



**BRILLIANT INSTITUTE OF ENGINEERING AND TECHNOLOGY**

**Environment Audit Report**

**2022-23**

  
PRINCIPAL  
BRILLIANT INSTITUTE OF  
ENGINEERING AND TECHNOLOGY  
Vill & Md: Abdullapurmet, R.R. Dist-501505.

# Water Management

- Auditing for Water Management of the institute for Environmental Consciousness and Sustainability
- Rain water harvesting structures and utilization in the campus

  
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## 1. WATER MANAGEMENT

This indicator addresses water consumption, water sources, irrigation, storm water, appliances and fixtures. Aquifer depletion and water contamination are taking place at unprecedented rates. It is therefore essential that any environmentally responsible institution should examine its water use practices.

PDIT, gets water from Municipal Corporation, and two ground water bore well sources. There are two sumps well and 10 overhead tankers.

Sl. No.	Water Tank Capacity	Numbers	Total Capacity
1	1000 liter	10	10000
Total Consumption of water in Liter			10000

Table 1 : Overhead water storage tank capacity in college

### Quantities of water taps and water coolers

Description	College
Water Taps	180
Water Coolers	5

### 1.1 Water Consumption

Water Audit at SCCOE,					
1	2	3	4	5	6
Activity	Average liters of water used per activity in liters	Number of times activity done each day	Total water used by a person each day (liters)	Number of people in the College using water	Water Consumption per day
<b>College Premises</b>					
Wash hands and face	10	3	2	1000	2000
Toilet / Urinal flush	9	3	4	1000	4000
Drinking	1	2	2	1400	2800
Laboratory			2	60	120
Gardening			3000		3000
Canteen	1	1		1000	1000
<b>Total water consumption in college</b>					<b>12920</b>

Table 2: Total water consumption in college

  
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## 1.2 Rain Water Harvesting System

No Rainwater harvesting is a technology used to collect, convey and store rain water for later use from relatively clean surfaces such as a roof, land surface or rock catchment. RWH is the technique of collecting water from roof, Filtering and storing for further uses. Rainwater Harvesting is a simple technique of catching and holding rainwater where its falls. Either, we can store it in tanks for further use or we can use it to recharge

Ground water depending upon the situation. RWH system provides sources of soft, high quality water reduces dependence on well and other sources and in many contexts are cost effective.

### 1.3.1 Wastewater Management

Waste water discharge from the collage hostel and canteen is directed to municipality drainage and is connected to the canal. Some of these water is used to irrigate the nearby seasonal plant beds.

More than 10 water purifiers are installed at various sites throughout the college campus. Waste water from these purifier outlets is used to water various indoor and outdoor plants to ensure least water wastage and beautification of the campus.

Potted plants have been placed below the outlets of Air Conditioners so that the water discharge from these outlets can be utilized properly.

### 1.3.2 Awareness Program on Water and Energy Conservation

- 1.3.2.1 World Environment Day was observed by organizing a one day program on 28.12. 2023 with the theme "National Energy conservation week" wherein resource persons across the nation drew the attention of the audience towards the alarming consequences of uneconomical use of energy and pollution. Brainstorming discussions with highly esteemed experts of many diverse fields.

  
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## 7.1.2.3: The institute has facilities and initiatives for water conservation

Sl. No	Details	Page No
1	Policy document of water conservation	
2	Leakage proof water distribution systems in the campus.	
3	RO water filter unit in college campus.	
4	Water conservation awareness by using posters/stickers.	
5	Bore well recharge arrangement in college campus.	
6	Rain water harvesting in College Boys hostel campus.	

### 1. Policy document of water conservation

BIET formulates Institute Policy on Water Conservation and Management. Basically, conserving water is an excellent way to save the environment and put off chores. Rainwater harvesting is one of the most efficient and effective ways of conserving water. It is more like the recycling of natural water.

#### This document covers the following:

1. Water Resources in the institute
2. Save water.
3. Benefits of Water conservation

#### Water Resources in the Institute:

- Bore well from where the water is stored in the tanks..
- Provision of water purifier system/ water filter & coolers which purifies the water for drinking purpose.
- For rain water harvesting, we have ground water recharge pits in the college campus.
- They consume the water into the ground and hence the rain water gets harvested properly.

#### Save water:

1. Avoid leakage of water from the taps.
2. Turn the tap off when not in use especially when you brush your teeth or wash clothes.
3. Rainwater harvesting is another method to conserve water.
4. The water supply should be limited in those areas which enjoys the unlimited water supplies.

#### The benefits of Water conservation are:

- Saving money, environment and energy.
- Protecting the drinking water resources.

  
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- Reduce or minimize the pollution and health problems.
- Reduce the need for new waste water treatment facilities.

## How to Manage Water in College

Water conservation and management encompasses the policies, strategies and activities made to manage water as a sustainable resource, to protect the water environment, and to meet current and future human demand, these areas are usually associated with large population centers or agriculture, where water use is high. Here are ways students can help conserve the world's most precious resource with little effort and no cost!

