



**SREE VIDYANIKETHAN ENGINEERING COLLEGE
(AUTONOMOUS)**

SreeSainath Nagar, Tirupati – 517 102

Environmental Consciousness and Sustainability

7.1.3Waste Management

Environmental Consciousness and Sustainability

7.1.3 Describe the facilities in the Institution for the management of the following types of degradable and non-degradable waste (within 500 words)

Solid waste management

Liquid waste management

Biomedical waste management

E-waste management

Waste recycling system

Hazardous chemicals and radioactive waste management

Provide web link to

- **Relevant documents like agreements/MoUs with Government and other approved agencies**
- **Geotagged photographs of the facilities**
- **Any other relevant information**

Solid Waste Management: The institution practices the segregation of solid waste into dry waste and wet waste. The collected waste is segregated at the source of generation. Dust bins are placed separately for dry waste and wet waste in the campus. Adequate number of dustbins at each building and along the road side is provided. The frequency of solid waste collection is twice in a week. The dry waste consists of paper, plastic, dry leaves etc., and are collected separately. Recyclable materials (1000 kg per month) such as plastics, glass, steel, tin cans, paper and cardboards are segregated under dry condition. Plastic and scrap are given to the external agencies for recycling. About 4000 kg of construction waste generated on an average in the form of broken bricks, dismantled walls and concrete structures which are deteriorated are used in land filling on the campus. The dry leaves, twigs etc., are collected and decomposed in a pit which is used as manure for trees and plants. The wet waste like food waste, vegetable waste and fruit waste etc., are disposed to vendors. Food waste generated in canteens and messes is about 9000 kg per month and is disposed to piggery. The sanitary waste collected from

washrooms and hostels is given to a biomedical waste agency having regular pickup from the institution.

E-Waste Management: An e-waste in the form of discarded electronic components including computers, printers, UPS batteries, multi-media systems, etc. is generated at the rate of 35 to 40 kg per month i.e. on an average of 400 kg per year. This is being stored safely and given to vendors once in a while. The condemned batteries and damaged computers are disposed to authorized E-waste management agencies. Obsolete computers and other electronic gadgets are sold to recyclers. E-waste generated in the campus is given to the authorized dealers who purchase the scrap and reuse the useful components. Apart from this, the electronic and electrical instruments under repair are given to the students during the lab sessions to dismantle and reassemble, which help in application oriented learning. The low configured and outdated computer is donated to nearby schools.

The Trust takes the responsibility and engages the disposal of the solid waste to the vendors identified by them.

Liquid Waste Management: The institution practices segregation of waste water into water from wash rooms and water from laboratories. Liquid waste from the wash rooms wash rooms, toilets of all buildings, canteen and messes is collected and transported by means of well conceived sewerage system to three sewage treatment plants of capacities 150 KLD, 200 KLD and 250 KLD. An extended type of activated sludge process principle is provided in the working of these sewage treatment plants. The wastewater generated is 100% domestic origin. The treated wastewater (sewage) is used for the gardens and lawns in the campus and toilet flushing. Waste water from laboratories is disposed off into closed collecting tank after neutralizing the chemicals etc. Chemicals in the laboratories are disposed as per MSDS (Material Safety Data Sheet) of each chemical. Eco-friendly floor cleaners are used periodically for cleaning toilets.

Biomedical Waste Management: Biomedical waste includes used cotton and discarded syringes, saline bottles and tubes, expired medicines and tablet

covers. Biomedical waste is generated very meagerly on an average of 0.5 kg per week and it is stored safely and given to gram panchayat for safe disposal.

Hazardous Waste Management: Hazardous waste in the form of 1) spent batteries, 2) Waste oils from busses and DG set are generated which is approximately 200 kg per month on an average. This is being used for smothering the construction centering sheets as a preventive measure to stop sticking of concrete to them. Some chemicals used for toilets cleaning and some chemicals used in laboratories find its way to septic tank along with the wash water. This wash water along with the domestic wastewater (sewage) is treated and reused for the purpose of watering the gardens and lawns.

Sree Vidyanikethan Engineering College has also taken various steps to restrict the generation of waste. Bio degradable plates, steel plates are used instead of plastic plates; steel spoons are used in place of plastic spoons in canteen and hostel. Usage of plastic bags is banned in the premises of the college. Awareness programs on waste management are conducted regularly for faculty, staff and students to promote eco friendly practices.



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Chittoor (Dist.) - 517 102, A.P., INDIA.

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The 6 Rs of Sustainability

- **Re-use:** Take an existing product that has become waste and use the material or parts of it for another purpose, without processing it.
- **Repair:** When a product breaks down or doesn't function properly, try to fix it rather than throw it away.
- **Recycle:** Take an existing product that has become waste and reprocess the material to use in a new product.
- **Reduce:** Minimise the amount of energy and materials you use.
- **Rethink:** Ask whether we can sustain our current way of life and the way we design, make, use and dispose of products.
- **Refuse:** Don't use a material or buy a product if you think you don't need it or if it's unsustainable.



Institute's Philosophy of Waste Management

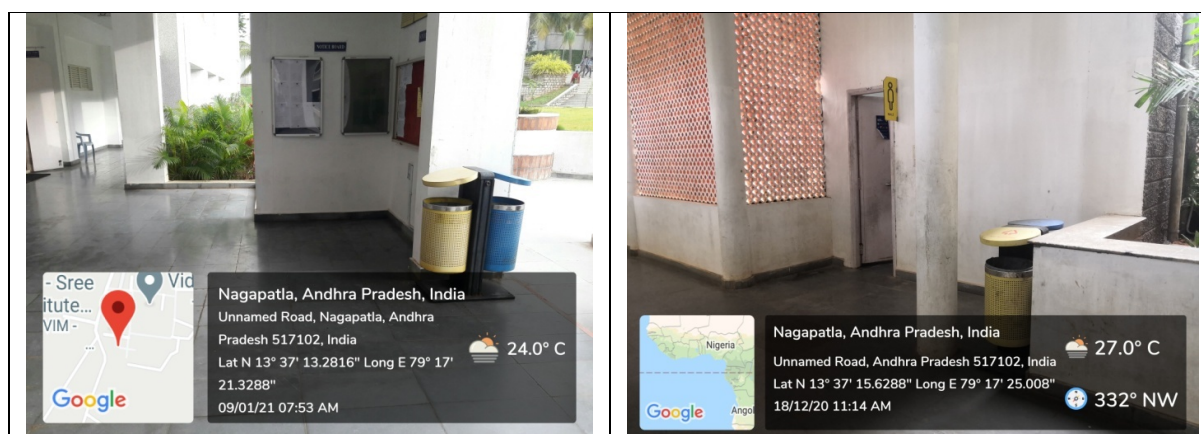
I. SOLID WASTE MANAGEMENT

I. Solid Waste Management

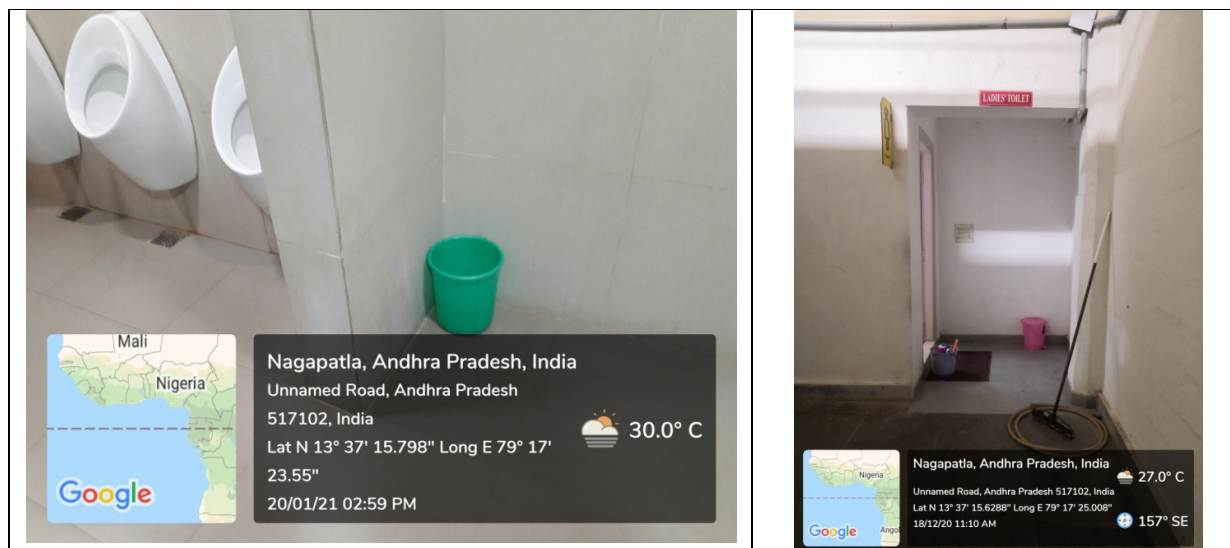
1. Dustbins:

