Green Audit Report (2022-23) of Government General Degree College, Tehatta



P.O. & P.S.- Tehatta, Dist -Nadia, Pin – 741160 Telephone: 03471-250100, 03471 291 293

Email: tehattagovtcollege@gmail.com

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Dr. Sibsankar Pal Officer-in-charge Govt. Gen. Degree College, Tehatta Nadia-741160

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1. Introduction:

The results, conclusions and suggestions from a thorough green audit carriedout at Government General Degree College, Tehatta are presented in the report that continues. The audit'sgoals were to evaluate the college's environmental impact and spot areas where sustainability may be improved. The audit addressed topics like journeys, disposal of trash, water use, electricity consumption, and general environmental awareness.

About the College:

Government General Degree College, Tehatta, established in 2014, is a general degree college at Tehatta, Nadia district. It offers undergraduate courses in Arts and Science. It is affiliated to University of Kalyani. Nestled amidst the picturesque landscape, this college enjoys a tranquil setting. Imagine the gentle flow of the Jalangi River, the rustling leaves of nearby trees, and the promise of learning echoing through the air.

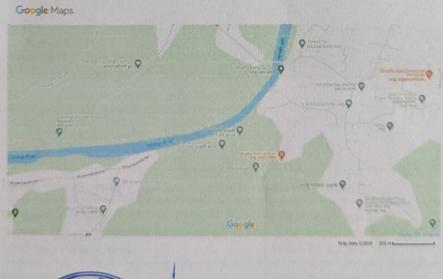
General Information about the College:

Year of establishment: 2014

Location of the college: Tehatta 1, Tehatta Nadia, Pin. 741160,

West Bengal, India.

Latitude: 23.729592, Longitude: 88.525039





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Total Campus area	12545.3 sq. mt.	
Total built up area	2982.56 sq. mt.	
Total open space area	9562.74 sq. mt.	
Total Green area	8553.74 sq. mt.	
Total Garden area	1009.00 sq.mt.	



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Green Audit Working Team:

SI No	Name of the Members	Designation	Signature
1	Dr. Sibsankar Pal	Officer-in-Charge	Au
2	Dr. Jyotirmoy Maiti	IQAC Coordinator	Jyotirmay Maili
3	Sri Raghunath Roy	Teachers' Council's Secretary	Raghunath Roy
4	Dr. Supratim Mukherjee	Assistant Professor, Department of Mathematics	Supratim Muchiyee
5	Dr. Sk. Basiruddin	Assistant Professor, Department of Chemistry	SK Basifudain
6	Dr. Sumit Kumar Das	Assistant Professor, Department of Physics	Sumit Kumaz Das
7	Dr. Shubhadip Debnath	Assistant Professor, Department of Bengali	Shubhadip Debnath
8	Sri Trideep Sinha	Upper Division Clerk	Thidipa Sother
9	Sri Debabrata Mondal	Data Entry Operator	Debabrata Mondal

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 a company, opening up chances for cost savings. Businesses can apply methods to save operational costs and boost overall efficiency by analyzing energy usage, resource consumption, and waste management.
- (d) Reputation and Stakeholder Expectations: Consumers and other stakeholders now demand more environmentally conscious company practices. Green audits offer organization transparency and prove its dedication to sustainability, strengthening its reputation and fostering trust among clients, staff,

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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 companies to control risks, comply with rules, cut costs, improve reputations, and support sustainable development.

2. 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:
- (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:
- (1) 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.

2.1. 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.

2.2. 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.

2.3. 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, office staff and students. A comprehensive questionnaire survey method was used to carry out the monitoring.

3. Target Areas of Green Auditing:

A process for resource management includes a green audit. The actual usefulness of green audits lies in the fact that they are conducted at predetermined intervals

Dr. Sibsankar Pal

Govt. Gen. Degree College, Tehatta Nadia-741160 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.

3.1. Energy Consumption:

3.1.1. Lighting: The audit showed that many of the college's lighting fixtures were ineffective and outdated. It is advised to use natural light whenever possible, add occupancy sensors, and swap out conventional light bulbs for energy- efficient LED ones.

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

The HVAC systems were discovered to be working less efficiently than necessary. Energy usage can be considerably decreased by switching to energyefficient HVAC equipment, using programmable thermostats, and performing routine maintenance.

