



INSTITUTE FOR EDUCATION



GREEN AUDIT REPORT – 2023



Centre for Environment and Life Care
Nurturing Lives, Sustaining Futures

CENTRE FOR ENVIRONMENT AND LIFE CARE
JAMSHEDPUR

Executive Summary

The primary goal of the green audit is to secure the best practices for environmental sustainability. There are several norms and standards in the environmental management system, and the green audit helps to conform to the norms. The audit also helps identify the ideal protocols that develop a sustainable ecosystem on the campus.

Questionnaires prepared to conduct the green audit were based on the guidelines, rules, acts, and formats set by the Government of India, Ministry of Environment and Forest, New Delhi, and Central Pollution Control Board, New Delhi. Questionnaires were prepared for solid waste, energy, water, hazardous waste, and e-waste. For audit purposes, analysis of suitable data is required, for the same study area is grouped into various Blocks and Departments.



INSTITUTE FOR EDUCATION

CERTIFICATE

PRESENTED TO

INSTITUTE FOR EDUCATION

DUGNI, JHARKHAND

Has been assessed by CENTRE FOR ENVIRONMENT AND LIFE CARE for the comprehensive study of
environmental impacts

on institutional working framework to fulfil the requirement of

GREEN AUDIT - 2023

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.

SIGNATURE

12/05/2023 - 22/05/2023

Date of Audit

CENTRE FOR ENVIRONMENT AND LIFE CARE

JAMSHEDPUR

CONTENTS	
1.0	Introduction
1.1	Objectives of the audit
1.2	Benefits of Green Audit
1.3	Methodology of Green Audit.
1.4	Audit Participants
1.5	Onsite Visit
1.6	Focus Group Discussion
1.7	Management Commitment
2.0	About IFE
2.1	Vision & Mission
2.1.1	Vision
2.1.2	Mission
2.2	Geographical Location
2.2.1	Buildings/blocks
2.2.2	Facilities available in Institute.
3.0	Green Audit
3.1	Questionnaires
3.2	Data analysis and final report preparation
3.2.1	Air Quality:
3.2.2	Illumination level
3.2.3	Noise Level
3.2.4	Water management
3.2.5	Drinking water
3.2.6	Rain Water harvesting system
3.2.7	Energy Conservation
3.2.8	Solar Energy
3.2.9	Waste Management
3.2.10	Solid Waste Management
3.2.11	E-waste management
3.2.12	Green area management
3.2.13	Use of Bicycles
3.2.14	E- communication
4.0	Conclusion
5.0	Recommendations

1.1 Objectives of the audit

It analyzes the environmental practices within and outside of the departments and utilities, which will have an impact on the eco-friendly ambience.

The different steps under the green audit consist of – Water audit, waste disposal audit, energy audit, and environmental quality audit including illumination and noise level in the campus. With the green audit reports, the universities can also recognize cost-effective methods for waste management. It allows universities to set and promote an enhanced learning ecosystem and obtain the top grade. More than that, it helps in exhibiting a credible branding of the educational institute.

1.2 Benefits of Green Audit:

- Recognize the cost saving methods through waste minimizing and managing strategies.
- Empower the organizations to frame a better environmental performance.
- Enhance the alertness for environmental guidelines and duties

1.3 Methodology of Green Audit.

- Data collection of energy, water, solid waste, noise level and illumination.
- Analysis of data and representation of data analysis.

1.4 Audit Participants

On behalf of Institute for Education

SI No	Name	Designation/Departments
1	Dr. Sweety Sinha	M.A, M.Ed, Ph.D
2	Dr. Om Prakash	College Co-ordinator, M.A, M Phil, M Ed , Ph.D
4	Shrabani Mukherjee	Assistant Professor, M.A, M. Ed, NET
5	Bandana Kumari	Assistant Professor, M.A, M. Ed.

On behalf CELC

SI No	Name	Position	Qualifications/Experience
1	Ajit Kumar Singh	Lead Auditor	M.Sc., PGDEPCT, PGDEMS, Lead Auditor ISO 14001: 2015, 20 years' experience in EMS & Compliance.
2	Dipak Soni	Co-Auditor	B.Sc. (IT) Project Manager. Working in social and environment sector last 5 years.

1.5 Onsite Visit

Data collection was done in the sectors such as Energy, Waste, Green Area, and Water use. IFE records and documents were verified several times to clarify the data received through surveys and discussions.

1.6 Focus Group Discussion

The actual planning of audit processes was discussed in the pre-audit meeting. An Audit team was also selected in this meeting with the help of staff and the Institute management. The audit protocol and audit plan were handed over at this meeting and discussed in advance of the audit itself.

1.7 Management Commitment

The College will adapt the principle of the “best practicable environmental process” in the delivery of waste management service. The college will apply a “Waste Management Hierarchy” approach which gives top priority to the waste prevention, followed by re-use, recycling, recovery and final disposal.

The College recognises the importance of meeting these legal requirements and to manage its waste responsibility, reduce the volume of waste sent to landfill and maximise reuse and recycling where ever it is possible.

Solid waste generated in the campus shall be managed and handled in accordance with the compliance criteria and the procedure laid down in Municipal Solid Waste

2.0 About Institute for Education (IFE)

Institute for education is an organization or establishment dedicated to the advancement of education through various means such as research, teaching, training, and advocacy. These institutes can take various forms, including schools, colleges, universities, research centers, think tanks, and non-profit organizations. Institutes for education can indeed encompass a wide range of entities, all focused on advancing education in different ways. From traditional schools and universities to research centers and advocacy groups, these institutes play crucial roles in shaping educational policies, conducting research to improve teaching methods, providing training for educators, and advocating for educational equity and access. Their diversity allows for a multifaceted approach to addressing the complex challenges facing education today.

2.1 Vision & Mission

2.1.1 Vision

The Vision of Institute for Education is to build a strong foundation in the realm of education and social upliftment where the stakeholders of IFE and the students from all walks of life rise from the darkness of ignorance to reach till the zenith of enlightenment. “तमसो मां ज्योतिर्गमय”, the motto of the organization envisions the holistic development of the society by and large.

2.1.2 Mission

Institute for Education, a progeny of the Educational and Social Development Trust, aims to achieve perfection and excellence in education and learning through practice and training. It has also modelled its team which works diligently to empower the seekers of extraordinary education. This empowerment builds a society that has youth with erudition. The mission in objective terms is:

- Affordable education to everyone
- Learning made practicable and suitable to meet industry standards
- Nurturing respect in anyone and everyone who joins
- Development of Soft-skills and Technical-skills through rigorous practice
- Making leaders who are fit to lead teams, organizations, parties and the state

2.2 Geographical Location

IFE has the huge infrastructure of approximately 39755 sq. ft of built-up area at DUGNI, JHARKHNAD. IFE offers the education with the latest Technologies available in the present area. (i.e. Wi-Fi Campus, Computer Centre, Digital Library etc).

This institution is situated amidst the natural beauty of the countryside and the urban glamour of an industrial area of Seraikella-Kharsawan district. The flowing river and picturesque backdrop of low hills on one side and large tracks of forest on trolling campus are an ideal place for learning. It has been growing from strength to strength ever since it was established in 2014.

Seraikella- kharsawan is the district is situated between 22°29'26" and 23°09'34" north latitudes and 85°30'14" and 86°15'24" east longitudes is formerly the Princely States of the twenty-four districts of Jharkhand state in eastern India. Seraikela town is the district headquarters of Saraikela Kharsawan district. The town is a road junction, an agricultural trade Centre and upcoming industrial center. The Nearest Airport is Ranchi and Sonari, JSR Airport.

It is situated between Jamshedpur and Chaibasa. Seraikela CD block with a total population of 79,507, and literacy 68.85%. It is well connected with Jamshedpur via land route. It is mainly a tribal belt. Saraikela is known for its Chhau dance is a unique amalgamation of Oriya and Ho tribal culture and has been approved by UNESCO in the year 2010 as intangible Heritage of India. There are many cultural places to visit which are enriched with historical stories.

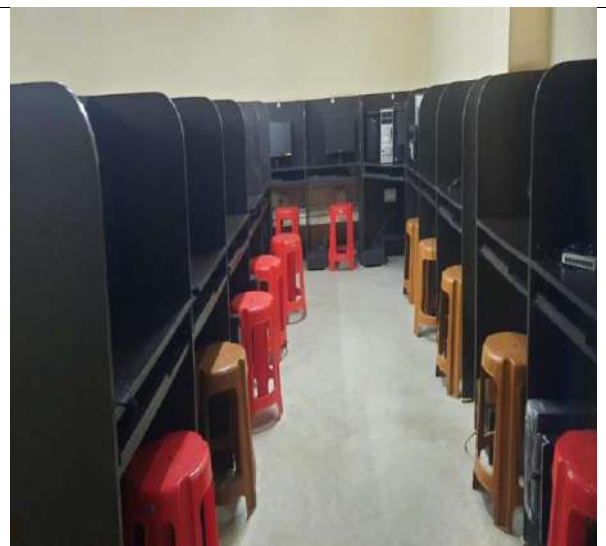
2.2.1 Buildings/blocks

Admin building, Class room, Library, Multipurpose Hall and Laboratories.

2.2.2 Facilities available in Institute.

The INSTITUTE FOR EDUCATION, SERAIKELLA was established in 2014 with an objective of providing a platform for excellence in academic growth of teacher trainees. The institute is dynamic, growing with faculty dedicated to providing quality education. The Institute offers courses in B.Ed. & D.El.Ed., started in 2014 & 2018 respectively. At present the department already has following regular faculty members

The Institute has its own fleet of buses to cater to the transportation needs of its students, staff members and visiting guests. These buses serve as the link between the campus and the city. The Institute provides transport facility to the faculties, students and support staffs from the city to the Institute campus and back on working days and special occasions.



3.0 Green Audit

3.1 Questionnaires

SI No	Audit Questions	Answers/Remarks
1.1	General information	
1	Does any Green Audit conduct earlier?	Yes
2	What is the total strength (people count) of the Institute?	Approx. 200
3	What is the total number of working days of your campus in a year?	210
4	Where is the campus located?	Dugni, Saraikela- Kharshwan
5	Municipal waste, Sewer line, waste water managed by?	Gram Panchyat
1.2	WASTE MINIMIZATION AND RECYCLING	
1	Does your institute generate any waste? If so, what are they?	Solid waste.
2	What is the approximate amount of waste generated per day? (in KG approx.)	15 kg
3	How is the waste generated in the institute managed? By Composting, Recycling, Reusing, Others (specify)	Single use plastic is banned on the campus. Composting is done for horticulture waste management.
4	Do you use recycled paper in institute?	Yes, IFE collaborates with third party recycle vendor.
5	How would you spread the message of recycling to others in the community?	NSS Seminars and webinars for students and faculty Various campaigns for awareness are organised by students.
1.3	GREENING THE CAMPUS	
1	Is there a garden in your institute?	Yes
2	Total number of Plants in Campus?	Approx 100, Full Grown Trees, Small Trees, Hedge Plants.
3	How many Tree Plantation Drives organized by campus per annum?	Yes. No. of plantation drives in last years.
4	Is there any Plant Distribution Program for Students and Community?	Yes
1.4	WATER AND WASTEWATER MANAGEMENT	
1	Sources of water	Ground water.
2	Water usage details.	Drinking, Gardening Kitchen & Toilets.
3	How does your institute store water? Are there any water saving techniques followed in your institute?	Sump tank and Overhead Water tanks.

