Green Audit Report (2020-21)

Of

SIR RASHBEHARI GHOSH MAHAVIDYALAYA

VILL+P.O.- UKHRID, P.S.- KHANDAGHOSH, DIST.- PURBA BARDHAMAN, PIN- 713142, WEST BENGAL

CONTACT NO: 7431866072
EMAIL: srgm_burdwan@rediffmail.com

Contents:

UMA Apartment, Rishi Arobindo Road, Madhyamgram, Kolkata-700130
Mob: 7595069903, Email ID: managementsystemconsultancy@gmail.com
Website: www.managementsystemconsultancy.in

1. Introduction:

Between the years 2020 and 2021, the Green Audit Committee at SIR RASHBEHARI GHOSH MAHAVIDYALAYA carried out a comprehensive environmental review of the institution. This audit's primary objective was to analyse the college's overall sustainability initiatives, as well as the college's ecological effect, energy consumption, waste management practices, and trash disposal procedures. This report provides an overview of the most important findings, recommendations, and a proposed action plan to enhance the environmental performance of the college.

Green Audit Working Team (2020-21):

Sl No	Name of the Members	Designation
1.	Dr Debabrata Ghosh	Pincipal
2.	Dr Ankur Konar	IQAC Coordinator
3.	Purnabrata Koner	SACT
4.	Tanmoy Ghosh	SACT
5.	Sufal Das	SACT
6.	Koushik Ghosh	Temporary Clerk
7.	Abul Basar Layek	Temporary Peon

2. The Necessity of a Green Audit:

The need for green audits, also known as environmental audits or sustainability audits, is rising in today's society for a number of reasons.

(a) Effects on the Environment: Green audits help to assess and lessen an organization's harmful environmental impact. They analyse factors such as energy consumption, trash generation, water use, and emissions to find areas that could be improved to decrease environmental harm.

(b) Conformity with Regulations: The environmental regulations and rules that have been established in many countries must be followed by businesses. Green audits help companies adhere to standards so they can avoid penalties or other legal implications for non-compliance.

(c) Savings on Expenses: Green audits can identify inefficient practises and inefficiencies within a business, providing opportunities for cost savings. By studying energy use, resource consumption, and waste management, businesses

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can put strategies into practise to reduce operational costs and increase overall efficiency.

(d) Reputation and the Expectations of Stakeholders: Customers and other stakeholders now call organisations to adopt more environmentally friendly practises. Green audits promote trust among customers, employees, investors, and communities by demonstrating an organization's transparency and commitment to sustainability.

(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. Green audits are essential to evaluate, enhance, and confirm environmental performance. They allow companies 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 company'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) Identify audit team and resources:

(c) Develop an audit plan: Create a detailed plan outlining audit activities, timelines, responsibilities, and communication channels.

(d) Data Collection:

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(e) Gather information:
(f) Conduct site visits and interviews:
(g) Review documentation:
(h) Evaluation and Analysis:
(i) Assess environmental impacts:
(j) Evaluate compliance:
(k) Identify strengths and weaknesses:
(l) Quantify results:
(m) Reporting:
(n) Prepare an audit report:
(o) Communicate results:
(p) Follow-up and Improvement:
(q) Develop an action plan:
(r) Monitor 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 the five-day field trip. The tour'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 nature club, staff, 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 was the main topic of discussion.

3.3. Energy and waste management Survey:

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

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4. Target Areas of Green Auditing:

An environmental audit is one of the steps involved in the process of resource management. Green audits are useful despite the fact that they are one-off occurrences. This is due to the fact that they are carried out on a regular basis, and the results of the audits might shift or get better over time. The concept of an eco-campus centers primarily on making effective use of water and energy while simultaneously reducing pollution and the amount of trash produced.

Several indicators will be evaluated during the "Green Auditing of this Educational Institute" procedure. Eco-campus focuses on these goals in order to reduce emissions, obtain a reliable and affordable energy supply, encourage and improve energy conservation, decrease the institute's energy and water use, reduce the amount of waste that is sent to landfills, and incorporate environmental considerations into all contracts and services that are thought to have significant environmental impacts. Eco-campus also focuses on these goals in order to improve the quality of life on campus. The water, the electricity, the rubbish, and the green campuses are the key focuses of this environmental audit.