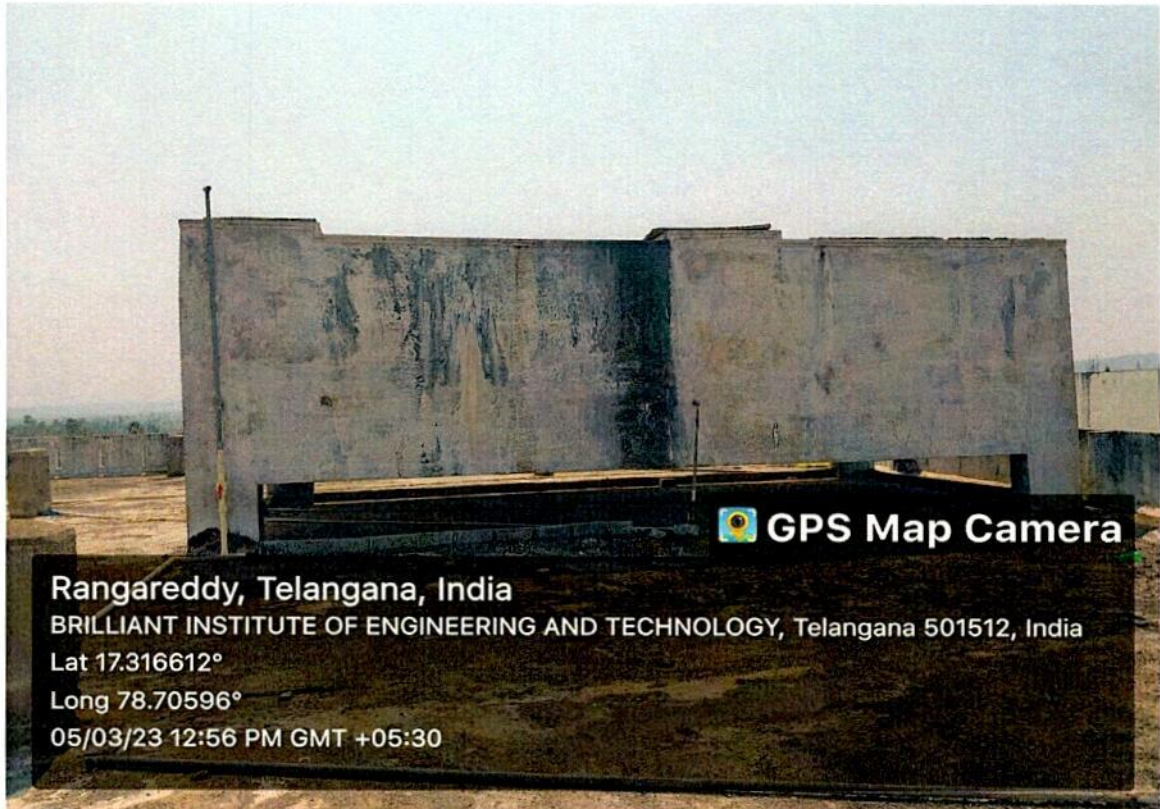
- Bring a reusable water bottle /cups to dining halls to decrease the amount of cups that need to be washed.
- Use a dishwasher (if have one) instead of hand washing to use less running water.
- Garden/Plants need regular supply of water to grow.
- Use "leftover" water from a drinking glass or from washing fruit and veggies to water plants
- Water plants in the early morning/ late evening to decrease the amount of evaporation.
- Have a leak or drip timely repaired.
- Schedule showers for post-exercise to avoid taking multiple showers in a day.
- Report leaks on campus and in your neighborhood workshop.
- Rain water collected at the terrace should be either directed to the water harvesting pits or directed to the play field/garden

  
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## 1. Leakage proof water distribution systems in the campus.

BIET has a network of well-built, leakage proof water distribution system in the campus. It is used to disperse the water to wash rooms, laboratories, rest rooms etc. Water for these purposes is provided through a different set of overhead tanks of 1000Ltrs and 2000Ltrs capacity water head tanks.

