INTERNAL AUDIT ON ENVIRONMENT, GREEN AND ENERGY 2023-2024

Prepared By:
Department of Zoology
Department of Botany
Department of Environmental studies
Bidhan Chandra College, Asansol - 713304

Report of Environmental Audit/Green Audit:

1.0 Introduction

The Environmental Audit and/or Green Audit is considered as systematic identification, quantification, recording, reporting and analysis of the different aspects as well as components of the environment and environmental issues related with human activities. The 'Environmental Audit' / 'Green Audit' focuses to measure the various factors involved in environmental practices in and around the Institutional campus; actually, it plays an important role on the ambient and environment-friendly atmosphere and its impacts on the stakeholders. It is designed with an objective to look after the activities performed by the organization in relation to safe environment, otherwise which can create risks to the health of dwellers and the environment.

Under the present format of AQAR and SSR Environmental Audit/Green audit is a mandatory factor as per requirement of National Assessment and Accreditation Council (NAAC) under the Criteria VII, which is a self-governing organization of lndia, which declares the Institutional Grade.

1.1 About the College:

Bidhan Chandra College, Asansol, Paschim Bardhaman was established in 196l at Asansol and Dr. Sarvapally Radhakrishnan laid down the foundation stone of this College in commemoration of Dr. Bidhan Chandra Roy. It was established with a contribution of Rs. 1,11,111/- by a philanthropist, Sri Sasthi Narayan Gorai. Previously, it was affiliated to the University of Burdwan, presently affiliated to Kazi Nazrul University, since 2015. Primarily, it started with the courses in English, Bengali, Sanskrit, History, Logic and Philosophy, Economics, Political Science, Mathematics. Later, in course of time, the College has opened some new courses like Physics, Chemistry, Hindi, Urdu, Accountancy, Taxation, Zoology, Botany, Geography, BBA, BCA and one PG Course in English since 2013. It was first accredited by NAAC in 2017 with B grade (2.32). The College has a lush green garden containing some very rare plants sprawling over a vast expanse of land inside the campus. In course of time, the institutional vision has widened and developed to establish the goals to provide higher education as well as quality education in a good ambience. Presently, there are 16 Honours subjects, 19 general subjects and 1 PG. At present, there is one UGC Girls Hostel inside the College campus.

2.0 Executive Summary:

During the initial planning of the audit, an analysis was conducted in order to identify, evaluate and prioritize the risks associated with the environmental sustainability. In accordance with the Format of Green Audit and Evaluation Plan, B C College, Asansol, Paschim Bardhaman, West Bengal has prepared it for the years 2019-'20, 2020-'21, 2021-'22 and 2022-'23. Audit was conducted in the month of June 2024. B C College, Asansol, Paschim Bardhaman is concerned and believes that there is an urgent need to address these local problems and redress the conditions. Being an old traditional built institution of higher learning, the College has initiated 'The Green Campus' program few years back.

A Green Audit in a college is an environmental evaluation that assesses the institution's sustainability practices and its overall ecological footprint. It involves a detailed review of areas like waste management, energy consumption, water usage, carbon footprint, and overall environmental impact. During the implementation of a Green Audit, both observations and celebrations play crucial roles in promoting awareness, encouraging responsible practices, and showcasing the efforts taken by the college. Thus, the purpose of the audit is to ensure that the practices followed in the campus are in accordance with the Green Policy adopted by the

institution. With this in mind, the specific objectives of the audit are to evaluate the adequacy of the management control framework of Environment Sustainability as well as the degree to which the Departments are in compliance with the applicable regulations, policies and standards. The analysis was based upon an examination of the policies, manuals and standards that govern the environmental sustainability, on data analysis, and on the results of preliminary interviews with personnel considered key in the environmental management in the campus. The criteria and methods used in the audit were based on the identified risks. The methodology used included physical inspection of the campus, review of the relevant documentation, and interviews.