Green Energy-

a) LED Lights- are used in whole campus to save electricity.

b) Sensor based energy conservation- Institutes wash rooms and most prominent places are well equipped with sensor based lighting & electric appliances.

4.1. Energy Consumption:

4.1.1. Lighting: According to the findings of the audit, a significant number of the college's lighting fixtures are both inefficient and out of date. It is recommended to make advantage of natural light whenever it is feasible, to install occupancy sensors, and to replace traditional light bulbs with LED light bulbs that are more energy efficient.

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

It was found that the HVAC systems were operating at a lower level of efficiency than was required. Switching to heating, ventilation, and air conditioning (HVAC) equipment that is more energy-efficient, installing thermostats that are programmable, and keeping up with normal maintenance can significantly cut energy consumption.

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4.1.3. Energy Awareness: Both the faculty and the student body should be encouraged to engage in energy-saving behaviours by the college. Campaigns, instructional activities, and financial incentives for projects that save energy are all potential ways to assist in accomplishing this goal.

Details electrical requirements:

SL	Electrical Devices	Number	Power (Watt)	Usage Time (Hr / Day)
1	Normal Tube light	20	40watt	10 AM to 5 PM
2	LED Tube light	51	20watt	10 AM to 5 PM
3	Normal Bulb	02	60watt	10 AM to 5 PM
4	LED Bulb	13	09watt	10 AM to 5 PM
5	Ceiling Fan	72	52watt	10 AM to 5 PM
6	Stand Fan	02	160watt	10 AM to 5 PM
7	LED Metal	03	130watt	6 PM to 6 AM
8	Exhaust Fan	01	65watt	10 AM to 5 PM

4.2. Waste Management:

4.2.1. Recycling: Despite the fact that recycling canisters were located all around the campus, the audit indicated that there was insufficient separation of recyclable materials and inadequate information regarding products that might be recycled. This was the case despite the fact that recycling canisters were located everywhere. An increase in the percentage of materials that are recycled can be accomplished in a number of different ways; some of these ways include making the signs clearer, providing instructions that are free of ambiguity, and carrying out an intensive recycling education programme.

4.2.2. Composting: At the organisation, composting facilities can be established so that the organic waste can be disposed of in an appropriate manner. Composting not only produces useful compost that can be utilised for campus landscaping and gardening, but it also contributes greatly to a reduction in the amount of waste that is dumped in landfills. This is one of the many benefits of composting.

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

Types of waste	Particulars	Disposal method
E-Waste	Computers, electrical and electronic parts	Store these in a separate tank, and we can start selling them directly after a certain amount of time.
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, and bags. Encourage people to use water bottles and other containers that may be reused. Establish distinct recycling containers for plastic garbage, and after a predetermined period of time, we will be able to begin selling the collected recyclables directly.
Solid wastes	Paper waste, Damaged furniture, paper plates, food wastes	Reuse after maintenance energy conversion. Installing composting systems on a college campus will allow for the conversion of discarded food into nutrient-dense compost that may be used in the campus landscaping or in community gardens. Another option is for institutions to form partnerships with farmers in the surrounding area to collect food waste.
Wastewater	Washing, urinals, bathrooms	Soak pits

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4.3. Water Usage:

4.3.1. Water Fixtures: Numerous locations within the college had outdated and ineffective water fixtures, which caused excessive water use. Water resources can be saved by swapping these fixtures for low-flow models 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
Testing for drinking water quality	Half-yearly	Do
Awareness of water conservation	Half-yearly	Green Audit Working Team & various department
Infrastructure for water distribution that needs upkeep and repair	As needed	Caretaker
Reporting and analysis of water use	Annually	Green Audit Working Team & Caretaker
Learn what causes excessive water consumption.	As needed	Caretaker

