7.1.2: The Institution has facilities and initiatives for:

(1) Alternate sources of energy and energy conservation measures

(2) Management of the various types of degradable and nondegradable waste

(3) Water conservation

(4) Green campus initiatives

(5) Disabled-friendly, barrier free environment

2022-23

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Contents:

1. Introduction:

The results and conclusions and suggestions from a thorough green audit carried out at BUDGE BUDGE COLLEGE 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 journeys, disposal of trash, water use, electricity consumption, and general environmental awareness.

2.Green Audit Working Team (2022-23):

1	Dr. Debjani Datta	Principal
2	Dr. Sandip Singha	IQAC Convenor and Joint NAAC Coordinator, Associate Professor, Commerce
3.	Dr. Gautam Das	Bursar, Joint NAAC Coordinator, Associate Professor, Commerce
4.	Dr. Dipak Mandal	Associate Professor, History
5.	Dr. Anup Kumar Sahoo	Assistant Professor, Physics
6.	Dr. Kishore Naskar	Assistant Professor, Economics
7.	Dr. Papia Das	Assistant Professor, Zoology
8.	Dr. Samiran Pandey	Assistant Professor, Botany
9.	Dr. Barnali Bera	SACT, Zoology
10.	Smt. Piyali Das	SACT, Botany
11.	Dr. Uttariya Roy	SACT, Environmental Science
12.	Dr. Shreya Chakravorty	Assistant Professor, English
13.	Shri Somnath Bose	Office Staff
14.	Shri Anis Ahmed	Office Staff

3. 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, 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.

4. 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:
(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.

4.1. 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.

4.2. 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.

4.3. 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.

5. 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 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.

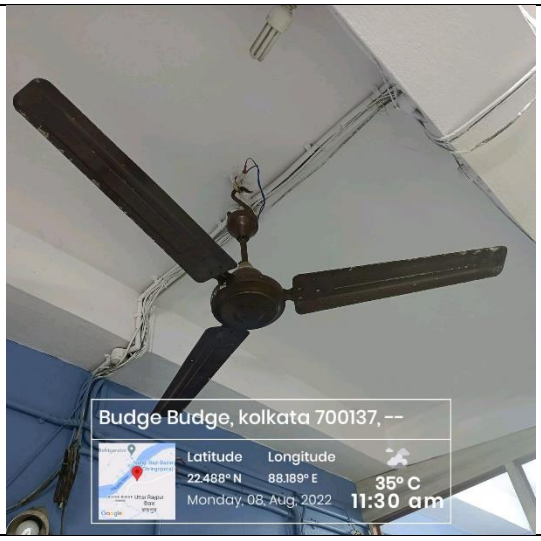
These indications are evaluated during the "Green Auditing of this Educational Institute" procedure. In order to reduce emissions, obtain a reliable and affordable energy supply, promote personal responsibility, encourage and improve energy conservation, reduce the institute's energy and water use, reduce 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.

5.1. Energy Consumption:

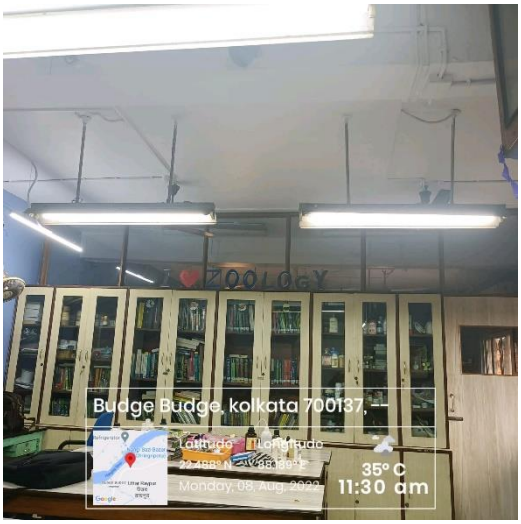
5.1.1. Lighting: The audit showed that many of the college's lighting fixtures were ineffective and outdated. It is advised to use natural light whenever possible, add occupancy sensors, and swap out conventional light bulbs for energy-efficient LED ones.

5.1.2. 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 energy-efficient HVAC equipment, using programmable thermostats, and performing routine maintenance.
5.1.3. Energy Awareness: The college should promote energy conservation practices among employees and students. Campaigns, educational activities, and financial incentives for energy-saving projects can all help achieve this.
Details electrical requirements:

Electrical device/items	Number	Power (watt)	Usage time (hr/day)
Normal Tubelight	50	2000	10:00 am to 5:00 pm
LED Tubelight	350	7000	Do
Normal Bulb	0	0	Do
LED Bulb	0	0	Do
Ceiling Fan	130	7800	Do
Wall fan	40	2400	Do



Ceiling Fan



LED tube light in laboratory

Silent DG sets are designed to generate a very low level of background noise, just as their name suggests. Their structures are constructed to eliminate virtually all noise and vibrations due to careful design. Because of this, they are not harmful to the environment and are ideally suited for use in residential areas.

College has installed solar panels on the roof of college building to reduce carbon footprint and pollution in the local community

5.2 Waste Management:

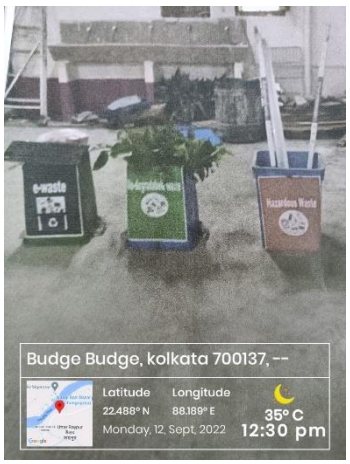
5.2.1. Recycling: Although there were recycling containers all across the campus, the audit showed that there was a lack of effective separation and information about recyclable products. Increased recycling rates can be achieved by upgrading signage, giving clear instructions and implementing a comprehensive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

5.2.2. Composting: The institution can set up a composting system to handle the organic waste produced by Hostel members (Boys & Girls Hostel). Composting can help drastically reduce the quantity of garbage dumped in landfills while also producing beneficial compost for campus landscaping and gardening.

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.
Chemical wastes	Laboratory waste	Water should be used to neutralise. When dealing with hazardous garbage, adhere strictly to all safety regulations.
Wastewater	Washing, urinals, bathrooms	Soak pits
Glass waste	Broken glass wares from the labs	Glass debris should be kept separate from other recyclable materials and disposed of in containers that are specifically intended for glass recycling. Make sure that you recycle glass in the correct manner by coordinating with the local recycling centers.
Sanitary Napkin	-	Napkin Incinerators



Separate waste baskets for disposal of different types of wastes generated in college campus

5.3. Water Usage:

5.3.1. 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

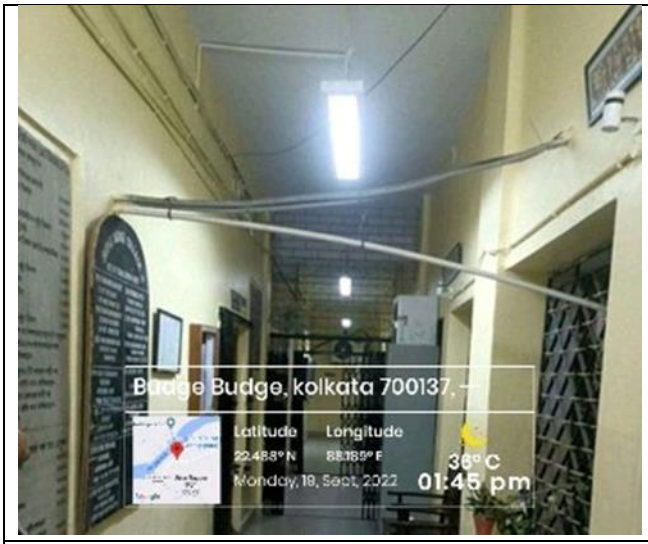
Tabular data detailing the subject at hand:

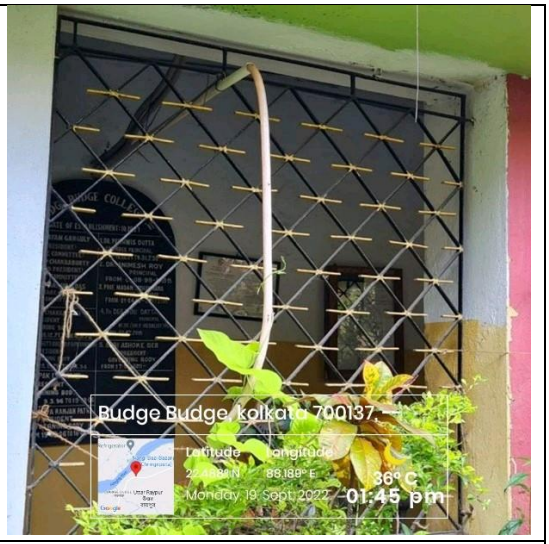
Sl No	Parameters	Response
1	Source of water	Municipality, Underground, Pond (10889.84 sqft) **Note:** Only Municipality water serves as a drinking water supply for around 3,550 people, including students and staff members. Pond and ground water is used for gardening, maintenance work and cleaning of washrooms
2	Source of Drinking Water	Municipality water
3	Any treatment for drinking water	Nil **Note:** Water purifiers have been installed in 1-2 numbers at all floors 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	Underground tank- 02@ 2000litres Top tank- 04@ 1000litres
6	Tap water	90 numbers
	Quantity of water pumped every day	4000 liters/per day

7	Do you waste water, and if so, why?	No
8	How much water is required for gardening purposes?	400 to 600 liters/per day
9	How many water coolers are there in total?	01
10	Do you have access to rainwater harvesting?	No
11	The number of units harvested and the total volume of water	Nil
12	Any leaky taps	None
13	Daily amount of water that is lost.	Not applicable
14	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 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?	Yes. All water taps and fixtures in the college premises are maintained and serviced regularly to stop water spillage to conserve water. AC waste water used to maintain college greenery.

Water purifier

Water reservoir

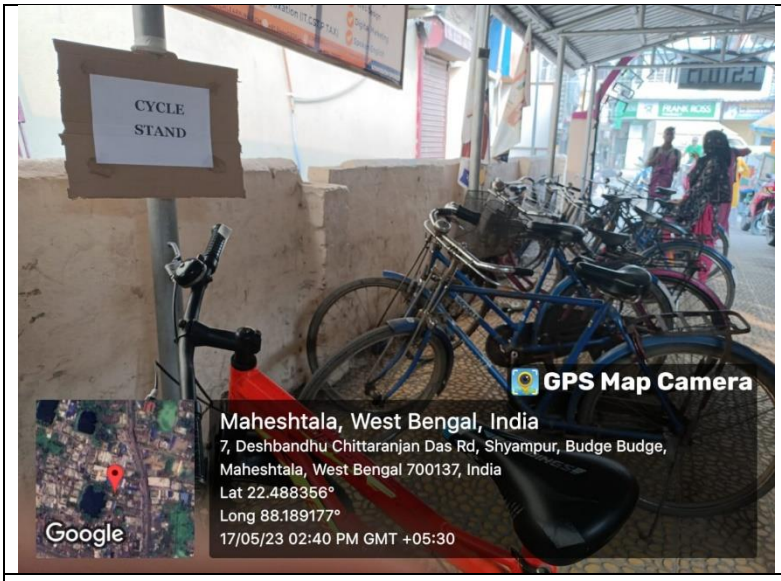




AC Waste Water Used to Maintain College Greenery

6. Transportation:

6.1. 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.



	Students	Employee	Total
	Average numbers over 6 days in a peak session		
Bicycles are being used as modes of transportation for getting to and around the college by students mostly	Girls-120 Boys-55	01	176

7. Overall Environmental Awareness:

7.1. 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.

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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 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
Pure Science	Conduct studies on environmental issues, such as assessing water quality, soil analysis, power consumption or recycling. To better comprehend environmental patterns and forecasts, consider using mathematical models. Investigate the repercussions of environmental actions on the economy, such as doing cost-benefit analyses for environmentally friendly projects.	Half-yearly/ each program
Bio-Science	Study subjects include ecosystems, biodiversity, and the interconnectedness of all living things.	Whole year
Physical Education	Encourage students to develop an appreciation for the natural world by having them participate in outdoor sports and activities. Talk about the significance of physical activity for both one's own health and the health of the environment (for example, taking bike instead of the car).	Whole year
NSS	To enhance the amount of green cover and fight deforestation, organizing tree-planting	Whole year

	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.	

Plantation Programmes

College Campus Cleaning Programme

7.2. 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.