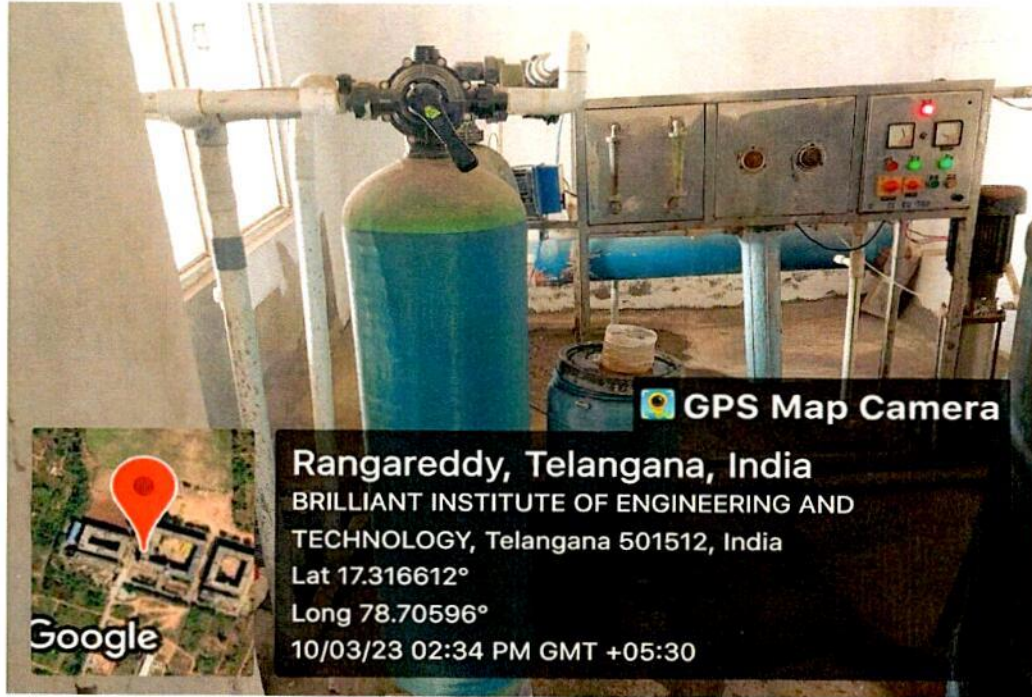
### Overhead tanks



  
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## RO water filter unit in college campus.

BIET has a reverse osmosis (RO) water filtering unit in campus. It is important in colleges because it can provide clean and safe drinking water for students and staffs. RO water purifiers use a semipermeable membrane to filter impurities and contaminants from water, resulting in pure and fresh water with a lower concentration of dissolved solids.



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**3. Water conservation by creating awareness through posters/ stickers.**  
BIET has initiating water conservation by creating awareness in students and staffs. The Posters/stickers like “save water”, don’t wastewater” are used for awareness creation.

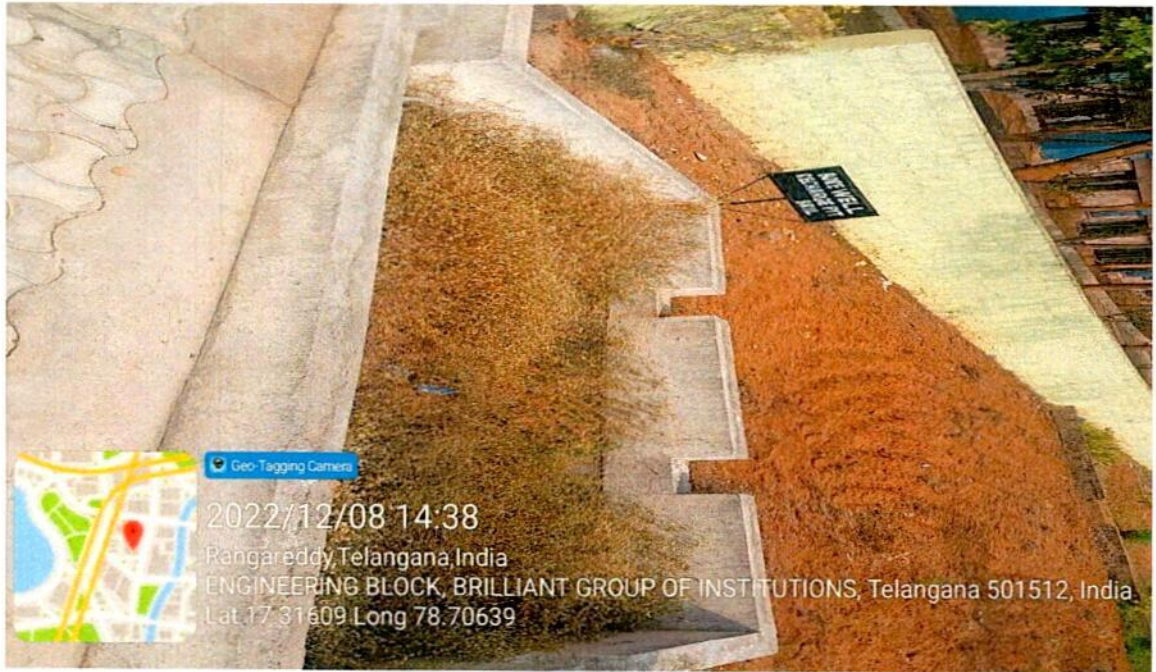


**Water conservation awareness poster “Save Water”**

*Dr. [Signature]*  
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#### 4. Bore well recharge arrangement in college campus.

Bore well recharge is environmental friendly way to recharge groundwater using harvested surface water. Hence BIET has initiating waterconservation by creating 02 bore well recharge arrangement in college campus.



  
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**7.1.2.1. The institution has the facilities and initiatives for alternativesources of energy and energy conservation measures.**

Sr. No	Details	Pag e No
7	<b>Policy documents of energy and energyconservation measures</b>	
8	<b>Solar Energy</b>	
9	<b>Use of energy efficient LED bulbs/lights</b>	
10	<b>Sensor based energy conservative street lights</b>	

**1. Policy documents of energy and energy conservation measures**

BIET has implemented an Energy Conservation Policy for an "Environment of educational excellence" in an effort to foster environmental awareness and the holistic development of its students. By using strategies that are compatible with a safe, secure, and environmentally conscious campus community, the university seeks to realistically and completely cut energy consumption, provide acceptable indoor air quality, and increase energy efficiency on campus. Energy conservation, as defined by this policy, will be achieved by creating an aggressive and forward-thinking strategy to provide energy-efficient, accountable, and economical operations.