Adequate number of dustbins is provided as mentioned below to maintain cleanliness in the campus. The frequency of solid waste collection is twice in a week.

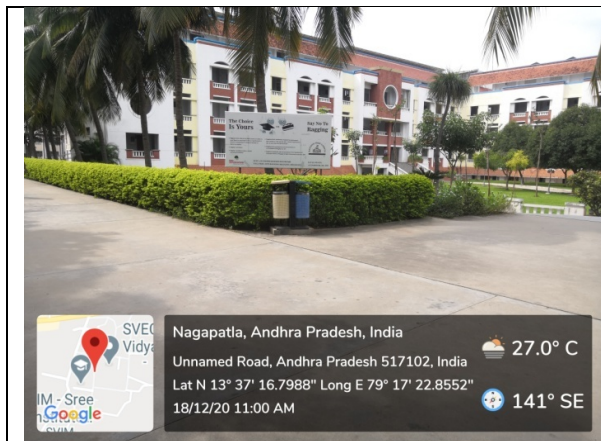
1. Pair of Recyclable and Non-Recyclable Dustbins are provided at all floors of each buildings, corridors, road side, laboratories, canteen and other important locations etc. Recyclable dustbins are blue in colour and are used for the collection of recyclable waste and Non-Recyclable dustbins are yellow in colour and are used for the collection of non-recyclable waste.
2. Small size dustbins are provided in class rooms, staff rooms and office rooms.



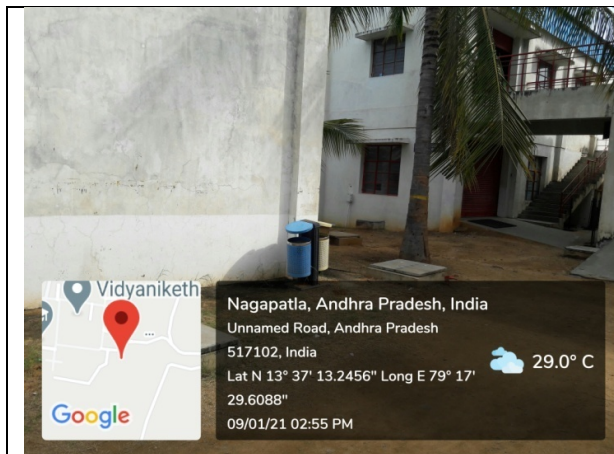
Dustbins at Corridors



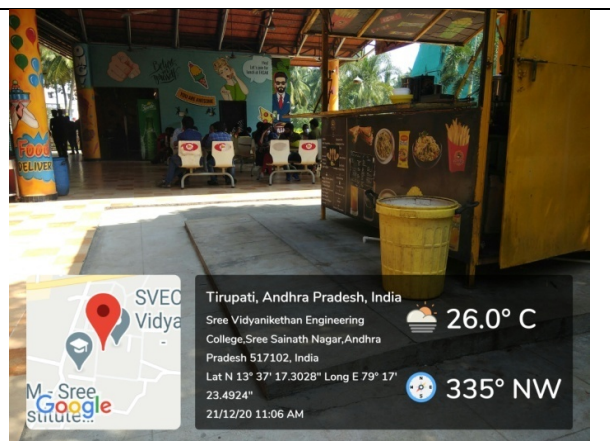
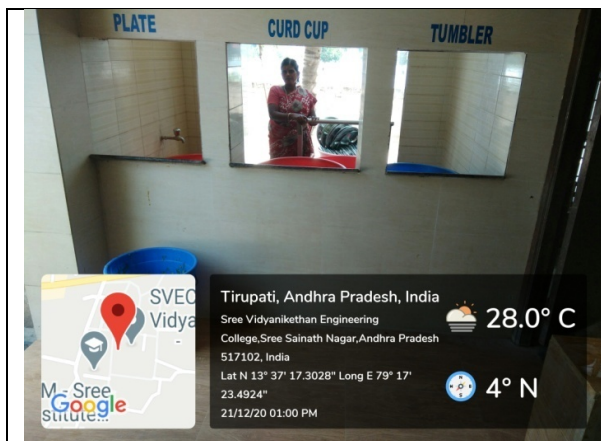
Dustbins at Toilets in the Central Library and South Wing in the M-Block



