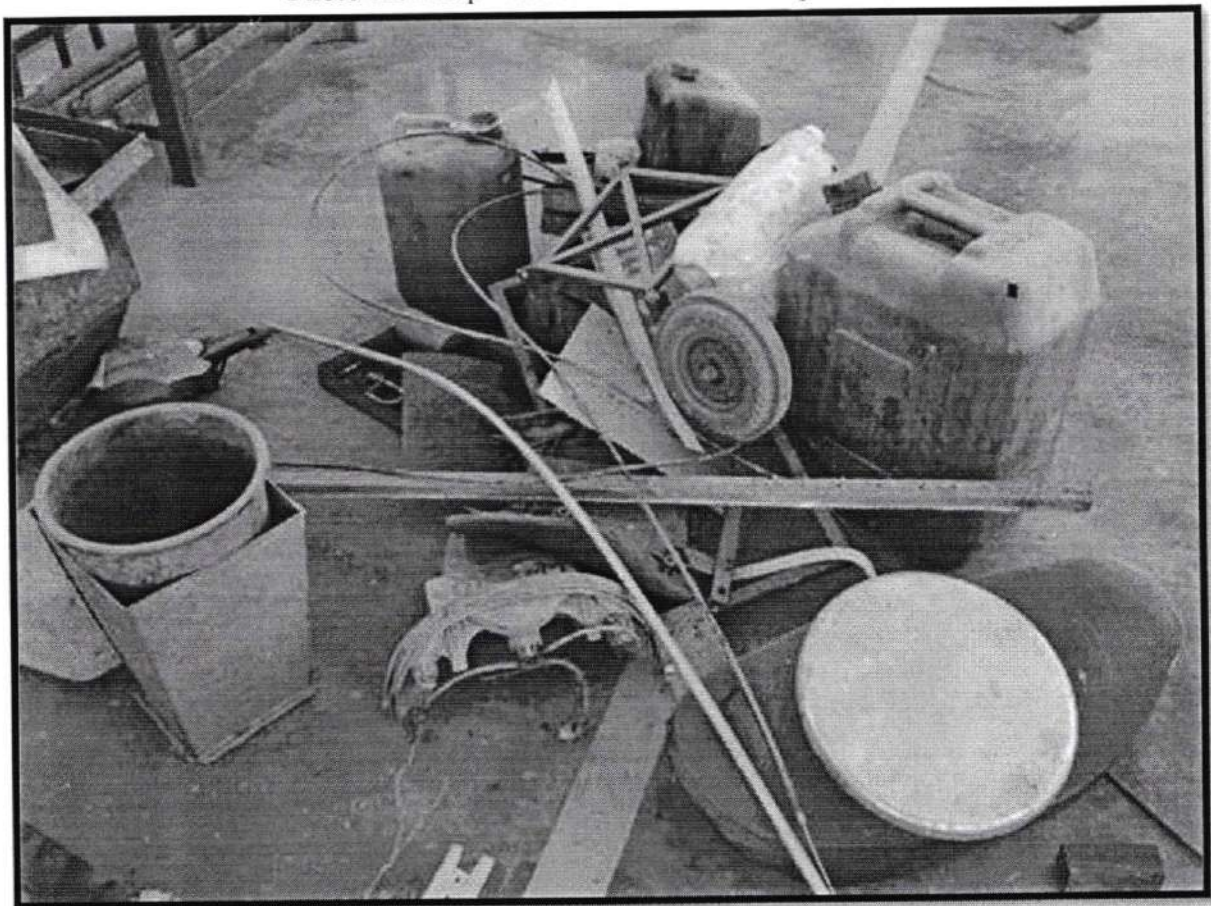


Photo 02: Scrap Waste collated in ICEM workshop