Tabular data detailing the subject at hand:

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Sl No	Parameters	Response
1	Source of water	Municipality, Underground, Pond (1500 sqft) & Rain Harvesting Water **Note:**The ground's water serves as a drinking water supply for around 4,500 people, including students and staff members.
2	Source of Drinking Water	Ground's water, 2 numbers water purifier
3	Any treatment for drinking water	Nil, 2 numbers water purifier **Note:** Water purifiers have been installed in 1-2 numbers on each floor and are maintained for 3–4 months afterward.
4	What is the total number of motors that are used?	02 numbers
5	What is the total number of water tanks? Capacity of tank	4 numbers@ 1000 liters each
6	Tap water	22 numbers
	Quantity of water pumped every day	300 liters/per day
7	Do you waste water, and if so, why?	No
8	How much water is required for gardening purposes?	50 liters/per day
9	How many water coolers are there in total?	01
10	Do you have access to rainwater harvesting?	Yes
11	Any leaky taps	None
12	Daily amount of water that is lost.	Not applicable
13	Is there any kind of plan for the management of water?	Raise public awareness regarding the importance of water conservation, the prevention of pollution, and the implementation of sustainable water

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		management practices. Unambiguous water rights and equitable water allocation regulations should be established to ensure that water is distributed fairly among the many different users.
15	Have any methods for conserving water been implemented?	Rainwater Harvesting

4.4.1. Public Transport: Cycle, van, Rikhsha, bus, Toto etc.

4.5. Overall Environmental Awareness:

4.5.1. Curriculum Integration: The institution can incorporate environmental consciousness and sustainable practices into its curriculum in a variety of topic areas. Students will be provided with teaching and training in environmental stewardship thanks to this technique, which will also encourage them to think in a sustainable manner.

Environmental awareness:

Environmental awareness across different subjects	Parameters	Program 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	Whole year

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	cultural point of view.	
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
NSS	To enhance the amount of green cover and fight deforestation, organizing tree-planting events in local communities and educational institutions is important. To combat littering and to encourage a clean environment, it is important to organize routine clean-up efforts in public places like parks and beaches. To educate both students and members of the general public about environmental issues such as climate change, waste management, renewable energy, and conservation, workshops and seminars should be organized. It should be a priority to create opportunities for individuals to engage with the natural world and develop a sense of ownership over its preservation through participating in hikes and other outdoor activities. To raise awareness about environmental issues and motivate people to take action, you might use social media, posters, and booklets.	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.

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5. Green Campus:

5.1. Floral Diversity:

The following are some actions to take into account when setting up a plantation programme at your college:

-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.

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-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 neighborhood, 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.

-Promote the planting programme within the campus community by using various communication channels, such as posters, social media, emails, and word-of-mouth, in order to raise awareness and find volunteers. Encourage everyone to volunteer, including alumni, faculty, staff, and students.

-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.

To encourage participation in the upkeep and preservation of the grassland, the institution's students, instructors, and staff should be encouraged to do so. Volunteer initiatives, instructional workshops, and awareness campaigns are all effective ways for reaching this objective. On grasslands, it is possible for many different kinds of plants and animals to flourish. By providing a home for a wide variety of plant and animal species and so making a contribution to the

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preservation of ecological equilibrium, a grassland promotes a higher level of biodiversity on a campus. Grasslands have the ability to collect carbon dioxide from the air and store it in their soil, which helps in the fight against climate change by lowering overall levels of greenhouse gases.

The ability of the campus to maintain a healthy ecological balance is greatly dependent on the presence of ponds. They contribute to the recharging of groundwater supplies, help to limit the amount of erosion that occurs in the surrounding area, and support the ecology of the area by providing a habitat for a diverse array of flora and fauna.

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.

Birds 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.

-Dove-*Streptopelia risoria*-Highest numbers in a day. Very common in the gardens

-Pigeon- *Columba livia*- Second highest numbers in a day. Very common on the college premises.