Department of Zoology organised field trip to aware students about biodiversity and its conservation

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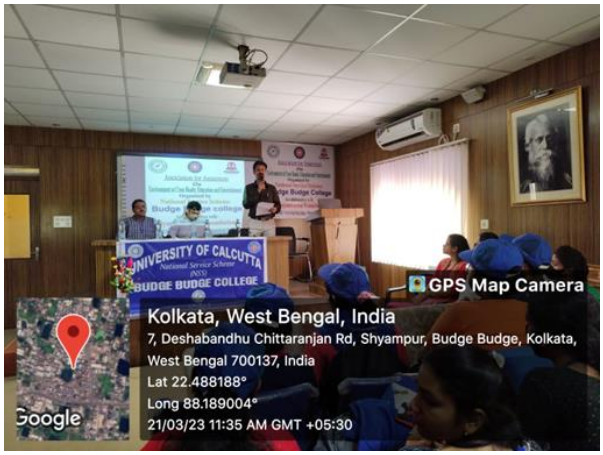
Student of Zoology department participated in rally to aware people about the biodiversity and its conservation



NSS Unit organised seminar to raise awareness about the wild life and environmental issues

8. Green Campus:

8.1. Floral Diversity:

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

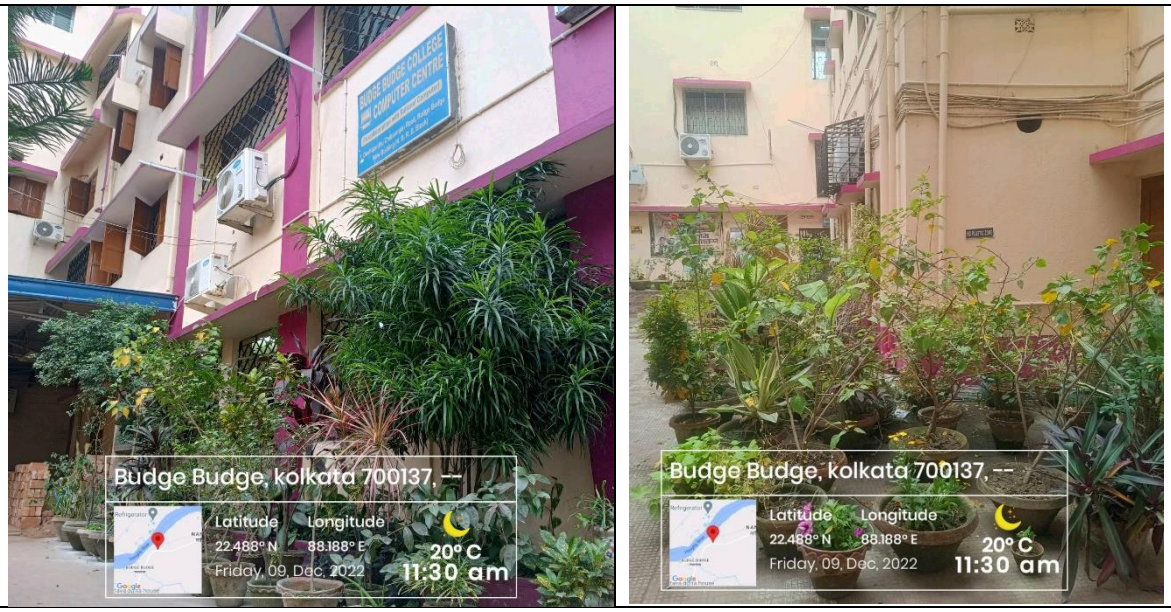
-Organise a group of academics, employees, and students who are interested in managing the plantation programme. Assign roles and duties to make the execution go smoothly.

-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.

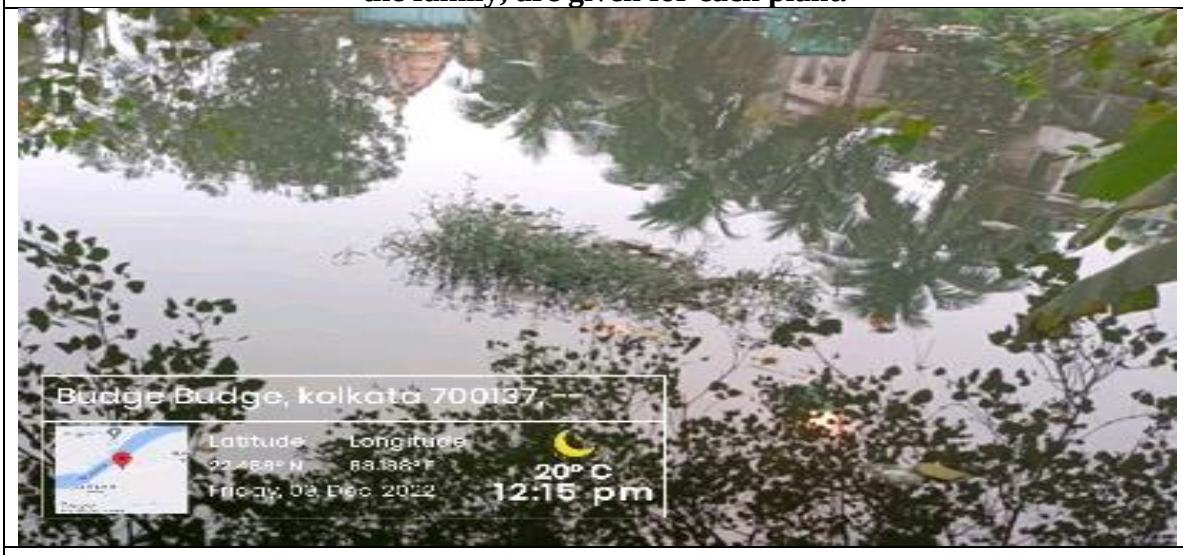
- Look into possible funding options, including grants, sponsorships, or collaborations with nearby companies or environmental organizations. This will aid in defraying the price of buying trees, equipment, and other required supplies.

- 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.



Floral Diversity of the Campus

Putting a name plate on the plants. Both the common and scientific names, as well as the family, are given for each plant.



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.

8.2. 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. The following bird species are observed inside the college campus:

SL NO.	LOCAL NAME	ENGLISH NAME	SCIENTIFIC NAME
1.	Tile ghughu	Spotted dove	*Spilopelia chinensis*
2.	Payra	Pigeon	*Columba livia*
3.	Kak	House Crow	*Corvus splendens*
4.	Deshi Kani Bak	The Indian Pond Heron	*Ardeola grayii*
5.	Machranga	White throated king fisher	*Halcyon smyrnensis*
6.	Salik	Common Myna	*Acridotheres tristis*
7.	Doyel	Oriental Magpie Robin	*Copsychus saularis*
8.	Pecha	Barn Owl	*Tyto alba*
9.	Charui	House Sparrow	*Passer domesticus*
10.	Bulbuli	Red vented Bulbul	Pycnonotus cafer
11.	Bashpati	Asian Green bee-eater	*Merops orientalis*
12.	Tuntuni	Tailor Bird	*Orthotomus sutorins*
13.	Phinge	Black Drongo	*Dierurus adsimilis*
14.	Chatare	Jungle Babbler	*Turdoides striatus*
15.	Kokil	Asian Koel	*Eudynamys scolopacea*
16.	Dahuk	White breasted waterhen	*Amaurornis phoenicurus*
17.	Benebou	Black Hooded Oriole	*Oriolus xanthornus*
18.	Harichacha	Rufous Treepie	*Dendrocitta vagabunda*
19.	Pankouri	Little Cormorant	*Phalacrocorax niger*

ORIENTAL MAGPIE ROBIN

RED VENTED BULBUL

GREEN BEE-EATER

LITTLE CORMORANT

COMMON MYNA

ASIAN KOEL (MALE)

WHITE BREASTED KINGFISHER

WHITE BREASTED WATER HEN

Butterfly:

Table:1 List of butterfly species observed in winter in and around College premises

Sl NO.	COMMON NAME	SCIENTIFIC NAME	FREQUENCY
FAMILY:-Nymphalidae			
1	COMMON CROW	*Euploea core*	*28*
2	BLUE TIGER	*Tirumala limniace*	*18*
3	COMMON FIVE – RING	*Ypthima baldus*	*25*
4	STRIPED TIGER	*Danaus genutia*	*27*
5	COMMON SAILOR	*Neptis hylas*	*8*
6	PEACOCK PANSY	*Junonia almana*	*9*
7	GREY PANSY	*Junonia atlites*	*15*
8	COMMON BUSHBROWN	*Mycalesisperseus*	*20*
9	DARKBAND BUSHBROWN	*Mycalesis mineus*	*15*
10	PLAIN TIGER	*Danaus chrysippus*	*31*
FAMILY:-Pieridae			
11	COMMON GRASS YELLOW	*Eurema hecabe*	*43*
12	COMMON JEZEBEL	*Delias eucharis*	*10*
13	PSYCHE	*Leptosia nina*	*29*
14	MOTTLED EMIGRANT	*Catopsilia pyranthe*	*12*
15	STRIPED ALBATROSS	*Appias libythea*	*8*
FAMILY:- Papilionidae			
16	COMMON MORMON	*Papilio polytes*	*24*
17	COMMON ROSE	*Atrophaneura aristolochiae*	*14*
18	LIME BUTTERFLY	*Papilio demoleus*	*3*

FAMILY:- Hesperiidae			
19	RICE SWIFT	*Borbo cinnara*	*15*
20	COMMON HEDGE BLUE	Acytolepis puspa	20
21	COMMON PIERROT	*Castalius rosimon*	*5*
TOTAL			*379*

Table:2. List of butterfly species observed in summer in and around college premises

NO. OF SPECIES	**COMMON NAME**	**SCIENTIFIC NAME**	**FREQUENCY**
FAMILY:- Nymphalidae			
1	COMMON CROW	*Euploea core*	*44*
2	BLUE TIGER	*Tirumala limniace*	*25*
3	PLAIN TIGER	*Danaus chrysippus*	*25*
4	PEACOCK PANSY	*Junonia almanac*	*6*
5	GLASSY TIGER	*Parantica aglea*	*15*
FAMILY:- Pieridae			
6	LARGE CABBAGE WHITE	*Pieris brassica*	*13*
7	PIONEER	*Belenois aurota*	*4*
8	COMMON GRASS YELLOW	*Eurema hecabe*	*46*
9	COMMON JEZEBEL	*Delias eucharis*	*7*
10	SMALL GRASS YELLOW	*Eurema brigitta*	*40*
11	THREE SPOT GRASS YELLOW	*Eurema blanda*	*48*
12	COMMON EMIGRANT	*Catopsilia pomana*	*41*
13	MOTTLED EMIGRANT	*Catopsilia pyranthe*	*46*
FAMILY:- Papilionidae			
14	COMMON MORMON	*Papilio polytes*	*18*

FAMILY:- Hesperiidae			
15	RICE SWIFT	*Borbo cinnara*	*10*
TOTAL			*388*

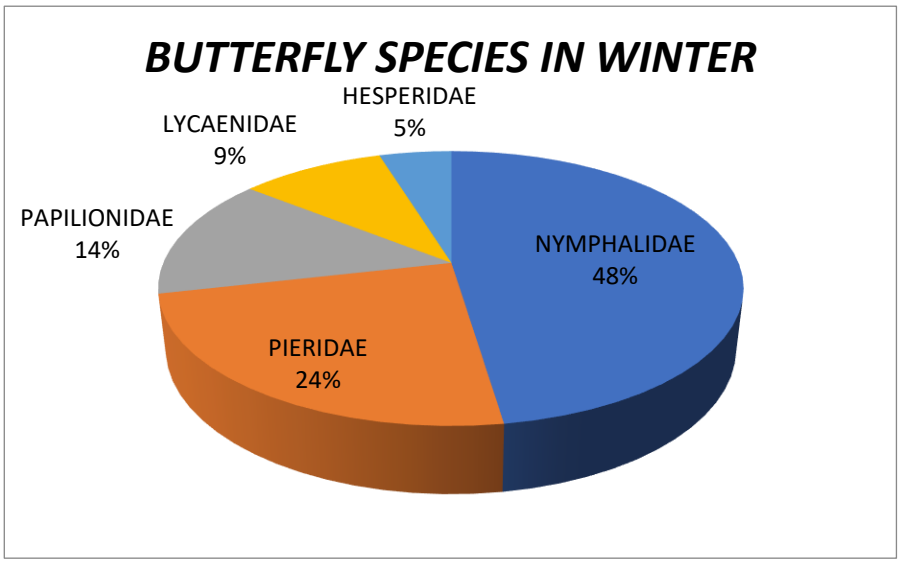


Fig1. Pie chart showing the percentage of distribution of different families of butterflies observed during winter