3.2 Data analysis and final report preparation

As part of green audit of campus, the Green Audit Assessment Team has carried out the environmental monitoring of campus. This includes Illumination, Noise level of the class rooms. It was observed that illumination and ventilation is adequate considering natural light and air velocity present. Noise level in the campus is well below the limit.

3.2.1 Air Quality:

The air quality being monitored by the local authorities and satellite. The campus is situated at DUGNI, SARAIKELA KHRASHWAN in panchayat. The air quality index –

Air quality index (AQI) forecast

Pollution level	Wind
Moderate 80 AQI	13.3 km/h

3.2.2 Illumination level

In order to improve education environment, classrooms need a good lighting. A good lighting makes the students feel safe, improves learning. In addition to this strengthen the schools brand value. In many studies stated that there is a close relation between lighting and the performance of the students.

3.2.3 Noise Level

The human ear is constantly being assailed by man-made sounds from all sides, and there remain few places in populous areas where relative quiet prevails. There are two basic properties of sound: Loudness and Frequency.

Noise level meter Lutron was used to measure the noise level at different locations in the university campus.

Sl No	Locations	Sound level (dB)
1	At court yard of admin building	63 dB
3	At Library	64 dB
4	In office entrance area	63 dB

3.2.4 Water management

The source of water is borewell. The overhead tanks are available for storage of water.

3.2.5 Drinking water

The water used for drinking purposes is clean and well-maintained. Total 03 numbers of RO units are Installed in the campus and available on all floors of the IFE to provide safe drinking water.



3.2.6 Rain Water harvesting system

It is the process of saving and collecting rain water using various means of different resources for future use. Rain water can be collected in natural reservoirs or artificial tanks of storage of roof water.

3.2.7 Energy Conservation

This indicator addresses energy IFE, energy sources, energy monitoring, lighting, appliance, natural resources. Energy use is clearly an important aspect of campus sustainability and thus requires no explanation for its inclusion in the assessment.

Monthly average energy consumption of IFE 1200 KWh/month.

The building architecture of college is designed in such a manner that permits the free flow of air and allows natural light to cover all the corners of the building. The ample natural light therefore avoids the usage of the lights in the corridors and rooms.

1. Use Reusable Water Bottles and Coffee Mugs.
2. Recycle and Compost.
3. Waste control chemicals and e-waste management
4. Use of LED bulbs in college
5. Conducting energy audit
7. Waste control in entire campus
8. No use of plastic in campus
9. Use of dust proof chalks in classrooms
10. Minimum use of Photocopy/Printing

POWER CONSUMPTION		
	Month	KWh
1	December 2023	902
2	November 2023	1118
3	October 2023	1320

Electrical equipment at campus.

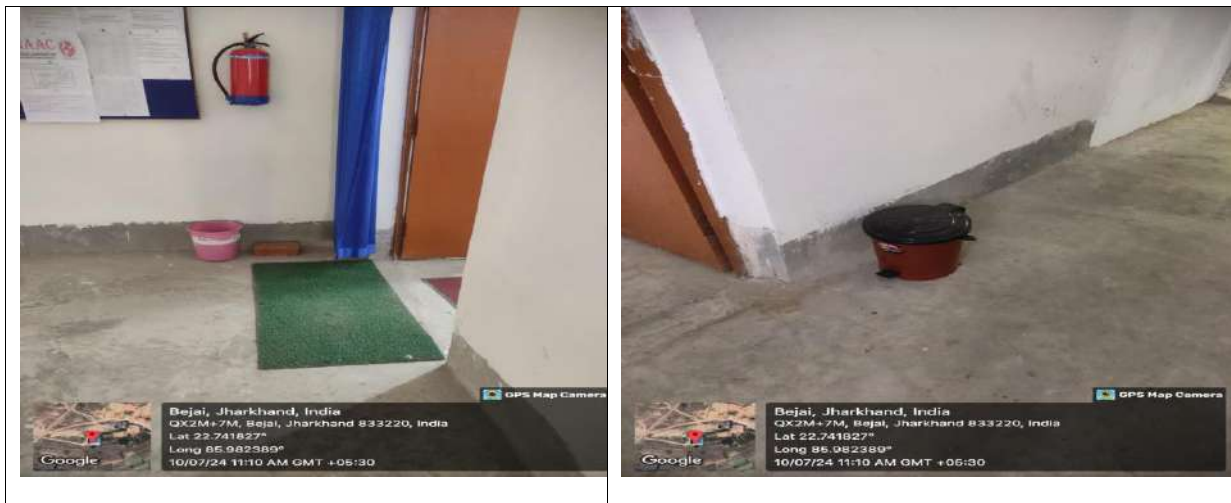
Sl No	Equipment	Watt	Quantity
1	Fan	75	30
2	LED Tube lights	18	45
3	General Tube lights	36	50
4	Centralized Air Conditioners	-	0
5	Air Conditioners	1.05 T	6
6	Computer	140-150	40
7	Water cooler	1200	2

3.2.8 Solar Energy

A current study is underway to assess the potential of solar energy within a given space. The findings from this study will guide the implementation of a solar energy system tailored to the available space, ensuring optimal utilization of solar resources.

3.2.9 Waste Management

Institute for Education is always committed to maintaining a clean green cover environment by enforcing the Prime Minister's "Swachh Bharat Abhiyan". It encourages the learners, staffs, faculties and the guests to maintain the cleanliness around them which is a matter of pride for every person in the institution. The learners, faculties and everyone present in the college is to be certain of not littering in any place of the college. Cleanliness is both the state of being clean and free from germs, dirt or waste and also the habit of achieving and maintaining the state. Our college always encourages people who as a student, faculty non-teaching staff tries to protect eh green cover of college along with the maintenance of cleanliness, sanitation and waste management system, so that staff and students are able to enjoy a comfortable learning environment. For that full time sweeper is allocated for cleaning the washroom twice a day during college hours. Students and teachers are strictly asked to maintain the cleanliness of the college campus.





3.2.10 Solid waste management:

1. Segregation of waste

It is the process of dividing the waste into wet and dry categories. Dry waste includes wood and related products, metal and glass whereas wet waste typically refers to waste containing moisture. Institute for Education has proper functioning of segregation of waste as it provides separate dustbins for those. General dustbin (Green) is used for dry waste and Red for wet waste.

Students are conscious not to waste paper. They use, used chart papers to make posters, invitations, envelopes, paper bags for academic, co-curricular & extra-curricular activities.

3.2.11 E-waste management

All the non-working electronic waste such as CPUs, Hard Disks, Laboratory Equipment scrap is sent to the market for sale. Workable Computers, printers and other equipment are repaired and used by the college.

3.2.12 Green area management

The trees of the Institute have increased the quality of life, not only the Institute fraternity but also the people around of the university in terms of contributing to our environment by providing oxygen, improving air quality, climate amelioration, conservation of water, preserving soil, and supporting wildlife, controlling climate by moderating the effects of the sun, rain and wind. Leaves absorb and filter the sun's radiant energy, keeping things cool in summer. Many species of birds are dependent on these trees mainly for food and shelter. Nectar of flowers and plants is a favourite of birds and many insects. Leaf – covered branches keep many animals, such as birds,

out of reach of predators. Different species display a seemingly endless variety of shapes, forms, texture and vibrant colours. Even individual trees vary their appearance throughout the course of the year as the seasons change. Thus, the Institute has been playing a significant role in maintaining the environment of its surrounding areas.



3.2.13 Use of Bicycles:

The Institute has constructed a cycle shed to safeguard their vehicles. This transport pooling is a greening initiative by Institute to avoid environmental pollution and reduce Carbon foot printing Levels. The pathways in Institute are laid with provision paver block for rainwater to seep through easily. This enables the easy recharge of ground water.

3.2.14 E - communication

All the Departments of the Institute, Examination cell, and laboratories are very well connected with a good and efficient LAN network. Hence all the inter office correspondence is done through email. This reduces the usage of papers. The e-governance is implemented. Institution implements e-governance covering following areas of operation.

4.0 Conclusion

The Institute is considering the environmental impacts of most of its actions and makes an intensive effort to act in an environmentally responsible manner.

Some of findings are –

- Study on Rain water harvesting system is in pipeline.
- Study of Solar energy installation under process.
- Good greenery and land scaping done inside campus.

5.0 Recommendations

Solar Power System Installation:

- Implement a solar power system to harness renewable energy efficiently.
- Assess the campus space for optimal placement of solar panels.

Rainwater Harvesting

- Introduce rainwater harvesting from rooftop runoff to enhance water conservation.
- Utilize harvested rainwater for non-potable purposes, reducing reliance on external water sources.

Promotion of Eco-Friendly Products:

- Advocate for the use of eco-friendly products among students, staff, and within campus facilities.
- Encourage the adoption of recycled paper to minimize environmental impact.

Paper Waste Management:

- Develop a systematic approach for managing paper waste.
- Shred, pulp, and recycle materials like answer sheets, old bills, and confidential reports after their preservation period.

Switch-Off Drills:

- Conduct regular switch-off drills to promote energy conservation.
- Raise awareness among the campus community about the importance of turning off lights and electronic devices when not in use.

Scheduled Electricity Shutdown:

- Implement a practice of shutting down electricity from the main building supply after occupancy hours.

Plantation Management:

- Periodically review the list of trees planted in the campus garden.
- Allot numbers and labels to each tree, maintaining comprehensive records to track growth and health.

INSTITUTE OF EDUCATION
JAMSHEDPUR, JHARKHAND

GREEN AUDIT REPORT - 2022

CENTRE FOR ENVIRONMENT AND LIFE CARE
JAMSHEDPUR

CERTIFICATE

PRESENTED TO

INSTITUTE FOR EDUCATION

Has been assessed by CENTRE FOR ENVIRONMENT AND LIFE CARE for the comprehensive study of
environmental impacts

on institutional working framework to fulfil the requirement of

GREEN AUDIT - 2022

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.



SIGNATURE

19/05/2022 - 29/05/2022

Date of Audit

CENTRE FOR ENVIRONMENT AND LIFE CARE

JAMSHEDPUR

CONTENTS	
1.0	Introduction
1.1	Need for green audit
1.2	Objectives of the audit
1.3	Audit Participants
1.4	Focus Group Discussion
1.5	Management Commitment
2.0	About INSTITUTE FOR EDUCATION
2.1	Vision & Vision STATEMENT
2.2	Geographical Location
2.3	Facilities available in college.
3.0	Green Audit
3.1	Data analysis and final report preparation
3.1.1	Air Quality:
3.1.2	Illumination level
3.1.3	Noise Level
3.1.4	Water management
3.1.5	Drinking water
3.1.6	Rain Water harvesting system
3.1.7	Energy Conservation
3.1.8	Solar Energy
3.1.9	Waste Management
3.1.10	Solid Waste Management
3.1.11	E-waste management
3.1.12	Information technology
3.1.13	Green area management
3.1.14	Transportation
4.0	Conclusion
5.0	Recommendations

1.0 Introduction

- Systematic evaluation of environmental diversity components
- Analyzes environmental practices within and outside the site
- Aims to promote an eco-friendly ambiance

Steps involved:

1. Water Audit: Assessing water usage and conservation opportunities
2. Waste Disposal Audit: Evaluating waste management practices and identifying areas for improvement
3. Energy Audit: Examining energy consumption and potential energy-efficient solutions
4. Environmental Quality Audit: Assessing illumination, noise levels, and overall environmental quality on campus

Benefits:

- Identifies cost-effective waste management methods
- Enhances learning ecosystem
- Supports achieving top grades and recognition
- Fosters credible branding for educational institutions

1.2 Objectives of the audit

The main objectives of a Green Audit! To recap, the primary goals are:

1. Assess current sustainability practices: Understand how natural resources are being used, energy is being utilized, waste is being generated and managed, and identify areas for improvement.
2. Establish a baseline of environmental conditions: Document the current state of the natural and physical environment, including metrics and data.
3. Raise awareness: Educate students and staff about environmental issues and the importance of sustainability.
4. Develop a report with recommendations: Document good practices, identify areas for improvement, and provide strategies and action plans to enhance environmental quality and sustainability.