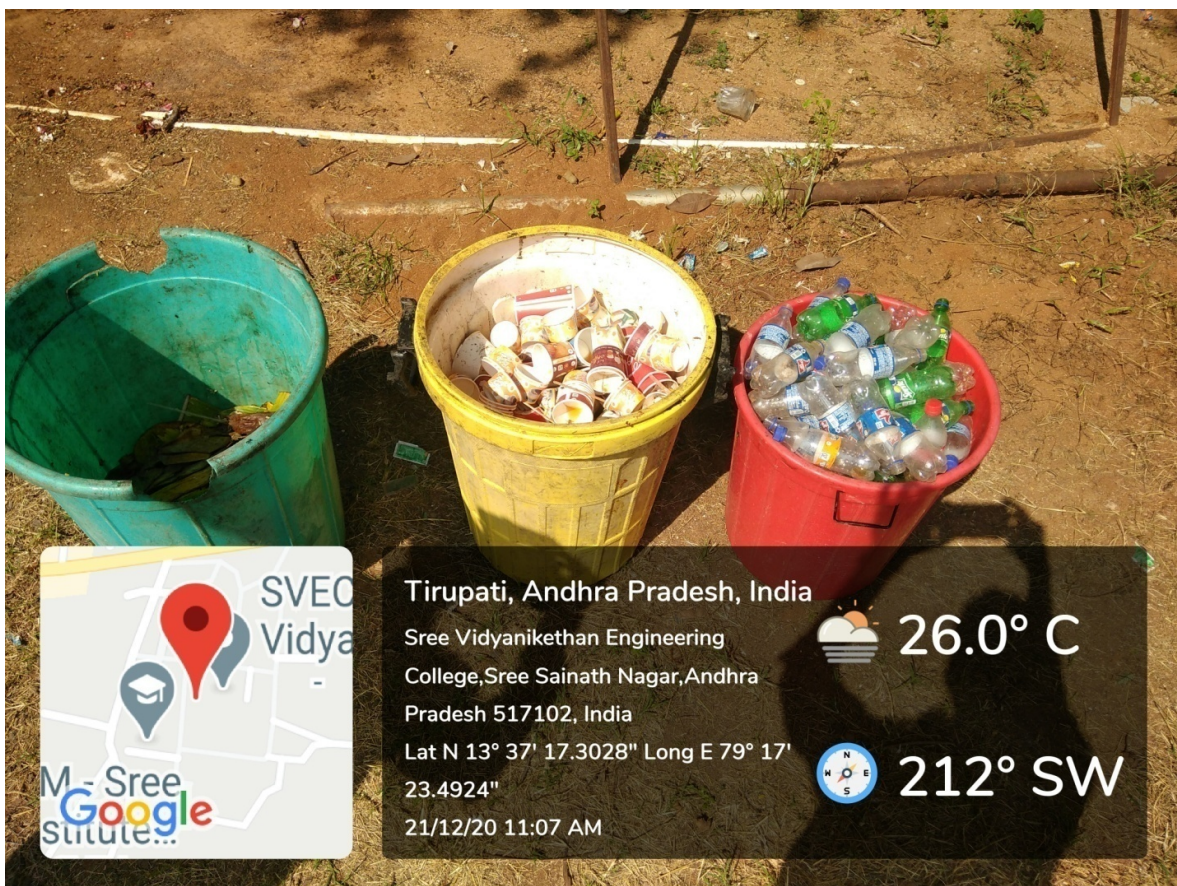
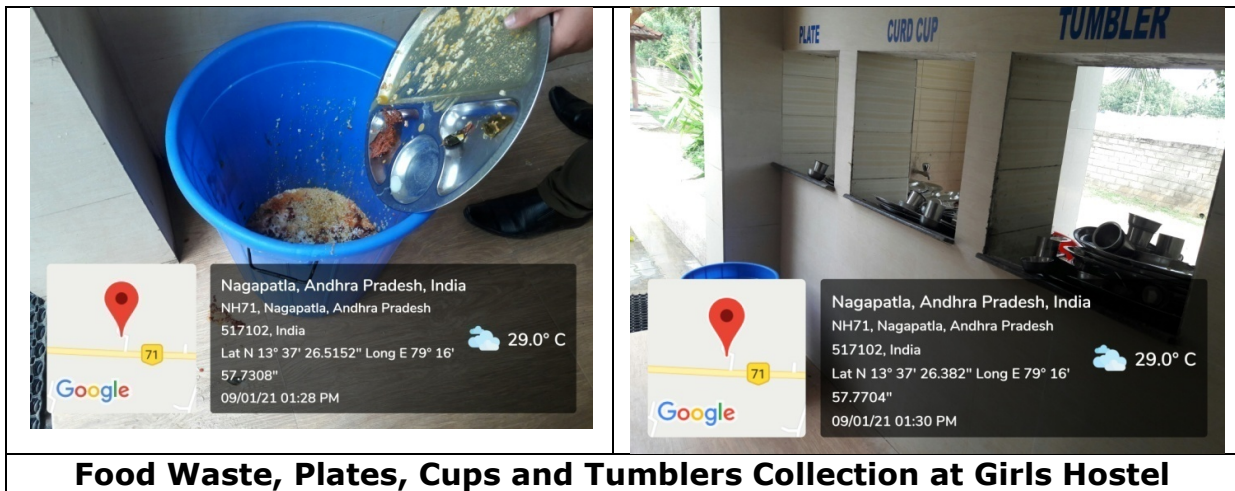
Dustbins along Roadside

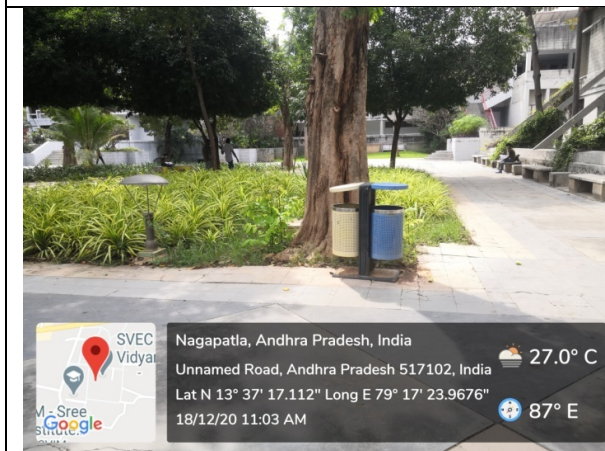


Dustbin at Workshop, Civil and Mechanical Engineering Laboratories

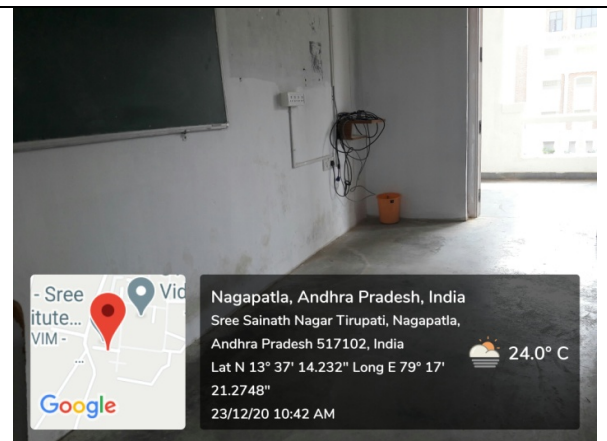
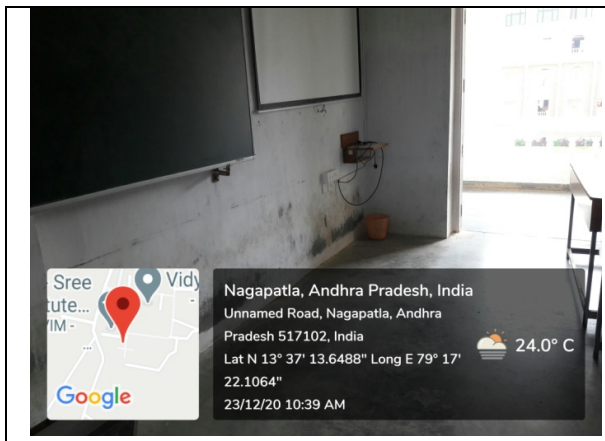