3.1.3. Energy Awareness: GGDC, Tehatta already conducted Energy Audit during the year 2023 to enhance Energy Conservation aspect. The study was conducted on the following area:

SI No.	
1	Electric connection
2	List of Energy Consuming Sources
3	Device Specific Load Consumption
4	Calculation of Electrical Load & Consumption
5	Analysis of Consumption of Energy (units)
6	Observation questionnaire



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3.2. Waste Management:

3.2.1. Recycling: Although there were recycling containers all across the campus, the audit showed that there was a lack of effective separation and information about recyclable products. Increased recycling rates can be achieved by upgrading signage, giving clear instructions and implementing a comprehensiverecycling education programme.

3.2.2. Composting: The institution can set up a composting system to handle the organic waste produced within the campus. Composting can help drastically reduce the quantity of garbage dumped in landfills while also producing beneficial compost for campus landscaping and gardening.

3.2.3. Segregation: Use of separate waste bin.



Waste Bin



3.2.4 Planning: College is always keen about recycling of all the waste material that are accumulated time to time and for recycling. College is in the process of contacting with the concerned authority to recycling the waste product.

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

Types of waste	Particulars	Disposal method
E-Waste	Computers, Printers, 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.
Chemical wastes	-	Chemical
Wastewater	Washing, urinals, bathrooms	Soak pits
Glass waste	-	Disposed by Panchayat Waste Management System (Carried by Garbage Van)
Sanitary Napkin	-	Disposed by Panchayat Waste Management System (Carried by Garbage Van)

3.3. Water Usage:

3.3.1. 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	Annually	Green Audit Working Team &
water use		Caretaker
Learn what causes excessive water consumption.	As needed	Caretaker

Tabular data detailing the subject at hand:

SI No	Parameters	Response
1	Source of water	Underground Note: The ground's water serves as a drinking water supply for around 6,000 people, including students and staff members.
2	Source of Drinking Water	Ground's water
3	Any treatment for drinking water	Note: Water purifiers have been installed in 1-2 numbers on each floor and are maintained for 3-4 months afterward and also have a big purifier which supply drinking water overall college.
4	What is the total number of motors that are used?	03 numbers and 1 number for Water ATM.



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5	What is the total number of water tanks? Capacity of tank	8 numbers / 2000 liters each
6	Tap water	60 numbers
	Quantity of water pumped every day	5000 liters/per day
7	Do you waste water, and if so, why?	No
8	How much water is required for gardening purposes?	400 liters/per day
9	How many water coolers are there in total?	03 number
10	Do you have access to rainwater harvesting?	No
11	The number of units harvested and the total volume of water	N.A.
12	Any leaky taps	None
13	Daily amount of water that is lost.	Not applicable
14		Raise public awareness regarding the importance of water conservation, the prevention of pollution, and the implementation of sustainable water 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?	Proposal for implementation of Rainwater Harvesting System



4. Transportation:

4.1 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 cheap bus passes, encouraging carpooling, and supporting bicycle infrastructure.

Most of the students of our college use bicycle for transportation. There is a dedicated cycle stand in the college premises where students can park their cycle during college hours.



Cycle Stand of GGDC, Tehatta

4.2 Electric Vehicles: To aid in the switch to electric transport, the college may choose to invest in infrastructure for charging EVs. Additionally, encouraging the use of electric vehicles through awareness programs and incentives can help lower the emissions produced by on-campus transportation.



5. Overall Environmental Awareness:

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 Parameters awareness across different subjects		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 cultural point of view.	Whole year	



	Analyze 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.	
Pure Science	Discuss renewable energy and energy harvesting. Teachers typically focus on educating students about the importance, applications, and potential of these technologies. They often talk about sustainable practices, reducing pollution and conserving natural resources. They also talk about the causes of climate change and possible solutions to the problem.	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	



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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.





Plantation Programmes

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.

6. Green Campus:

6.1 Floral Diversity:

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



- Organize a group of academicians, 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 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 willaid 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 and word-ofmouth, 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 fosteringteamwork.
- 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 theeffort. Keep an eye on the trees' growth and survival rate. To determine areas for improvement and to organize upcoming plantation programmes, collect participant's and stakeholder's input.

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Putting a number of plants. Both the common and scientific names, aswell as the family, are given for each plant.