**Applies to:**

- Faculty, staff, students and visitors.
- Energy conservation practices and eco-friendly habits are inculcated among students And staff through cautioning them about simple things which are really effective to reduce Electricity Consumption like students and staff turning off all lights, appliances and Electronics not in use.
- Our Energy conservation practices include the College replacing all tube lights With LED tubes, LED bulbs being the most energy efficient lighting option. LED Tubes use 75% less electricity than incandescent tubes, (Energy Star). LED tubes last about 25 through LED.
- Annual Energy audit is made mandatory.
- To save energy at the institution level with time-bound plan towards energy conservation. Thus the institution has adopted a mechanism to use renewable energy and install 60 W Solar power Street lights in the campus outside which ensures that renewable energy is used to meet considerable degree of power requirement, thus subscribing to Environmental Sustainability.

  
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## Save Energy tips to be followed:

- ✓ Activate power management features on computer and monitor so that it will go into a Lowpower "sleep" mode when the students and staff are not working on it.
- ✓ Turn off the monitor when the students and staff leave the table.
- 
- ✓ Whenever possible, shut down rather than logging off.
- ✓ Turn off unnecessary lights and use daylight instead.
- ✓ Avoid the use of decorative lighting
- ✓ Use LED or compact fluorescent bulbs.
- ✓ Keep lights off in conference halls, classrooms, seminar halls when they are not in use.
- ✓ Use the fans only when they are needed.
- ✓ Unplug appliances not plugged into power strips (Like TVs, Refrigerators, ACs, tea /coffeepots, printers, and chargers etc.)

  
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2. **Solar Energy** BIET provides the solar water heaters facility in boy's hostel for energy conservation. Boy's hostel has total 14 units of solar water heaters with a capacity of 250 liters per day and MS/GI Coated outer tank arrangements.

3.

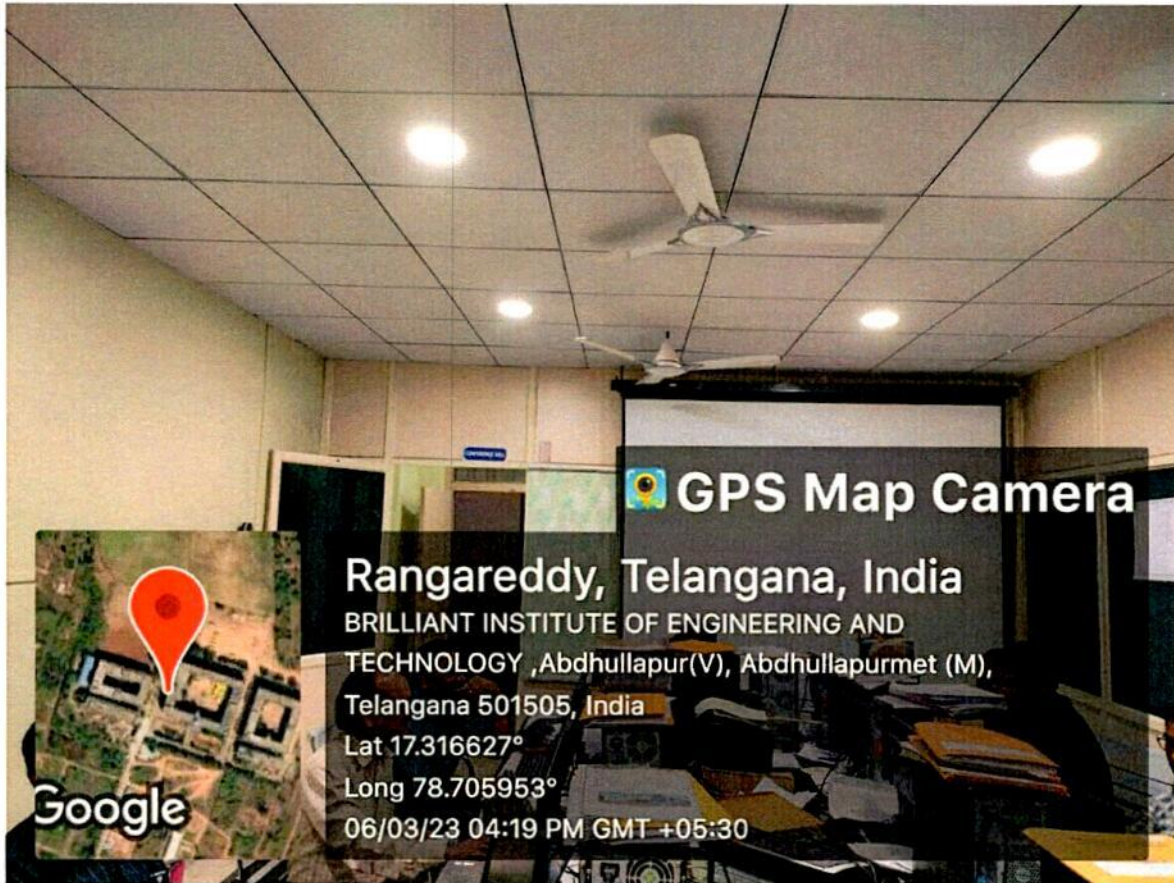
**250 LPD capacity solar water heaters**



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#### 4. Use of energy efficient LED bulbs.