Food Waste Collection Bins at Girls Hostel Mess and College Canteen

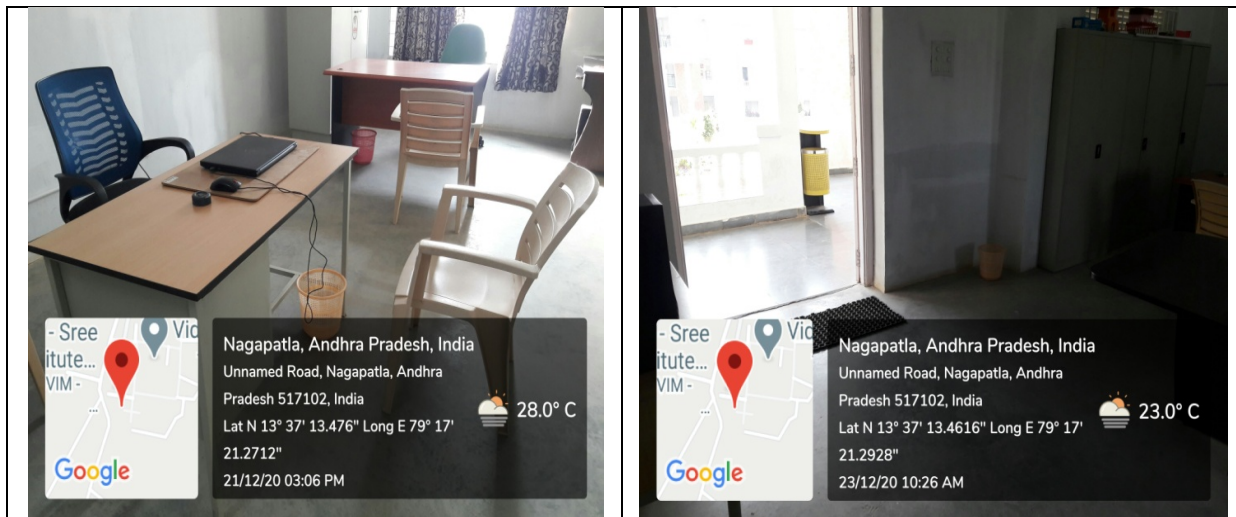




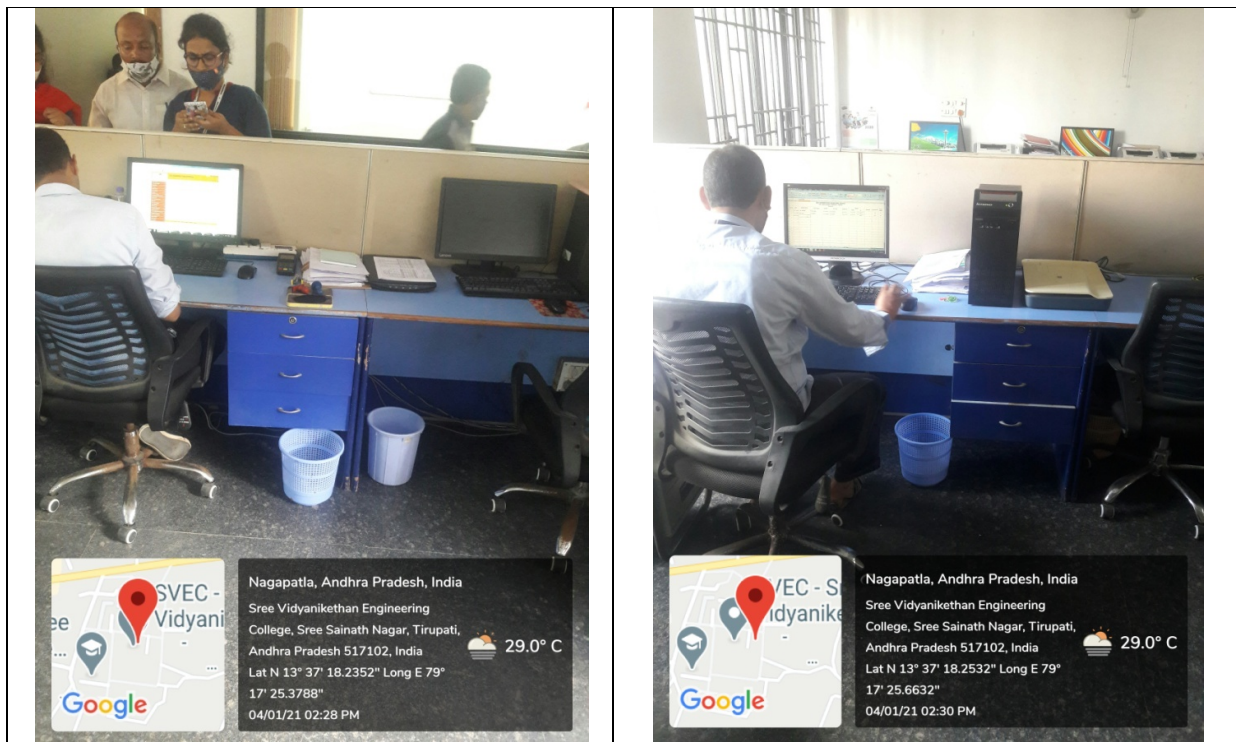
Dustbins at Important Locations



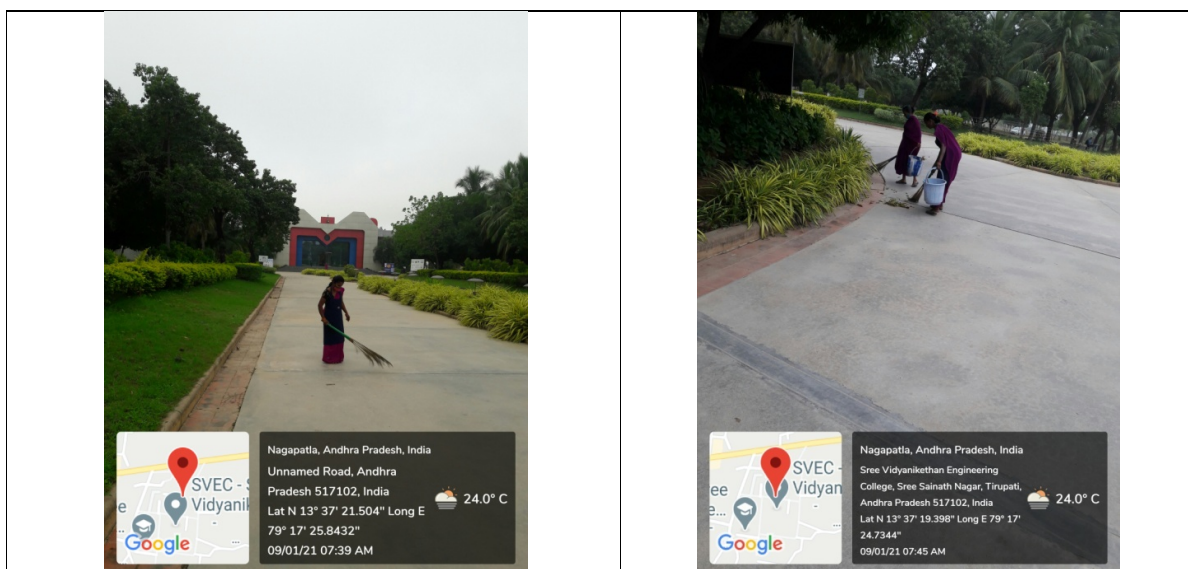
Dustbins in Class Rooms



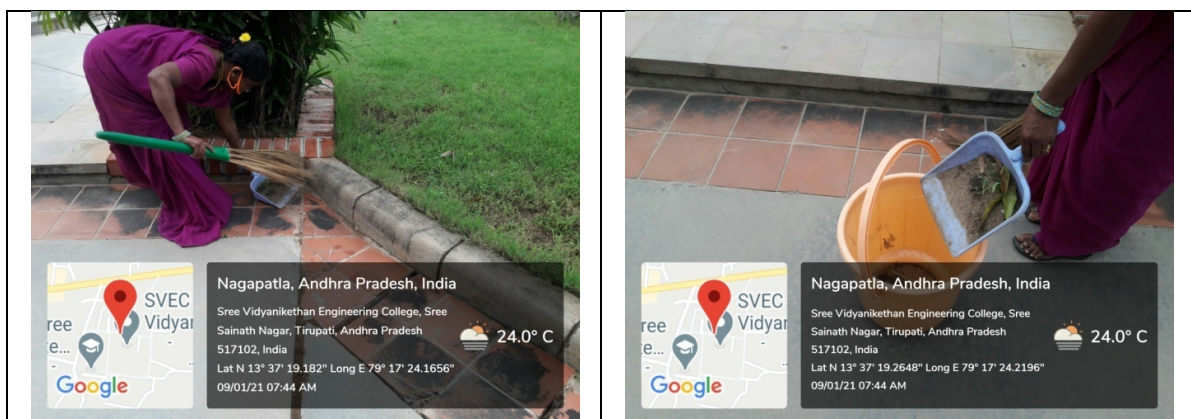
Dustbins at Inside and Outside the Staff Room



