Green Audit Report (2022-23)

Buniadpur Mahavidyalaya

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Contents:

Certificate ISO based

1. Introduction:

The results, conclusions and suggestions from a thorough green audit carried out at Buniadpur Mahavidyalaya are presented in the report that continues. The audit's goals were to evaluate the college's environmental impact and spot areas where sustainability may be improved. The audit addressed topics like initiatives, disposal of garbage/waste, water usage, electricity consumption and general environmental awareness.

Green Audit Working Team:

Sl No	Name of the Members	Designation
1	Dr. Jitesh Chandra Chaki	Principal & Member Secretary, GB
2	Dr. Santigopal Das	IQAC Coordinator & GB Member
3	Dr. Tanima Dutta	NAAC Coordinator & GB Member
4	Dr. Ramatosh Sarkar	TCS & GB Member
5	Prof. Rabi Tigga	Teachers' Representative
6	Sri. Subrata Shil	Accountant & GB Member
7	Ex-officio	Representative from NCC
8	Ex-officio	Representative from NSS

2. Need for Green Audit:

Green audits, also known as environmental audits or sustainability audits, are becoming more and more necessary in today's society for several reasons:

(a) Environmental Impact: Green audits assist in evaluating and reducing an organization's negative environmental impact. They assess variables like energy use, waste production, water use and emissions, identifying areas that might be improved to lessen environmental harm.

(b) Regulatory Compliance: Businesses must abide by the environmental laws and standards that have been set in many nations. Green audits assist businesses in complying with regulations and avoiding fines or other legal repercussions for non-compliance.

(c) Cost Reduction: Green audits can reveal inefficiencies and wasteful behaviours within an organisation, opening chances for cost savings. Entities can apply methods to save operational costs and boost overall efficiency by analysing energy usage, resource consumption and waste management.

(d) Reputation and Stakeholder Expectations: Stakeholders now demand more environmentally conscious organisational practices. Green audits offer organization transparency and prove its dedication to sustainability, strengthening its reputation and fostering trust among clients, staff, investors and communities.

(e) Risk Management: Environmental hazards can have serious financial and reputational ramifications for firms, including pollution events, regulatory non-compliance and supply chain interruptions. By evaluating environmental management systems, ensuring sufficient controls are in place and putting preventative measures in place to deal with possible problems, green audits assist in identifying and mitigating these risks.

(f) Continuous Improvement: Green audits encourage a continuing commitment to sustainability rather than being one-time events. Organizations can see trends, set goals and implement improvement initiatives by routinely evaluating and tracking environmental performance. This iterative process promotes a culture of sustainability and propels long-lasting transformation.

(g) Sustainable Development Goals (SDGs): An international framework for solving urgent environmental and social issues is provided by the Sustainable Development Goals. Organizations can better align their operations with these objectives with the aid of green audits, paving the way for a more just and sustainable future. To evaluate, enhance and confirm environmental performance, green audits are essential. They allow organisations to control risks, comply with rules, cut costs, improve reputations and support sustainable development.

3. Methodology for Green Audit:

Audits of an organization's environmental performance and practices are known as "green", "environmental" or "sustainability" audits. They entail assessing the organisation's influence on the environment, resource usage, waste management and adherence to environmental legislation. Here is a procedure for carrying out a green audit:

(a) Planning
(b) Identifying audit team and resources
(c) Developing an audit plan: Creating a detailed plan outlining audit activity, timelines, responsibilities and communication channels.
(d) Data Collection
(e) Gathering information
(f) Conducting site visits and interviews
(g) Reviewing documentation
(h) Evaluation and Analysis
(i) Assessing environmental impacts
(j) Evaluating compliance

(k) Identifying strengths and weaknesses
(l) Quantifying results
(m) Reporting
(n) Preparing an audit report
(o) Communicating results
(p) Follow-up and Improvement
(q) Developing an action plan
(r) Monitoring progress
(s) Continuous improvement

The methodology adopted to conduct the Green Audit of the Institution had the following components.