By achieving these objectives, a Green Audit can help institutions:

- Reduce their environmental footprint
- Promote sustainable practices
- Improve resource efficiency
- Enhance their reputation and credibility
- Support environmental education and awareness

1.3 Audit Participants

On behalf of IFE

SI No	Name	Designation/Departments
1	Dr. Sweety Sinha	M.A, M.Ed, Ph.D
2	Dr. Om Prakash	College Co-ordinator, M.A, M Phil, M Ed, Ph.D
3	Shrabani Mukherjee	Assistant Professor, M.A, M. Ed, NET
4	Bandana Kumari	Assistant Professor, M.A, M. Ed.

On behalf of CELC

SI No	Name	Position	Qualifications/Experience
1	Ajit Kumar Singh	Lead Auditor	M.Sc., PGDEPCT, PGDEMS, Lead Auditor ISO 14001: 2015, 20 years' experience in EMS & Compliance.
2	Madhulika Singh	Co-Auditor	Bachelor in political science, MSW
3	Dipak Soni	Co-Auditor	B.Sc. (IT) Project Manager. Working in social and environment sector last 5 years.

1.4 Focus Group Discussion

A thorough and well-structured approach to conducting a Green Audit! The pre-audit meeting seems to have been a crucial step in:

1. Understanding the college's current green initiatives and concerns
2. Gathering relevant information and documents
3. Discussing and finalizing the audit protocol and plan
4. Selecting the audit team with input from staff and management.

By doing so, the audit team can:

- Hit the ground running with a clear understanding of the college's situation
- Focus on the most critical areas during the audit

- Ensure a comprehensive and effective audit process

Some key takeaways from this approach include:

- Importance of stakeholder engagement and collaboration

- Value of advance planning and preparation

- Need for clear communication and documentation

- Benefits of involving staff and management in the audit process

Overall, this pre-audit meeting set the stage for a successful and productive Green Audit!

1.5 Management Commitment

The college management is committed to green auditing and sustainability initiatives. Their willingness to:

1. Encourage green activities

2. Promote environmentally friendly practices

3. Formulate policies based on the green audit report

demonstrates a strong commitment to creating a sustainable and eco-friendly campus environment.

Some potential outcomes of this commitment include:

1. Reduced environmental footprint

2. Increased awareness and education on sustainability among students and staff

3. Improved campus aesthetics and biodiversity through tree planting and campus farming

4. Development of policies that support sustainability and environmental responsibility

5. Enhanced reputation and credibility for the college as a leader in sustainability

2.0 About Institute for Education

Institutes for education are indeed diverse organizations that share a common goal of advancing education through various means. They can be categorized into several types, including:

1. Academic institutions (schools, colleges, universities)
2. Research centres
3. Think tanks
4. Non-profit organizations
5. Training and professional development providers
6. Advocacy groups

These institutes play a vital role in:

1. Shaping educational policies
2. Conducting research to improve teaching methods and learning outcomes
3. Providing training and professional development for educators
4. Advocating for educational equity, access, and quality
5. Promoting innovation and best practices in education

The diversity of institutes for education allows for a comprehensive and multifaceted approach to addressing the complex challenges facing education today, such as:

1. Improving student outcomes
2. Increasing access and equity
3. Enhancing teacher quality and development
4. Integrating technology and innovation
5. Addressing social and emotional learning needs

2.1 Vision & Mission

Vision

The Vision of Institute for Education is to build a strong foundation in the realm of education and social upliftment where the stakeholders of IFE and the students from all walks of life rise from the darkness of ignorance to reach till the zenith of

enlightenment. “तमसो मां ज्योतिर्गमय” , the motto of the organization envisions the holistic development of the society by and large.

Mission

Institute for Education, a progeny of the Educational and Social Development Trust, aims to achieve perfection and excellence in education and learning through practice and training. It has also modelled its team which works

2.2 Geographical Location

Bijay, Saraikela Sini, PS: Saraikela Anchal, Saraikela-Kharsawan, Jharkhand, India. Saraikella- kharsawan is the district is situated between 22°29'26" and 23°09'34" north latitudes and 85°30'14" and 86°15'24" east longitudes is formerly the Princely States of the twenty-four districts of Jharkhand state in eastern India. Saraikela town is the district headquarters of Saraikela Kharsawan district.

2.3 Facilities available in college.

Multipurpose Hall

The college has a specious Multi-Purpose Hall with a seating capacity of 500. The hall is used as a venue for organization of various College functions. The Open-Air Theatre with capacity of 300 is provided on the ground floor. The students use this facility for road shows, one-act plays, and departmental functions.





Language lab

Language Lab at Institute for Education is a pedagogy driven laboratory which supports various kinds of language teaching activities at the institute. Of the various language teaching activities conducted in the laboratory, the most important is the Communication Skills course taught to students. The remedial English language course taught at the 1st year level is also partially conducted in the language lab. Apart from these courses from the Academic Programme, the laboratory also supports the institute's Foreign Languages Programme. Currently, the programme runs six courses in French, German and Japanese. All the tutorial activities associated with these courses are held in the language laboratory. The laboratory also facilitates the English Conversation classes conducted by the Counselling Service for IFE students. The lab infrastructure comprises a state-of-the-art Robotel New Smart Class Digital technology housed in the New Core Lab building. The set up provides an advanced language laboratory teaching/learning experience. The Smart Class has fifty six booths for students and a teacher console. The teacher's Control Unit enables the teacher to direct the video, audio, keyboard and mouse signal to any booth. The Students' Terminals allow the students to interact with the teacher.

Sports and Recreation

Sports are taken seriously at IFE. The fields/courts on campus include Badminton, Basketball, Cricket, Football, Tennis and Volleyball. There is a multi-gymnasium located in the College Campus. Indoor sports facilities are available in the students' residences. In addition to the facilities on campus, students at IFE have access to tennis courts, squash courts, and a synthetic athletics track through our affiliation with local clubs and other sports associations.

3.0 Green Audit

Questionnaires

Sl No	Audit Questions	Answers/Remarks
1.1	General information	
1	Does any Green Audit conduct earlier?	No.
2	What is the total strength (people count) of the Institute?	Approx. 200
3	What is the total number of working days of your campus in a year?	210
4	Where is the campus located?	DUGNI
5	Municipal waste, Sewer line, waste water managed by?	Being managed by institute inside premises.
1.2	WASTE MINIMIZATION AND RECYCLING	
1	Does your institute generate any waste? If so, what are they?	Solid waste.
2	What is the approximate amount of waste generated per day? (in KG approx.)	12 kg
3	How is the waste generated in the institute managed? By Composting, Recycling, Reusing, Others (specify)	Single use plastic is banned on the campus. Composting is done for horticulture waste management. Solid waste (Both dry and wet) is managed by segregation in recycle. Paper waste is sent to scrap vendor periodically.
4	Do you use recycled paper in institute?	No
5	How would you spread the message of recycling to others in the community?	Seminars and webinars for students and faculty Nukkar-Natak by Students to increasing awareness. Various campaigns for awareness are organised by NSS team.
1.3	GREENING THE CAMPUS	
1	Is there a garden in your institute?	Yes
2	Total number of Plants in Campus?	Full Grown Trees, Small Trees, Hedge Plants.
3	How many Tree Plantation Drives organized by campus per annum?	Yes. No. of plantation drives in last years.
4	Is there any Plant Distribution Program for Students and Community?	Yes
1.4	WATER AND WASTEWATER MANAGEMENT	

1	Sources of water	Ground water.
2	Water usage details.	Drinking, Gardening Kitchen & Toilets.
3	How does your institute store water? Are there any water saving techniques followed in your institute?	Sump tank and Overhead Water tanks.

3.1 Data analysis and final report preparation

3.1.1 Air Quality:

The air quality being monitored by the local authorities of the township. The campus is situated at middle of Jamshedpur. The air quality index –

Jamshedpur air quality index (AQI) forecast

Pollution level	Wind
Moderate 80 AQI	13.5 km/h

3.1.2 Illumination level

Lux light level is sufficient in classroom where students spend most of their times and focus on learning. In order to draw attention to the area where the teacher is located, to contribute to the students' concentration of 750 lux light level can be done here. An illumination study was carried in different class rooms with value of 365 to 585 lux.

3.1.3 Noise Level

The WHO has fixed 45 dB as the safe noise level for a city. For international standards a noise level up to 65 dB is considered tolerate. Loudness is also expressed in sones. One sone equals the loudness of 40 dB sound pressure at 1000 Hz. Frequency is defined as the number of vibrations per second. It is denoted as Hertz (Hz).

3.1.4 Water management

Drinking or using contaminated water can result in severe illness or death. That is why it is important IFE that drinking water is safe, clean and free from bacteria and disease. The parameters for water quality are determined by the intended use.

The ground water being stored in overhead tanks and supplied for different purposes. The buildings are attached to each other so, the storage tanks are installed at top of building. 01 Nos of tanks are installed with capacity of 2000 litres.

3.1.5 Drinking water

The water used for drinking purposes is clean and well-maintained. Total 06 numbers of RO units are Installed in the campus and available on all floors of the university to provide safe drinking water.

Water Quality Assessment Water samples from the KCC were collected and analysed for its quality parameters. The major parameters analysed include colour, pH, Total dissolved solids, and total suspended solids.

Microbial analysis Worldwide, water-borne infections are a major contributor to illness and fatalities. The protection of the public's health depends on routine microbiological testing of drinking water sources, recreational waters, and environmental waters.

3.1.6 Rain Water harvesting system

The Rainwater harvesting system with Recharge pits well inside the campus Rain water harvesting units are also functioning for recharging ground water level. There are soaking pits available widespread all over the campus. The collected rooftop water is collected in the recharge wells.

3.1.7 Energy Conservation

This indicator addresses energy IFE, energy sources, energy monitoring, lighting, appliance, natural resources. Energy use is clearly an important aspect of campus sustainability and thus requires no explanation for its inclusion in the assessment.



LED in Hall



LED lights lecture room

3.1.8 Solar Energy

Presently study of solar energy capability being study going on. Based on the capability with respect to space available solar energy system will be installed.

3.1.9 Waste Management

IFE is aware of the fact that proper waste management is one of the key necessities for a well-defined ecosystem. It is one of the important pillars for proper campus development. The IFE works on the mission of “Clean and Green Campus” which involves proper management of solid waste, liquid waste, Biomedical and E-Waste management.

Various waste collection storage containers are installed at some points inside the campus and the students are encouraged to identify and dispose off the wastes at the appropriate places.

Waste management awareness drives are organized at regular intervals amongst the students of the university.

The nearby villages are also made conscious of the waste management basics and are encouraged to act accordingly.

3.1.10 Solid waste management:

Solid wastes include both the biodegradable and non-biodegradable items. The biodegradable wastes generated in the campus are vegetable peels, dry leaves, food wastes etc. These are segregated and serve as excellent bio-fertilizers for the beautiful garden in the campus

Waste generated from tree droppings and lawn management are major solid wastes generated in the campus. Separate dustbins are provided for Bio-degradable and Plastic waste in order to segregate them at the source itself. Metal waste and wooden waste is stored and sent to authorize scrap agents for further processing. Glass bottles are reused in the laboratories. The IFE has separate bins to collect biodegradable and non-biodegradable waste generated in the campus. Regular meetings are conducted with ground staff regarding the cleanliness of the campus and proper disposal of waste.