Dustbins in Office Rooms



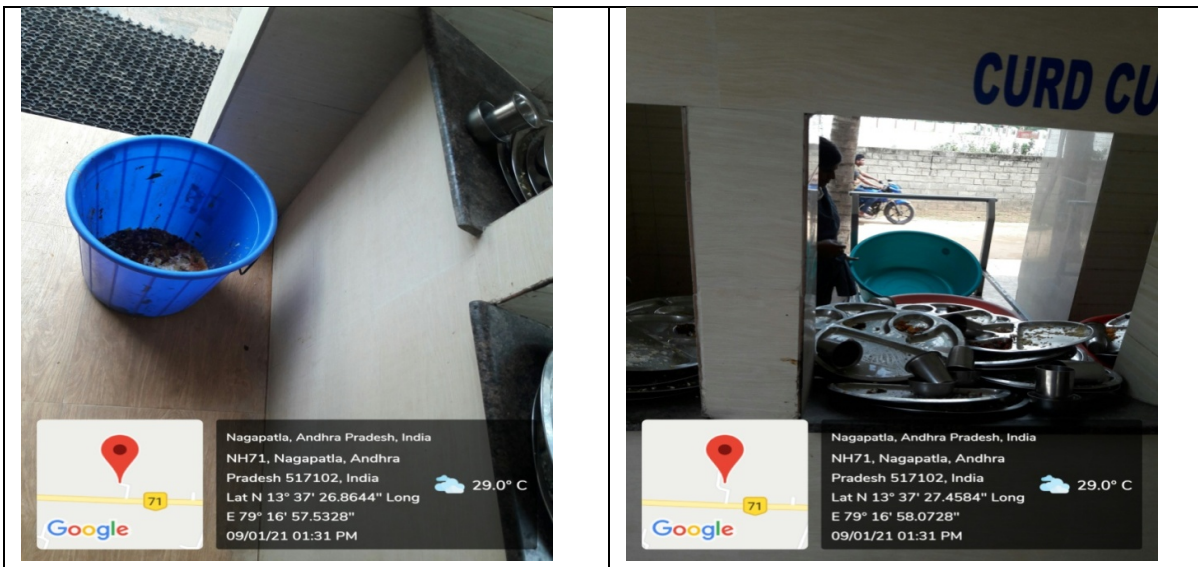
Solid Waste Collection through Manual Sweeping of Roads in the Campus – In Front of M-Block



Solid Waste Collection through Manual Sweeping of Roads in the Campus– Near Central Library

2. Food Waste:

- Food waste generated in canteens and messes is about 9000 kg per month and is disposed to piggery.



Food Waste Collection at Hostel Mess



Food Preparation and Serving in Banana Leaves at Canteen

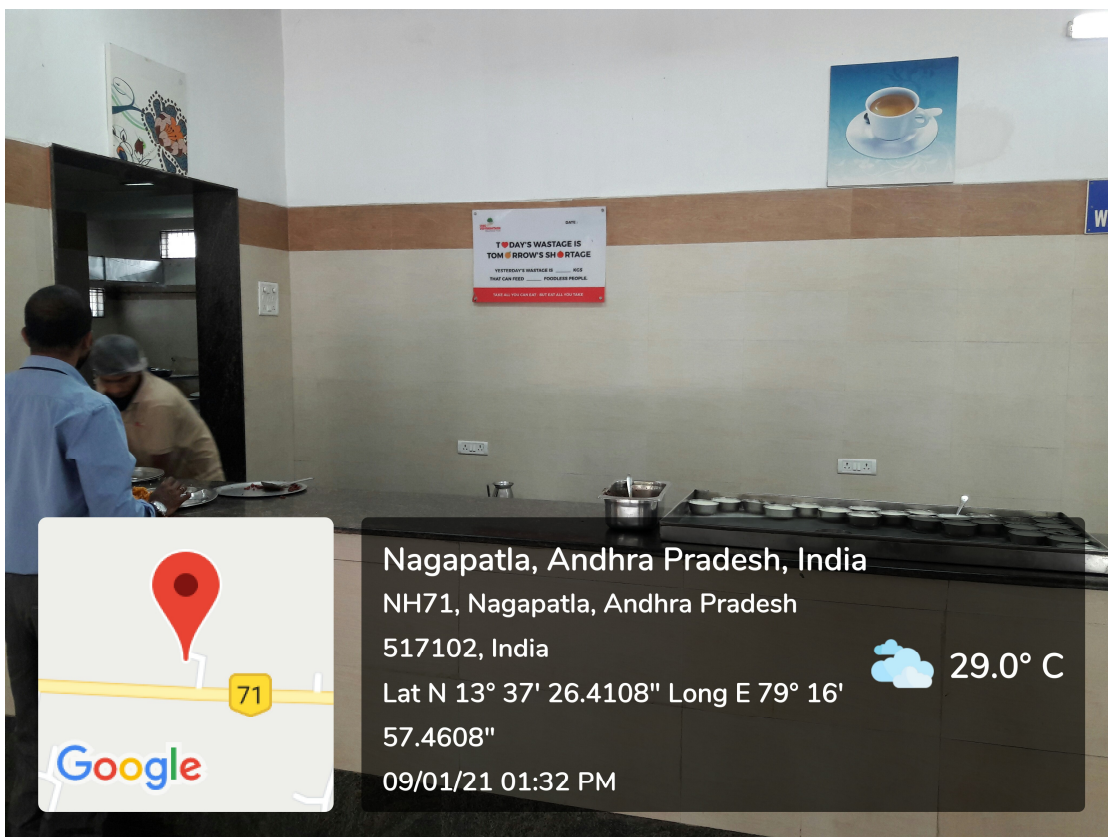
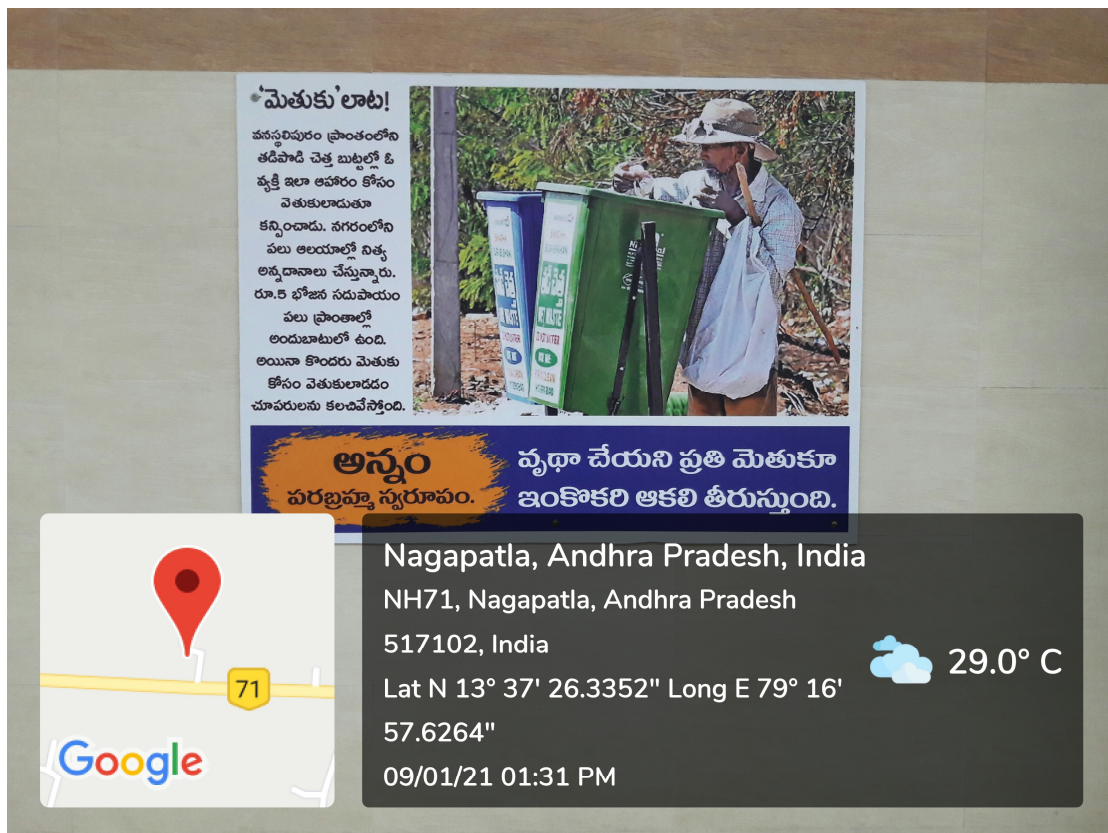
Plates Collection, Food and other Waste Segregation at Canteen