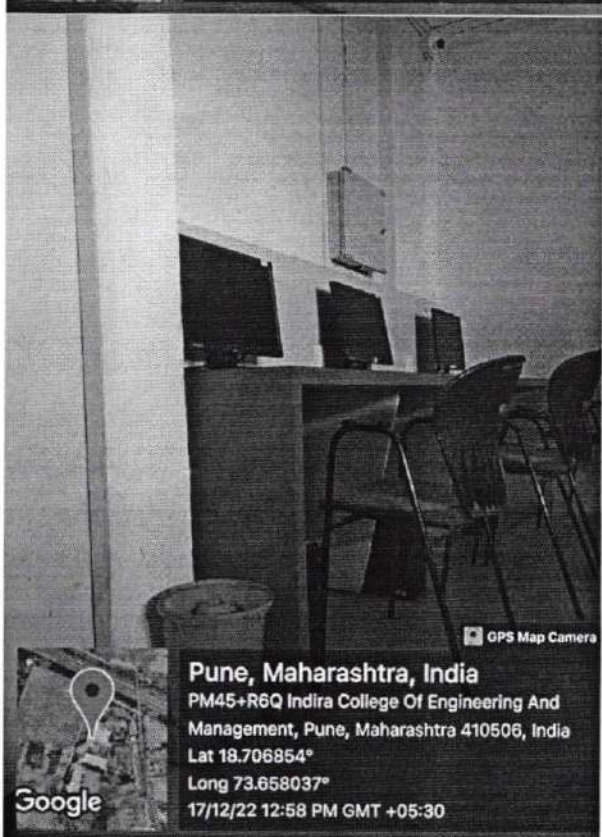
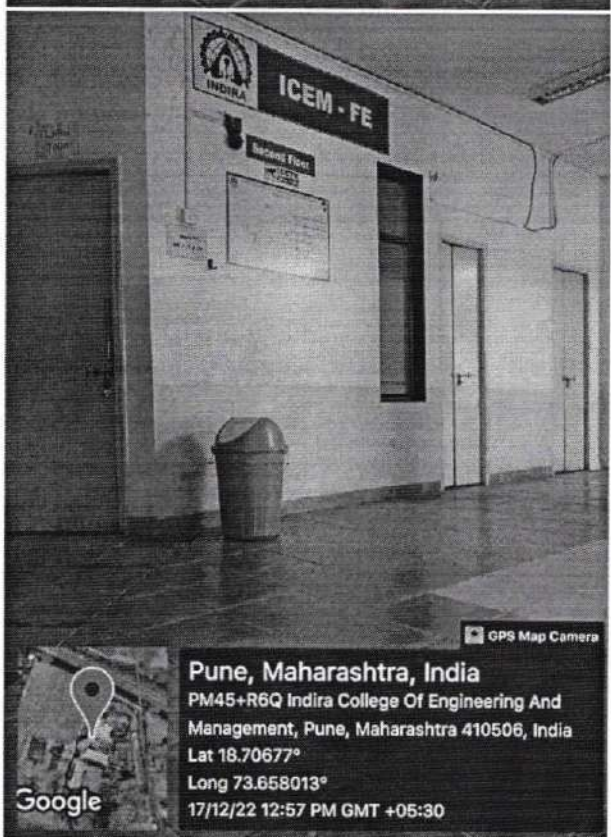