3.1.11 E-waste management

E-waste is generated when the electronic devices are discarded after they are out of service and their life time is exhausted. The purpose of this partnership in compliance with E- Waste Management) Rules, 2016.

3.1.12 Information Technology

Information Technology is unarguably the defining force of this millennium, and IFE is poised to break new ground as the most e-enabled Business School in India. The initial focus of being system friendly has now resulted in a virtual flood of e-initiatives. Beginning with the up gradation of infrastructure like marching towards Wi-Fi campus, supplemented by the introduction of new courses, workshops, seminars, live projects and setting up a Centre for e-Business that aims to facilitate industry-academia interface. Thus enabling the creation of whole new batch of tech-savy managers with the skills to integrate technology solutions to the workplace environment has began.

The computing resources at IFE include latest servers and workstations, a state-of-the-art campus network and 500 MBPS raw bandwidth WAN connectivity. There are high-end servers, which host the IFE web page, Mail and SNTP server, Oracle, Lotus notes, SAS, DB2 and other software.

Apart from value added learning of different packages, access to various database, electronic journal and software, IFE is providing Web hosted SAP solution for hands on ERP through University Alliance programme.

IFE has GIGABIT Fiber backbone throughout the campus to support the Institute`s local area network. Every student is equipped with a laptop/desktop in his/her room and has round the clock access to intranet as well as internet. Entire academic activities such as e-bulletin board, e-discussion forum, grades and feedback, on line leave application, course outline, electives, handouts, class schedule are made available to the faculty, students and the administration on their desktop. Apart from the individual nodes, more than 500 units of latest Pentium workstation, scanners, laser printers or desk jet printers, close circuit camera, multimedia projectors, digital camera to serve the desk need of faculty, student's computer centre, classrooms, examination hall, auditorium, library and various administrative offices. The institute also has its own video conferencing facility through dedicated ISDN lines.



3.1.13 Green area management

The open area of IFE is immensely diverse with a variety of tree species performing a variety of functions. Most of these tree species are planted in different periods of time through various plantation programmes organised by the IFE and have become an integral part of the institution. The trees of the IFE have increased the quality of life, not only the college fraternity but also the people around of the university in terms of contributing to our environment by providing oxygen, improving air quality, climate amelioration, conservation of water, preserving soil, and supporting wildlife, controlling climate by moderating the effects of the sun, rain and wind. Leaves absorb and filter the sun's radiant energy, keeping things cool in summer. Many species of birds are dependent on these trees mainly for food and shelter. Nectar of flowers and plants is a favourite of birds and many insects. Leaf – covered branches keep many animals, such as birds, out of reach of predators. Different species display a seemingly endless variety of shapes, forms, texture and vibrant colours. Even individual trees vary their appearance throughout the course of the year as the seasons change. Thus, the college has been playing a significant role in maintaining the environment of its surrounding areas.

Table: List of tree species at all campuses -

SI No	Common Name	Botanical Name	Uses	Numbers
1	Coconut tree	Cocus nucifera	Anti-microbial	10
2	Mango tree	Mangifera indica	Anti-bacterial, Anti-Fungal	20
3	Ashoka Tree	Saraca asoca	Blood Disorder Tumor	6
4	Bottle palm	Hyophorbe Lagercaulis	Anaemia	10
5	Guava Tree	Psidium Guajava	Diabetes	8
6	Hoop Pine	Araucaria Cunningham	Flooring	2
7	Croton	Codiacum Variegatum	Biofuel	15
8	Belly Flower Plant	Jasminum Sombac	infections	7
9	Rose	Rosaceae	Anxiety	15
10	Lemon	Citrus Limon	Anti-cancer Anti-Oxidant	10



Tree Plantation drives

3.1.14 Transportation:

The students and non-teaching staff in and around the campus commute to college by bicycles. The college has constructed a cycle shed to safeguard their vehicles. This transport pooling (bus services) is a greening initiative by college to avoid environmental pollution and reduce Carbon foot printing Levels. The pathways in college are laid with provision paver block for rainwater to seep through easily. This enables the easy recharge of ground water.



4.0 Conclusion

This audit involved discussions, questionnaire with all the teams, interactions with key personnel on wider range of issues related to Environmental aspects. The college is considering the environmental impacts of most of its actions and makes an intensive effort to act in an environmentally responsible manner.

Some of findings are –

- LED lights/tubes are fitted in class rooms/lecture halls and many strategic locations.
- Solid waste being segregated and collected at Recycle station and accordingly recycling/disposal being done.
- Rain water harvesting system is at main administrative buildings.
- Good greenery and land scaping done inside campus.

5.0 Recommendations

- There is a need for monitoring and controlling overflow and periodically supervision drills should be arranged.
- Paper waste like answer sheets, old bills, and confidential reports should be sent for shredding, pulping, and recycling after completion of their preservation period.
- The management should support more for renewable and carbon-neutral electricity options on any energy- purchasing consortium, with the aim of supplying all college properties with electricity that can be attributed to renewable and carbon-neutral sources.
- More LED lights should be installed to reduce power for lighting.
- The campus administration should run switch–off drill on regular basis.
- In campus premises electricity should be shut down from main building supply after occupancy time, to prevent power loss due to eddy current.
- Cleaning of tube-lights/bulbs to be done periodically, to remove dust over it.
- Review periodically the list of trees planted in the garden, allot numbers to the trees and keep records.



Centre for Environment and Life Care
Nurturing Lives, Sustaining Futures

CENTRE FOR ENVIRONMENT AND LIFE CARE

GREEN AUDIT

REPORT

2023 - 2024



Executive Summary

The Institute for Education's initiative to conduct a Green Audit of its campus is a commendable step toward sustainable development. The strategies involved included the preparation of questionnaires and subsequent action plans to implement the project.

The Green Audit aligns with Criteria 7 of the National Assessment and Accreditation Council (NAAC), an autonomous organization in India that grades institutions as Grade A, Grade B, or Grade C based on their accreditation scores.

The Green Audit aimed to analyze the environmental practices within the campus, which affect the university's eco-friendly ambiance. The primary goal of the Green Audit is to secure best practices for environmental sustainability, thereby reducing potential health hazards and threats to students. The audit helps ensure compliance with various environmental management norms and standards and identifies protocols to develop a sustainable ecosystem on campus.

Questionnaires for the Green Audit were prepared based on guidelines, rules, acts, and formats set by the Government of India, the Ministry of Environment and Forest, New Delhi, and the Central Pollution Control Board, New Delhi. These questionnaires covered aspects such as solid waste, energy, water, hazardous waste, and e-waste. For the audit, suitable data analysis required the study area to be grouped into various Blocks and Departments. The audit examined areas including solid waste, electricity and energy, water and wastewater, illumination, noise levels, and green inventory. It also highlighted the green initiatives undertaken by the university to conserve environmental resources.

CERTIFICATE

PRESENTED TO

INSTITUTE FOR EDUCATION

ASSESSED BY CENTRE FOR ENVIRONMENT AND LIFECARE FOR THE
COMPREHENSIVE STUDY OF ENVIRONMENTAL IMPACTS ON INSTITUTIONAL
WORKING TO FULFIL THE REQUIREMENT OF

GREEN AUDIT

THE GREEN INITIATIVE 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



SIGNATURE

02/06/2024 - 16/06/2024
DATE OF AUDIT



1.0 Introduction

1.1 Need for Green Audit

A Green Audit is a systematic process involving the identification, quantification, recording, reporting, and analysis of components of environmental diversity. It aims to evaluate environmental practices both within and outside the concerned sites, impacting the eco-friendly ambiance. The steps involved in a Green Audit include water audit, waste disposal audit, energy audit, and environmental quality audit, which covers illumination and noise levels on campus. By analyzing the audit reports, universities can recognize cost-effective waste management methods, promote an enhanced learning ecosystem, and strive for top accreditation grades. Additionally, it bolsters the university's credibility and branding.

1.2 Objectives of the Audit

The main objective of the Green Audit is to assess current sustainability practices concerning natural resource use, energy utilization, waste generation, and management in an environmentally friendly manner. The audit focuses on establishing a baseline of existing environmental conditions, emphasizing the natural and physical environment. It aims to raise awareness among students and staff about environmental issues and sustainability, document baseline data of good practices, and provide strategies and action plans for improving future environmental quality.

1.3 Green Audit Process

1. Understand the scope of the audit.
2. Analyze the strengths and weaknesses of the internal environment.
3. Conduct the audit.
4. Evaluate the observations of the audit program.
5. Prepare a report documenting the observations.

1.4 Benefits of Green Audit

- **Cost Savings:** Identifies cost-saving methods through waste minimization and management strategies.
- **Problem Identification:** Highlights existing and potential environmental issues.
- **Enhanced Environmental Performance:** Enables organizations to improve their environmental performance.
- **Increased Awareness:** Raises awareness of environmental guidelines and responsibilities.

1.5 Methodology of Green Audit

- Formation of the core team for the Green Audit and conducting a kick-off meeting and discussions.
- Primary data collection of energy, water, and solar plant details, as well as monitoring environmental parameters such as noise levels and illumination.
- Analysis and representation of the collected data.

1.6 Audit Participants

On behalf of INTITUTE FOR EDUCATION :

SI No	Name	Position	Qualifications/Experience
1	Dr Sweety Sinha	Principal	M. A. M. Ed, Ph. D
3	Sharboni Mukherjee	Assistant Professor	M. A, M.Ed, NET
3	Nisha Rani Burh	Assistant Professor	M. Sc, M. Ed, NET.
4	Dr Om Prakash	College Coordinator	M. A, M. Ed, Ph.D
5	Bandana Kumari	Assistant Professor	M. A, M. Ed.

On behalf of Center for Environment and Life Care:

SI No	Name	Position	Qualifications/Experience
1	Ajit Kumar Singh	Lead Auditor	M.Sc., PGDEPCT, PGDEMS, Lead Auditor ISO 14001: 2015, 20 years' experience in EMS & Compliance.
3	Shubhro Praksh das	Co-Auditor	Bachelor in political science, MSW
3	Dipak Soni	Co-Auditor	Post graduate in Environment Management; Project Manager. Working in social and environment sector last 5 years.

1.7 Onsite Visit

The Green Audit was conducted with the help of co-associates, involving various student groups, teaching, and non-teaching staff. The audit began with a kick-off meeting with the core team, followed by teams walking through all the facilities. They determined the various utility patterns, waste management practices, and environmental parameters. Staff and students were interviewed to gather details

on usage, frequency, and general characteristics of environmental parameters. Data collection covered sectors such as energy, waste, green areas, and water use. College records and documents were verified multiple times to ensure the accuracy of data obtained through surveys and discussions.

1.8 Focus Group Discussion

Pre-audit discussions focused on the scope and objectives of the audit, considering the green initiatives already taken and the current scenario of the college campus. This meeting was a crucial step for the Green Audit as it was the first opportunity to understand concerns and gather information for the audit team to review before the onsite visit. The audit protocol and plan were distributed and discussed during this meeting. The necessary documents were collected from the college prior to the start of the audit processes. During this meeting, the audit team was selected with the help of staff and college management. The pre-audit meeting ensured successful planning and coordination of the audit processes.

1.9 Management Commitment

The management of the college has demonstrated a strong commitment to green auditing during the pre-audit meeting. They are prepared to encourage and support all green activities. Following the green audit, the management plans to promote various environmentally friendly initiatives, such as awareness programs on environmental issues, campus farming, and planting more trees on the campus. They are also willing to formulate policies based on the green audit report to ensure ongoing environmental sustainability.