3.1. On-site Visit:

The Green Audit Team carried out a five-day field visit. The visit's main goal was to evaluate the institution's waste management procedures, energy conservation tactics and other aspects of its green cover. The protocols for sample collection, preservation and analysis were followed scientifically.

3.2. Focus Group Discussion:

The Eco Club, Alumni Association, staff, representatives from NCC Coy. & NSS Unit and management members participated in focus group discussions on various facets of the green audit. Identification of attitudes and awareness towards environmental issues at the institutional and local levels were the main topics of discussion.

3.3. Energy and waste management Survey:

The audit team evaluated the college's waste generation, management, disposal and treatment facilities as well as its energy usage pattern with the assistance of staff and students. A comprehensive questionnaire survey method was used to carry out the monitoring.

4. Target Areas of Green Auditing:

A process for resource management includes a green audit. The actual usefulness of green audit lies in the fact that they are conducted at predetermined intervals and that the results might show improvement or change over time, even though they are individual events. The concept of an eco-campus primarily emphasizes the effective use of energy and water, the reduction of waste output or pollution and economic efficiency.

These indications are evaluated during the "Green Auditing of this Educational Institute" procedure. In order to reduce emissions, obtain a reliable and affordable

energy supply, promote personal responsibility, encourage and improve energy conservation, reduce the institute's energy and water use, reduce waste going to landfills and incorporate environmental considerations into all contracts and services deemed to have significant environmental impacts, Eco-campus focuses on these goals. Water, energy, trash and green campus are the focus topics for this green audit.

4.1. Energy Consumption:

4.1.1. Lighting: The audit showed that almost all of college's lighting fixtures were modern and energy efficient but lack automation. It is thus advised to use natural light whenever possible and add ambient light/occupancy/proximity sensors to minimise wastage of electricity.

4.1.2. Heating, Ventilation and Air Conditioning (HVAC):

The HVAC systems were found to be well-maintained & in good working condition with satisfactory cooling efficiency. Energy usage can be considerably decreased by continuing regular maintenance, switching to more energy-efficient HVAC equipment, using programmable thermostats & powering them with solar systems.

4.1.3. Energy Awareness: The college should promote energy conservation practices among employees and students. Awareness campaigns, educational activities and financial incentives for energy-saving projects can all help achieve this.

Electrical device/items	Number	Power consumption (watt)	Usage time (hr/day) (depends on weather)
Conventional Tubelights	02	80	10:00 am to 5:00 pm
LED Tube lights	102	1900	10:00 am to 5:00 pm
Tungsten filament bulbs	00	00	10:00 am to 5:00 pm
Compact Fluorescent Lamp Bulbs (CFLs)	02	40	10:00 am to 5:00 pm
LED Bulbs	120	2400	10:00 am to 5:00 pm
Ceiling Fans	295	20650	10:00 am to 5:00 pm
Wall mounted fans	06	420	10:00 am to 5:00 pm
Pedestal fans	02	240	10:00 am to 5:00 pm

In the classrooms, common rooms, reading rooms, etc., energy efficient lights (LED) and fans can be installed, so that electricity usage is optimised. Conventional tubelights & tungsten bulbs have been replaced with LED batens & CFLs/LEDs, which is a positive approach. The institution must try to switch over to solar power at the earliest to minimise dependence on fossil fuel- generated electricity. [Note: The fact that all of the power switches are functional demonstrates that the electrical equipment is being maintained properly.]	
Suggestions:	Performing routine maintenance on electrical fans. The accumulation of dust and debris can

	hinder the fan's performance. Regular cleaning of the grilles, blades and motor housing is necessary to maintain optimal operation, ensure smooth airflow & save energy.

Silent Diesel Generator sets are designed to generate a very low level of background noise & their structures are constructed to eliminate maximum noise and vibrations due to their design. The College has a silent DG set which serves during power cuts.