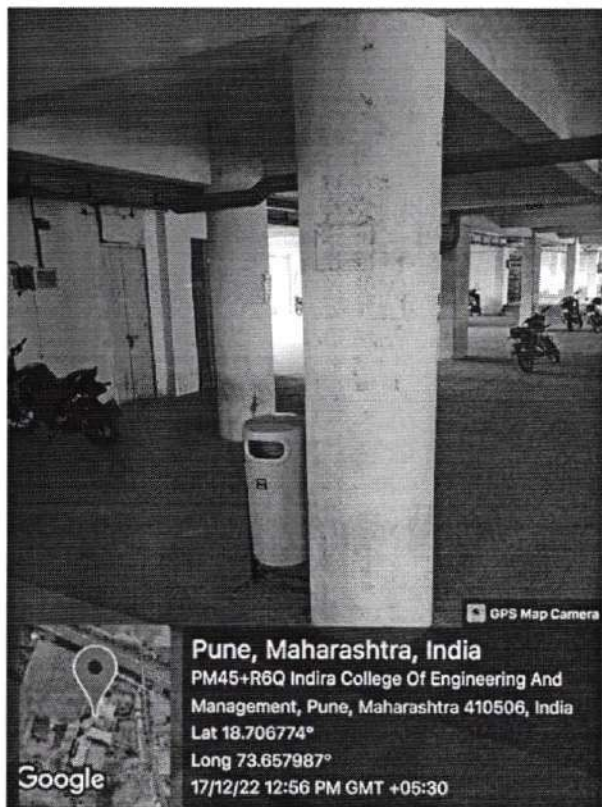
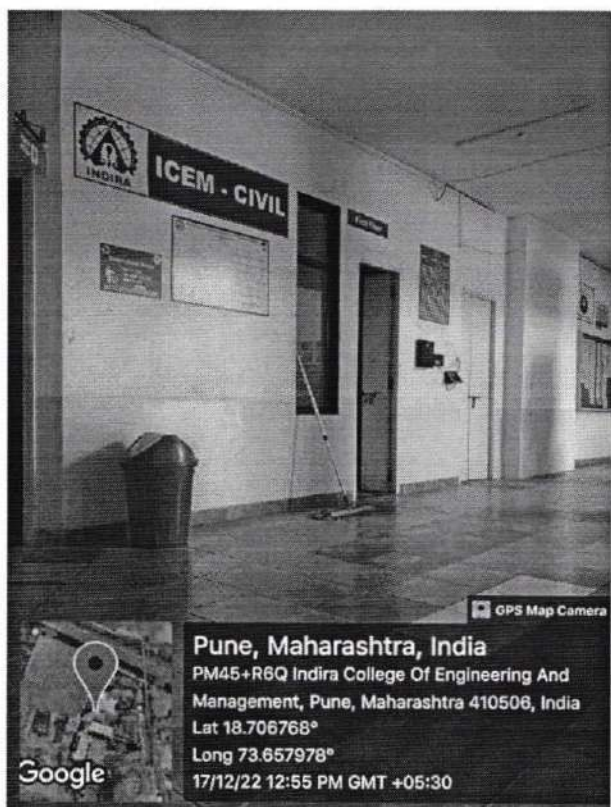