-The Indian Pond Heron (*Ardeola grayii*), is a species of heron that is very available

-Kingfisher (*Alcedo atthis*): Very common

-The Common Myna (*Acridotheres tristis*), is a species of bird that lives in college premises and is famous for its ability to imitate human speech as well as other sounds.

-Oriental Magpie Robin (*Copsychus saularis*) – Very available at our college campus

-House Sparrow (*Passer domesticus*) – Very common

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- Rose-ringed Parakeet (*Psittacula krameri*)- Rare
- Common Tailorbird (*Orthotomus sutorius*)-Very common
-Coppersmith Barbet (*Psilopogon haemacephalus*)-Very rare

Butterfly:

Seasonally found the following butterflyes-

Peacock Pansy (*Junonia almanac*), Plain Tiger (*Danaus chrysippus*), Common Albatrosses (*Appias albina*), Blue Mormon (*Papilio polymnestor*), Grey Pansy (*Junonia atlites*), Blue tiger (*Tirumala limniace*), Tailed Jay (*Graphium agamemnon*), Common Grass Yellow (*Eurema hecabe*), Common Mormon (*Papilio polytes*), Common Caster (*Ariadne merione*), Common Rose (*Pachliopta aristolochiae*), Palm Fly (*Elymnias hypermnestra*) and Common Crow (*Euploea core*).

6. Wild type Medicinal plants at mededicinal garden:

Two medicinal gardens were developed at our college premises. Many wild medicinal plant varieties were lost daily due to anthropogenic activities and pollution. After identifying these plants, we conserve these through propagation in our medicinal gardens. Any interested people or agencies can access it through the proper channel. Medicinal garden is a specific area inside the grounds of a college that is dedicated to the cultivation and upkeep of a wide range of different sorts of medicinal plants. As an educational and research resource, it makes it possible for students, faculty members, and researchers to investigate and gain knowledge on medicinal plants' varied qualities and applications. Culturing a medicinal garden on a college campus can confer major value and benefits to the surrounding academic community and society.

Table: List of wild types of medicinal plants

SL	Name	Scientific Name	Number
1	Shirish	*Albizia lebbeck*	16
2	Sonajhuri	*Acacia auriculiformis*	703
3	Neem	*Azadirachta indica*	14
4	Mango	*Mangifera indica*	17
5	Shishu	*Dalbergia*	34

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		sissoo	
6	Babla	*Vachellia nilotica*	04
7	Lemon	*Citrus Limon*	05
8	Jujube (Kul)	*Ziziphus mauritiana*	05
9	Palm	*Arecaceae*	10
10	Mehogony	*Swietenia macrophylla*	02
11	Jamun (Jam)	*Syzygium cumini*	02
12	Wild Mango (Amra)	*Spondias mombin*	01

7. Conclusion: According to the findings of a recent green audit, the SIR RASHBEHARI GHOSH MAHAVIDYALAYA has identified a few locations on campus that can benefit from some additional work in order to advance its sustainability goals. The application of the proposed solutions has the potential to result in a number of beneficial consequences for the environment, such as a reduction in energy consumption, an improvement in waste management, an increase in the efficiency with which water is used, an expansion of sustainable transportation options, and a heightened environmental consciousness. By putting these changes into effect, SIR RASHBEHARI GHOSH MAHAVIDYALAYA will be able to show its students how to appropriately care for the environment and contribute towards a more sustainable future. In addition, the college will be able to better prepare its students for the world of the future.

Audit conducted by "Management System Consultancy"

Auditor

UMA Apartment, Rishi Arobindo Road, Madhyamgram, Kolkata-700130
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Website: www.managementsystemconsultancy.in

Amalesh Kumar Mandal

PRINCIPAL
Sir Rashbehari Ghosh Mahavidyalaya
Ukhrid (Khandaghosh)
Purba Bardhaman, W.B.-713142

Dr. Debabrata Ghosh

PRINCIPAL, SIR RASHBEHARI GHOSH MAHAVIDYALAYA

UMA Apartment, Rishi Arobindo Road, Madhyamgram, Kolkata-700130
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