




BRILLIANT INSTITUTE OF ENGINEERING AND TECHNOLOGY

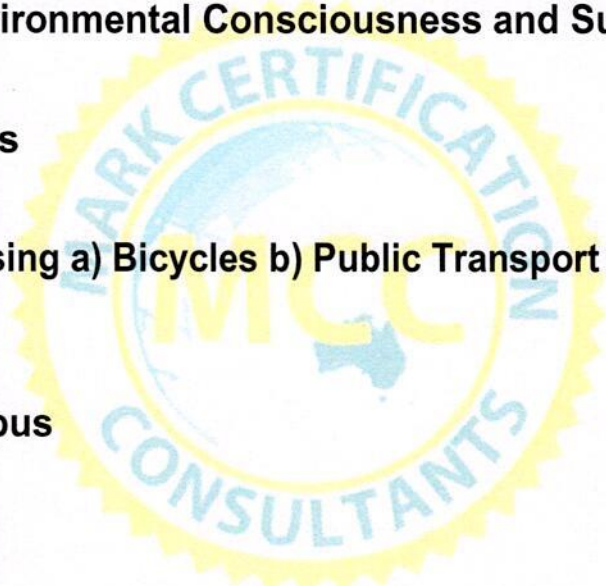
Green Audit Report

2023-24


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Green Audit

- Green Campus Management and Carbon Foot print of the institute for Environmental Consciousness and Sustainability.
- Green Practices
- Students, staff using a) Bicycles b) Public Transport c) Pedestrian friendly roads
- Plastic-free campus
- Paperless office
- Green landscaping with trees and plants




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GREEN CAMPUS MANAGEMENT

All plant and animal species - including humans - are linked together in a complex web of life; we depend upon biodiversity for our survival. Biodiversity is the key to healthy ecosystems and ultimately a healthy planet. It keeps the air and water clean, regulates our climate and provides us food, shelter, clothing, medicine and other useful products. Each part within this complex web diminishes a little when one part weakens or disappears.

Area under green cover(in sq ft or in acre)	Sq. Ft.
Availability of Nursery on Campus(Yes/No)	No
Plant Protection Management	Yes
Number of plantations done in the year 2022-23	100
Extent of area(% of area)under tree cover	12%

Table 1: Green Area management




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The trees work hard to keep the air we breathe clean and healthy. They are like sponges. Their leaves take in much of the poisonous unwanted carbon dioxide in the air, and replace it with the oxygen we need for healthy living. This system of absorbing gases on which all plants rely for their food is called photosynthesis. In this process, the plants with the help of sunlight, water, mineral and the green material called Chlorophyll within the leaves change the carbon-dioxide into food for themselves. When doing this they release oxygen into the air which is vital for all life on earth. At night when there is no sunlight the plant no longer makes food, so it does not release the same amount of oxygen.

One is often told not to sleep with plants in one's room, as they will use up all the oxygen. However, at night although photosynthesis does take place the plants also rest, so that little oxygen is absorbed from the air and very little harm can be done to the ones sleeping in the room. The roots of trees dig deep into the earth and hold it together so that the rain and wind cannot wash or blow it away. This is very important as the earth has only a very thin layer (seldom more than one foot) of top soil covering it. If this is washed, blown or worn away leaving rock or sand on which no plants can grow then the earth would become a desert. The removal of this top-soil is called soil erosion. Scientists, all over the world are trying to find ways to prevent soil erosion. One of the most important ways is creating by planting more trees.

Trees send up water vapor into the atmosphere through their leaves. When this vapor meets the cool air above it turns into drops of water which then fall as rain. They give us beauty, color and greenery. This is something which we often forget and fail to appreciate. They are the homes of many birds, animals and insects. Each of these is important in maintaining the balance of nature.

Green Audit

Green Audit defined as documented, verification process of specified environmental activities, events, conditions, management system. Green Audit can create awareness in college staff as well as students which are our responsibility too, to save our environment and also can find the ways to improve environmental issues which are increasing day by day. Environmental problems such as recycling of waste, water conservation and recycling, pollution control, plantation, biodiversity conservation etc. can solve through Green Auditing. Good growth comes from good education as well as


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good mental and physical health if we protect our environment, we can also protect our health.