Photo 03: Dustbins Placed at various locations in ICEM Campus



Name and place of site visit: - Sewage Treatment Plant, ICEM

Day and day of site visit: -Monday,14/03/2022.

Subject: Waste Water Engineering.

Faculty Coordinator: - Prof. Shreyas Satpute.

AIM: -. Brief report on a case study of package wastewater treatment plant.

PACKAGE WASTEWATER TREATMENT

POINTS HIGHLIGHTED IN SITE VISIT: -

1. **Equalization tank:** The equalization tank is the first collection tank in an STP. Its main function is to act as buffer: To collect the incoming raw sewage that comes at widely fluctuating rates, and pass it on to the rest of the STP at a steady (average) flow rate. During the peak hours, sewage comes at a high rate. It has capacity of 35784 l The equalization tank stores this sewage, and lets it out during the non-peak time when there is no/little incoming sewage.

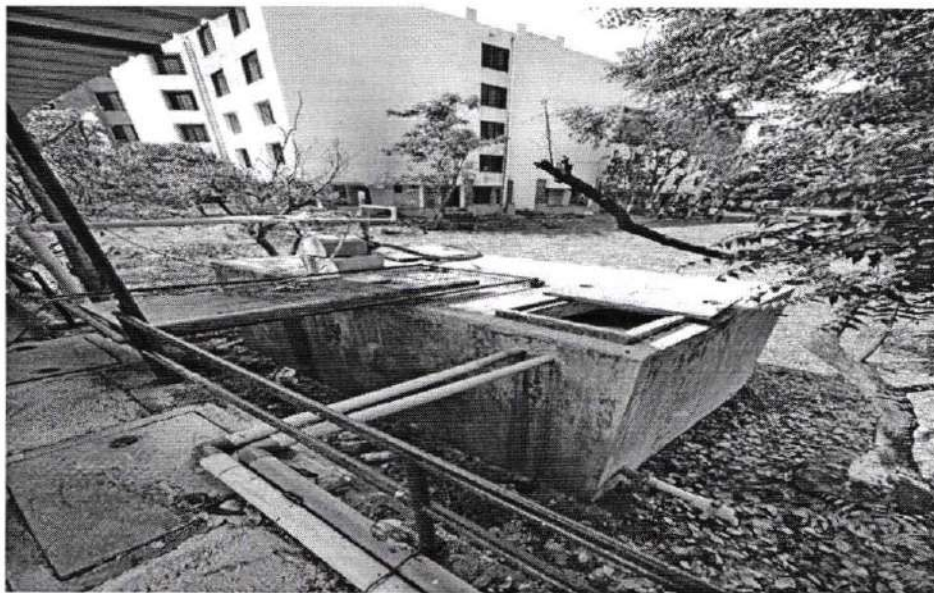


Fig No.1: Storage tank for treated water.

2. **Aeration tank:** Wastewater aeration is the process of adding air into wastewater to allow aerobic bio-degradation of the pollutant components. It is an integral part of most biological wastewater treatment systems. Unlike chemical treatment which uses chemicals to react and stabilize contaminants in the wastewater stream, biological treatment uses microorganisms that occur naturally in wastewater to degrade wastewater contaminants. And capacity of 38304l.



Fig.No.2: Equalization & Aeration tank

3. **Filter feed tank:** The filter feed tank operates as a buffer and flow stabilizer before the filter to feed the solution for filtration. The solution is typically fed into the tank from the top, and two connecting nozzles that pump the solution to the filter are located in the lower section of the tank. The agitator provides complete suspension conditions inside the tank to ensure that there are no settled particles or problems generated through sand reactors. It has a capacity of 18480 liters.
4. **Sludge Digester:** The digesters are closed circular tanks 30 m in diameter and up to 12 m deep and capacity of 23760 liters. The digestion uses the naturally-occurring anaerobic (i.e. living without oxygen) microorganisms to break down organic materials into methane and carbon dioxide. The sludge is heated to 37 degrees C in the primary digester to improve the rate of digestion. The sludge then enters the secondary digester.
5. **Dosing Pump:** A dosing pump is a positive displacement pump designed to transport very precise flow rates of a chemical or other substance into a fluid stream. The mechanism of this industrial pump involves drawing a measured quantity of fluid into the chamber and then injecting this volume rate into the container being dosed. As a function, a dosing pump is designed to be reliable so once it is properly set up; it should look after itself and not require large amounts of input (100 liters). Dosing pumps are used for automating fluid flow in many applications including pharmaceutical water treatment plants.
6. **Sludge Pump:** Wastewater Pumps are also known as Sewage Pumps as they are primarily used to transfer sewage, sludge, waste water and other kinds of dirty fluids with solid particles and liquids with high viscosity. And capacity of 4.5m³/hour or 4500 liters. These pumps are also known as single screw pump or progressive cavity pumps. They work on the principle of positive displacement. These pumps are used for a number of applications such as dirty water, sewage, sludge cake, activated sludge, bio-sludge etc.

7. **Air Blower:** The function of an air blower in a sewage treatment plant is to create strong pressure and create efficient airflow to provide air in the aeration process. Airflow, someone also called flow rate. Air is required for the naturally occurring aerobic bacteria or microorganisms to treat the sewage and waste water and capacity of 120 m³/hr. The air blower system creates pressure to produce constant air flow. So the air pressure and air flow rate are very important factors for an air blower.
8. **Filter feed Pump:** They are used to take the water from the clarified water sump and has capacity of 9.5m³/hrs and pass it through the pressure sand filter and activated carbon filter installed in series.