4.2. Waste Management:

4.2.1. Recycling: There were recycling bins across the campus, the audit showed that there was an adequacy of effective separation and information about recyclable waste. Increased recycling rates can be achieved by upgrading signage, giving clear instructions and implementing a comprehensive recycling education programme, which the college has carried out through workshops and sensitization measures.

4.2.2. Composting: The institution has a composting pit to handle the degradable waste produced by students and staff. Composting can help drastically reduce the quantity of garbage dumped in landfills while also producing compost for gardening. Bio-degradable waste processing plants are present at the college campus, which effectively do the job.

Waste Bins

Municipal Waste Bin

Waste Processing Unit

Table: Different types of waste generated in the college and their disposal

Types of waste	Particulars	Disposal method(s)
E-Waste	Computers, electrical and electronic parts	Stored in a separate bin and collected by Buniadpur Municipality for proper disposal.
Plastic waste	Pen, Refill, Plastic water bottles and other plastic containers, wrappers, etc.	Items made of plastic that are only intended to be used once, such as bottles, jars, use & throw pens, bags, etc. College encourages people to use glass/steel/copper water bottles and other containers that can be reused. Distinct recycling containers kept for plastic garbage and after a predetermined period of time, disposed through Buniadpur Municipality.
Solid waste	Paper waste, paper plates, food wastes	Bio-degradable waste is processed in bio-compost in the facility available in the campus Non-biodegradable solid waste is collected by Buniadpur Municipality for proper disposal.
Chemical waste	None	No science laboratory existent
Waste water	Washing, urinals, bathrooms	Soak pits → ground water table recharge
Glass waste	Broken glass items	Glass debris are kept separate from other recyclable materials and disposed in yellow puncture-resistant containers. The said debris is then collected by Buniadpur Municipality for proper disposal.
Sanitary Napkin	-	Napkin Incinerators available in female washrooms

4.3. Water Usage:

4.3.1. Water Fixtures: Most of the water fixtures in the college campus are maintained & are in working condition. Water resources can be saved by regular maintenance of these fixtures and encouraging staff and students to practice water-saving habits.

Water management table:

Water Management Tasks	Frequency	Responsible Party
Routine examination of water supplies	Monthly	Green Audit Working Team & Eco Club
Testing for drinking water quality	Half-yearly	Green Audit Working Team & Eco Club
Awareness of water conservation	Half-yearly	Green Audit Working Team & Eco Club
Infrastructure for water distribution that needs upkeep and repair	As & when needed	Caretaker
Reporting and analysis of water use	Annually	Green Audit Working Team & Caretaker
Learn what causes excessive water consumption.	As & when needed	Green Audit Working Team & Eco Club

Tabular data detailing the subject at hand:

Sl No	Parameters	Response
1	Sources of water	Municipality, Underground, Pond (1500 sq. ft.) & Rainwater Harvesting **Note:** The ground water serves as a drinking water supply for students and staff members.
2	Source of Drinking Water	Ground water (purified)
3	Any treatment for drinking water	Water purifier & cooler **Note:** Water purifiers have been installed on each floor and are maintained periodically.
4	What is the total number of motors that are used?	03 numbers
5	What is the total number of water tanks? Capacity of tank	05 @ 1000 litres each
6	No. of Taps	105 numbers
	Quantity of water pumped every day	5000 litres/per day (approx.)
7	Do you waste water and if so, why?	No

8	How much water is required for gardening purposes?	300 litres/per day
9	How many water coolers are there in total?	03
10	Do you have access to rainwater harvesting?	Yes. Collected from rain down pipes & stored in tanks for use.
11	The number of units harvested and the total volume of water	01
12	Any leaky taps	00 found during visit
13	Daily amount of water that is lost.	00
14	Is there any kind of plan for the management of water?	Eco Club monitors management of water resources and takes steps accordingly
15	Have any methods for conserving water been implemented?	Rainwater Harvesting from rain down pipes, which collect rainwater in tanks & conserve the same for use.