Green Audit means of assessing environmental performance. It is a systematic documented periodic and objective review by regulated entities of facility operations and practices related to meeting environmental requirement. It is otherwise the systematic examination of the interactions between any operation and its surroundings. This includes all emissions to air, land and water, legal constraints, the effects on the neighboring community, landscape and ecology, the public's perception of the operating company in the local area. Green audit does not stop all compliance with legislation. Nor is it a 'green washing' public relations exercise. Rather it is a total strategic approach to the organization's activities.

Our Vision

To Produce Technically Competent Socially Committed Technocrats, Prosper captaincy and Bureaucrats through quality Academics and Research.

Our Mission

To create advanced facilities of teaching and practical training to the UG & PG Students.

To inculcate facilities in the arena of Research & Development.

To develop technical manpower through interactive communication, training, short-term courses, seminars, group discussions, mock-interviews, etc.

To initiate the collaborative real life industrial projects with nearby industries and academic institutions.

College Green Committee

The college Green committee was established in the college with proactive attitude towards conservation of the environment and objective of generating awareness and promoting environmental care at both individual and community level. The committee aims to create as per meeting atmosphere facilitating conversation, action and feedback on environmental issues engaging faculty, students and the general public. The institution looks at the macro-environmental perspective in the college and the society and envisions nurturing the environment with a greener future.

11.1 Green Campus Policy of College


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BIET is committed to develop its campuses as places where education is combined with environmental friendly practices to promote Sustainable Development by o restricted entry of automobiles, promoting the use of Bicycles and provision of Pedestrian Friendly path ways emanon use of disposable Plastics in line with the State

Government Guidelines. Creating awareness with stakeholders on the need for maintaining greenery in the campus for sustainable ambience.

Encouraging all stakeholders to support and participate in ensuring green cover in the campus of preserving age old trees and protect them to have prolonged life. Enhancement of green cover by landscaping with trees and plants. Conduct of green audit at regular intervals and implement the suggestions towards creating green campus. The faculty, staff and students are encouraged to contribute collectively to develop an eco-friendly sustainable campus and disseminate the concept of eco-friendly culture to the nearby community and wherever possible.

BIET envisions a clean and green university campus where ecological friendly practices and education combine to encourage sustainable and eco-friendly systems in the campus and beyond the campus. The green campus offers the organization a prospect to take the lead in redefining its green culture through promoting environmental ethics among students and staff The Institute also promotes clean and green campus through adopting, practicing and promoting environmentally friendly practices among students and staff to generate Eco consciousness among them and in the world around them.


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Objectives of the policy: To compose students by understanding the importance of environment and its problem areas Important function of the policy.

- To train students to create responsiveness amongst public.
- To encourage students to keep environment safe and clean.
- To encourage students to adopt environment friendly practices which include paper bags, save.
- To help the students to minimize the use of polluting product.

Why Green Audit

The excessive environmental degradation is creating the "Environmental poverty". Thus, academic leaders should initiate the knowledge and benefits of resources so that their institutions respond to environmental issues and challenges. We believe that there is an urgent need to address these problems and reverse the trends of environment degradation.

OBJECTIVES-

- To assess environmental performance
- To promote environmental awareness
- To improve health
- To conserve resources
- To reduce waste
- To improve environmental standards
- To sustainable use of natural resources
- To develop responsibility about environment
- To enhance college profile




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PLANTATION-

To create Environmental awareness at the college campus we organize plantation program with all the staffs and students of our college. We try to plant more trees. To keep the greeneries in the campus we maintain the garden by paid staff under the guidance of garden committee members.