3.0 Significant Observations:

1. College has a good green ambience covering 20.55 acre approx. with a green area of 65,200 Sq.mt and has constituted its own Environmental Audit Team for protection of environment and safety of all stakeholders.
2. The College has implemented the first Green Policy on 2018.
3. The College has constituted the "College Environmental Committee" in the name of 'ECOWARRIOR' and conducted so far 03 meetings during the years 2023-2024 following the Green Policy and has taken efforts for maintaining greenery in the College campus.
4. Students are used to celebrate Earth Day, World Environment Day, Ozone Day, International Biodiversity Day, etc.
5. Some of the best practices such as campus cleaning, recycling campaigns, electronic waste management, anti-plastic campaigns, training on vermicompost and tree plantation programmes are conducted on regular basis.
6. NSS has adopted two villages and are engaged in awaring the rural people on education of children, sanitation, waterlogging, garbage dumping, etc.
7. Energy Consumption:

    - ✓ Observation: Monitoring energy usage across classrooms, hostels, offices, and common areas to identify inefficiencies (such as excessive use of non-LED lights or air conditioning).
    - ✓ Results: Higher energy usage during peak hours or improper use of electrical appliances.
    - ✓ Potential Actions: Promote energy-saving habits, installation of energy-efficient equipment, and encourage renewable energy adoption (solar panels).

8. Waste Management:

    - ✓ Observation: Analyzing waste segregation practices, the volume of waste generated, and its disposal methods.
    - ✓ Results: Improper waste segregation and lack of effective recycling systems.
    - ✓ Potential Actions: Introduce better waste segregation at source, set up more recycling bins, and encourage composting.

9. Water Usage:

    - ✓ Observation: Assessing water consumption in different areas like bathrooms, cafeterias, and gardens.
    - ✓ Results: Overuse or wastage of water due to leaking faucets, inefficient water systems, or lack of water conservation measures.
    - ✓ Potential Actions: Install water-saving fixtures, promote rainwater harvesting, and raise awareness about water conservation.

10. Transportation and Carbon Footprint:

    - ✓ Observation: Evaluating transportation habits of students and staff (private vehicles, use of buses, or cycling).
    - ✓ Results: High levels of individual car usage leading to increased carbon emissions.
    - ✓ Potential Actions: Encourage carpooling, cycling, and using public transport to reduce the college's carbon footprint.

11. Green Spaces:

    - ✓ Observation: Reviewing the availability of green spaces such as gardens, trees, and landscaping in the college campus.
    - ✓ Results: Lack of green areas or poorly maintained gardens that could enhance biodiversity and improve air quality.
    - ✓ Potential Actions: Initiate planting campaigns, create more green spaces, and enhance landscaping.

12. Sustainability Education:

    - ✓ Observation: Checking if sustainability is embedded in the curriculum and whether students and staff are aware of environmental practices.
    - ✓ Results: Lack of environmental education or awareness programs.
    - ✓ Potential Actions: Incorporate sustainability into educational modules, organize workshops, and raise awareness through campaigns.

13. Building Construction and Materials:

    - ✓ Observation: Assessing the use of eco-friendly materials in construction and whether energy-efficient designs are being implemented in newer buildings.
    - ✓ Results: The use of materials that are not sustainable or the absence of green building standards.
    - ✓ Potential Actions: Promote the use of sustainable construction materials, energy-efficient designs, and green roofs.

4.0 Statement of Assurance:

As far as possible and appropriate audit procedures completed and evidence gathered to support the accuracy of the conclusions reached and contained in this report. The conclusions are based on a comparison of the situations as they existed at the time of the audit with the established criteria.

GREEN AUDIT WORKING FORMAT:

4.0 Audit Framework and detailed findings:

The following audit framework issued for conducting Green Audit in years 2023-24. The framework also lists the findings and observations for every criterion.

Control objectives	**Control(s)**	**Audit Observations**
Maximize the proportion of recyclable waste and minimize the amount of non-recyclable refuse	Minimize the total waste generated by the institute and staff offices.	The college has implemented measures to reduce the total amount of waste generated by its departments, staff offices, and other areas.
	Ensure optimal use of all recycling facilities available through the City Municipality and private providers, including those for glass, cans, white, colored, and brown paper, plastic bottles, batteries, printer cartridges, cardboard, and furniture.	College has to take the advantages of waste management through Asansol Municipality. Formal MoU to be maintained for long-term basis and periodical monitoring.
	Compost, or ensure the composting of, all organic waste, green waste, and non-recyclable cardboard generated in or collected from kitchens, gardens, offices, and rooms.	The college utilizes different colored bins for the disposal of segregated waste. Non-recyclable cardboard generated in or collected from departments, gardens, offices, and classrooms is managed as solid waste.
	Recycle or safely dispose of white goods, computers, and electrical appliances in an environmentally responsible manner.	Safe disposal methods have been implemented for electrical waste, e-waste, printer cartridges, and similar materials.
	Opt for reusable resources and containers, and minimize the use of unnecessary packaging whenever possible.	No, the college has not yet adopted the use of reusable resources and containers, nor minimized unnecessary packaging where possible.
	Provide sufficient, accessible, well-publicized collection points for recyclable waste, with responsibility clearly allocated.	The college has a limited number of accessible and well-publicized collection points for recyclable waste. So, there is a need to expand the number of accessible collection points and clearly allocate recycling responsibilities to improve waste segregation and recycling outcomes.
Maximize the proportion of	Implement specific events,	The college has