BIET is using Light Emitting Diode (LED)bulbs/lights in campus, corridors, labs and classrooms for energy conversion. LED bulbs/lights are consuming much less energy to provide the same amount of light as

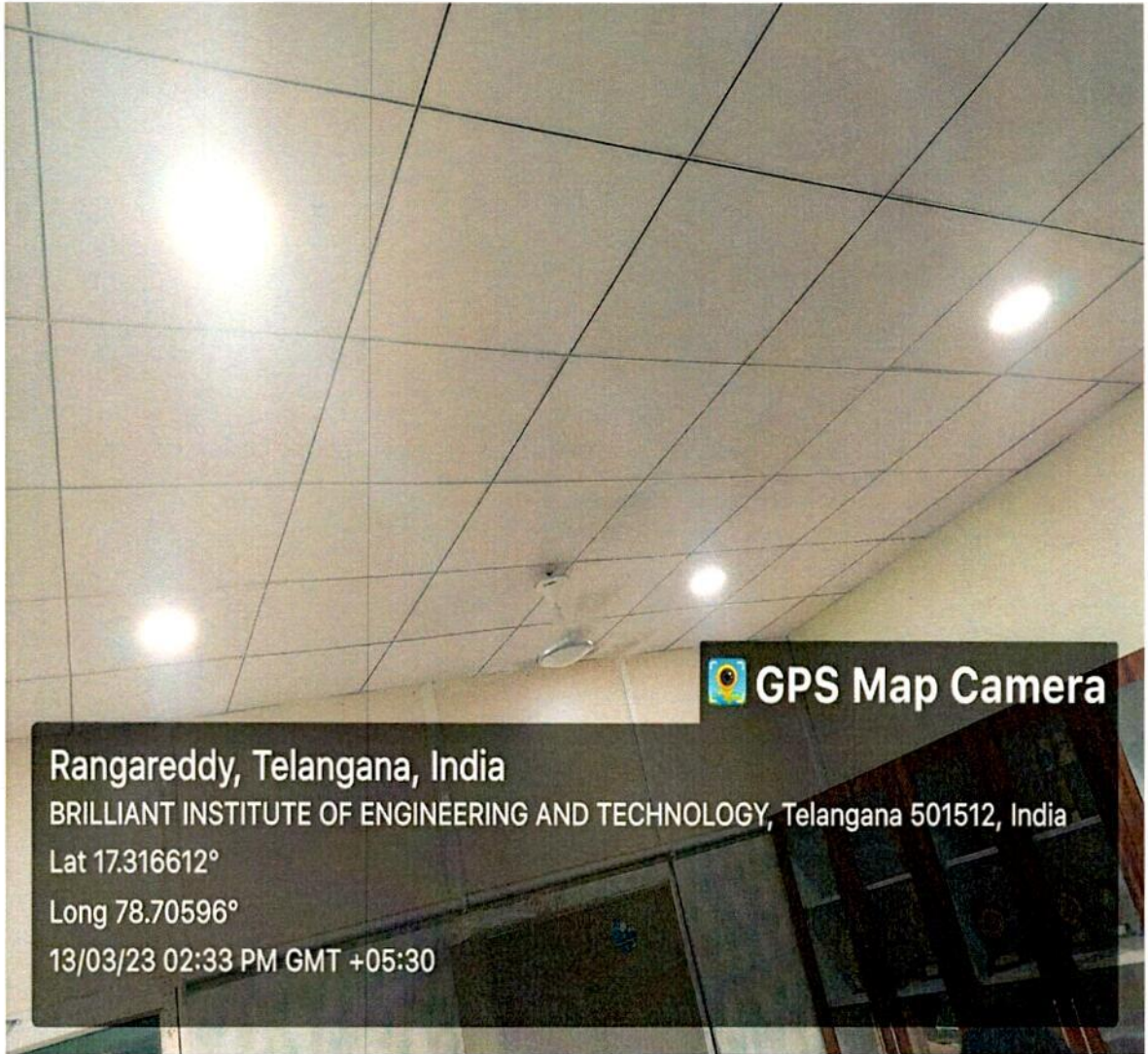


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compared to other forms of bulbs/lights. One of the main reasons LED bulbs/lights are so efficient is that most of their energy is used solely to create light, rather than creating light and heat.