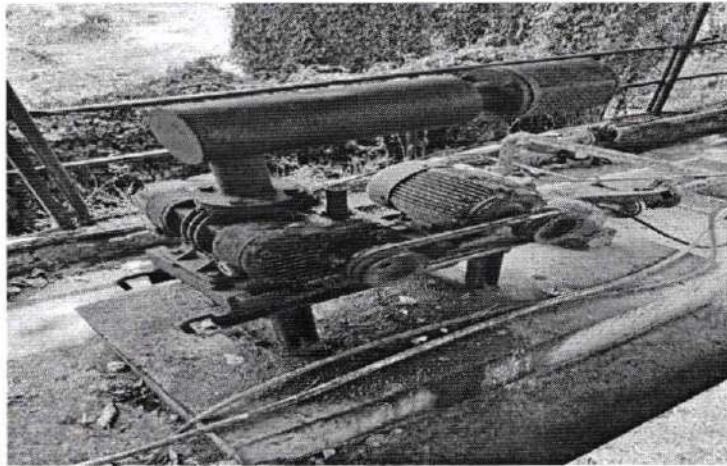


Fig No.3: Filter feed pump.

9. **Pressure Sand Filter:** The Pressure sand filter consists of a pressure vessel either vertical or horizontal, with a set of frontal pipe work and valves, graded silica quartz sand supported by layers of graded under bed consisting of pebbles and gravels, a top distributor to distribute the incoming water uniformly throughout the cross section of the filter, and an under drain system to uniformly collect the filtered water. And has diameter of 1 meter.