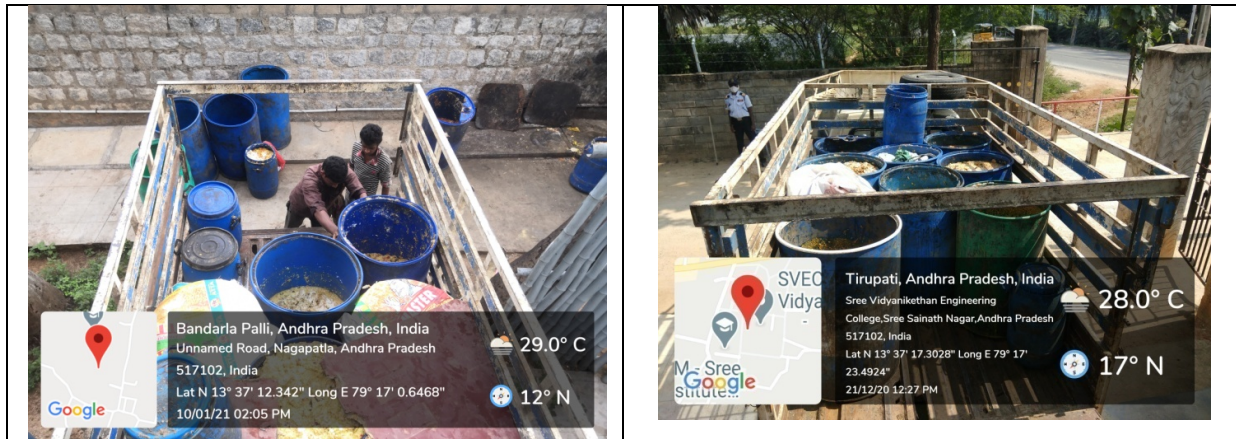
Segregated Waste at the College Canteen



Food Waste Collection at Boys Hostel



Signage on No Food Waste



Food Waste Disposal to Piggery

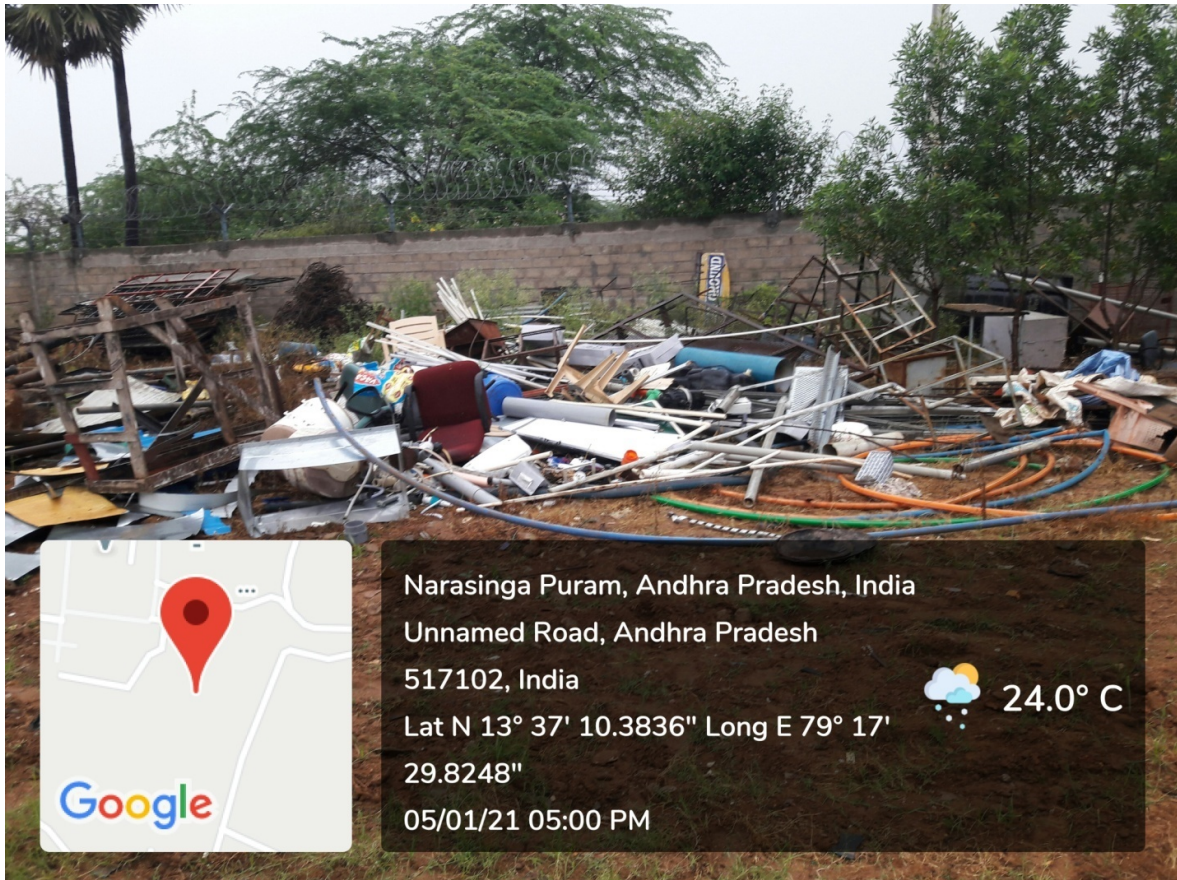
3. Recyclable Materials:

Recyclable materials (900 kg per month) such as plastics, glass, steel, tin cans, paper and cardboards are segregated under dry condition.

Waste Paper: Waste paper, mostly the paper used for printing may be rejected if any mistakes found. That paper is also used for rough work and thereafter it is rejected, collected and stored for recycling purpose. In this way, hardly the waste paper generated is about 5 kg per week and 20 kg per

month. Once in a while it is sold to paper recycling vendors along with the wasted news papers and old exam papers and postage covers received.

Recyclable Materials like Metals and Plastics: The damaged students' desks, benches, tables and cupboards are repaired and unrepairable materials are stored and sold to vendors.



Storage Facility - Reusable / Recyclable Materials (Size: 15 m x 10 m)



Scrap Yard (Size: 20 m x 10 m)

Scrap is reused for making sanitizer stands, stands for guiding directions, temporary structures etc.

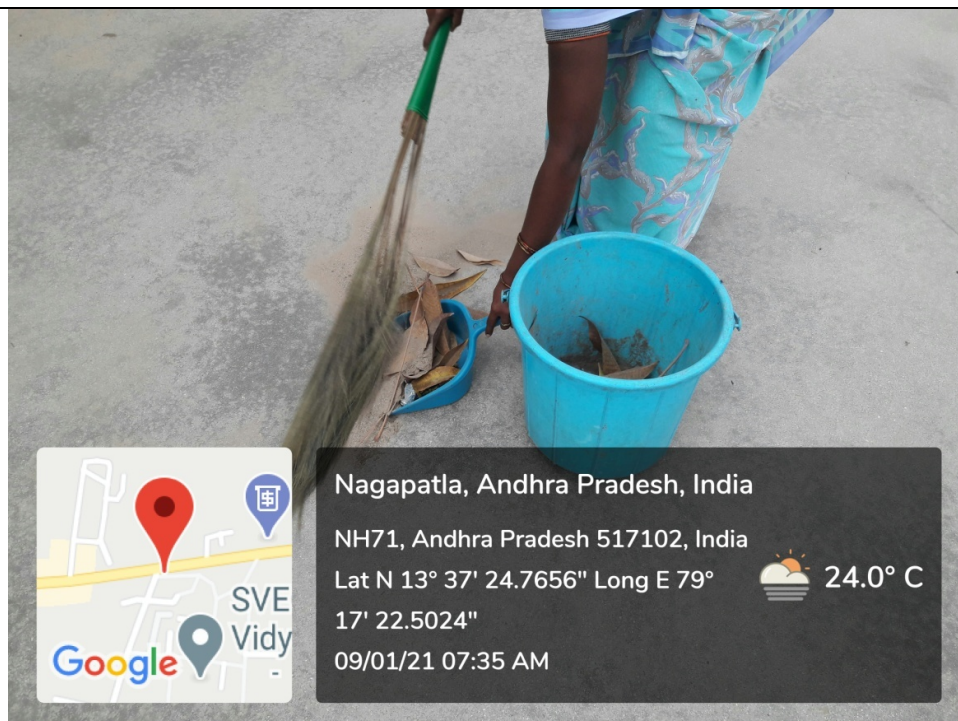
4. Grass and Bush Trimmings; and Fallen Leaves from Trees and Creepers; and Composting:

There are grass lawns and bushes along the campus roads, coconut trees and mango trees, decorative trees and other creepers planted for good landscape and are maintained well.