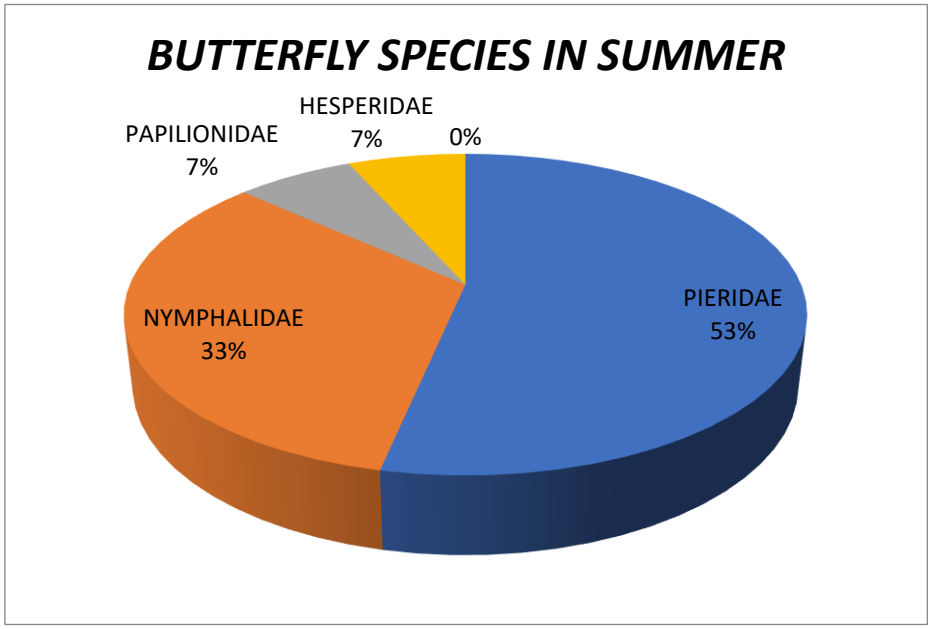


Fig2. Pie chart showing the percentage of distribution of different families of butterflies observed during summer

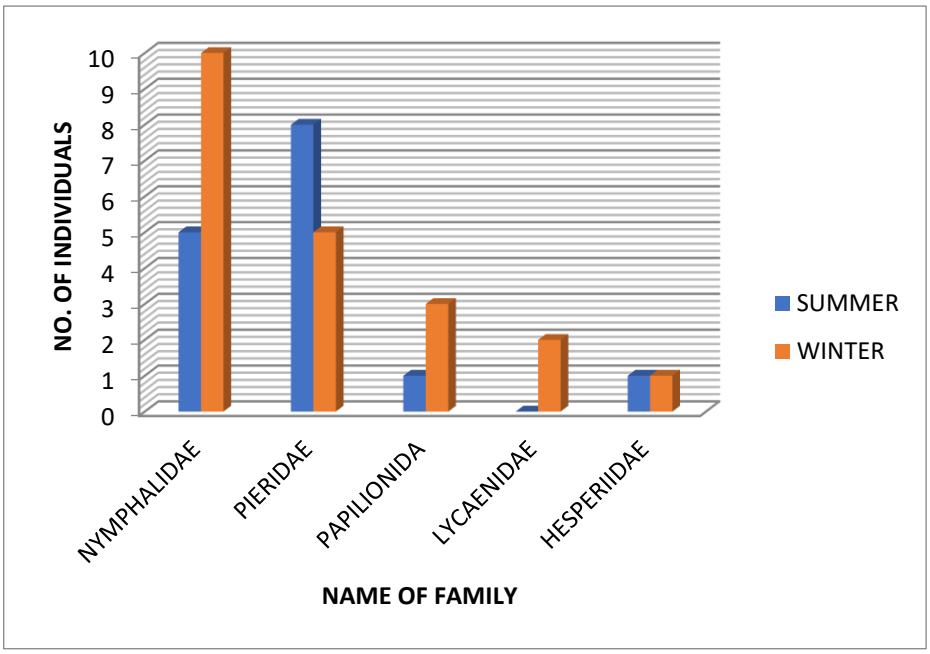


Fig 3. Bar diagram showing the frequency distribution of different families of butterflies observed in the present study area during winter and summer seasons

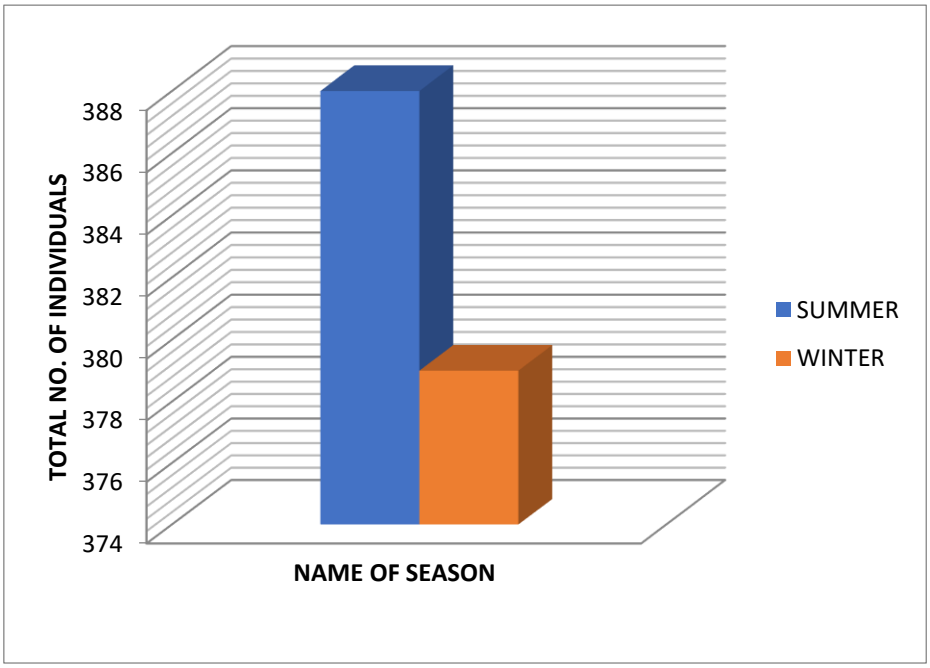


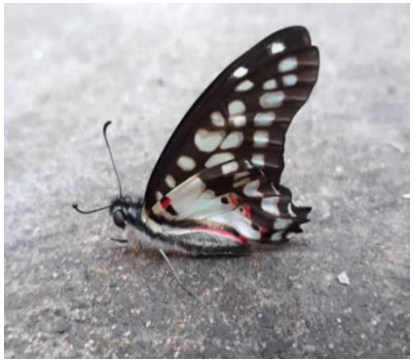
Fig4. Bar diagram showing the abundance of butterfly species in summer and winter seasons

Small Grass Yellow

Glassy Tiger

Psyche

Common Sailor



Lime Butterfly

Common Five-ring

Peacock Pansy

Pioneer

Plain Tiger

Grey Pansy

Striped Albatross

Darkband Bushbrown

Mammals:
The following mammals were observed inside the college campus

SL NO.	LOCAL NAME	ENGLISH NAME	SCIENTIFIC NAME
1.	Chamchika	Indian pipistrelle	*Pipistrellus coromandra*
2.	Kathbirali	Fivestriped Palm Squirrel	*Funambulus pennant*
3.	Beral	Cat	*Felis catus*
4.	Indur	Lesser Bandicoot Rat	*Bandicota bengalensis*
5.	Kukur	Dog	*Canis familiaris*

Plantation of Wild type Medicinal plants:

On the grounds of our college, we planted different medicinal plants. Every day, more and more wild medicinal plant kinds are becoming extinct as a direct result of human activity and pollution. Once we have determined the species of these plants, we will work to preserve them by creating medicinal garden in our college campus. A medical garden is a specific location on the grounds of an educational institution that is devoted to the growth and maintenance of a large variety of different kinds of medicinal plants. Medical gardens are often found on university campuses. Students, staff members, and researchers all have access to it as a resource for teaching and study, which makes it possible for them to investigate and learn about the many different qualities and applications that medicinal plants can have. The cultivation of a medicinal garden on a college campus has the potential to confer significant value and benefits on the surrounding academic community as well as on society.

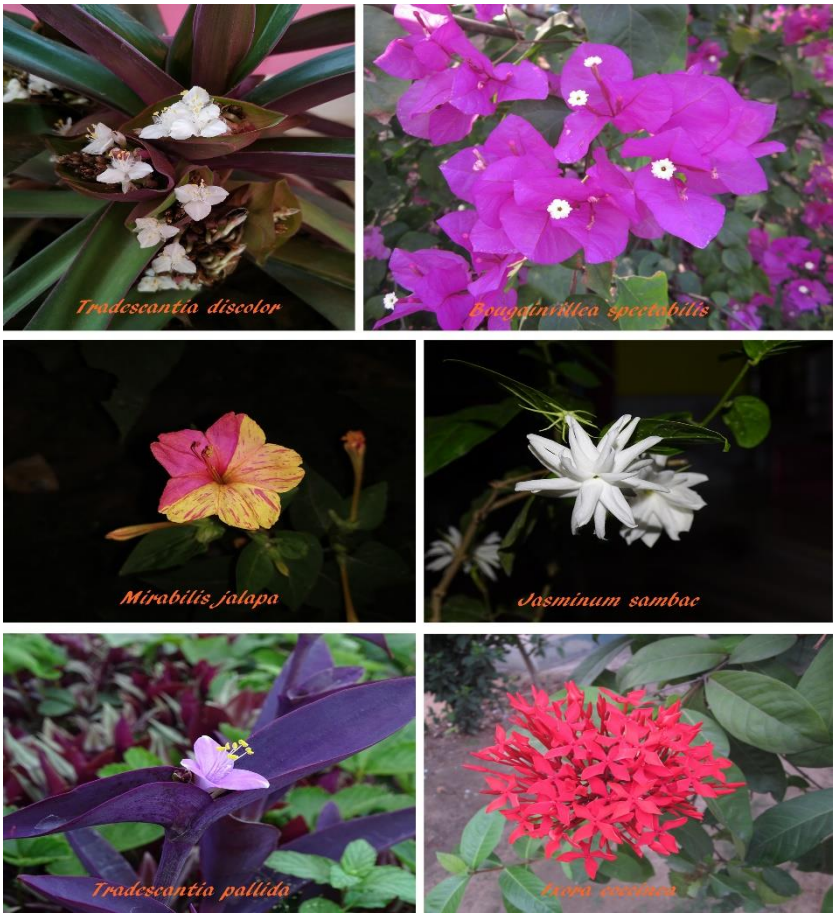
Table: List of wild types of medicinal plants at the premises of Budge Budge College

Plant Name	Uses
Terminalia arjuna	It is cardiac stimulant and commonly used in cardiac diseases. Powdered bark is used to get relieve from hypertension.
Azadirachta indica	Neem leaf is used for leprosy, eye disorders, stomach upset, loss of appetite, skin ulcers, gum diseases and liver problem
Nyctanthes arbortristis	The leaves are useful in fever and rheumatism. The fresh juice of leaves is given with honey in chronic fever.
Oscimum sanctum	It is used for cold and cough, heart diseases, kidney stone etc.

List of Floral groups:

Sl. No.	Scientific name	Vernacular Name	Family	No. of plants
1.	*Terminalia arjuna*	Arjun	Combretaceae	1
2.	*Acacia auriculiformis*	Akashmoni	Mimosaceae	1
3.	*Cocos nucifera*	Narikel	Arecaceae	4
4.	*Azadirachta indica*	Neem	Meliaceae	1
5.	*Ficus religiosa*	Aswatha	Moraceae	1
6.	*Mangifera indica*	Aam	Anacardiaceae	1
7.	*Nerium indicum*	Karabi	Apocynaceae	2
8.	*Thebetia pelviana*	Kolke	Apocynaceae	2
9.	*Murraya paniculata*	Kamini	Rutaceae	2
10.	*Psidium guajava*	Peyara	Myrtaceae	1
11.	*Musa paradisieca*	Kola	Musaceae	5
12.	*Areca catechu*	Supari	Arecaceae	4
13.	*Hibiscus rosa-sinensis*	Jaba	Malvaceae	2
14.	*Zizyphus jujuba*	Kul	Rhamnaceae	1
15.	*Nyctanthus arbortristis*	Shiuli	Oleaceae	1
16.	*Araucaria heterophylla*	Chrismas Tree	Araucariaceae	2
17.	*Roystonia regia*	Royal Palm	Arecaceae	5
18.	*Swietenia macrophylla*	Mahogoni	Meliaceae	2
19.	*Ixora coccinia*	Rangan	Rubiaceae	1
20.	*Clitoria ternatia*	Aparajita	Papilionaceae	1
21.	*Rhoeo discolor*	-	Commelinaceae	1
22.	*Agave aungustifolia*	-	Agavaceae	1
23.	*Aloe vera*	Ghritokumari	Liliaceae	1

24.	*Dracaena aungustifolia*	-	Liliaceae	1
25.	*Dracaena marginata*	-	Liliaceae	1
26.	*Andrographis paniculata*	Kalmegh	Acanthaceae	1
27.	*Cycas sp.*	-	Cycadaceae	1
28.	*Ocimum sanctum*	Tulsi	Lamiaceae	1
29.	*Euphorbia millii*	Mili	Euphorbiaceae	1
30.	*Bougainvillea spectabilis*	Bougainvillea	Nyctaginaceae	1
31.	*Jasminum sambuc*	Belful	Oleaceae	1
32.	*Codiaeum variegatum*		Euphorbiaceae	1
33.	*Sansevieria trifosciata*	Snake plant	Liliaceae	1
34.	*Scindapsus officinalis*	Money plant	Araceae	1
35.	*Rosa chinensis*	Rose	Rosaceae	1



10. Conclusion: The BUDGE BUDGE COLLEGE 's green audit identifies some areas that should be improved to advance sustainability initiatives on campus. Reduced energy use, better waste management, optimized water use, sustainable transportation options, and raised environmental awareness can all result from implementing the suggested solutions. BUDGE BUDGE COLLEGE can set an example of environmental stewardship for its students and contribute to a cleaner future by implementing these improvements.