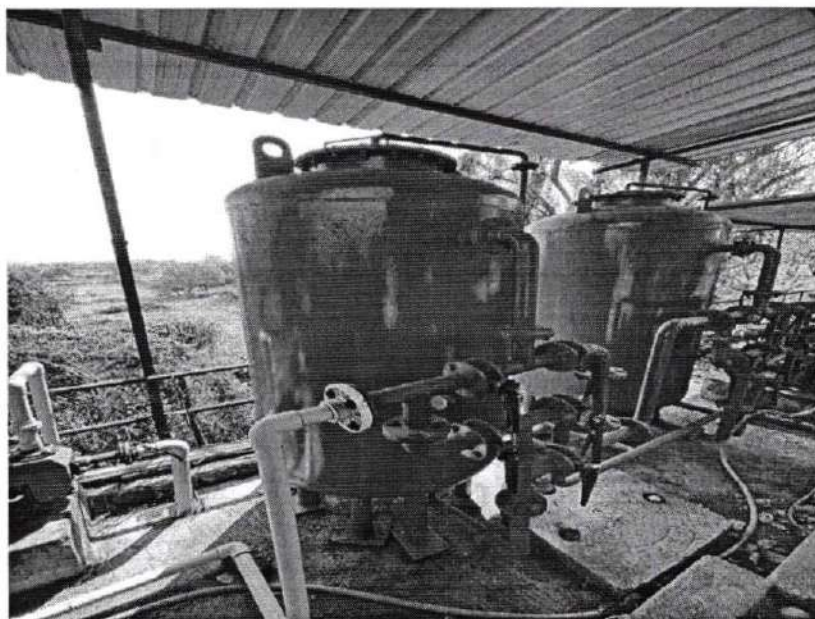
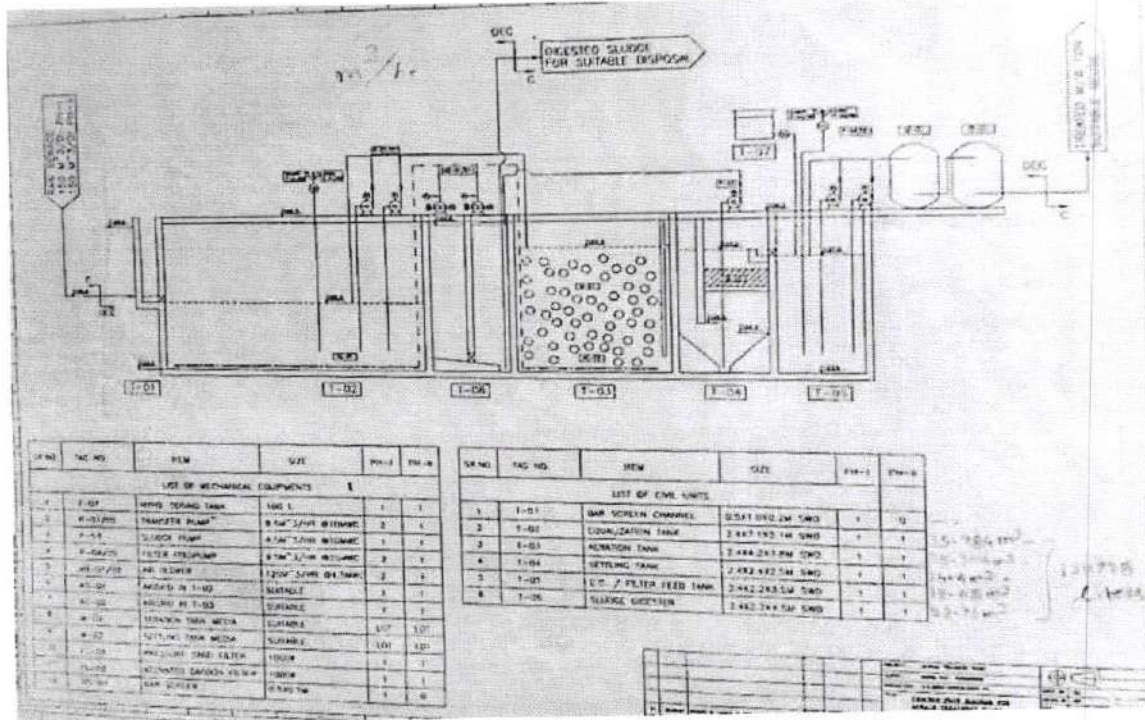


Fig.No.4: Pressure Sand Filter& Activated Carbon Filter

10. Activated Carbon Filter: Activated carbon filter process basically absorbs unwanted contaminants from waste-water. Activated carbon is initially treated with oxygen. This helps the charcoal open up millions of tiny pores. Activated carbon is highly effective when it comes to absorption of contaminants from water. Filtration process includes activated carbon to remove the residual contaminants from sewage waste. Carbon absorbs micro pollutants such as chlorine, methane, organic compounds, and even the taste and odor from water.