## Energy efficient LED bulbs/lights in corridors

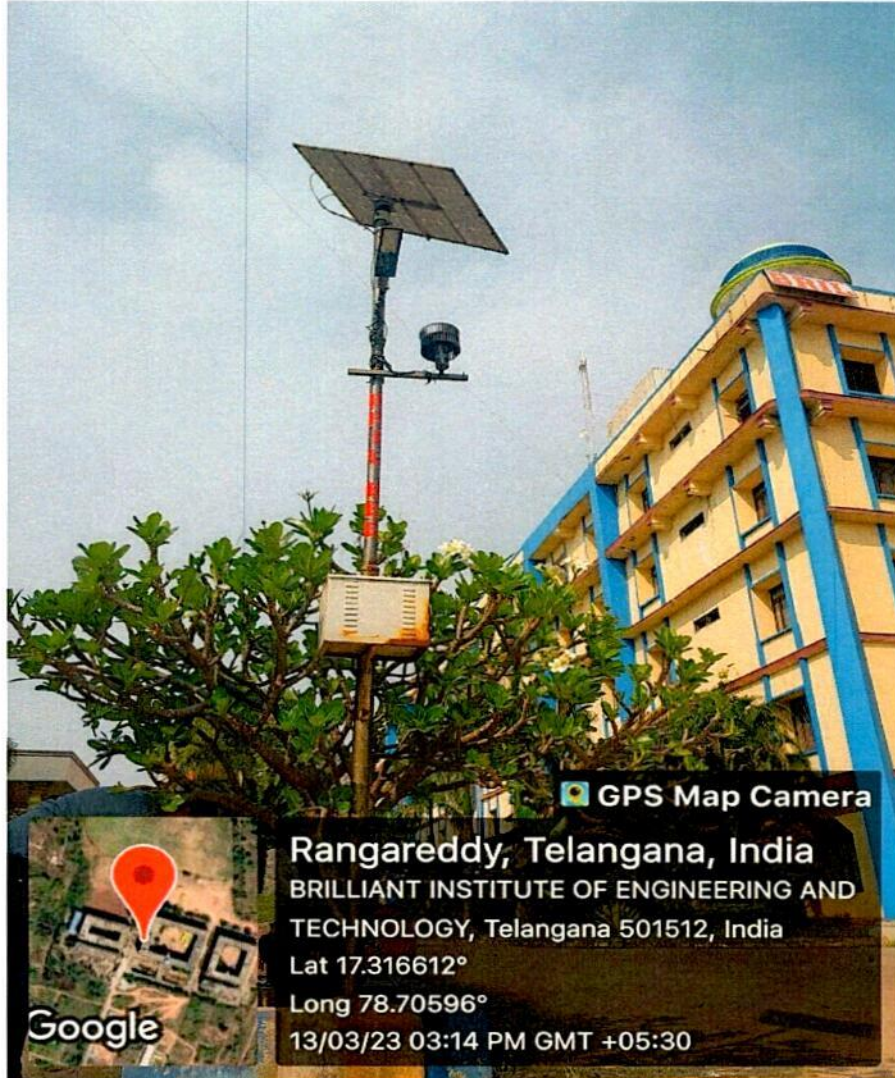


*Dr. Anurag*  
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## 5. Sensor Based Street lights:

BIET is using Sensor based street lights in college campus. These sensor based street lights are designed to detect motion and ambient light levels. The lights are energy efficient LED lights, so they allow significant savings on energy bills.

### Sensor Based Street light



*Dr. Anil Kumar*  
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# Waste Management

- Auditing for Waste Management of the institute for Environmental Consciousness and Sustainability.
- Waste Management steps including:
  - Solid waste management
  - Liquid waste management
  - E-waste management

  
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## 2.WASTE MANAGEMENT

This indicator addresses waste production and disposal, plastic waste, paper waste, food waste, and recycling. Municipal solid waste has a number of adverse environmental impacts, most of which are well known and not in need of elaboration. To reduce waste at institute, students and staff are educated on proper waste management practices through lectures, advertisement on notice boards, displaying slogan boards in the campus.

Waste is collected on a daily basis from various sources and is separated as **dry and wet waste**. Color coded dustbins are used for different types of wastes. Green for wet and blue for solid waste.

Daily garbage is collected by housekeeping personnel and handed over to authorized personnel of Municipal Corporation, for further processing.

### 2.1 Solid Waste management

Solid waste can be divided into two categories: general waste and hazardous waste. General waste includes what is usually thrown away in homes and schools such as paper, plastics tins and glass bottles. Hazardous waste is waste that is likely to be a threat to one's health or the environment like cleaning chemicals and petrol. Small bucket and big buckets are used for solid waste.

Small Plastic bucket = 40


Nos. Big Plastic Bucket  
= 20

Nos.

Total Production of Solid Waste (Bio degradable): 2-10 Kg Total Production of Solid Waste (Non Bio degradable) : Less than 1 Kg College also have two numbers of Napkins/Wending/Burning Machine

#### 2.1.1 Non Bio degradable Waste – Plastic Bottles / Waste Paper etc.

Non- biodegradable are those waste, which cannot be decomposed by biological processes. These are of two types - Recyclable: waste

  
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having economic values but destined for disposal can be recovered and reused along

With their energy value. e.g. Plastic, paper, old cloth etc. Non-recyclable: waste which do not have economic value of recovery. e.g. Carbon paper, thermocol,

Tetra packs etc. Disposal of non-biodegradable waste is a major concern, not just plastic, a variety of waste being accumulated. There are a few ways to help non-biodegradable waste management. The impact of non-biodegradable waste on the environment and also focuses on its safe disposal for sustainable environment.

Waste material like plastic, papers etc. are collected and sold out to scrap vendor from time to time.

- ☐ College has also planned for compost pit to produce compost manure from the canteen solid waste and waste from other sources. Manure will be used for the purpose of botanical garden, Swami Vivekananda Garden, herbal garden as well or for planted tree.

## 2.2 Liquid waste management:

The waste chemicals mixed water from laboratory should not be mixed with groundwater. Labs are bringing to adopt fully or to minimize hazardous chemical.

### 2.2.1 Re-use of waste water

Waste water discharge from the canteen is directed to a small tank (Oxidation pond) named Lotus tank. It is surrounded by a wire mesh. The tank contains a variety of eye catching aquatic plants. Water of this pond is used to irrigate the nearby seasonal plant beds.