2021-22

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Contents:

1. Introduction:

The results and conclusions and suggestions from a thorough green audit carried out at BUDGE BUDGE COLLEGE 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 journeys, disposal of trash, water use, electricity consumption, and general environmental awareness.

2.Green Audit Working Team (2021-22):

1	Dr. Debjani Datta	Principal
2	Dr. Sandip Singha	Joint NAAC Coordinator, Associate Professor, Commerce
3.	Dr. Gautam Das	Bursar, Joint NAAC Coordinator, Assistant Professor, Commerce
4.	Dr. Dipak Mandal	Assistant Professor, History
5.	Dr. Anup Kumar Sahoo	IQAC Convenor, Assistant Professor, Physics
6.	Dr. Kishore Naskar	Assistant Professor, Economics
7.	Dr. Papia Das	Assistant Professor, Zoology
8.	Dr. Samiran Pandey	Assistant Professor, Botany
9.	Dr. Barnali Bera	SACT, Zoology
10.	Smt. Piyali Das	SACT, Botany
11.	Dr. Uttariya Roy	SACT, Environmental Science
12.	Dr. Shreya Chakravorty	Assistant Professor, English
13.	Shri Somnath Bose	Office Staff
14.	Shri Anis Ahmed	Office Staff

3. 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, 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.

4. 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:
(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.

4.1. 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.

4.2. 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.

4.3. 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.

5. 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 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.

5.1. Energy Consumption:

5.1.1. 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.

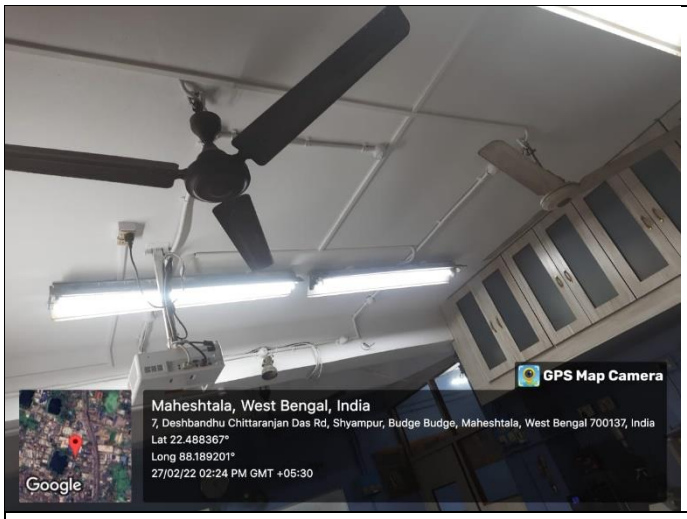
5.1.2. Heating, Ventilation, and Air Conditioning (HVAC):
The HVAC systems were discovered to be working less efficiently than necessary. Energy usage can be considerably decreased by switching to energy-efficient HVAC equipment, using programmable thermostats, and performing routine maintenance.

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

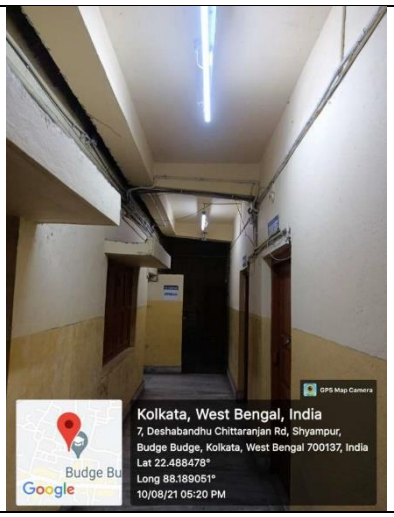
Details electrical requirements:

Electrical device/items	Number	Power (watt)	Usage time (hr/day)
Normal Tubelight	10	400	3-4 hours *
LED Tubelight	50	2000	Do
Normal Bulb	0	0	Do
LED Bulb	0	0	Do
Ceiling Fan	20	1200	Do
Wall fan	10	600	Do

*** College was closed due to corona pandemic**

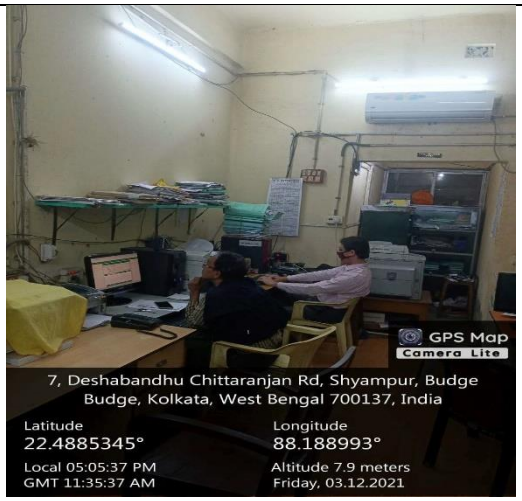


LED Tube light and Ceiling Fan



LED tube light at Corridor

LED tube lights in rooms



LED tube lights in office

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Silent DG sets are designed to generate a very low level of background noise, just as their name suggests. Their structures are constructed to eliminate virtually all noise and vibrations due to careful design. Because of this, they are not harmful to the environment and are ideally suited for use in residential areas.

College has installed solar panels on the roof of college building to reduce carbon footprint and pollution in the local community

5.2 Waste Management:

5.2.1. 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 comprehensive recycling education programme.

5.2.2. Composting: The institution can set up a composting system to handle the organic waste produced by Hostel members (Boys & Girls Hostel). Composting can help drastically reduce the quantity of garbage dumped in landfills while also producing beneficial compost for campus landscaping and gardening.

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.
Chemical wastes	Laboratory waste	Water should be used to neutralise. When dealing with hazardous garbage, adhere strictly to all safety regulations.
Wastewater	Washing, urinals, bathrooms	Soak pits
Glass waste	Broken glass wares from the labs	Glass debris should be kept separate from other recyclable materials and disposed of in containers that are specifically intended for glass recycling. Make sure that you recycle glass in the

		correct manner by coordinating with the local recycling centers.
Sanitary Napkin	-	Napkin Incinerators

Separate waste baskets for disposal of different types of wastes generated in college campus

5.3. Water Usage:

5.3.1. 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:

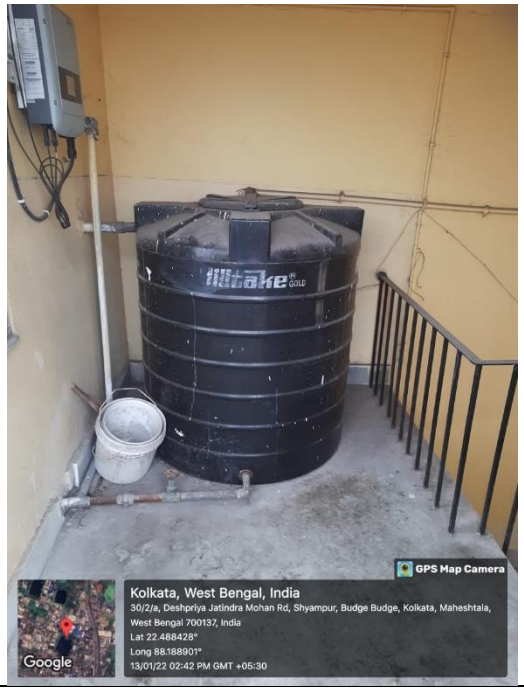
Water Management Tasks	Frequency	Responsible Party
Routine examination of water supplies	Monthly	Green Audit Working Team
Testing for drinking water quality	Half-yearly	Do
Awareness of water conservation	Half-yearly	Green Audit Working Team & various department
Infrastructure for water distribution that 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:

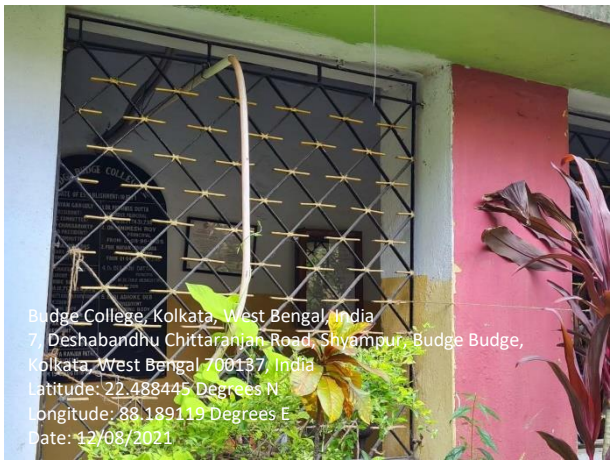
Sl No	Parameters	Response
1	Source of water	Municipality, Underground, Pond (10889.84 sqft) **Note:** Only Municipality water serves as a drinking water supply for around 3,500 people, including students and staff members. Pond and ground water is used for gardening, maintenance work and cleaning of washrooms
2	Source of Drinking Water	Municipality water
3	Any treatment for drinking water	Nil **Note:** Water purifiers have been installed in 1-2 numbers at all floors 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	Underground tank- 02@ 2000litres Top tank- 04@ 1000litres
6	Tap water	90 numbers
	Quantity of water pumped every day	4000 liters/per day
7	Do you waste water, and if so, why?	No
8	How much water is required for gardening purposes?	400 to 600 liters/per day
9	How many water coolers are there in total?	01
10	Do you have access to rainwater harvesting?	No
11	The number of units harvested and the total volume of water	Nil
12	Any leaky taps	None
13	Daily amount of water that is lost.	Not applicable
14	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 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?	Yes. All water taps and fixtures in the college premises are maintained and serviced regularly to stop water spillage to conserve water. AC waste water used to maintain college greenery.

Water purifier



Water reservoir



AC Waste Water Used to Maintain College Greenery

6. Transportation:

6.1. 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.

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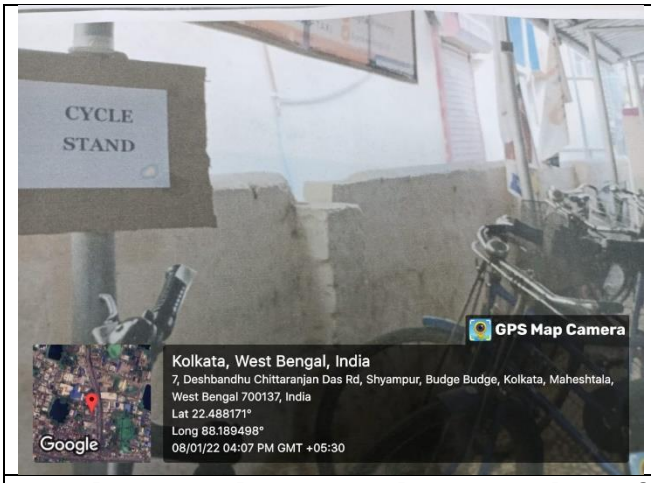	**Students**	**Employee**	**Total**
	Average numbers over 6 days in a peak session		
Bicycles are being used as modes of transportation for getting to and around the college by students mostly	Girls- 115 Boys-50	01	166

7. Overall Environmental Awareness:

7.1. 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	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
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	Whole year

	geographical approaches to resolving environmental issues, such as environmentally responsible land management planning.	
Pure Science	Conduct studies on environmental issues, such as assessing water quality, soil analysis, power consumption or recycling. To better comprehend environmental patterns and forecasts, consider using mathematical models. Investigate the repercussions of environmental actions on the economy, such as doing cost-benefit analyses for environmentally friendly projects.	Half-yearly/ each program
Bio-Science	Study subjects include ecosystems, biodiversity, and the interconnectedness of all living things.	Whole year
Physical Education	Encourage students to develop an appreciation for the natural world by having them participate in outdoor sports and activities. Talk about the significance of physical activity for both one's own health and the health of the environment (for example, taking bike instead of the car).	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

Plantation Programmes **College Campus Cleaning Programme**

College Campus Cleaning Programme

7.2. 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.

Department of Zoology organised field trip to aware students about biodiversity and its conservation

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8. Green Campus:

8.1. 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.

-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.