- **Geotagged Photographs of STP**

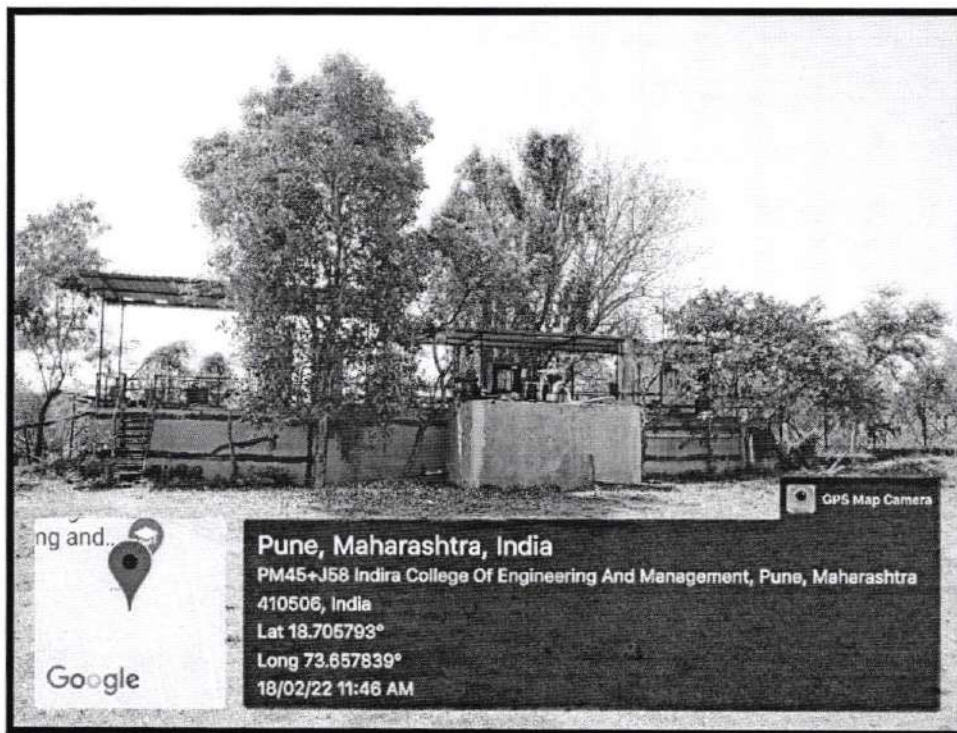


Photo 03: Waste Water Treatment Plant Besides Hostel Building

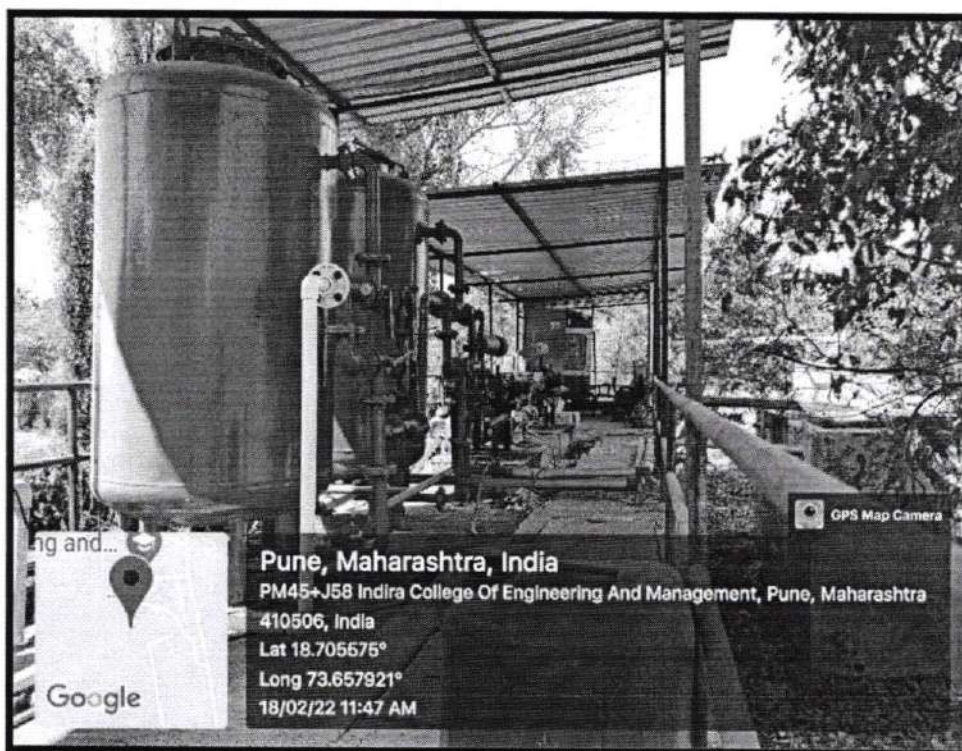


Photo 04: Pressure Sand Filter and other units of Waste Water Treatment Plant