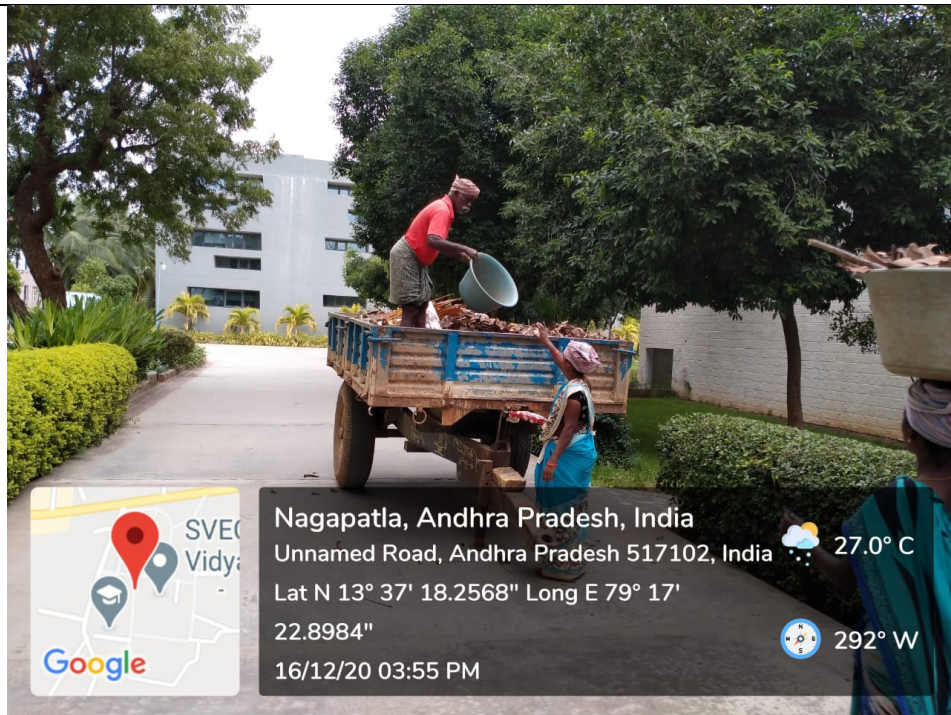
Grass and bush cuttings and fallen leaves from trees and creepers of about 100 kg per week are generated and it is taken to the farm land nearby for composting along with the cow dung. It is converted into manure within 60 to 65 days and used as organic fertilizer to the trees.



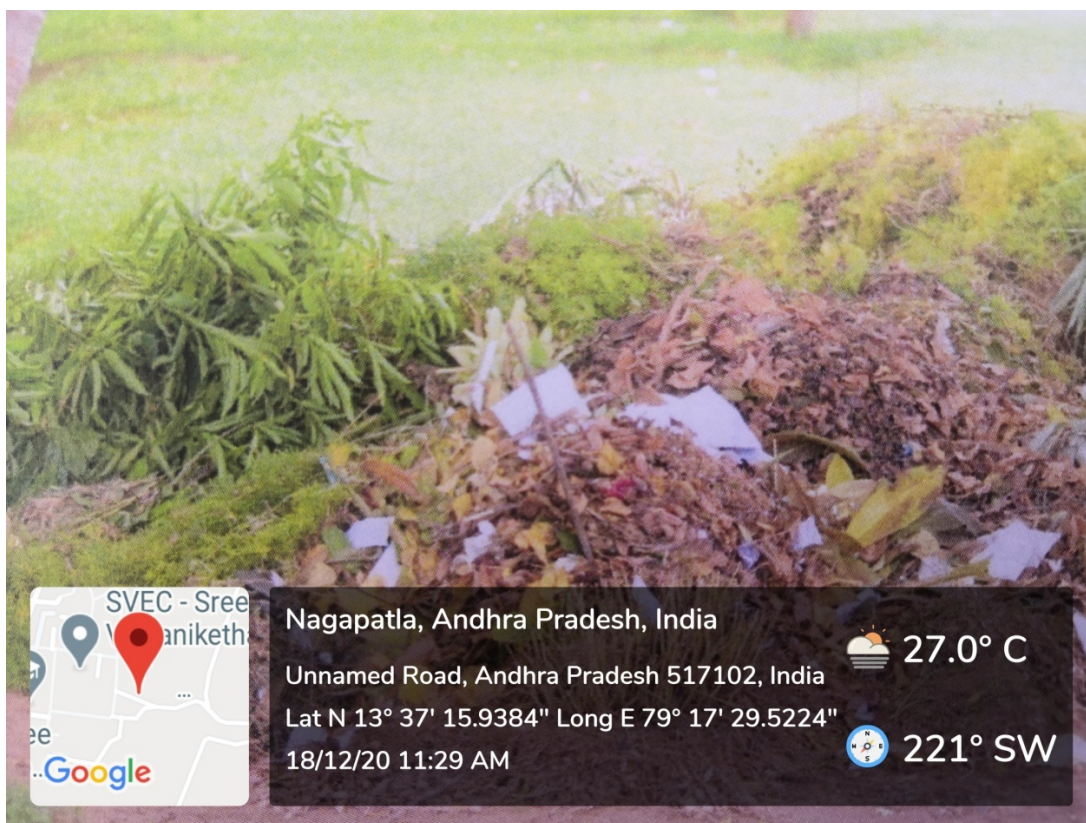
Sweeping of Dust and Fallen Leaves on Roads



Collection of Dust and Fallen Leaves into the Dust Bins



Fallen Leaves and Grass Trimmings Collection in the Trolley of Tractor



Storage and Drying Yard – Grass and Bush Trimmings, and Fallen Leaves (Size: 7 m x 4 m)





Mixing of Cow Dung and Dried Leaves and Trimmings

COMPOSTING OF SOLID WASTE (GRASS AND BUSH TRIMMINGS, FALLEN LEAVES AND KITCHEN WASTE)

5. Plastic Free Campus:

SVEC campus is plastic free campus. Use of plastic in the campus is banned. There are two canteens in the campus. In both canteens, food is served in steel plates and coffee and tea are served in either ceramic or paper cups. Fresh Juice is also served in paper cups only. Paper cups are compostable. They are being sent along with other kitchen waste for composting in the farm land.

6. Usage of Building Construction and Demolished Materials:

The building construction and demolished materials are used for filling low lying areas and also excessive quantity, if any given to outsiders & nearby surrounding villagers for filling of low lying areas wherever required for them.