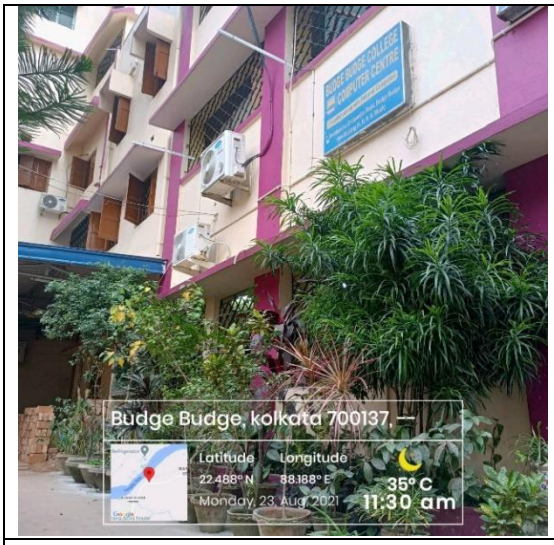
- Establish the plantation event's date, time, and venue. Plan the delivery of the trees, tools, and equipment to the planting location. Make sure that safety precautions are in place, including appropriate instruction on planting methods and equipment use.

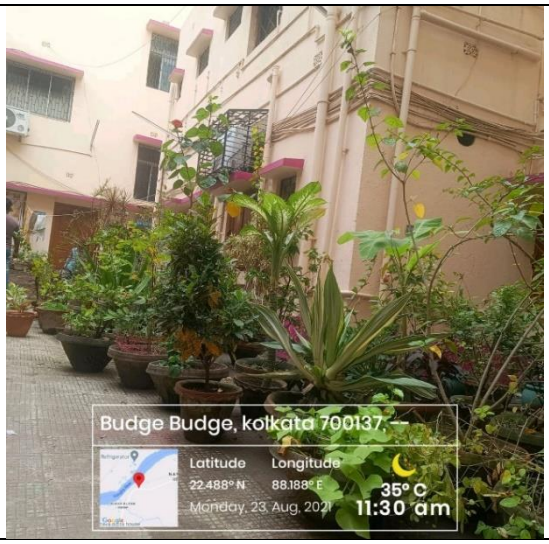
-Promote the planting programme within the campus community by using various communication channels, such as posters, social media, emails, and word-of-mouth, in order to raise awareness and find volunteers. Encourage everyone to volunteer, including alumni, faculty, staff, and students.

-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.





Floral Diversity of the Campus

Putting a name plate on the plants. Both the common and scientific names, as well as the family, are given for each plant.

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.

8.2. 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. The following bird species are observed inside the college campus:

SL NO.	LOCAL NAME	ENGLISH NAME	SCIENTIFIC NAME
1.	Tile ghughu	Spotted dove	*Spilopelia chinensis*
2.	Payra	Pigeon	*Columba livia*
3.	Kak	House Crow	*Corvus splendens*
4.	Deshi Kani Bak	The Indian Pond Heron	*Ardeola grayii*
5.	Machranga	White throated king fisher	*Halcyon smyrnensis*
6.	Salik	Common Myna	*Acridotheres tristis*
7.	Doyel	Oriental Magpie Robin	*Copsychus saularis*
8.	Pecha	Barn Owl	*Tyto alba*
9.	Charui	House Sparrow	*Passer domesticus*
10.	Bulbuli	Red vented Bulbul	Pycnonotus cafer
11.	Bashpati	Asian Green bee-eater	*Merops orientalis*
12.	Tuntuni	Tailor Bird	*Orthotomus sutorins*
13.	Phinge	Black Drongo	*Dierurus adsimilis*
14.	Chatare	Jungle Babbler	*Turdoides striatus*
15.	Kokil	Koel	*Eudynamys scolopacea*
16.	Dahuk	White breasted waterhen	*Amaurornis phoenicurus*
17.	Benebou	Black Hooded Oriole	*Oriolus xanthornus*
18.	Harichacha	Rufous Treepie	*Dendrocitta vagabunda*

The Indian Pond Heron

White-breasted Waterhen

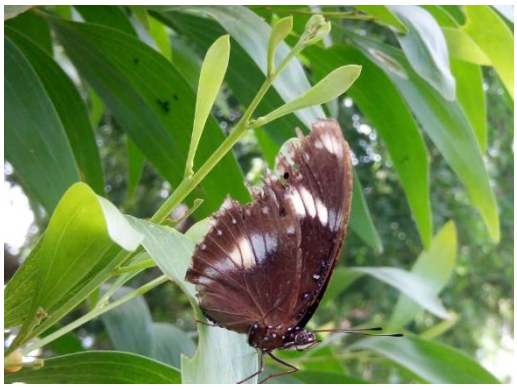
Black Hooded Oriole

Rufous Treepie

Butterfly:

Seasonally found the following butterflies-

SL NO.	COMMON NAME	SCIENTIFIC NAME
1.	Peacock Pansy	*Junonia almanac*
2.	Plain Tiger	*Danaus chrysippus*
3.	Grey Pansy	*Junonia atlites*
4.	Blue tiger	*Tirumala limniace*
5.	Common Grass Yellow	*Eurema hecabe*
6.	Common Mormon	*Papilio polytes*
7.	Oriental Great Eggfly	*Hypolimnas bolina*
8.	Common evening brown	*Melanitis leda*
9.	Psyche	*Leptosia nina*
10.	Common Jezebel	*Delias eucharis*
11.	Common emigrant	*Catopsilia pomana*
12.	Lime butterfly	*Papilio demoleus*
13.	Great Eggfly	*Hypolimnas bolina*



Great Eggfly

Plain Tiger

Mammals:

The following mammals were observed inside the college campus

SL NO.	LOCAL NAME	ENGLISH NAME	SCIENTIFIC NAME
1.	Chamchika	Indian pipistrelle	*Pipistrellus coromandra*
2.	Kathbirali	Fivestriped Palm Squirrel	*Funambulus pennant*
3.	Beral	Cat	*Felis catus*
4.	Indur	Lesser Bandicoot Rat	*Bandicota bengalensis*
5.	Kukur	Dog	*Canis familiaris*

Plantation of Wild type Medicinal plants:

On the grounds of our college, we planted different medicinal plants. Every day, more and more wild medicinal plant kinds are becoming extinct as a direct result of human activity and

pollution. Once we have determined the species of these plants, we will work to preserve them by creating medicinal garden in our college campus. A medical garden is a specific location on the grounds of an educational institution that is devoted to the growth and maintenance of a large variety of different kinds of medicinal plants. Medical gardens are often found on university campuses. Students, staff members, and researchers all have access to it as a resource for teaching and study, which makes it possible for them to investigate and learn about the many different qualities and applications that medicinal plants can have. The cultivation of a medicinal garden on a college campus has the potential to confer significant value and benefits on the surrounding academic community as well as on society.

Table: List of wild types of medicinal plants at the premises of Budge Budge College

Plant Name	Uses
Terminalia arjuna	It is cardiac stimulant and commonly used in cardiac diseases. Powdered bark is used to get relieve from hypertension.
Azadirachta indica	Neem leaf is used for leprosy, eye disorders, stomach upset, loss of appetite, skin ulcers, gum diseases and liver problem
Nyctanthes arbortristis	The leaves are useful in fever and rheumatism. The fresh juice of leaves is given with honey in chronic fever.
Oscimum sanctum	It is used for cold and cough, heart diseases, kidney stone etc.

List of Floral groups:

Sl. No.	**Scientific name**	**Vernacular Name**	**Family**	**No. of plants**
1.	*Terminalia arjuna*	Arjun	Combretaceae	1
2.	*Acacia auriculiformis*	Akashmoni	Mimosaceae	1
3.	*Cocos nucifera*	Narikel	Arecaceae	4
4.	*Azadirachta indica*	Neem	Meliaceae	1
5.	*Ficus religiosa*	Aswatha	Moraceae	1
6.	*Mangifera indica*	Aam	Anacardiaceae	1
7.	*Nerium indicum*	Karabi	Apocynaceae	2
8.	*Thebetia pelviana*	Kolke	Apocynaceae	2
9.	*Murraya paniculata*	Kamini	Rutaceae	2
10.	*Psidium guajava*	Peyara	Myrtaceae	1
11.	*Musa paradisieca*	Kola	Musaceae	5

12.	*Areca catechu*	Supari	Arecaceae	4
13.	*Hibiscus rosa-sinensis*	Jaba	Malvaceae	2
14.	*Zizyphus jujuba*	Kul	Rhamnaceae	1
15.	*Nyctanthus arbortristis*	Shiuli	Oleaceae	1
16.	*Araucaria heterophylla*	Chrismas Tree	Araucariaceae	2
17.	*Roystonia regia*	Royal Palm	Arecaceae	5
18.	*Swietenia macrophylla*	Mahogoni	Meliaceae	2
19.	*Ixora coccinia*	Rangan	Rubiaceae	1
20.	*Clitoria ternatia*	Aparajita	Papilionaceae	1
21.	*Rhoeo discolor*	-	Commelinaceae	1
22.	*Agave aungustifolia*	-	Agavaceae	1
23.	*Aloe vera*	Ghritokumari	Liliaceae	1
24.	*Dracaena aungustifolia*	-	Liliaceae	1
25.	*Dracaena marginata*	-	Liliaceae	1
26.	*Andrographis paniculata*	Kalmegh	Acanthaceae	1
27.	*Cycas sp.*	-	Cycadaceae	1
28.	*Ocimum sanctum*	Tulsi	Lamiaceae	1
29.	*Euphorbia millii*	Mili	Euphorbiaceae	1
30.	*Bougainvillea spectabilis*	Bougainvillea	Nyctaginaceae	1
31.	*Jasminum sambuc*	Belful	Oleaceae	1
32.	*Codiaeum variegatum*		Euphorbiaceae	1
33.	*Sansevieria trifosciata*	Snake plant	Liliaceae	1
34.	*Scindapsus officinalis*	Money plant	Araceae	1
35.	*Rosa chinensis*	Rose	Rosaceae	1

9. Conclusion: According to the results of a recent green audit, the BUDGE BUDGE COLLEGE has identified a few sites on campus that may use some work to further sustainability goals. Implementing the offered solutions has the potential to result in a number of positive environmental outcomes, including decreased energy consumption, improved waste management, enhanced water use efficiency, expanded sustainable transportation options, and heightened environmental consciousness. By putting these alterations into effect, BUDGE BUDGE COLLEGE will be able to demonstrate to its pupils how to responsibly care for the environment and make a contribution towards a more sustainable future.

2020-21

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Contents:

1. Introduction:

Between the years 2020 and 2021, the Green Audit Committee at BUDGE BUDGE COLLEGE 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.

2. Green Audit Working Team (2020-21):

1	Dr. Debjani Datta	Principal
2	Dr. Sandip Singha	Associate Professor, Commerce
3.	Dr. Gautam Das	NAAC Coordinator, Bursar, Assistant Professor, Commerce
4.	Dr. Dipak Mandal	Assistant Professor, History
5.	Dr. Anup Kumar Sahoo	IQAC Convenor, Assistant Professor, Physics
6.	Dr. Kishore Naskar	Assistant Professor, Economics
7.	Dr. Papia Das	Assistant Professor, Zoology
8.	Dr. Samiran Panday	Assistant Professor, Botany
9.	Dr. Barnali Bera	SACT, Zoology
10.	Dr. Uttariya Roy	SACT, Environmental Science
11.	Smt. Piyali Das	SACT, Botany
12.	Dr. Shreya Chakravorty	Assistant Professor, English
13.	Shri Somnath Bose	Office Staff
14.	Shri Anis Ahmed	Office Staff

3. 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 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.

4. 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:
(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.

4.1. 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.

4.2. 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.

4.3. 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.

5. 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.

5.1. Energy Consumption:

5.1.1. 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.

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

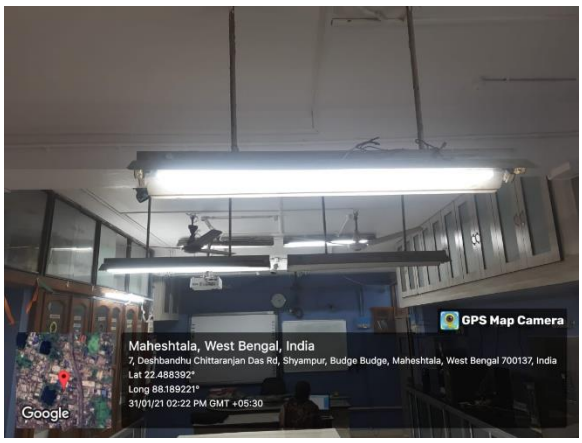
It was found that the HVAC systems were operating at a lower level of efficiency than was required. Switching to heating, ventilation, and air conditioning (HVAC) equipment that is more energy-efficient, installing thermostats that are programmable, and keeping up with normal maintenance can significantly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

5.1.3. 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.