waste that is recycled & minimize the quantity of non-recyclable refuse	such as cultural activities, internal and external seminars, and conferences, where significant recyclable waste is likely to be produced. These arrangements should focus on minimizing waste generation and maximizing recycling and reuse of materials.	implemented several measures for events, such as cultural events, international and national seminars, and conferences, where a significant amount of recyclable waste is likely to be generated.
	Encourage the reuse of items and recycling of waste among staff, students, and conference guests by providing training, displaying informative posters, and offering incentives for active participation.	The college has a limited scope for promoting the reuse of items and waste recycling among staff, students, and conference guests through training, posters, and incentives.
	Dispose of all waste, whether solid or otherwise, in an environmentally responsible manner, ensuring that it is not released directly into the environment.	Yes, the College disposes all wastes, whether solid or otherwise, but not released directly to the environment.
	Ensure that recycling stations are available at high-traffic areas such as entrances, throughout administrative and classroom areas.	Yes, this is followed in the college campus.
Reduce energy consumption, especially of energy derived from fossil fuels	Support renewable and carbon-neutral electricity options within any energy purchasing consortium, with the goal of supplying all college properties with electricity sourced from renewable and carbon-neutral energy providers.	The college has not yet installed solar panels and relies on an energy-purchasing consortium to maintain energy supply for all its properties.
	It is commendable to prioritize purchasing electricity from a company that invests in new sources of renewable and carbon-neutral electricity. This supports sustainable energy practices and aligns with environmental goals, helping reduce the carbon footprint of the college's operations.	The College has no choice other than State Electricity Board.

	Look into the possibility of on-site micro-generation of renewable electricity.	The college has initiated a proposal for the installation of solar panels to explore the possibility of on-site micro-generation of renewable electricity.
	Give preference to the most energy efficient and environmentally sound appliances available, this includes only using energy saving light bulbs.	The college is using LED lights (40%) as much as practicable and generating at least 80% of e-notices for academic and administrative purposes.
Reduce energy consumption, especially of energy derived from fossil fuels	Educate staff and students on energy-saving habits, such as turning off lights when not in use, reducing electronic device usage, and setting computers to energy-saving modes.	Misuse of electricity is controlled by turning off the appliances when not required. All the stakeholder's area ware and doing their best and practices 'switch off drill' to save electricity. But regular monitoring system is lacking.
	Ensures that all electronic and electrical equipment's, such as computers, are switched off when not in use, and is generally configured in power saving mode when such option is available.	Students and all the members are used to follow this practice.
	If equipment is running in standby mode, reduce its energy consumption or minimize the time it spends in standby mode.	Some of the equipment's are running on standby mode.
	Purchase efficient and environmentally sound appliances to meet the commitments outlined in inspection 2, and consider replacing outdated equipment with "greener," more energy-efficient alternatives.	College is positive about increasing greenery by planting in front of the campus and maintaining plants as much as possible; cleanliness is maintained by the students. Tree plantation programmes are followed in different occasions on regular basis.
Minimize the use of unsustainable transport	Provide staff and students with information about bicycle and pedestrian routes, public transport services, and car-sharing schemes to encourage sustainable travel options. This can be done through	The College is well connected through bus and train services, so all of them mostly avail bus/train services.