2.0 About INSTITUTE FOR EDUCATION

The importance of Values and Morals is sky-high when it comes to talking about the Institute for Education. We, at IFE give a lot of prominence to virtues like honesty, diligence, courtesy, punctuality and respect towards women. Moral is the life-line of the body called Character. Someone has rightly said, "If you lose money, you lose nothing. If you lose health, you lose half. And, if you lose character, you lose everything." Through moral values, we at IFE impart quality education and try to develop an individual to become an unbiased leader who values courage and truth.

2.1 Focus

We as an Institution focus on our students who provide us a reason for our existence. All our efforts are directed towards inculcating a constant yearning for learning.

2.2 Vision & Mission

2.2.1 Vision

The Vision of Institute for Education is to build a strong foundation in the realm of education and social upliftment where the stakeholders of IFE and the students from all walks of life rise from the darkness of ignorance to reach till the zenith of enlightenment. “तमसो मां ज्योतिर्गमय” , the motto of the organization envisions the holistic development of the society by and large.

Mission

Institute for Education, a progeny of the Educational and Social Development Trust, aims to achieve perfection and excellence in education and learning through practice and training. It has also modelled its team which works diligently to empower the seekers of extraordinary education. This empowerment builds a society that has youth with erudition.

The mission in objective terms is:

- Affordable education to everyone
- Learning made practicable and suitable to meet industry standards
- Nurturing respect in anyone and everyone who joins
- Development of Soft-skills and Technical-skills through rigorous practice
- Making leaders who are fit to lead teams, organizations, parties and the state

2.2 Geographical Location

PXVJ+3GG, Bijay,
Saraikela Sini,
PS : Saraikela Anchal,
Saraikela-Kharsawan,
Jharkhand, India

2.2.1 Buildings/Blocks

Block A

- Administration
- B.ed
- D.El.ed

Block B

- Proposed BCA and BBA

2.2.2 Facilities Available in the College

The college provides a comprehensive infrastructure that includes a spacious playground, modern auditorium, and dedicated common rooms for both boys and girls. Facilities like a well-stocked library, specialized language room, and visitor's room enhance the academic environment. The college also offers smart classrooms, IT infrastructure, sports and recreation areas, and medical facilities. Faculty enjoy a comfortable staff room, while students have access to a social science room, fully-equipped computer lab, canteen, finance and GIS resources. This infrastructure supports both academic and extracurricular activities, fostering a well-rounded educational experience.

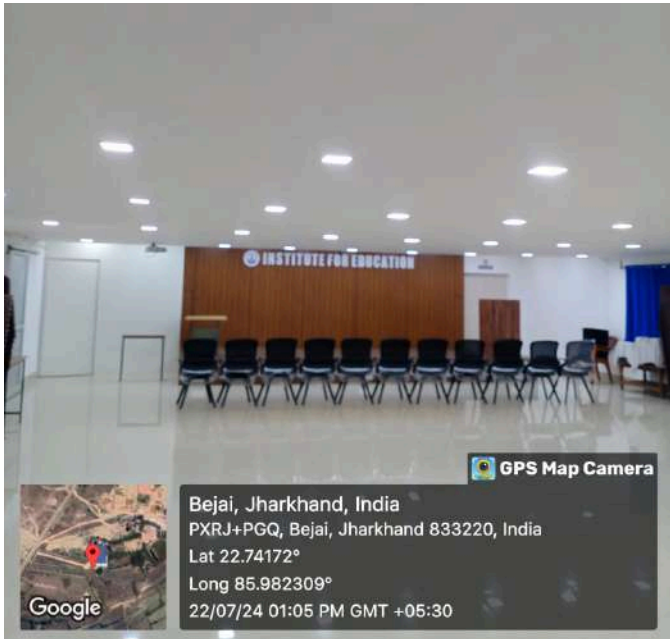
COURSES

The college offers a diverse range of courses to cater to different academic interests and career aspirations.

These include :

- Bachelor of Education (B.Ed.),
- Diploma in Elementary Education (D.El.Ed.),
- Bachelor of Business Administration (BBA), and
- Bachelor of Computer Applications (BCA).

These programs are designed to provide students with a strong foundation in their chosen fields, combining theoretical knowledge with practical experience to prepare them for future professional challenges.



INSTITUTE FOR EDUCATION DUGNI

3.0 Green Audit

3.1 Questionnaires

Sl No	Audit Questions	Answers/Remarks
1.1	General information	
1	Does any Green Audit conduct earlier?	YES
2	What is the total strength (people count) of the Institute?	200
3	What is the total number of working days of your campus in a year?	210
4	Where is the campus located?	DUGNI
5	Municipal waste, Sewer line, waste water managed by?	<p>Municipal waste in the college are effectively managed through a systematic approach. Waste is segregated at the source and then sent for recycling and composting. Sanitary waste is disposed of responsibly through incineration.</p> <p>No Sewer line, as it is under Gram Panchayat.</p>

Sl No	Audit Questions	Answers/Remarks
1.2	WASTE MINIMIZATION AND RECYCLING	
1	Does your institute generate any waste? If so, what are they?	Solid waste.
2	What is the approximate amount of waste generated per day? (in KG approx.)	15 kgs
3	How is the waste generated in the institute managed? By Composting, Recycling, Reusing, Others (specify)	<ul style="list-style-type: none"> • Single use plastic is banned on the campus. • Composting is done for horticulture waste management. • Solid waste (Both dry and wet) is managed by segregation in recycle. • Paper waste is sent to scrap vendor periodically. • signed MOU with Koru Foundation for Recyclables AND E-WASTE.
4	Do you use recycled paper in institute?	YES INSTITUTE FOR EDUCATION COLLABORATES WITH THIRD PARTY RECYCLE VENDOR.
5	How would you spread the message of recycling to others in the community?	<ul style="list-style-type: none"> • Seminars and webinars for students and faculty. • Nukkar-Natak by Students to increasing awareness. • Various campaigns for awareness are organised by NSS team.

Sl No	Audit Questions	Answers/Remarks
1.3	GREENING THE CAMPUS	
1	Is there a garden in your institute?	Yes
2	Total number of Plants in Campus?	~ 200 , Full Grown Trees, Small Trees, Hedge Plants.
3	How many Tree Plantation Drives organized by campus per annum?	Yes. 5+ plantation drives in last years.
4	Is there any Plant Distribution Program for Students and Community?	Yes

Sl No	Audit Questions	Answers/Remarks
1.4	WATER AND WASTEWATER MANAGEMENT	
1	Sources of water	Ground water.
2	Water usage details.	Drinking, Gardening, Kitchen & Toilets.
3	How does your institute store water? Are there any water saving techniques followed in your institute?	Sump tank and Overhead Water tanks.

3.2 Data analysis and final report preparation

Proper analysis and presentation of data produced from work are vital elements. In the case of a green audit, the filled questionnaires from each group's survey were tabulated according to their modules in Excel spreadsheets. This tabulated data was then used for further analysis. To enhance understanding and avoid complications, averages and percentages were calculated. Graphical representations of these results were created to provide a quick overview of the status. The overall outcomes were interpreted by incorporating all primary and secondary data, references, and interrelations. This interpretation was used to prepare the final report.

The study covered the following areas to summarize the current status of environmental management on the campus:

As part of the green audit, the Green Audit Assessment Team conducted environmental monitoring of the campus, including illumination and noise levels in the classrooms. It was observed that the illumination and ventilation are adequate, considering natural light and air velocity. Additionally, noise levels on the campus are well below the permissible limits.

3.2.1 Air Quality:

The air quality is monitored by the local authorities of the township. The campus is located in the heart of Jamshedpur. The air quality index (AQI) forecast for Jamshedpur is as follows:

Pollution level	Wind
Moderate 90 AQI	13.5 km/h

3.2.2 Illumination level

To improve the educational environment, classrooms need good lighting. Good lighting makes students feel safe and enhances learning. Additionally, it strengthens the school's brand value. Many studies have shown a close relationship between lighting and student performance.

A light level of 250 lux is sufficient in classrooms where students spend most of their time and focus on learning. To draw attention to the area where the teacher is located and to enhance students' concentration, a light level of **750 lux** can be used in that area. An illumination study was conducted in different classrooms, with values ranging from **350 to 600 lux**.



3.2.3 Noise Level

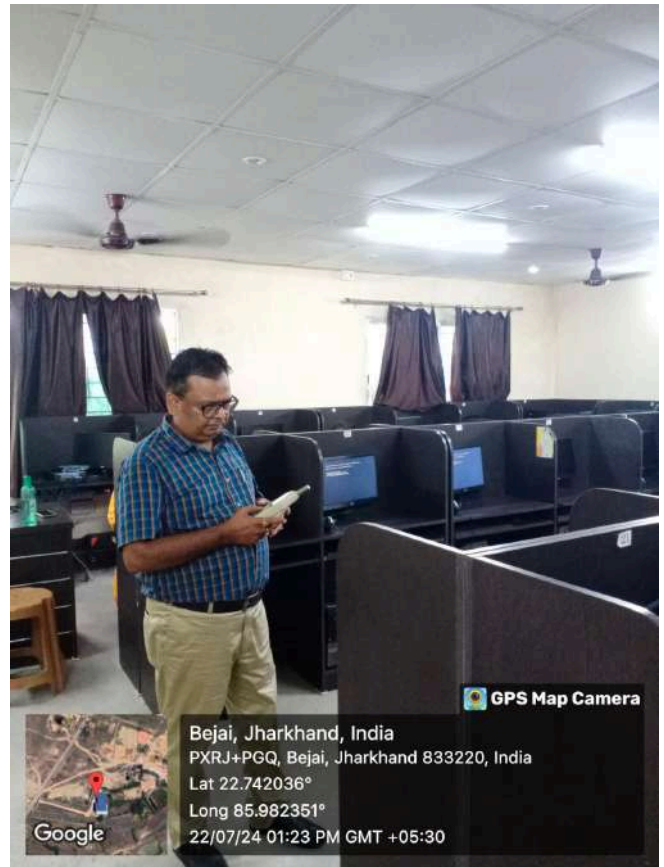
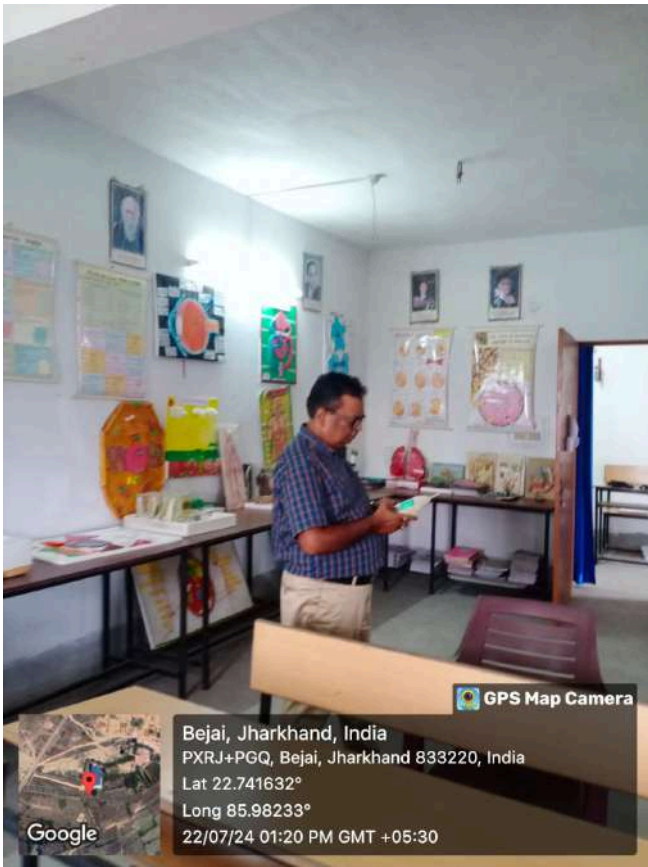
The human ear is constantly bombarded by man-made sounds from all directions, and there are few places in populated areas where relative quiet prevails. Sound has two basic properties: loudness and frequency.