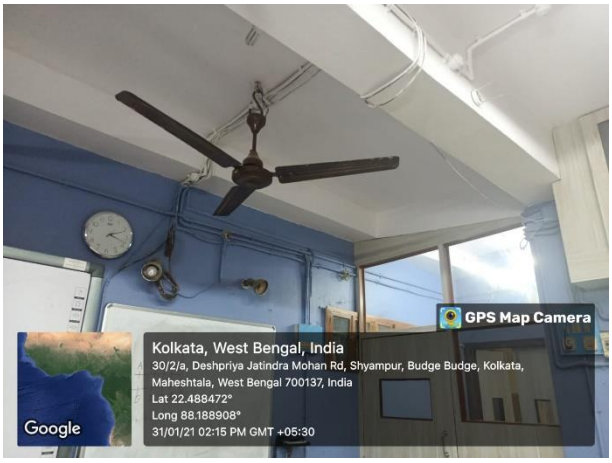
Details electrical requirements:

Electrical device/items	Number	Power (watt)	Usage time (hr/day)
Normal Tubelight	10	400	3-4 hours *
LED Tubelight	50	2000	Do
Normal Bulb	0	0	Do
LED Bulb	0	0	Do
Ceiling Fan	20	1200	Do
Wall fan	10	600	Do

*** College was closed due to corona pandemic**



LED Tubelight



Ceiling Fan

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Silent DG sets are designed to generate a very low level of background noise, just as their name suggests. Their structures are constructed to eliminate virtually all noise and vibrations due to careful design. Because of this, they are not harmful to the environment and are ideally suited for use in residential areas.

6. Waste Management:

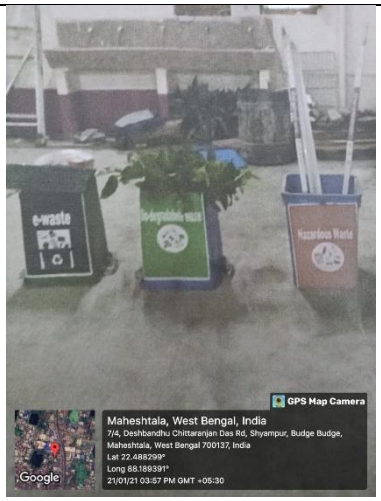
6.1. Recycling: Despite the fact that recycling canisters were located all around the campus, the audit indicated that there was insufficient separation of recyclable materials and inadequate information regarding products that might be recycled. This was the case despite the fact that recycling canisters 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.

6.2. Composting: At the organisation, composting facilities can be established so that the organic waste that is produced by the residents of the hostel (both boys and girls) 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.

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.
Chemical wastes	Laboratory waste	Water should be used to neutralise. When dealing with hazardous garbage, adhere strictly to all safety regulations.
Wastewater	Washing, urinals, bathrooms	Soak pits
Glass waste	Broken glass wares from the labs	Glass debris should be kept separate from other recyclable materials and disposed of in containers that are specifically intended for glass recycling. Make sure that you recycle glass in the correct manner by coordinating with the local recycling centers.
Sanitary Napkin	-	Napkin Incinerators



Separate waste baskets for disposal of different types of wastes generated in college campus

7. Water Usage:

7.1. 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.

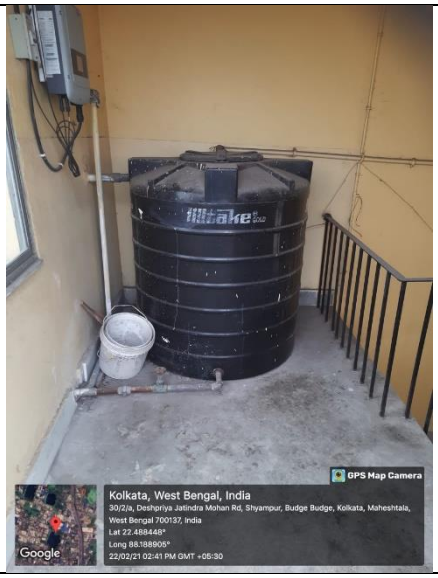
Water management table:

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:

Sl No	Parameters	Response
1	Source of water	Municipality, Underground, Pond (10889.84 sqft) **Note:** Only Municipality water serves as a drinking water supply for around 3,500 people, including students and staff members. Pond and ground water is used for gardening, maintenance work and cleaning of washrooms.
2	Source of Drinking Water	Municipality water
3	Any treatment for drinking water	Nil **Note:** Water purifiers have been installed in 1-2 numbers at all floors 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	Underground tank- 02@ 2000litres Top tank- 04@ 1000litres
6	Tap water	90 numbers
	Quantity of water pumped every day	4000 liters/per day

7	Do you waste water, and if so, why?	No
8	How much water is required for gardening purposes?	400 to 600 liters/per day
9	How many water coolers are there in total?	01
10	Do you have access to rainwater harvesting?	No
11	The number of units harvested and the total volume of water	Nil
12	Any leaky taps	None
13	Daily amount of water that is lost.	Not applicable
14	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 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?	Yes. All water taps and fixtures in the college premises are maintained and serviced regularly to stop water spillage to conserve water. AC waste water used to maintain college greenery.



Water reservoir

Water purifier

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7.2. Public Transport: Cycle, van, Ricksha, Train, bus etc.

<table>
<tr><td rowspan="2"> 
</td><td>Students</td><td>Employee</td><td>Total</td></tr>
<tr><td colspan="3">Average numbers over 6 days in a peak session</td></tr>
<tr><td>Bicycles are being used as modes of transportation for getting to and around the college by students, non-teaching staff and teaching staff.</td><td>Girls- 110
Boys-55</td><td>01</td><td>166</td></tr>
</table>

7.3. Overall Environmental Awareness:

7.3.1. 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 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	Whole year

	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	Conduct studies on environmental issues, such as assessing water quality, soil analysis, power consumption or recycling. To better comprehend environmental patterns and forecasts, consider using mathematical models. Investigate the repercussions of environmental actions on the economy, such as doing cost-benefit analyses for environmentally friendly projects.	Half-yearly/ each program
Bio-Science	Study subjects include ecosystems, biodiversity, and the interconnectedness of all living things.	Whole year
Physical Education	Encourage students to develop an appreciation for the natural world by having them participate in outdoor sports and activities. Talk about the significance of physical activity for both one's own health and the health of the environment (for example, taking bike instead of the car).	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

Plantation Programmes

Cleaning of college campus and surrounding area

Disposal of the garbage at the corporation garbage vat

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7.3.2. 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.

8. Green Campus:

8.1. 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.

-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.

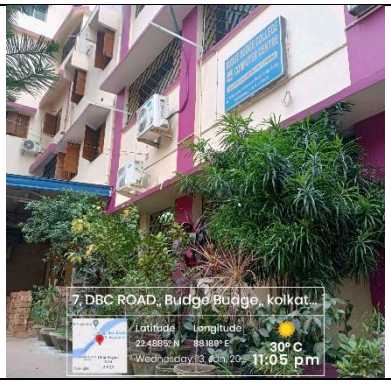
- Establish the plantation event's date, time, and venue. Plan the delivery of the trees, tools, and equipment to the planting location. Make sure that safety precautions are in place, including appropriate instruction on planting methods and equipment use.

-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.



Floral diversity of college campus

Ponds play a crucial role in the campus's ability to maintain a balanced ecological system. They serve the local environment by providing a habitat for a variety of plants and animals, assisting in the reduction of erosion, and assisting in the replenishment of groundwater supplies.

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.

8.2. 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.

The following bird species are observed inside the college campus:

SL NO.	LOCAL NAME	ENGLISH NAME	SCIENTIFIC NAME
1.	Tile ghughu	Spotted dove	*Spilopelia chinensis*
2.	Payra	Pigeon	*Columba livia*
3.	Kak	House Crow	*Corvus splendens*
4.	Deshi Kani Bak	The Indian Pond Heron	*Ardeola grayii*
5.	Machranga	White throated king fisher	*Halcyon smyrnensis*
6.	Salik	Common Myna	*Acridotheres tristis*
7.	Doyel	Oriental Magpie Robin	*Copsychus saularis*
8.	Pecha	Barn Owl	*Tyto alba*
9.	Charui	House Sparrow	*Passer domesticus*

10.	Bulbuli	Red vented Bulbul	Pycnonotus cafer
11.	Bashpati	Asian Green bee-eater	*Merops orientalis*
12.	Tuntuni	Tailor Bird	*Orthotomus sutorins*
13.	Phinge	Black Drongo	*Dierurus adsimilis*
14.	Chatare	Jungle Babbler	*Turdoides striatus*
15.	Kokil	Koel	*Eudynamys scolopacea*
16.	Dahuk	White breasted waterhen	*Amaurornis phoenicurus*

Butterfly:

Seasonally found the following butterflies-

SL NO.	COMMON NAME	SCIENTIFIC NAME
1.	Peacock Pansy	*Junonia almanac*
2.	Plain Tiger	*Danaus chrysippus*
3.	Grey Pansy	*Junonia atlites*
4.	Blue tiger	*Tirumala limniace*
5.	Common Grass Yellow	*Eurema hecabe*
6.	Common Mormon	*Papilio polytes*
7.	Oriental Great Eggfly	*Hypolimnas bolina*
8.	Common evening brown	*Melanitis leda*
9.	Psyche	*Leptosia nina*
10.	Common Jezebel	*Delias eucharis*
11.	Common emigrant	*Catopsilia pomana*
12.	Lime butterfly	*Papilio demoleus*

Mammals:

The following mammals were observed inside the college campus

SL NO.	LOCAL NAME	ENGLISH NAME	SCIENTIFIC NAME
1.	Chamchika	Indian pipistrelle	*Pipistrellus coromandra*
2.	Kathbirali	Fivestriped Palm Squirrel	*Funambulus pennant*
3.	Beral	Cat	*Felis catus*
4.	Indur	Lesser Bandicoot Rat	*Bandicota bengalensis*
5.	Kukur	Dog	*Canis familiaris*

Plantation of Wild type Medicinal plants:

On the grounds of our college, we planted different medicinal plants. Every day, more and more wild medicinal plant kinds are becoming extinct as a direct result of human activity and pollution. Once we have determined the species of these plants, we will work to preserve them by creating medicinal garden in our college campus. A medical garden is a specific location on the grounds of an educational institution that is devoted to the growth and maintenance of a

large variety of different kinds of medicinal plants. Medical gardens are often found on university campuses. Students, staff members, and researchers all have access to it as a resource for teaching and study, which makes it possible for them to investigate and learn about the many different qualities and applications that medicinal plants can have. The cultivation of a medicinal garden on a college campus has the potential to confer significant value and benefits on the surrounding academic community as well as on society.

Table: List of wild types of medicinal plants at the premises of Budge Budge College

Plant Name	Uses
Terminalia arjuna	It is cardiac stimulant and commonly used in cardiac diseases. Powdered bark is used to get relieve from hypertension.
Azadirachta indica	Neem leaf is used for leprosy, eye disorders, stomach upset, loss of appetite, skin ulcers, gum diseases and liver problem
Nyctanthes arbortristis	The leaves are useful in fever and rheumatism. The fresh juice of leaves is given with honey in chronic fever.
Oscimum sanctum	It is used for cold and cough, heart diseases, kidney stone etc.

List of Floral groups:

Sl. No.	Scientific name	Vernacular Name	Family	No. of plants
1.	*Terminalia arjuna*	Arjun	Combretaceae	1
2.	*Acacia auriculiformis*	Akashmoni	Mimosaceae	1
3.	*Cocos nucifera*	Narikel	Arecaceae	4
4.	*Azadirachta indica*	Neem	Meliaceae	1
5.	*Ficus religiosa*	Aswatha	Moraceae	1
6.	*Mangifera indica*	Aam	Anacardiaceae	1
7.	*Nerium indicum*	Karabi	Apocynaceae	2
8.	*Thebetia pelviana*	Kolke	Apocynaceae	2
9.	*Murraya paniculata*	Kamini	Rutaceae	2
10.	*Psidium guajava*	Peyara	Myrtaceae	1
11.	*Musa paradisieca*	Kola	Musaceae	5
12.	*Areca catechu*	Supari	Arecaceae	4
13.	*Hibiscus rosa-sinensis*	Jaba	Malvaceae	2

14.	*Zizyphus jujuba*	Kul	Rhamnaceae	1
15.	*Nyctanthus arbortristis*	Shiuli	Oleaceae	1
16.	*Araucaria heterophylla*	Chrismas Tree	Araucariaceae	2
17.	*Roystonia regia*	Royal Palm	Arecaceae	5
18.	*Swietenia macrophylla*	Mahogoni	Meliaceae	2
19.	*Ixora coccinia*	Rangan	Rubiaceae	1
20.	*Clitoria ternatia*	Aparajita	Papilionaceae	1
21.	*Rhoeo discolor*	-	Commelinaceae	1
22.	*Agave aungustifolia*	-	Agavaceae	1
23.	*Aloe vera*	Ghritokumari	Liliaceae	1
24.	*Dracaena aungustifolia*	-	Liliaceae	1
25.	*Dracaena marginata*	-	Liliaceae	1
26.	*Andrographis paniculata*	Kalmegh	Acanthaceae	1
27.	*Cycas sp.*	-	Cycadaceae	1
28.	*Ocimum sanctum*	Tulsi	Lamiaceae	1
29.	*Euphorbia millii*	Mili	Euphorbiaceae	1
30.	*Bougainvillea spectabilis*	Bougainvillea	Nyctaginaceae	1
31.	*Jasminum sambuc*	Belful	Oleaceae	1
32.	*Codiaeum variegatum*		Euphorbiaceae	1
33.	*Sansevieria trifosciata*	Snake plant	Liliaceae	1
34.	*Scindapsus officinalis*	Money plant	Araceae	1
35.	*Rosa chinensis*	Rose	Rosaceae	1

Some of the plants present in the college campus

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9. Conclusion: According to the findings of a recent green audit, the BUDGE BUDGE COLLEGE 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, BUDGE BUDGE COLLEGE 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.