  
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## a. Re-use of impure wastewater from water purifiers.

Impure drinking water is one of the main sources of infection, even mild poisoning, in many cases. Hence, it is important to use water purifiers in college campus. About 16 water purifiers are installed at various sites throughout the college campus. Waste water from these purifier outlets is used to water various indoor and outdoor plants to ensure least water wastage and beautification of the campus.

## b. Re-use of waste water from Air Conditioners

Potted plants have been placed below the outlets of Air Conditioners so that the water discharge from these outlets can be utilized properly.



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## 2.3 E-Waste Management

Waste Electrical and Electronic Equipment (WEEE) or E-waste is one of the fastest growing waste streams in the world. In developed countries, it equals 1% of total solid waste on an average.

In developing countries, it ranges from 0.01% to 1% of the total municipal solid waste generation. In countries like China and India, though annual generation per capita is less than 1 kg, it is growing at an exponential pace. Presently, a very small amount of E waste from offices and glass waste from labs is generated in College.

The E-waste collected is stored in store room and disposed every year by selling it to vendors.

The total e-waste kept in college is about 50 Kg.

The Level of disturbance it creates for the college in a scale 1 to 9.

Sl. No.	Area	Rating
1	Municipal Dump Yard	9
2	Garbage heap	9
3	Sewer line	8
4	Stagnant water	9
5	Open drainage	7
6	Industry	No

  
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**7.1.2.2 : The institute has facilities and initiatives for management of the various types of degradable and non-degradable waste.**

SI No	Details	Page No
11	Policy document for degradable and non-degradable waste	
12	Solid waste management	
13	Liquid waste management	
14	Plastic waste management	
15	Compost pit for degradable waste management	

### **1. Policy document for degradable and non-degradable waste**


BIET is a green campus with lush green lawns, beautiful scenery, aesthetically pleasing architecture, and cutting-edge infrastructure. Usually more Number of students will study in one academic year. Most of the students are coming from Villages of various Dist. Being a rural background student they don't have much knowledge about waste management.

So, it is necessary to keep the college campus clean and ecofriendly by creating awareness about the cleanliness, health and hygiene among the student community. So, policy is framed to maintain and manage the waste generated during college hours.

This policy envisages to guarantying the moral, social and legal responsibilities of the College in creating an environment-friendly and sustainable world devoid of waste and Exploitation of nature. This policy is a guidance document to the teaching and non-teaching faculties, and students to behave responsibly in the production of waste, waste segregation, storage, and handling. Transport and disposal.

#### **Policy objectives:**

- Creating awareness among faculty and Students about the ways in which waste is generated and the means by which they can reduce waste generation.
- It is instructed to Maintenance committee recruited temporary Staff to segregate degradable and non-degradable waste.
- Following the five "R" principle of reduce, reuse, recycle, refuse and regenerate. Maintaining the campus plastic free.
- To reduce waste generation during college program and day today work in the campus.
- To encourage holistic approach of waste management in the campus

  
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- Educate and create Awareness to the community about proper waste management through extension activities.

## **Policy for solid waste management**


- The solid waste generated in the college is related to the day-to-day activities should be segregated into degradable and non-degradable waste.
- The students should be encouraged to discard wastes to the respective baskets based on the type of solid waste.
- Dustbins should be kept in each class room, ladies' room, staff room, laboratories and library of the college.
- It should be monitored by the class teachers.
- NSS, Red Cross, Rovers and Rangers unit should actively take part in collecting the leaf litter and other degradable waste for making bio compost.
- The food waste generated by the students and staffs should be taken by them to their own home to reduce the generation of waste within the campus.

## **Liquid waste management:**

- Liquid waste generated in the institute comes under three categories. So, policy is framed to manage such liquid waste in the campus.
- Waste water should be released into college garden.
- Awareness about the importance of drinking water should be explained the beginning of the academic year to the fresher's of the college.

## **E-waste management:**

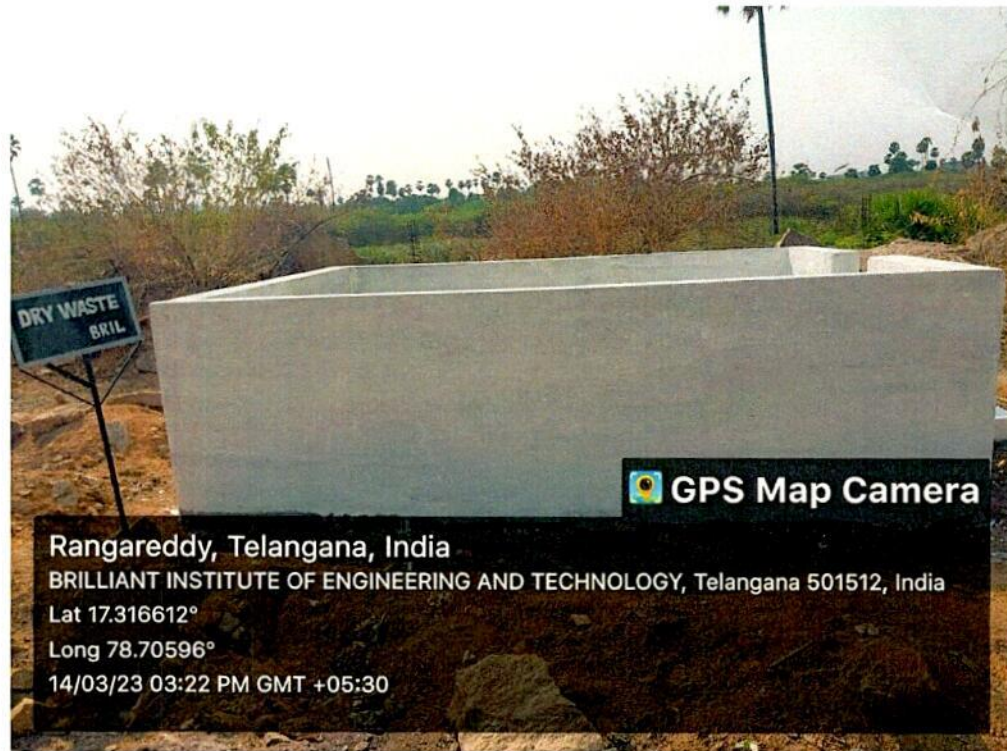
- Electronic waste includes damaged and unserviceable CD's, printers, monitors, hard disc, scanners, calculators, battery, mouse, Key pad, CPU, Xerox machine etc. E wastes should be placed in the separate room