Loudness is the strength of the sensation of sound perceived by an individual. It is measured in decibels (dB). For example, a whisper is about 20 dB, a library is around 30 dB, normal conversation ranges from 35-60 dB, heavy street traffic is about 60-70 dB, boiler factories are around 120 dB, jet planes during takeoff reach about 150 dB, and a rocket engine is about 180 dB. The loudest sound a person can endure without much discomfort is around 80 dB. Sounds beyond 80 dB can be considered pollutants as they harm the hearing system. The World Health Organization (WHO) has set 45 dB as the safe noise level for a city, while international standards consider up to 65 dB tolerable. Loudness is also expressed in sones, with one sone equaling the loudness of a 40 dB sound pressure at 1000 Hz.

Frequency is defined as the number of vibrations per second and is denoted in **Hertz (Hz)**.

A Lutron noise level meter was used to measure the noise levels at different locations on the university campus.

Sl No	Locations	Sound level (dB)
1	At court yard of college at Dugni	64dB
2	At Main Gate at Institute for Education	66 dB
3	Teachers common room at Institute for Education	64 dB
4	In office entrance area at Institute for Education	68 dB



NOISE LEVEL MONITORING AT INSTITUTE FOR EDUCATION

3.2.4 Water management

Water is one of the most crucial elements in our environment. At the university, water is primarily used for drinking, cleaning, gardening, food preparation, recreational purposes, laboratories, and bathrooms.

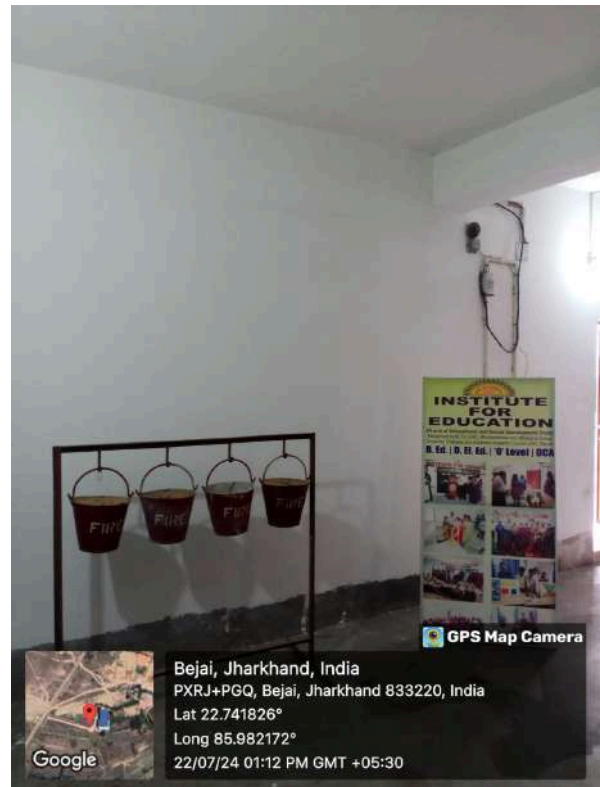
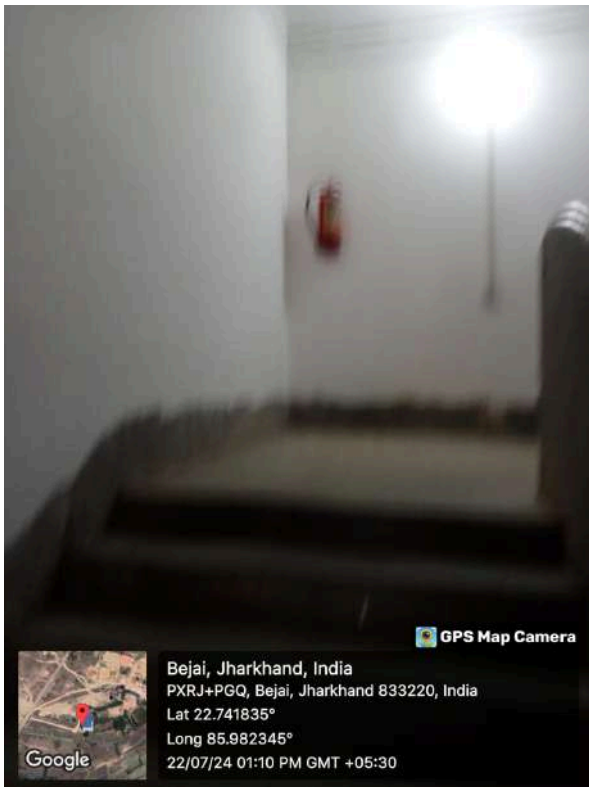
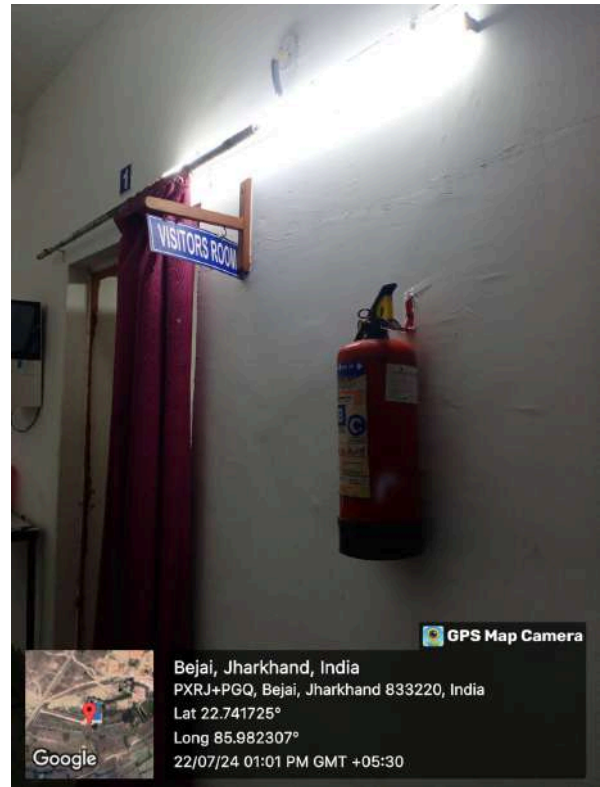
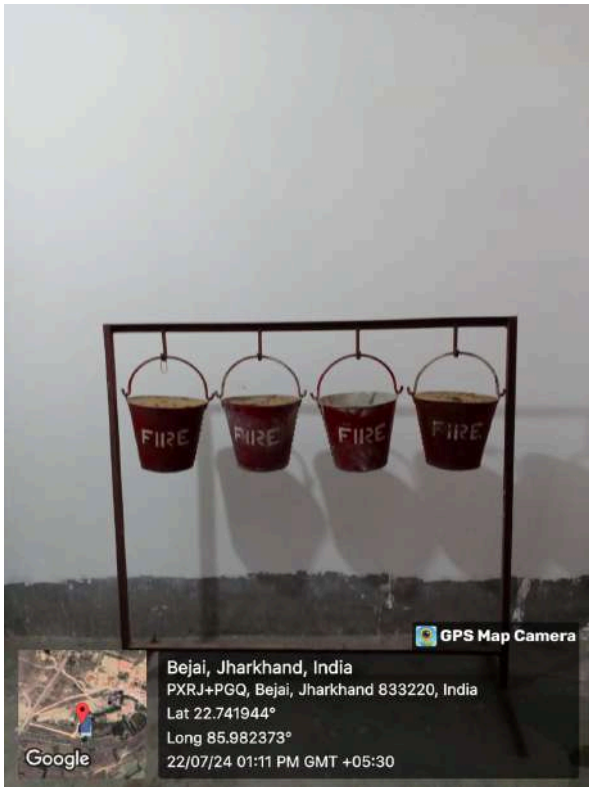
Water quality testing is vital because it identifies contaminants and prevents waterborne diseases. Drinking or using contaminated water can lead to severe illness or even death. Therefore, it is essential for INSTITUTE FOR EDUCATION to ensure that drinking water is safe, clean, and free from bacteria and disease. Water quality parameters are determined by the intended use, with a focus on water treated for human consumption or environmental purposes.

The INSTITUTE FOR EDUCATION uses ground water . The buildings are connected, and storage tanks are installed on top of the buildings. Approximately two tanks, each with a capacity of 1000 liters, are installed.

The college's water quality is regularly analyzed by an RO technician using a TDS meter to ensure safety and standards. The daily water consumption on campus is approximately 2,000 liters, which is carefully monitored to maintain optimal usage and sustainability.



WATER STORAGE AT INSTITUTE FOR EDUCATION : SUMP TANK, OVERHEAD TANKS, AND DRINKING WATER FACILITIES



FIRE HYDRANT INSTITUTE FOR EDUCATION

3.2.5 Drinking water

The water used for drinking purposes is clean and well-maintained. A total of three RO units are installed on the campus, ensuring safe drinking water is available on all floors of the university.

Water Quality Assessment

Water samples from INSTITUTE FOR EDUCATION were collected and analyzed for quality parameters. The major parameters analyzed include color, pH, total dissolved solids, and total suspended solids.

Microbial Analysis Worldwide

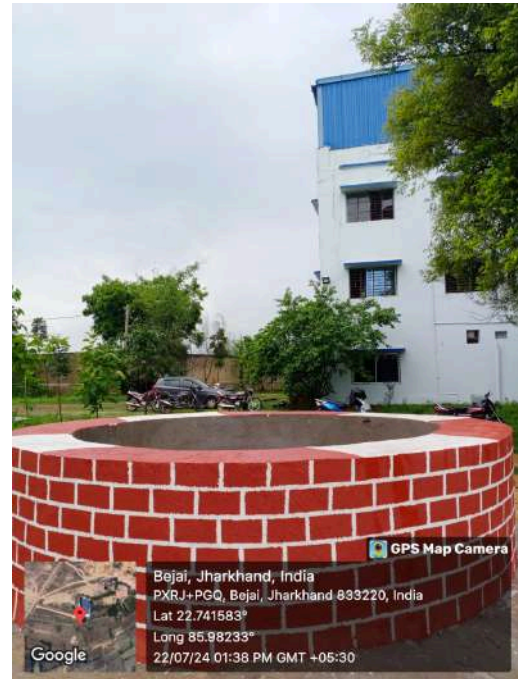
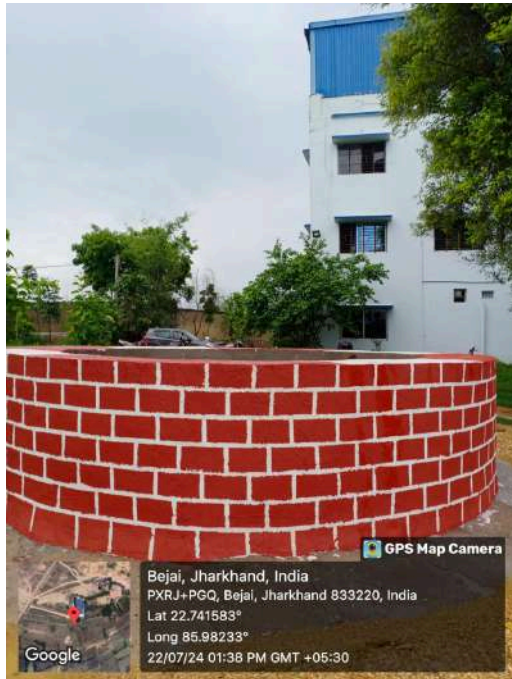
water-borne infections are a major contributor to illness and fatalities. Routine microbiological testing of drinking water sources, recreational waters, and environmental waters is essential for protecting public health.