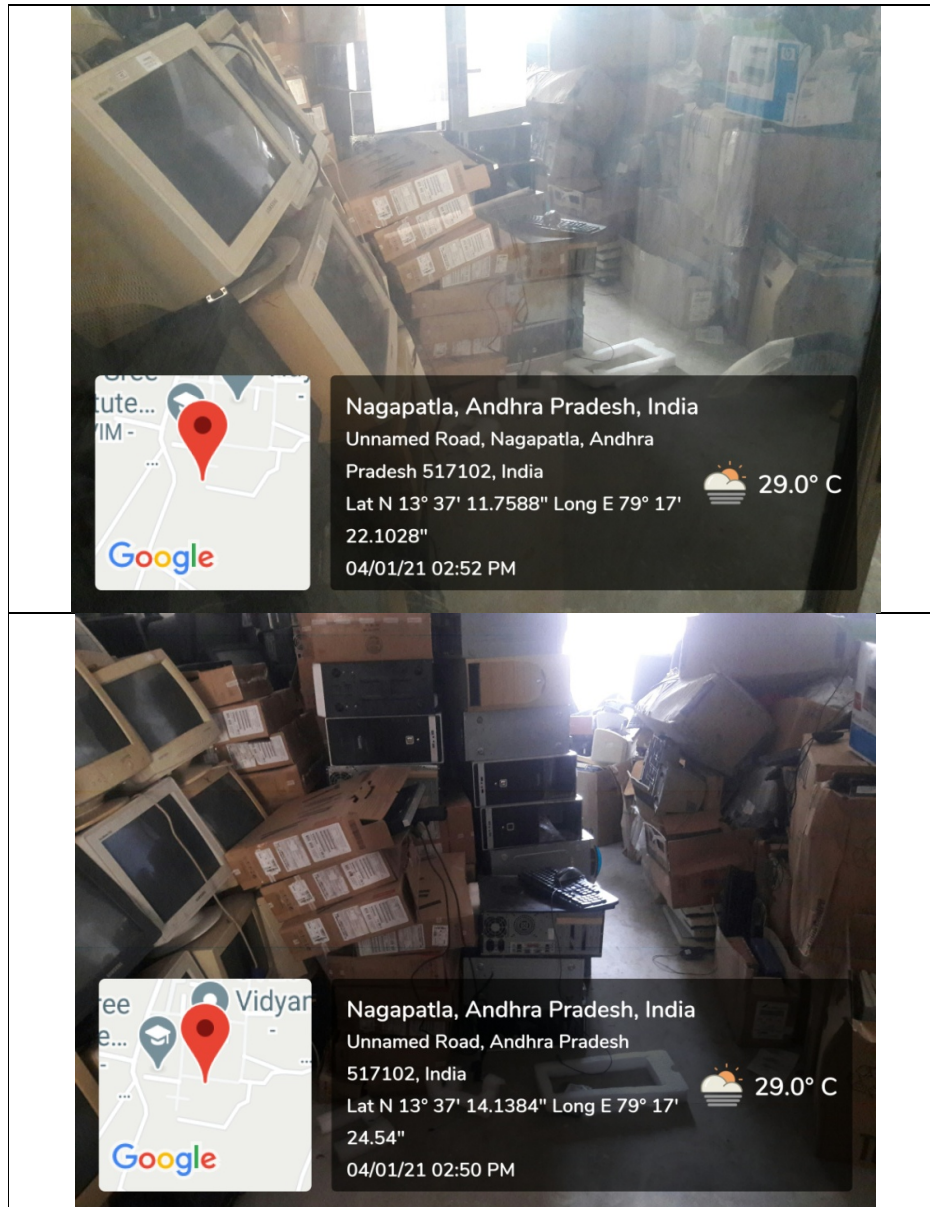
Filling up of Low Lying Area for providing Path for the Toilet Building and Storage Room

II. E-WASTE MANAGEMENT

II. E-Waste Management

- An e-waste of 40 kg per month is generated on an average.
- Hazardous waste in the form of 1) spent batteries, 2) Waste oils from busses and DG set are generated which is approximately 200 kg per month on an average.

The Trust takes the responsibility and engages the disposal of the solid waste to the vendors identified by them.



E-waste Storage Facility (Size: 8 m x 8 m)



Discarded Computer Keyboards Utilisation as Wall Cladding at Computer Centre

III. LIQUIDWASTE MANAGEMENT

III. Liquid Waste Management:

- The ground water available in the campus contains hardness beyond the drinking water standards. The institute installed five Reverse Osmosis (RO) systems of capacities 500 Litres per hour, 1000 Liters per hour, 2000 Liters per hour (2 No.) and 3000 Liters per hour at appropriate locations as per the requirement. These RO systems are usually operated during morning (4 am to 9 am) and evening (6 pm to 10 pm).
- Manual alert system is provided to check overflow of water tanks. The water works man always keep track on the water tanks.
- Water tanks are cleaned periodically.
- Drinking water quality standards are well maintained through periodic water quality tests.
- Pipelines, taps and other sources of water discharge are well maintained without any leakages.
- Wastewater is generated from wash rooms, toilets of all buildings, canteen and messes is collected and transported by means of well-conceived sewerage system to three sewage treatment plants of capacities 150 KLD, 200 KLD and 250 KLD. An extended type of activated sludge process principle is provided in the working of these sewage treatment plants. The wastewater generated is 100% domestic origin. **The treated wastewater (sewage) is used for the gardens and lawns in the campus.**
- Eco-friendly floor cleaners are used periodically for cleaning toilets.
- Chemicals in the laboratories are disposed as per MSDS (Material Safety Data Sheet) of each chemical.

1. Drinking Water:

- The ground water available in the campus contains hardness beyond the drinking water standards. The institute installed five Reverse Osmosis (RO) systems of capacities 500 Litres per hour, 1000 Liters per hour, 2000 Liters per hour (2 No.) and 3000 Liters per hour at appropriate locations as per the requirement. This RO system is usually operated during morning (4 am to 9 am) and evening (6 pm to 10 pm).
- Manual alert system is provided to check overflow of water tanks. The water works man always keep track on the water tanks.
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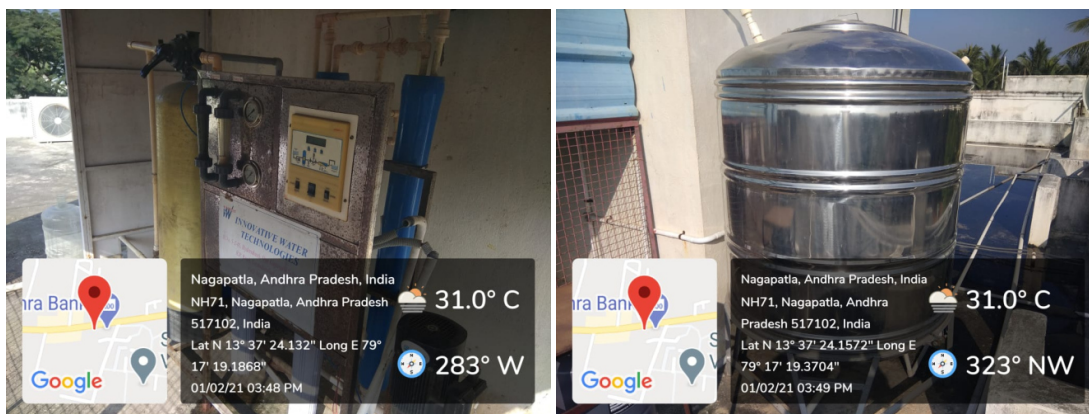
Reverse Osmosis (RO) System (3000 Liters per Hour Capacity) at Girls Hostel Premises



Two Reverse Osmosis (RO) Systems (1000 and 2000 Liters per Hour Capacity) at College Premises



Reverse Osmosis (RO) System (2000 Liters per Hour Capacity) at College Premises



Reverse Osmosis (RO) System (500 Liters per Hour Capacity) at Parents Guest House

2. Wastewater:

- Wastewater is generated from wash rooms, toilets of all buildings, canteen and messes is collected and transported by means of well conceived sewerage system to three sewage treatment plants of 150 KLD, 200 KLD and 250 KLD. An extended type of activated sludge process principle is provided in the working of these sewage treatment plants. The wastewater generated is 100% domestic origin.**The treated water is used for the gardening the lawns on campus.**
- Eco-friendly floor cleaners are used periodically for cleaning toilets.
- Chemicals in the laboratories are disposed as per MSDS (Material Safety Data Sheet) of each chemical.



Sewage Treatment Plant of 150 KLD Capacity at Girls Hostels



Sewage Treatment Plant of 200 KLD Capacity at Boys Hostels



Sewage Treatment Plant of 250 KLD Capacity at V Block



Treated Wastewater used for Watering the Gardens on Campus