2019-20

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Contents:

1. Introduction:

Budge Budge College was established on 10th December' 1971. Initially the college was located in a different location with few classrooms. Later it was shifted to its present position. This College was lucky to have the famous writer late Narayan Ganguly as its Founder President of the Governing Body and the founder principal was late Prof. Prithwis Dutta. The college has played its role since all these years for the development of education in the suburbs of Kolkata.The township of Budge Budge itself has its own significance in the field of culture and freedom movement of India. The College is located in the vicinity of Budge Budge Railway Station and occupies an important position in the locality. Hence to serve the students in the larger area has been possible for the College. Day by day this College has created its own aura and significance in spreading education in West Bengal particularly to the middle class & lower middle-class families. Students of this College come from all spheres of society. We have large numbers of female students to take care of. Most of our students are well established in their life and playing their role as good citizens.

2. Green Audit Working Team (2019-20):

1	Dr. Debjani Datta	Principal
2.	Dr. Gautam Das	NAAC coordinator, Bursar, Associate Professor, Commerce
3.	Dr. Dipak Mandal	Associate Professor, History
4.	Dr. Anup Kumar Sahoo	Assistant Professor, Physics
5.	Dr. Kishore Naskar	Assistant Professor, Economics
6.	Dr. Papia Das	Assistant Professor, Zoology
7.	Dr. Samiran Panday	Assistant Professor, Botany
8.	Dr. Barnali Bera	SACT, Zoology
9.	Dr. Uttariya Roy	SACT, Environmental Studies
10.	Smt. Piyali Das	SACT, Botany
11.	Dr. Shreya Chakravorty	Assistant Professor, English
12.	Shri Somnath Bose	Office Staff
13.	Shri Anis Ahmed	Office Staff

3. 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 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.

4. 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:
(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.

4.1. 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.

4.2. 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.

4.3. 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.

5. 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.

5.1. Energy Consumption:

5.1.1. 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.

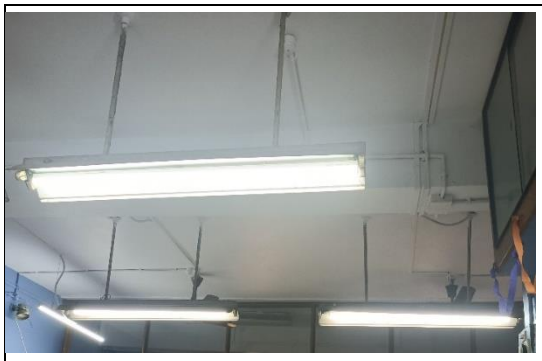
5.1.2. Heating, Ventilation, and Air Conditioning (HVAC):

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.

5.1.3. 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:

Electrical device/items	Number	Power (watt)	Usage time (hr/day)
Normal Tubelight	50	2000	10:00 am to 5:00 pm
LED Tubelight	350	7000	Do
Normal Bulb	0	0	Do
LED Bulb	0	0	Do
Ceiling Fan	130	7800	Do
Wall fan	40	2400	Do



LED Tubelight and Wall fan

Silent DG sets are designed to generate a very low level of background noise, just as their name suggests. Their structures are constructed to eliminate virtually all noise and vibrations due to careful design. Because of this, they are not harmful to the environment and are ideally suited for use in residential areas.

6. Waste Management:

6.1. 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.

6.2. Composting: At the organisation, composting facilities can be established so that the organic waste that is produced by the residents of the hostel (both boys and girls) 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.

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.

Chemical wastes	Laboratory waste	Water should be used to neutralise. When dealing with hazardous garbage, adhere strictly to all safety regulations.
Wastewater	Washing, urinals, bathrooms	Soak pits
Glass waste	Broken glass wares from the labs	Glass debris should be kept separate from other recyclable materials and disposed of in containers that are specifically intended for glass recycling. Make sure that you recycle glass in the correct manner by coordinating with the local recycling centers.
Sanitary Napkin	-	Napkin Incinerators

Separate waste baskets for disposal of different types of wastes generated in college campus

7. Water Usage:

7.1. 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:

Sl No	Parameters	Response
1	Source of water	Municipality, Underground, Pond (10889.84 sqft) **Note:** Only Municipality water serves as a drinking water supply for around 3,300 people, including students and staff members. Pond and ground water is used for gardening, maintenance work and cleaning of washrooms.
2	Source of Drinking Water	Municipality water
3	Any treatment for drinking water	Nil **Note:** Water purifiers have been installed in 1-2 numbers at all floors 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	Underground tank- 02@ 2000litres Top tank- 04@ 1000litres
6	Tap water	90 numbers
	Quantity of water pumped every day	4000 liters/per day
7	Do you waste water, and if so, why?	No
8	How much water is required for gardening purposes?	400 to 600 liters/per day
9	How many water coolers are there in total?	01
10	Do you have access to rainwater harvesting?	No

11	The number of units harvested and the total volume of water	Nil
12	Any leaky taps	None
13	Daily amount of water that is lost.	Not applicable
14	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 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?	Yes. All water taps and fixtures in the college premises are maintained and serviced regularly to stop water spillage to conserve water. AC waste water used to maintain college greenery. Besides seminars are organised by NSS to educate students on water conservation.

Seminar organised by NSS to educate students on water conservation

Underground water reservoir

7.1.2. Public Transport: Cycle, van, Ricksha, Train, bus etc.

7.2. Overall Environmental Awareness:

7.2.1. 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 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
Pure Science	Conduct studies on environmental issues, such as assessing water quality, soil analysis, power consumption or recycling. To better comprehend environmental patterns and forecasts, consider using mathematical models. Investigate the repercussions of environmental actions on the economy, such as doing cost-benefit analyses for environmentally friendly projects.	Half-yearly/ each program

Bio-Science	Study subjects include ecosystems, biodiversity, and the interconnectedness of all living things.	Whole year
Physical Education	Encourage students to develop an appreciation for the natural world by having them participate in outdoor sports and activities. Talk about the significance of physical activity for both one's own health and the health of the environment (for example, taking bike instead of the car).	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

Plantation Programmes and student participation in rally to aware people about the biodiversity and its conservation

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Department of Botany and Zoology organised field trip to aware students about biodiversity and its conservation

NSS of Budge Budge College regularly organise campus cleaning programme to encourage a clean environment

7.2.2. 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. Department of Zoology and Botany regularly organize field trips for the students which bring out the truest essence of learning directly from Mother Nature and aware them about the importance of conserving nature.

8. Green Campus:

8.1. 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.

-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.

Floral Diversity of the Campus

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.

Ponds play a crucial role in the campus's ability to maintain a balanced ecological system. They serve the local environment by providing a habitat for a variety of plants and animals, assisting in the reduction of erosion, and assisting in the replenishment of groundwater supplies.

8.2. 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.

The following bird species are observed inside the college campus:

SL NO.	LOCAL NAME	ENGLISH NAME	SCIENTIFIC NAME
1.	Tile ghughu	Spotted dove	*Spilopelia chinensis*
2.	Payra	Pigeon	*Columba livia*
3.	Kak	House Crow	*Corvus splendens*
4.	Deshi Kani Bak	The Indian Pond Heron	*Ardeola grayii*
5.	Machranga	White throated king fisher	*Halcyon smyrnensis*
6.	Salik	Common Myna	*Acridotheres tristis*
7.	Doyel	Oriental Magpie Robin	*Copsychus saularis*
8.	Pecha	Barn Owl	*Tyto alba*
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Plant Name	Uses
Terminalia arjuna	It is cardiac stimulant and commonly used in cardiac diseases. Powdered bark is used to get relieve from hypertension.
Azadirachta indica	Neem leaf is used for leprosy, eye disorders, stomach upset, loss of appetite, skin ulcers, gum diseases and liver problem
Nyctanthes arbortristis	The leaves are useful in fever and rheumatism. The fresh juice of leaves is given with honey in chronic fever.
Oscimum sanctum	It is used for cold and cough, heart diseases, kidney stone etc.

List of Floral groups:

Sl. No.	Scientific name	Vernacular Name	Family	No. of plants
1.	*Terminalia arjuna*	Arjun	Combretaceae	1
2.	*Acacia auriculiformis*	Akashmoni	Mimosaceae	1
3.	*Cocos nucifera*	Narikel	Arecaceae	4
4.	*Azadirachta indica*	Neem	Meliaceae	1
5.	*Ficus religiosa*	Aswatha	Moraceae	1
6.	*Mangifera indica*	Aam	Anacardiaceae	1
7.	*Nerium indicum*	Karabi	Apocynaceae	2
8.	*Thebetia pelviana*	Kolke	Apocynaceae	2
9.	*Murraya paniculata*	Kamini	Rutaceae	2
10.	*Psidium guajava*	Peyara	Myrtaceae	1
11.	*Musa paradisieca*	Kola	Musaceae	5
12.	*Areca catechu*	Supari	Arecaceae	4
13.	*Hibiscus rosa-sinensis*	Jaba	Malvaceae	2
14.	*Zizyphus jujuba*	Kul	Rhamnaceae	1
15.	*Nyctanthus arbortristis*	Shiuli	Oleaceae	1
16.	*Araucaria heterophylla*	Chrismas Tree	Araucariaceae	2

17.	*Roystonia regia*	Royal Palm	Arecaceae	5
18.	*Swietenia macrophylla*	Mahogoni	Meliaceae	2
19.	*Ixora coccinia*	Rangan	Rubiaceae	1
20.	*Clitoria ternatia*	Aparajita	Papilionaceae	1
21.	*Rhoeo discolor*	-	Commelinaceae	1
22.	*Agave aungustifolia*	-	Agavaceae	1
23.	*Aloe vera*	Ghritokumari	Liliaceae	1
24.	*Dracaena aungustifolia*	-	Liliaceae	1
25.	*Dracaena marginata*	-	Liliaceae	1
26.	*Andrographis paniculata*	Kalmegh	Acanthaceae	1
27.	*Cycas sp.*	-	Cycadaceae	1
28.	*Ocimum sanctum*	Tulsi	Lamiaceae	1
29.	*Euphorbia millii*	Mili	Euphorbiaceae	1
30.	*Bougainvillea spectabilis*	Bougainvillea	Nyctaginaceae	1
31.	*Jasminum sambuc*	Belful	Oleaceae	1
32.	*Codiaeum variegatum*		Euphorbiaceae	1
33.	*Sansevieria trifosciata*	Snake plant	Liliaceae	1
34.	*Scindapsus officinalis*	Money plant	Araceae	1
35.	*Rosa chinensis*	Rose	Rosaceae	1

9. Conclusion: According to the results of a recent green audit, the BUDGE BUDGE COLLEGE has identified a few sites on campus that may use some work to further sustainability goals. Implementing the offered solutions has the potential to result in a number of positive environmental outcomes, including decreased energy consumption, improved waste management, enhanced water use efficiency, expanded sustainable transportation options, and heightened environmental consciousness. By putting these alterations into effect, BUDGE BUDGE COLLEGE will be able to demonstrate to its pupils how to responsibly care for the environment and make a contribution towards a more sustainable future.

2018-19

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Contents:

1. Introduction:

Budge Budge College was established on 10th December' 1971. Initially the college was located in a different location with few classrooms. Later it was shifted to its present position. This College was lucky to have the famous writer late Narayan Ganguly as its Founder President of the Governing Body and the founder principal was late Prof. Prithwis Dutta. The college has played its role since all these years for the development of education in the suburbs of Kolkata.The township of Budge Budge itself has its own significance in the field of culture and freedom movement of India. The College is located in the vicinity of Budge Budge Railway Station and occupies an important position in the locality. Hence to serve the students in the larger area has been possible for the College. Day by day this College has created its own aura and significance in spreading education in West Bengal particularly to the middle class & lower middle-class families. Students of this College come from all spheres of society. We have large numbers of female students to take care of. Most of our students are well established in their life and playing their role as good citizens.