SI	Scientific name	Common	Family	No. of
No.		Name		plant
1	Swietenia mahagoni (L.) Jacq.	Mehagoni	Meliaceae	22
2	Tectona grandis L.f.	Segun	Verbanace ae	5
3	Psidium	Peyara	Myrtaceae	5
4	Acacia Auriculiformis	Akashmoni		1
5	Azadirachta indica	Nim	Meliaceae	3
6	Mangifera indica L.	Aam	Anacardiac eae	4
7	Litchi chinensis	Lichu	Sapindaceae	1
8	Casuarina equisetifoliaL.	Jhau	Casuarinac	21
9	Polyalthialingifolia (Sonn.) Thwaites	Debdaru	Meliaceae	25



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10	Nyctanthes arbor-tristis	Shiuli	Oleaceae	2
11	Tabernaemontana	Tagor	Apocynaceae	2
12	Caesalpinia pulcherrima	Radhachura	Fabaceae	2
13	Tabernaemontana divaricata	Crape Jasmine	Apocynaceae	25
14	Arecaceae	Palm	Arecaceae,	2
			Bercht.	
15	Butea monosperma	Palash	Fabaceae	1
16	Murraya koenigii	Karipata	Rutaceae	1
17	Dalbergia sissoo	Shishu	Fabaceae	5
18	Cocos nucifera	Narkel	Arecaceae	8
19	Ziziphus mauritiana	Kul		2
20	Alstoniascholaris L.R.Br.	Chhatim	Apocynace	2
			ae	
21	Artocarpus heterophyllus	Kathal tree	Moraceae	2
22	Rosa	Golap	Rosaceae	



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Green Campus









Kitchen Garden







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Floral Diversity of the Campus



Encourage participation from the pupils at the institution, faculty, and staff in the upkeep and preservation of the grassland. 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. A grassland encourages biodiversity on campus by serving as a habitat for various plant and animal species, thereby contributing to the maintenance of ecological equilibrium. Grasslands 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.





The aesthetic attractiveness of the college campus is enhanced by a football field with lush grassland, which makes the institution more welcoming and appealing to students, professors and visitors.

6.2 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.

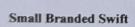
6.3 Birds Diversity:

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.



Butterfly:







Ypthima Huebneri Kirby, 1871

Most observed species of Butterflies in the month of December and January:

SLNO	SPECIES NAME	NUMBER
1.	Common Albatrosses	20
2.	Grey Pansy	4
3.	Peacock Pansy	1
4.	Common Caster	5
5.	Tailed Jay	9
6.	Blue Tiger	5
7.	Common Grass Yellow	15
8.	Plain Tiger	12
9.	Common Rose	1
10.	Common Mormon	6

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Rue

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11.	Blue Mormon	1
12.	Common Crow	3
13.	Palm Fly	1

Butterfly Activity time:

We wanted to study the time when the butterfly was most active and we observed that the time was 9 am -12pm.

6.4 Green Area Management:

Comments	Response Yes	
Is there any garden inside the campus		
Whether the garden is Watered by using drip / sprinkler irrigation system	No	
Is there any mechanism for periodical monitoring of tree spcies	Yes	
Whether the college has taken programme for plantation of fruit trees which can attract birds, bees etc.	Yes	



7. Conclusion:

The Green Audit highlights areas where Government General Degree College, Tehatta can enhance its environmental sustainability practices. By implementing the recommended strategies, the college can lower its impact on the environment, raise awareness about sustainability, and set a good example for other educational institutions. Continued monitoring and evaluation will be essential to track progress and ensure the effectiveness of sustainability initiatives. Our college has a clear plan for future environmental improvements.

8. Future Plans of Institute to improve the Environmental expect in a better

- To construct a rain water harvesting unit.
- To install solar panels on the rooftop as a step towards renewable and green energy solutions.
- To introduce a medicinal garden in the campus.
- Increase the use of Electrical vehicle to reduce the pollution.
- Improve garden: To grow healthy plants, you also need healthy soil. Improving soil quality is an ongoing process for a gardener. Good, rich in nutrients, and friable soil will offer the plants everything all on its own. Thus, you would need lesser fertilizers and pesticides.

College may conduct more awareness programme on Environmental Issues time

Checked and signed by External Expert

Officer-In-Charge Government General Degree College, Tehatta

Dr. Sibsankar Pal Officer-in-charge

Govt. Gen. Degree College, Tehatta Nadia-741160

Signature: Sales 19/04/2023
Name: DR. SUBHASIS PANDA

Designation: PRINCIPAL

(FORMER ASSOCIATE PROF. OF BOTANY)

DR. SUBHASIS PANDA

(WBSES, Ph.D, FIAT) PRINCIPAL Government General Degree College Chapra Vill. Shikra, P.O. Padmamala, PS. Chapra, Nadia-741123