4.4. Transportation:

Public Transport: The college's carbon footprint can be significantly reduced by encouraging employees and students to use public transport. Sustainable transport solutions can be promoted by offering bus passes, encouraging carpooling and supporting bicycle.

4.5. Overall Environmental Awareness:

4.5.1. Curriculum Integration: The institution can integrate environmental awareness and sustainability into its curriculum across various subject areas. This strategy will guarantee that students receive instruction and training in environmental stewardship, encouraging sustainable thinking.

Environmental awareness across different subjects	Parameters	Programme time
Language Arts	Discuss texts from literature that are in some way connected to topics concerning the environment, such as conservation or environmental advocacy. Compose poetry or essays that argue for the protection of the environment and use persuasion. Conduct research on a variety of environmental topics, then present your findings. Through various awareness programs, they understand the environmental laws and regulations that apply on the local, national and international levels. Discuss the roles that governments, NGOs and people play in the effort to solve environmental problems. Investigate the environmental concerns from both a historical and cultural point of view.	Whole year
Arts	Investigate the causes of climate change and possible solutions to the problem. Analyse the impact that human activities have had on different landscapes as well as the distribution of natural resources. Studies should be done on urbanization, logging and industry's impact on the natural environment. Investigate geographical approaches to resolving environmental issues, such as environmentally responsible land management planning.	Whole year

4.5.2. Student Engagement: A culture of sustainability can be promoted among students by supporting student-led projects, creating environmental groups and holding awareness events and workshops.

5. Green Campus:

5.1. Floral Diversity:

Suggested actions:

- Organise a group of academics, employees and students who are interested in managing the plantation programme. Assign roles and duties to make the execution go smoothly.
- Consult with local forestry professionals or environmental groups to discover native or adapted tree species that are well-suited to the climate, soil and goal of the plantation programme. Research and choose suitable tree species.

-To obtain the necessary approvals or permits for planting trees on campus or in the neighbourhood, check with the college administration or other appropriate authorities.

- Look into possible funding options, including grants, sponsorships, or collaborations with nearby companies or environmental organizations. This will aid in defraying the price of buying trees, equipment and other required supplies.
- Establish the plantation event's date, time and venue. Plan the delivery of the trees, tools and equipment to the planting location. Make sure that safety precautions are in place, including appropriate instruction on planting methods and equipment use.
-Volunteers should be gathered at the planting site on the appointed planting day. Give them the equipment, instructions and direction they need to plant trees correctly. Foster a sense of accomplishment and community pride while fostering teamwork.
-Stress the significance of taking care of the freshly planted trees. This could entail routine weeding, mulching, watering and pest or disease inspection. To guarantee the long-term well-being and survival of the trees, think about setting up a system for volunteers or staff members.
-After the plantation programme, evaluate the impact and accomplishment of the effort. Keep an eye on the trees' growth and survival rate. To determine areas for improvement and to organize upcoming plantation programmes, collect participant and stakeholder input.

Encourage participation from the students at the institution, faculty and staff in the upkeep and preservation of the greenery. Volunteer programmes, instructional workshops and awareness campaigns are all excellent avenues for accomplishing this goal. A wide variety of plant and animal species can thrive on grasslands. Greenery encourages biodiversity on campus by serving as a habitat for various plant and animal species, thereby contributing to the maintenance of ecological equilibrium. Greenery can remove carbon dioxide from the air and store it in their soil, which contributes to the fight against climate change by lowering overall levels of greenhouse gases.

Playground of Buniadpur Mahavidyalaya, which not only serves a space for activities of the college, but also supports the ecology.

College Pond

Ponds are extremely important to the campus's ability to sustain a healthy ecological balance. They help to reduce erosion, contribute to the recharging of groundwater supplies and support the surrounding ecology by providing a habitat for a wide range of plants and animals.