2. Green Audit Working Team (2018-19):

1.	Dr. Debjani Datta	Principal
2.	Dr. Gautam Das	NAAC coordinator, Bursar, Assistant Professor, Commerce
3.	Dr. Dipak Mandal	Assistant Professor, History
4.	Dr. Anup Kumar Sahoo	Assistant Professor, Physics
5.	Dr. Kishore Naskar	Assistant Professor, Economics
6.	Dr. Papia Das	Assistant Professor, Zoology
7.	Smt. Piyali Das	SACT, Botany
8.	Dr. Shreya Chakravorty	Assistant Professor, English
9.	Shri Somnath Bose	Office Staff
10.	Shri Anis Ahmed	Office Staff

3. 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 several 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 established in many countries must be followed by organizations. Green audits help colleges adhere to standards to avoid penalties or other legal implications for non-compliance.

(c) Savings on Expenses: Green audits can identify inefficient practices, providing opportunities for cost savings. By studying energy use, resource consumption, and waste management, businesses can put strategies into practice 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 practices. 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.

4. 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:

(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.

4.1. 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.

4.2. 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.

4.3. 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.

5. Target Areas of Green Auditing:

Energy Consumption:

The college's electrical and HVAC usage trends are dissected in this section. It detects energy-efficient practices and points out places to make improvements, such as through lighting retrofits, HVAC system optimisation, and the introduction of energy-saving devices.

Waste Management:

Recycling initiatives, landfill diversion rates, and other waste management practices on campus are all part of the evaluation. It proposes measures to cut down on garbage, boost recycling, and promote eco-friendly behaviour all over campus.

Water Usage:

The college's water consumption, conservation initiatives, and opportunities for water savings are all evaluated in this report. It recommends promoting water conservation through the use of water-efficient fixtures, rainwater collection, and educational programmes.

Transportation:

In this section, we take a look at how the college neighbourhood gets around. Bicycle-sharing initiatives, financial incentives for carpooling, and collaborations with public transportation providers are some of the eco-friendly commute solutions investigated.

Green Spaces and Biodiversity:

The report assesses the school's green areas, biodiversity protection initiatives, and landscaping methods. Preserving natural areas, growing native species and supporting programmes that help pollinators are all possible suggestions.

Curriculum and Awareness:

This analysis considers the ways in which sustainability and environmental studies are taught and discussed on campus. It suggests fostering environmental awareness and green initiatives across all academic fields.

Stakeholder Engagement:

Student, professor, and staff participation in sustainability initiatives is assessed in this report. It suggests ways to increase participation and diversity in environmentally friendly activities.

Future Goals and Targets:

This section establishes attainable sustainability targets for the university based on audit findings. It lays out both immediate and far-off goals for improving the organization's environmental impact.

Conclusion:

The implementation plan details the steps to be taken, who will be responsible for them, and when they will be completed in order to meet the suggested sustainability targets. Budgetary constraints, collaboration with external organisations, and methods for assessing performance are all possibilities.

Yearly Records (2018-19):

Electrical device/items	Number	Power (watt)	Usage time (hr/day)
Normal Tubelight	50	2000	10:00 am to 5:00 pm
LED Tubelight	350	7000	Do
Normal Bulb	0	0	Do
LED Bulb	0	0	Do
Ceiling Fan	130	7800	Do
Wall fan	40	2400	Do


LED tube light & Fan

6. Waste Management:

6.1. Recycling: Even though recycling containers could be found all throughout campus, the audit discovered that there was insufficient separation of recyclable items and inadequate information regarding products that might be recycled. Raising the recycling rate can be done in a number of ways, including by enhancing the signs, providing clear instructions, and implementing a comprehensive recycling education programme.

6.2. Composting: To appropriately dispose of organic waste produced by Hostel occupants (both boys and girls), composting facilities might be set up at the organisation. Composting not only reduces the quantity of waste sent to landfills but also produces useful compost that may be utilised for campus landscaping and gardening.

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	After a while, we can offer these from a separate tank.
Plastic waste	Pen, Refill, Plastic water bottles and other plastic containers, wrappers etc	Single-use plastic bottles, jars, and bags. Encourage reusable water bottles and other containers. Establish plastic recycling containers, and after a certain time, we can sell the recyclables directly.
Solid wastes	Paper waste, Damaged furniture, paper plates, food wastes	Maintenance energy conversion reuse. College composting systems turn food waste into nutrient-rich compost for campus landscaping and community gardens. Institutions can work with local farms to collect food waste.

Chemical wastes	Laboratory waste	Water neutralises. Follow safety rules when handling hazardous waste.
Wastewater	Washing, urinals, bathrooms	Soak pits
Glass waste	Broken glass wares from the labs	Glass should be recycled separately from other recyclables in glass recycling containers. Contact local recycling centres to recycle glass properly.
Sanitary Napkin	-	Burn

7. Water Usage:

7.1. 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:

Sl No	Parameters	Response
1	Source of water	Municipality, Underground, Pond (10889.84 sqft) **Note:** Only Municipality water serves as a drinking water supply for around 3,200 people, including students and staff members. Pond and ground water is used for gardening, maintenance work and cleaning of washrooms.
2	Source of Drinking Water	Municipality water
3	Any treatment for drinking water	Nil **Note:** Water purifiers have been installed in 1-2 numbers at all floors 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	Underground tank- 02@2000litres Top tank- 04@1000litres
6	Tap water	90 numbers
	Quantity of water pumped every day	4000 liters/per day
7	Do you waste water, and if so, why?	No
8	How much water is required for gardening purposes?	400 to 600 liters/per day
9	How many water coolers are there in total?	01
10	Do you have access to rainwater harvesting?	No
11	The number of units harvested and the total volume of water	Nil
12	Any leaky taps	None
13	Daily amount of water that is lost.	Not applicable

14	Is there any kind of plan for the management of water?	Promote water conservation, pollution reduction, and sustainable water management. Water rights and allocation procedures should be clear to distribute water fairly among multiple users.
15	Have any methods for conserving water been implemented?	Yes. All water taps and fixtures in the college premises are maintained and serviced regularly to stop water spillage to conserve water. Beside AC waste water used to maintain college greenery.

Water purifier used to filter drinking water

Water tank

AC waste water used to maintain college greenery

7.1.2. 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.

<table>
<tr><td rowspan="2"> 
</td><td>Students</td><td>Employee</td><td>Total</td></tr>
<tr><td colspan="3">Average numbers over 6 days in a peak session</td></tr>
<tr><td>Bicycles are being used as modes of transportation for getting to and around the college by students, non-teaching staff and teaching staff.</td><td>Girls-100

Boys-50</td><td>01</td><td>151</td></tr>
</table>

7.2. Overall Environmental Awareness:

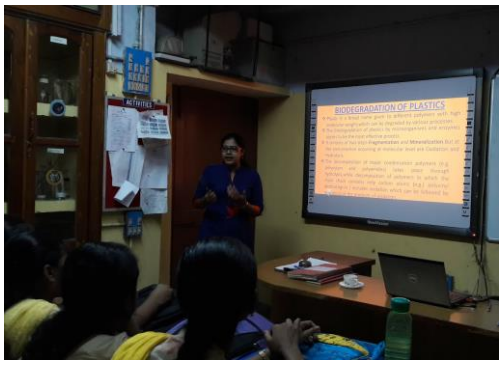
7.2.1. Curriculum Integration: The institution can integrate environmental awareness and sustainability into its curriculum across various subject areas. This strategy will guarantee that students receive instruction and training in environmental stewardship, encouraging sustainable thinking.

Environmental awareness across different subjects	Parameters	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

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
Pure Science	Conduct studies on environmental issues, such as assessing water quality, soil analysis, power consumption or recycling. To better comprehend environmental patterns and forecasts, consider using mathematical models. Investigate the repercussions of environmental actions on the economy, such as doing cost-benefit analyses for environmentally friendly projects.	Half-yearly/ each program
Bio-Science	Study subjects include ecosystems, biodiversity, and the interconnectedness of all living things.	Whole year
Physical Education	Encourage students to develop an appreciation for the natural world by having them participate in outdoor sports and activities. Talk about the significance of physical activity for both one's own health and the health of the environment (for example, taking bike instead of the car).	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.	Whole year

	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.	

Plantation Programmes organised by NSS Unit



Zoology department organize student seminars to aware students on Environmental issues

Students of zoology department participates in rally to aware people about the biodiversity and its conservation

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NSS of Budge Budge College regularly organise campus cleaning programme to encourage a clean environment

7.2.2. 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. Department of Zoology and Botany regularly organize field trips for the students which bring out the truest essence of learning directly from Mother Nature and aware them about the importance of conserving nature.

8. Green Campus:

8.1. 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.

-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.

-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.

Floral diversity of the college

Ponds play a crucial role in the campus's ability to maintain a balanced ecological system. They serve the local environment by providing a habitat for a variety of plants and animals, assisting in the reduction of erosion, and assisting in the replenishment of groundwater supplies.


Students of Zoology Department regularly test physical parameters of the pond water to maintain and keep watch on the water quality of the pond.

8.2. Faunal Diversity:

The study of faunal diversity can help raise awareness about the issues facing the environment as well as the relevance of conservation. It is possible that educational institutions that are home to a large number of different animal species may be more likely to implement ecologically friendly policies and methods of operation in order to protect both the campus environment and the people who live there.

Birds Diversity:

A robust and flourishing ecosystem can be inferred from the presence of a large number of distinct bird species within its population. Birds of many various species play a significant role in the preservation of ecological balance by performing a variety of tasks, some of the most important of which are the spreading of seeds, the management of insect populations, and the act of pollination. They provide a contribution to the overall variety of plant and animal life that may be found on the site.

-House Crow (*Corvus splendens*) -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

-White throated king fisher (*Halcyon smyrnensis*)-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*) – Common

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

-Spotted Dove- *Spilopelia chinensis*- Very available at our college campus

- Barn Owl (*Tyto alba*) - Very rare

- Red vented Bulbul (Pycnonotus cafer)- Common

- Asian Green bee-eater (*Merops orientalis*)- Common

Butterfly:

Seasonally found the following butterflies-

Peacock Pansy (*Junonia almanac*), Plain Tiger (*Danaus chrysippus*), Grey Pansy (*Junonia atlites*), Blue tiger (*Tirumala limniace*), Common Grass Yellow (*Eurema hecabe*), Common Mormon (*Papilio polytes*), Oriental Great Eggfly (*Hypolimnas bolina*), Common evening brown (*Melanitis leda*)

Plantation of Wild type Medicinal plants:

On the grounds of our college, we planted different medicinal plants. Every day, more and more wild medicinal plant kinds are becoming extinct as a direct result of human activity and pollution. Once we have determined the species of these plants, we will work to preserve them by creating medicinal garden in our college campus. A medical garden is a specific location on the grounds of an educational institution that is devoted to the growth and maintenance of a large variety of different kinds of medicinal plants. Medical gardens are often found on university campuses. Students, staff members, and researchers all have access to it as a resource for teaching and study, which makes it possible for them to investigate and learn about the many different qualities and applications that medicinal plants can have. The cultivation of a medicinal garden on a college campus has the potential to confer significant value and benefits on the surrounding academic community as well as on society.

Some important medicinal plants present in our college campus

Plant Name	**Uses**
Terminalia arjuna	It is cardiac stimulant and commonly used in cardiac diseases. Powdered bark is used to get relieve from hypertension.
Azadirachta indica	Neem leaf is used for leprosy, eye disorders, stomach upset, loss of appetite, skin ulcers, gum diseases and liver problem
Nyctanthes arbortristis	The leaves are useful in fever and rheumatism. The fresh juice of leaves is given with honey in chronic fever.

Most Floral groups of college campus are- *Ficus religiosa, Areca catechu, Terminalia arjuna, Acacia auriculiformis, Psidium guajava, Mangifera indica, Ziziphus jujuba, Nerium indicum, Hibiscus rosa-sinensis, Acacia auriculiformes, Cocos nucifera, Azadirachta indica, Thebetia pelviana, Murraya paniculata, Musa paradisiaca, Nyctanthes arbortristis, Cycas sp., Ixora coccinia, Clitoria ternatia, Jasminum sambuc, Sansevieria trifosciata, Scindapsus officinalis*

9. Conclusion: According to the results of a recent green audit, the BUDGE BUDGE COLLEGE has identified a few sites on campus that may use some work to further sustainability goals. Implementing the offered solutions has the potential to result in a number of positive environmental outcomes, including decreased energy consumption, improved waste management, enhanced water use efficiency, expanded sustainable transportation options, and heightened environmental consciousness. By putting these alterations into effect, BUDGE BUDGE COLLEGE will be able to demonstrate to its pupils how to responsibly care for the environment and make a contribution towards a more sustainable future.