WATER SOURCES AND RO WITH WATER COOLERS AT INSTITUTE FOR EDUCATION

3.2.6 Rain Water harvesting system

The campus features a rainwater harvesting system equipped with recharge pits located throughout the premises. These units effectively recharge the groundwater level by utilizing soaking pits spread across the campus. Rainwater collected from rooftops is directed into these recharge wells.

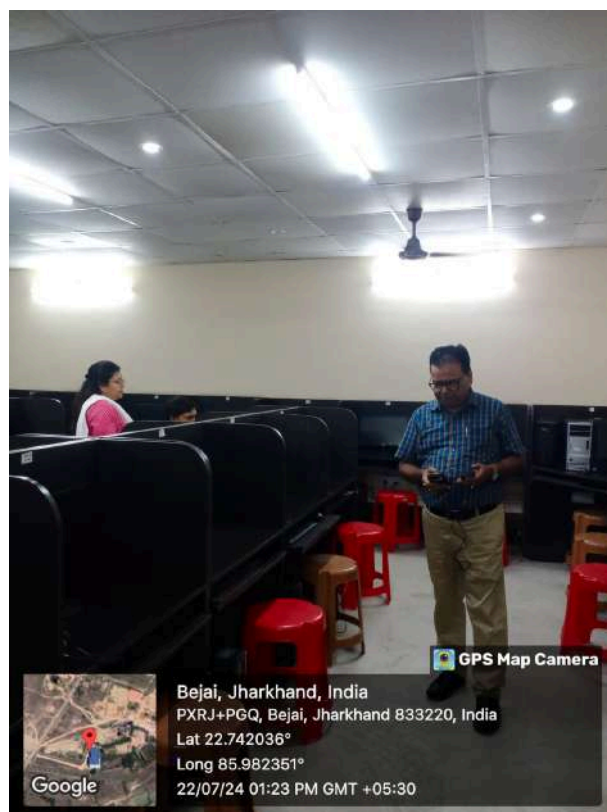
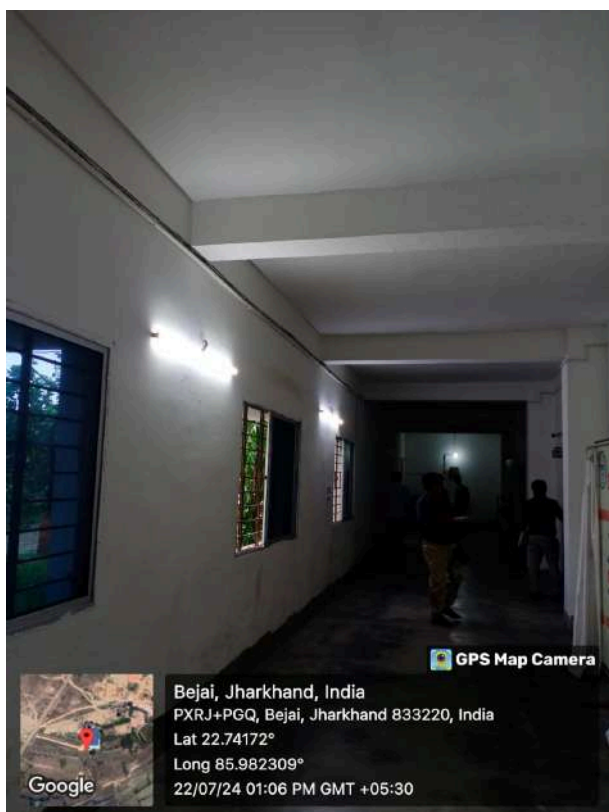


RAINWATER HARVESTING SYSTEM WITH DOWNPIPES AND WATER COLLECTION CIRCUITS AT INSTITUTE FOR EDUCATION

3.2.7 Energy Conservation

This indicator focuses on energy consumption at the Institute for Education, encompassing energy sources, monitoring systems, lighting solutions, appliances, and the efficient use of natural resources. Energy management is a crucial aspect of campus sustainability, significantly influencing the institution's environmental footprint. The Institute is dedicated to optimizing energy use, thereby reducing operational costs and contributing to global efforts against climate change.

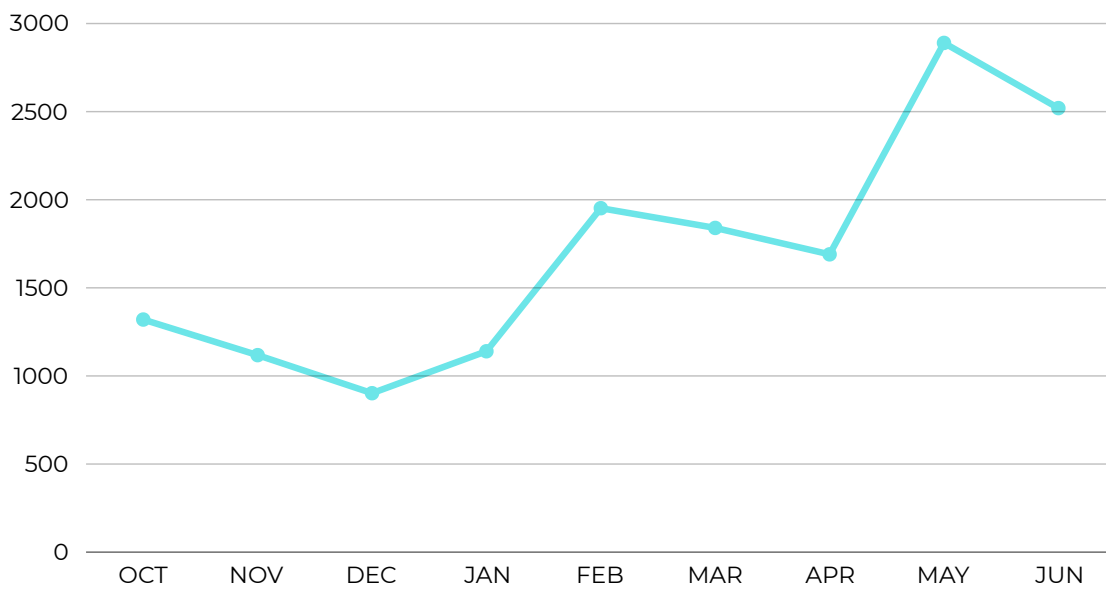
To enhance energy efficiency, the Institute has implemented various strategies, including the widespread use of **LED tubes**, which significantly conserve energy compared to traditional lighting. Additionally, energy-saving appliances and sustainable lighting systems are utilized, and natural resources are integrated wherever possible. Regular monitoring of energy consumption is conducted to identify areas for improvement and ensure responsible resource use. Currently, the Institute's monthly average energy consumption is **1,708 kWh**, reflecting its ongoing commitment to balancing operational needs with sustainable energy practices across the campus



Electrical equipments at the college

Equipment	Number
FANS	58
LED TUBE LIGHTS	54
CFL	25
WATER COOLERS	2
COMPUTERS	57
SMART BOARDS	2
FRIDGE	1
AIR CONDITIONERS	2

Power Consumption at campus



3.2.8 Solar panel

Solar Panel Specifications:

- Power Output: 545 W
- Voltage: 50.3 V
- Current: 12.8 A
- Temperature Range: -40°C to +85°C

Certifications:

- IS 14286
- IS 61730-1 & 2
- IS 62804
- IEC 61701
- Fire Rating: BIS
- ISO 9001, 14001, 45001 (In Process)

Panel Tier: Tier 1

Efficiency: 21.67%

Solar Plant Performance:

- Plant Capacity: 10 kWp
- Daily Power Generation: 40 kWh
- Monthly Power Generation: 1,200 kWh
- Annual Power Generation: 14,400 kWh

Power Generation Analysis:

The solar power system analyzed consists of a 10 kWp (kilowatt peak) solar plant. The system is capable of generating:

- Daily Output: 40 kWh/day
- Monthly Output: 1,200 kWh/month
- Annual Output: 14,400 kWh/year

System Overview:

This solar panel system is designed with high efficiency, offering an impressive efficiency rate of 21.67%. The panels operate within a broad temperature range, making them suitable for various environmental conditions. With 19 plates and a total power output of 545W per panel, this system demonstrates a robust capacity for energy generation.

The solar plant, rated at 10 kWp, is projected to produce approximately 40 kWh per day, translating to around 1,200 kWh per month and 14,400 kWh annually. This output significantly contributes to reducing reliance on non-renewable energy sources, lowering the carbon footprint, and promoting sustainability.

Certification and Compliance

The solar panels comply with multiple standards, including IS 14286, IS 61730-1 & 2, and IEC 61701, ensuring they meet stringent quality and safety criteria. The BIS fire rating adds another layer of safety, while ISO certifications for quality (9001), environmental management (14001), and occupational health and safety (45001) are in process, indicating ongoing efforts to maintain high standards across the board.

Conclusion

The analyzed solar power system is a highly efficient, certified, and reliable energy solution. Its capacity to generate significant amounts of renewable energy makes it a valuable asset for reducing environmental impact and advancing sustainable energy practices.



3.2.9 Waste Management

Institute for Education recognizes that proper waste management is essential for a well-defined ecosystem and is a crucial aspect of campus development. The college is committed to the “Clean and Green Campus” mission, which encompasses the management of solid waste, liquid waste, biomedical waste, and e-waste. Collaborating with various NGOs, the college continually introduces new initiatives to sustain and energize this mission.

Key Initiatives:

- Waste Collection and Segregation:
 - Installation of Waste Bins: Multiple waste collection containers have been strategically placed around the campus. Students are encouraged to correctly identify and dispose of waste in these bins.
 - Training of Utility Staff: A team of trained utility workers is engaged on campus, proficient in waste segregation and management
- Recycle Station Collaboration
 - Partnership with KORU FOUNDATION: A “Recycle Station” has been established in collaboration with KORU FOUNDATION. The station promotes the concept “Waste is not waste until we waste it.”
 - Concept: The Recycle Station encourages the community to view waste as 'recyclables,' fostering resource conservation and environmental protection.
- Awareness and Education:
 - Waste Management Drives: Regular awareness drives are conducted to educate students on proper waste management.
 - Community Outreach: Nearby villages are educated on waste management basics and encouraged to adopt sustainable practices.
- 3R Strategy Implementation:
 - Reduce: Efforts to minimize waste generation.
 - Reuse: Promoting the reuse of items after proper segregation and cleaning.
 - Recycle: Segregated recyclable items are handed over to appropriate agencies.

Plastic Ban Initiatives:

- Campus Messaging: Clear messages about the plastic ban are displayed campus.

Composting Initiative:

- Composting Mesh at Campus: A composting mesh has been set up at the campus for organic and garden waste, converting it into useful compost for campus gardens.

3.2.10 Solid waste management:

Institute for Education is committed to effective waste management as part of its “Clean and Green Campus” mission. This mission includes the management of solid waste (biodegradable and non-biodegradable), liquid waste, biomedical waste, and e-waste. The college collaborates with various NGOs to sustain and enhance these initiatives.