To create- green cover, eco-friendly atmosphere, pure oxygen at the college campus, plantation program is organized every year with involving all students, principal, and all departments faculty members. In this session vanamahotsav program was organized and about 100 or nominal, avenue,

Medicinal plant with rare and exotic beautiful trees was planted in botanical garden and other parts of college campus. To keep the greeneries in the campus, we regularly maintain the gardens which are looked after by paid staff under the guidance of garden committee members. Moreover, every year we try to plant new trees. Seasonal flower garden is also a unique feature of this college. There are so many plants are present in our college campus categorized below-

Category	Numbers(Approx.)
Herbs	30
Shrubs	20
Trees	107
Medicinal Plant	15

IDENTIFICATION OF PLANT SPECIES:

There are so many plant species are present at college campus. The member of the environment committee audited and identified of various plant species with the help of flora.


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Carbon Footprint

A carbon footprint is the amount of green house gases—primarily carbon dioxide—released into the atmosphere by an individual, event, organization, service, or product, expressed as carbon dioxide equivalent. In addition to the water, waste, energy and biodiversity audits we can also determine what our carbon footprint is, based on the amount of carbon emissions created. The release of carbon dioxide gas into the Earth's atmosphere through human activities is commonly known as carbon emissions.

An important aspect of doing an audit is to be able to measure our impact so that we can determine better ways to manage the impact. In addition to the water, waste, energy and biodiversity audits we can also determine what our carbon footprint is, based on the amount of carbon emissions created.

A) The following activity/ utility is responsible for carbon emission:-

- Transportation
- Electricity purchased from Distribution companies.




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11.4.1 Carbon Emission by Transportation

Principal, Administrator, teaching & non-teaching staff and students comes to college either by two wheelers & four wheelers. The two major fuels used by the transport sector are petrol and diesel. These fuels are carbon intensive as they contain 80-85% of carbon by weight.

Sl. No.	Fuel Used	Types of Transport	Persons	Numbers of Persons	A	B	C	D=C/B	E	F=E x D	G	H=G x F x A
					Nos. of Vehicle Used	mileage	Av. distance in KM	Fuel Consumed per Day per Vehicle in ltr	Total working days	Petrol Consumption Per Vehicle in a year	Emission factor	Total emission
1	No Fuel	Bicycle	Students									
			Non-Technical-Staff									
2	Petrol	Two Wheeler	Students	1331	1000	60	20	0.33	180	59.4	2.67	158598
			Non-Teaching Staff	60	50	60	20	0.33	180	59.4	2.67	7930
			Teaching Staff	71	59	60	20	0.33	180	59.4	2.67	9357.2
3	Petrol	Four-Wheeler	Teaching Staff	71	5	20	20	1.0	180	180	2.67	
4	Diesel	Auto	Students	31								
		Bus	Students	300								
			Teaching Staff	10								
Total Co2 emission in Kg Co2 eq per Year											175885.2	

Table29: Carbon emission by transport

Thus, total emission by the transport is **175885** KGCO₂eq. Per year.

Carbon Emission by Electricity

Electricity is taken by DG set which uses diesel for electricity generation.

Parameter	Emission Factor(A)	Unit in KWH (B)(350/day)	Total emission (C=A x B)
Grid Electricity	0.82	130200	104160
Total Kg CO₂Eq. Emission by Electricity			104160

Table30: Carbon Emission by Electricity

Thus, total emission by purchased electricity is 104160 Kg CO₂Eq.

Total Carbon dioxide emission at BIET

Area	CO ₂ eq.emission in KG
Electricity	104160
Transport	175885
Total	280045

Table31: Total Carbon dioxide emission at BIET

Reduction of Carbon Emission

B) The following installation/ activity is responsible for reduction in carbon emission:-

- Composting
- Tree plantation

Reduction of Carbon Emission due to absorption of CO₂ by Tree Plantation

Planting is a great way to help sequester carbon emissions. Through photosynthesis is trees **absorb carbon dioxide to produce oxygen, food and wood.**

Particulars of Flora	Numbers	Carbon absorption by one tree Per year	Total Carbon Dioxide in Kg
Full grown Tree	250	6.8	1700
Semi Grown Tree		3.4	
Quarter grown plants	30	1.7	51
Total Carbon dioxide absorption by trees			1751

Table33: Carbon absorption by tree plantation.