5.2. Faunal Diversity:

Studying faunal diversity can increase awareness about environmental challenges and conservation's significance. Colleges that are home to a wide variety of animal species may be more likely to adopt environmentally friendly policies and methods of operation to safeguard the campus environment and the people who live there.

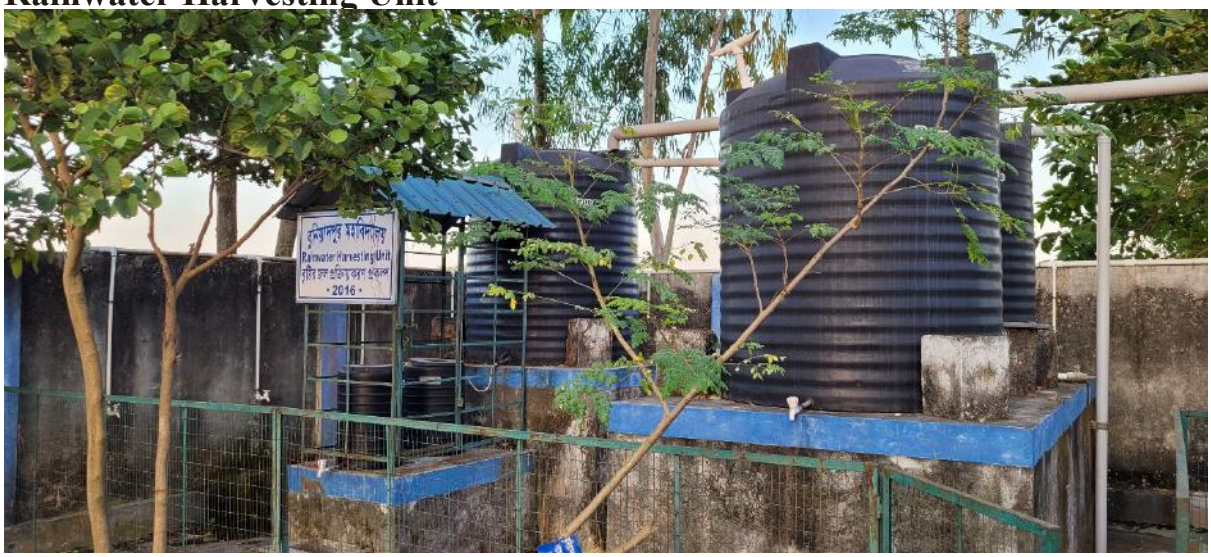
Bird Diversity:

A population of birds that is rich in variety is indicative of an ecosystem that is robust and thriving. Seed dispersal, the control of insect populations and pollination are just a few of the many important functions that different species of birds perform to help maintain ecological equilibrium. They provide a contribution to the campus's general diversity of flora and fauna.

6. Medicinal plants in the campus:

Buniadpur Mahavidyalaya has a variety of medicinal plants and herbs in & around the campus growing naturally. Commonly found herbs & plants of medicinal value, for example, *Tulsi, Neem, Kalmegh*, *Nayantara, Kulekhara (Hygrophila auriculata), Aloe vera,* etc. are found here. The Eco Club, Alumni Association, NSS Unit & NCC Coy. takes care of these medicinal plants in the campus to systematically preserve the existing variety. The institution has plans to plant more of such medicinal plants in future & to prepare a Herbal Garden.

Rainwater Harvesting Unit



Rainwater Harvesting Unit

Rainwater is collected & stored from raindown pipes of roof in tanks, which is later utilized for purposes other than drinking.

Glimpses of Garden & Greenery of the College

7. Conclusion:

Buniadpur Mahavidyalaya's Green Audit identifies certain areas that should be improved to advance sustainability initiatives on campus. Reduced energy use, better water & waste management, optimized water use, sustainable transportation options and raised environmental awareness can all result from implementing the suggested solutions. Buniadpur Mahavidyalaya can set an example of environmental stewardship for its students and contribute to a cleaner future by implementing these improvements.