Key Initiatives:

- Solid Waste Management:
- Biodegradable Waste:
 - Types: Includes vegetable peels, dry leaves, and food waste.
 - Usage: Segregated and used as bio-fertilizers for the campus gardens.
 - Composting: A composting pit measuring 2m x 2m x 2m converts these wastes into organic fertilizer.
- Non-Biodegradable Waste:
 - Types: Includes minimal use of polythene bags, plastic, glass, and metal wastes.
 - Reduction Measures: Polythene bags are minimized or avoided entirely to maintain a plastic-free campus.
 - Alternatives: The campus café has replaced disposable plastic cups and plates with steel plates and earthen cups.



Recycle Station:

- Location: Situated in front of the student canteen.
- Function: Glass and metal wastes are collected in well-marked bins and sold to recyclers.
- Awareness: Notifications and signs promoting the ban on single-use plastic are displayed at strategic locations.

Waste Segregation:

- Binning System:
 - Separate Bins: Provided for biodegradable and non-biodegradable waste at source.
 - Dedicated Bins: Specific bins for biodegradable, plastic, food waste, and non-biodegradable waste.
- Metal and Wooden Waste: Stored and sent to authorized scrap agents.

Garden and Lawn Waste:

- Tree Droppings and Lawn Management: Major sources of solid waste, handled through separate dustbins for biodegradable and plastic waste.

Awareness and Training:

- Ground Staff Meetings: Regular meetings with ground staff to discuss campus cleanliness and proper waste disposal practices

3.2.11 E-waste management

Overview:

Institute for Education is dedicated to the proper management of e-waste, which consists of electronic devices discarded after they have reached the end of their useful life. The e-waste generated on campus primarily includes outdated computer systems, keyboards, electronic kits, battery cells, calculators, CDs, and similar items.

Key Initiatives:

- Systematic Collection and Disposal:
 - E-Waste Types: Includes out-of-use electronic devices such as computer systems, keyboards, electronic kits, battery cells, calculators, CDs, etc.
 - Collection Process: E-waste is systematically collected on campus and prepared for appropriate disposal.
- Partnership for Disposal:
 - MoU with Koru Foundation: The college has signed a Memorandum of Understanding (MoU) with Koru Foundation to ensure smooth and proper disposal of e-waste.
 - Purpose: This partnership aligns with the E-Waste Management Rules, 2016, and ensures compliance with government regulations.

Impact and Benefits:

- Environmental Compliance: Ensures that e-waste is disposed of in an environmentally friendly manner, complying with legal requirements.
- Sustainable Practices: Reinforces the college's commitment to sustainable waste management practices.

3.2.12 Green area management

Overview:

Institute for Education feature diverse tree species that provide numerous environmental benefits. These trees, planted through various university programs, have become integral to the institution.

Key Contributions:

- Environmental Benefits:
 - Oxygen Production and Air Quality: Trees supply oxygen and improve air quality.
 - Climate Regulation: They moderate the effects of sun, rain, and wind, and help conserve water and soil.
 - Wildlife Support: Trees provide food and shelter for various bird species and other wildlife.
- Biodiversity and Aesthetics:
 - Species Variety: A wide range of tree species enhances biodiversity.
 - Seasonal Beauty: Trees display changing shapes, forms, textures, and colors throughout the year.
- Quality of Life:
 - Enhanced Environment: Trees improve the quality of life for the college community and nearby residents by cooling the campus and providing aesthetic and health benefits.

Recommendations:

- Ongoing Plantations: Continue tree planting programs.
- Biodiversity Monitoring: Regularly monitor tree health and diversity.
- Community Involvement: Engage the local community in conservation activities.

Table: List of tree species at all campuses -

S.N.	COMMON NAME	BOTANICAL NAME	USES	NUMBER
1	Sagwan	<i>Tectona grandis</i>	used for treating gastrointestinal disorders such as dysentery, stomach ache, piles and constipation	126
2	Mahogany	<i>Swietenia mahagoni</i>	Anti-inflammatory, Antimicrobial, Anti-diabetic, Anti-HIV, Anti-ulcer, Anticonvulsant, Hepatoprotective, Anticancer, Antiseptic, and Insect repellent	72
3	Kusum	<i>Schleichera</i>	Used as an astringent to treat skin inflammations, ulcers, itching, acne, and other skin infections. analgesic and antibiotic against dysentery.	4
4	Mango	<i>Mangifera indica</i>	Anti-bacterial, anti-fungal	10
5	Lal Chandan	<i>Pterocarpus Santalinus</i>	antipyretic, anti-inflammatory, anthelmintic	9
6	Chandan	<i>Santalum album</i>	Anti-fungal, anti-bacterial	3
7	Neem	<i>Azadirachta indica</i>	anti-inflammatory	3
8	Amla	<i>Phyllanthus emblica</i>	Anti-inflammatory, Anti-diabetic Anti-hyperlipidaemic	9
9	Guava	<i>Psidium guajava</i>	antioxidant, antimicrobial, anti-inflammatory, antispasmodic	1
10	Kadamb	<i>Neolamarckia cadamba</i>	Analgesic and anti-inflammatory Antifungal, anti-filarial, and antimalarial Antibacterial Diarrheal	6
11	Kathal	<i>Artocarpus heterophyllus</i>	antioxidant, anti-inflammatory, antibacterial	2
12	Imli	<i>Tamarindus indica</i>	Anti-inflammatory, antidiabetic, antimicrobial, anti-venomic, antioxidant, antimalarial, cardioprotective, hepatoprotective, antiasthmatic, laxative, and anti-hyperlipidemic	2
13	Karanj	<i>Millettia pinnata</i>	antioxidant, antimicrobial, anti-inflammatory, and anti-diabetic	4
14	Saal	<i>Shorea robusta</i>	Anti-inflammatory, Analgesic, Antinociceptive, Antioxidant, Hypolipidemic, Hepatoprotective, Expectorant, Anti-obesity, and Immunomodulatory	71
15	Ber	<i>Ziziphus mauritiana</i>	anti-inflammatory	1
16	Bel	<i>Aegle marmelos</i>	antibacterial, antiviral, antidiarrheal, gastroprotective, anti-ulcerative colitis	2
17	Belly	<i>Jasminum sambac</i>	Infections	4
18	Rose	<i>Rosaceae</i>	Anxiety	4
19	China rose	<i>Hibiscus rosa-sinensis</i>	antioxidant	5
20	Garlic	<i>Allium sativum</i>	Anti-biotic, anti-inflammatory, anti-fungal, anti-oxidant	5
21	Aloe vera	<i>Aloe vera</i>	Anti-inflammatory, anti-oxidant, anti-bacterial, anti-viral, antiseptic, anticancer, antidiabetic, antihyperlipidemic	4
22	Turmeric	<i>Curcuma longa</i>	anti-inflammatory, anti-oxidant, antimicrobial, anti-septic, and anti-cancer	4
23	Ashoka	<i>Saraca asoca</i>	Anti-bacterial, anti-inflammatory, anti-oxidant	2

3.2.13 Use of Bicycles :

At Institute for Education, students and non-teaching staff commute by bicycle, supported by a dedicated cycle shed for vehicle safety. This green initiative helps reduce environmental pollution and carbon footprints. Additionally, the college pathways are laid with permeable paver blocks, facilitating rainwater seepage and ground water recharge.

Key Initiatives:

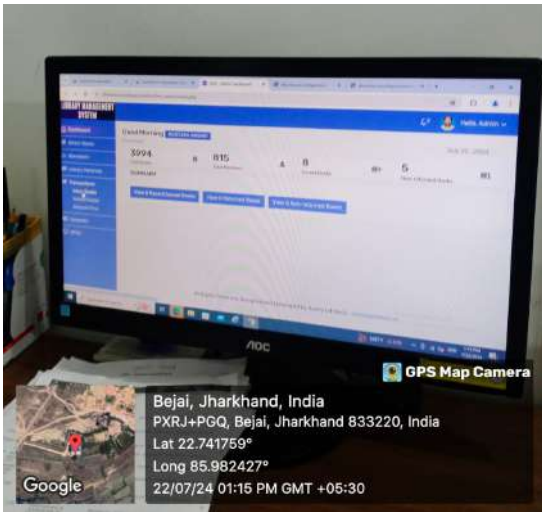
- Sustainable Transport:
 - Bicycle Commute: Encourages students and staff to use bicycles, reducing environmental pollution and carbon emissions.
 - Cycle Shed: Constructed to provide secure parking for bicycles.
- Eco-Friendly Infrastructure:
 - Permeable Pathways: Pathways with paver blocks allow rainwater to seep through, recharging the groundwater and preventing waterlogging.

3.2.14 E - communication

Institute for Education has implemented efficient e-governance and digital infrastructure to enhance communication and reduce paper usage.

Key Initiatives:

- LAN Network:
 - Connectivity: All departments, the examination cell, and laboratories are well-connected through an efficient LAN network.
 - Digital Communication: Inter-office correspondence is conducted via email, significantly reducing paper usage.
- E-Governance Implementation:
 - Areas of Operation: E-governance is implemented across various areas of operation within the institution.
 - Collaboration: The college partnered with Master Soft in the 2021-2022 session to implement these digital solutions.



4.0 Conclusion

This audit involved discussions, questionnaires with various teams, and interactions with key personnel on a wide range of environmental issues. The college is dedicated to considering the environmental impacts of its actions and strives to act in an environmentally responsible manner.

Key Findings:

- **LED Lighting:** Classrooms, lecture halls, and many strategic locations are fitted with LED lights and tubes.
- **Solid Waste Management:** Solid waste is segregated and collected at the recycle station for appropriate recycling and disposal.
- **Rainwater Harvesting:** The main administrative buildings are equipped with a rainwater harvesting system.
- **Noise Reduction:** Generators are fitted with acoustic chambers to minimize noise pollution.
- **Greenery and Landscaping:** The campus features extensive greenery and well-maintained landscaping.

Recommendations:

- **Water Audit:** Conduct a water audit and balance to ensure efficient water usage.
- **Reuse of Treated Water:** Implement the reuse of treated water for gardening purposes.

5.0 Recommendations

- Energy Efficiency:
 - LED Lighting: Increase the installation of LED lights to reduce power consumption for lighting.
 - High-Efficiency Appliances: Use 5-star rated air conditioners, fans, and CFLs.
 - Switch-off Drills: Conduct regular switch-off drills and shut down electricity from the main building supply after occupancy hours to prevent power loss due to eddy current.
 - Regular Cleaning: Clean tube-lights and bulbs periodically to remove dust and maintain efficiency.
- Water Management:
 - Overflow Monitoring: Implement monitoring and control measures for water overflow and arrange periodic supervision drills.
 - Water Audits: Conduct water audits and balancing to ensure efficient water usage.
 - Treated Water Reuse: Reuse treated water for gardening purposes.
- Waste Management:
 - Biogas Unit: Introduce a biogas unit to utilize biodegradable and food waste.
 - Waste Recycling Plans: Develop various recycling plans for different types of waste.
 - Paper Waste: Send paper waste, such as answer sheets, old bills, and confidential reports, for shredding, pulping, and recycling after their preservation period.
- Environmental Impact:
 - Eco-Friendly Cleaning Products: Ensure that all cleaning products used by staff have minimal environmental impact.
- Green Initiatives:
 - Tree Management: Periodically review the list of trees planted in the garden, allot numbers to the trees, and maintain records.
 - Indoor Plantation: Encourage indoor planting to foster interest in students, with bonsai plants in corridors to strengthen their connection with nature.
 - Greenery and Landscaping: Continue to enhance the campus with extensive greenery and well-maintained landscaping.