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Total Reduction in Carbon dioxide emission at BIET

Area	Reduction in CO2 eq. emission in KG
Trees	280
Total	1750

Table34: Total Reduction in Carbon dioxide emission



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RECOMMENDATIONS

12.1 Formation of SWATCH BIET CELL:

We recommend to formation of the SWATCH BIET CELL for spreading awareness on the importance of energy conservation. SWATCH BIET CELL will participate in all energy conservation activities and organize programs.

Every year, India observes National Energy Conservation on December 14. The day is organized by the Bureau of Energy Efficiency (BEE) – which operates under the Ministry of Power, aiming to present India's stellar achievements in cost-efficient energy production and resource conservation.

SWATCH BIET CELL will celebrate "Energy Conservation Day" on 14th December, each year. Further plans for the future may be discussed on this day, targeting holistic development as the main goal towards mitigation of climate change. It would not only help in imparting knowledge on energy efficiency but also in its implementation in households and institutions.

Objective of SWATCH BIET CELL

The objective of the club is to create awareness among the students, staff and teachers and equip them for efficient management of all forms of energy, to promote energy efficiency and energy conservation. The club will keep to spread "Energy Conservation Messages" in the society by conducting awareness programs to students and public.

12.2 Enhancement of Energy Efficacy of light fittings:

Cleaning of tube-lights/bulbs to be done periodically, to remove the dustcover. It affects on lamp efficacy (lm/watt).


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General Recommendation for Energy Saving in Office Equipment

Equipment	Wattage	Comments
CRT Monitor	100 - 120W (during operating condition)	CRT monitors consume a lot of power, much of which is wasted as heat, and represent the largest power consumption component in a typical desktop computer. Emit potentially harmful radiation. Fortunately, most CRT monitors these days are legacy equipment as new computers are generally supplied with LCD monitors. Unfortunately; most CRT monitors end up in landfill.
Desktop Computer	150W (during operating condition)	Power consumption will differ significantly depending on whether a CRT or LCD monitor is used. In home and office situations where it is necessary to run multiple desktop computers, it may be possible to make significant power savings by running a single terminal server computer with several LCD monitors and key boards attached. Terminal server computer scan also greatly simplify network management, software upgrades, etc
Photocopier	7-30W (St.Mode)40-300W (Standby)200-1300W (Op. condition)	Most of the energy used in a photocopiers consumed by the controllers, which are usually kept hot on stand-bay, consuming from 40-300W. Significant energy savings (40%to60%) can be made by ensuring that photocopiers are switched off at night and on weekends. Some photocopiers consume up to 30 watts even when switched off, so photocopiers should be switched off at the power outlet tone sure they are really "off".
LCD Monitor	30-50W (during operating condition)	LCD monitors typically require about 30%of the power required for a CRT monitor with the same screen area. In addition, the amount of heat generated by an LCD monitor is considerably less than a CRT monitor, resulting in a lower load on ACs. Building

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		cooling needs may be decreased by up to 20%.
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Inkjet Printer	120W (during operating condition)	Inkjet printers use relatively little power in comparison to laser printers. From an energy consumption point of view, inkjets are preferable to lasers. Unfortunately, they typically cost more to run on a cost-per-print basis and sometimes produce less than optimum results
Laser Printer	25-80W (Standby)150-1100W (during operating condition)	Laser printers consume significant amounts of power even when in standby mode. Over the course of an 8-10hr working day, a laser printer could consume around 1kWh of energy. On the other hand, laser printers are cheaper to run on a cost-per page basis and generally produce better results. Both the number of laser printers used, and the number of hours they are operated for, should be minimized. As with printing of any kind, office procedures should be developed which minimize the need for printing to paper
Laptop Computer	15-40W (during operating condition)	Laptop computer power consumption is typically 10% to 25% of that of a desktop computer. In situations such as an office or home office, where computers may operate for 8 to 10 hours a day, this difference is significant and could represent an energy saving of up to 1kWh per day.

Table: General Recommendation for Energy Saving in Office Equipment


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AUDIT CERTIFICATE

PRESENTED TO

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Hyderabad, Telangana.

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

GREEN 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: 24.06.2024



Mr. AnilKumar Gurayya Swami

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