  
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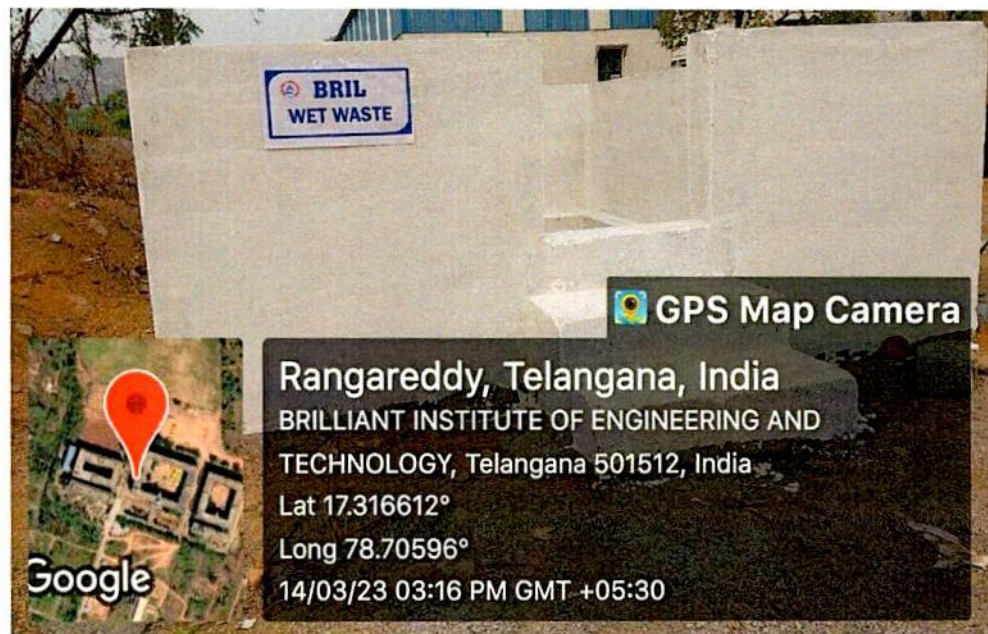
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## 2. Solid waste management

BIET has provided the separate dust bins for the collection of dry waste and wet waste separately in college campus.



Dry solid waste dustbin



Wet solid waste dustbin

  
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### 3. Liquid waste management

BIET has a reverse osmosis (RO) water filtering unit in campus. It is important in colleges because it can provide clean and safe drinking water for students and staffs.

### 4. Plastic waste management

BIET has provided the separate dust bins for the collection of plastic waste like pens, plastic geometrical instruments, plastic bags etc. separately in college campus.

### 5. Compost pit for degradable waste management

Creating a compost pit is an excellent way to manage organic waste and enrich your soil. BIET has provided the compost pit to create a pile of decaying degradable wastes. 02 compost pits with a size of 05 feet \* 05 feet are constructed in college campus. The organic fertilizer generated in compost pits is used for plant in our college campus.



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## 2.4 Environment Management Policy: Leading the way to a cleaner and healthier Environment

- Reducing degradable and non-degradable waste in the campus
- Reducing pollution through gases, heat, odor, chemicals and hazardous microorganisms
- Reducing water consumption and wastage
- Appropriate training to staff and students for environmental awareness through academic programs and campus awareness initiatives
- Facilitation of research in sustainability

  
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## AUDIT CERTIFICATE

PRESENTED TO

### BRILLIANT INSTITUTE OF ENGINEERING AND TECHNOLOGY

Hyderabad, Telangana.

Has been assessed by MCC for a comprehensive study of environmental impacts on institutional working framework to fulfill the requirements of

## ENVIRONMENT AUDIT

The green initiatives carried out by the institution have been verified on the report submitted and was found to be satisfactory.

The efforts taken by the management and the faculty towards environment and sustainability are appreciated and noteworthy.

Auditor Signature

Auditor Name

Date of Audit: 20.06.2023



Mr. AnilKumar Gurayya Swami

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