	digital platforms, noticeboards, or dedicated information sessions, making it easier for the college community to access eco-friendly commuting alternatives.	
Minimize the use of unsustainable transport	Reduce the proportion of travel on the University/Institute business carried out in private transport and eliminate unnecessary and inefficient use of the University/Institute vehicles.	College does not have any common bus services to all stakeholders.
	Prioritize sustainable alternatives such as public transport, carpooling, cycling, or virtual meetings to minimize travel-related emissions and enhance resource efficiency.	The College is not promoting car sharing/car pool among the students and faculty members.
Minimize consumption of water.	Repair sources of water leakage, such as dripping taps and showers as quickly as possible	Regular checking and maintenance of pipelines are done to control the water wastage. Misuse and wastage of water from sources are taken care of.
	Install appliances which reduce water consumption.	Practiced as much as possible.
	Encourage students, staff and conference guests to turn off taps when not in use.	College has taken some steps to encourage a decrease in water usage among staff students and conference guests.
	Use an efficient and hygienic water storage mechanism to minimize the loss of water during storage.	College has a hygienic water storage mechanism to minimize the loss of water during storage.
	Minimize water and electricity wastage during the water filtration process, such as RO filtration, by ensuring that equipment is regularly serviced and operates efficiently. Additionally, ensure that water wastage does not exceed the industry standard for similar equipment capacities.	Water filters with RO, aqua guards are installed at the strategic locations in the campus for the students.

	Install Water recycling mechanism, such as rainwater harvesting system.	Two harvesting pits are prepared to collect rain water from the main buildings.
	Ensure that all cleaning products used by the University/Institute staff have least detrimental impact on the environment, i.e., are biodegradable and non-toxic, even where this exceeds the Control of Substances Hazardous to Health (COSHH) regulations.	In the college negligible amount of cleaning/washing liquids are used and all the toilet cleaners are Eco- friendly.
	Minimize the use of fertilizers and pesticides in the University/Institutional gardens, opting for the use of compost produced on site wherever possible.	Negligible number of fertilizers and pesticides are used in the campus for maintenance of tree etc.
	Dispose the chemical waste generated from the laboratories in a scientific manner.	Proper disposal system of toxic and hazardous chemicals from the laboratories is to be followed.
	Inside the campus reduce the practice of burning plastic and other materials that emit the harmful gas on burning.	No such burning.
	Establish a Garden in the campus	College has a garden of some Medicinal plants with in the Campus.
	Encourage the faculties and students to plant tree in the garden.	College conducts tree plantation programmes through students and staff members on regular basis and in different occasions. Choice-plantation, fruit plantation like guava, mango etc. may be planted within the campus.
	Reviews periodically the list of trees planted in the garden periodically.	Periodical maintenance is followed.
Ensure that environmental awareness is created.	Organize workshops, seminars, or webinars on topics like climate change, sustainability, and waste management. Invite experts to talk about the	Environmental awareness programmes are organized for conservation of nature and Natural resources, wildlife, and biodiversity.

	environmental impact of human activities and ways to reduce our carbon footprint.	College celebrates World Environment Day, Ozone Day etc.
	Create awareness of environmental sustainability and takes actions to ensure environmental sustainability	College conducts seminars and awareness programmes to ensure environmental sustainability, and involvement of students is encouraging
	Reduce the rate at which the University/Institute contributes to the depletion and degradation of natural resources	College is not directly or indirectly participating in depletion and degradation of natural resources
	Promote environmental awareness as a part of course work in various curricular areas, independent research projects, and community service.	Compulsory ENVS paper of 50 marks (4 credits) in the syllabus as per University guidelines for all the students of all streams to develop Environmental Awareness
	Utilize the college's social media channels to spread environmental messages, share tips on sustainability, and celebrate successes. A digital campaign can also highlight eco-friendly achievements within the campus.	It is followed.
Ensure that the buildings conform to green standards.	Review architecture of existing buildings and reviews ways, in consultation with experts, to reduce usage of energy for such buildings, offering greatest efficiency for energy and water usage, and reducing carbon emission	New constructions are following the green standard.
	Use building designs that maximize natural light (daylighting), minimize the need for artificial lighting, and optimize the placement of windows for passive heating and cooling.	New constructions are following the green standard
Ensure that the Environmental Policy is enacted, enforced and reviewed	Establish the University/Institute Environmental Committee that will hold responsibility for the enactment,	College has an Environmental Committee in the name of ECOWARRIOR and conducted so far three (03)

	enforcement and review of the Environmental Policy. The Environmental Committee shall be the source of advice and guidance to staff and students on how to implement this Policy	meetings since 2023.
	Ensure that on the Nature Club/Environmental Committee there will be appropriate representatives of the relevant university departments and authorities - such as catering, gardening, maintenance, cleaning and finance	Environmental Committees constituted by the representative from all such sections to maintain the campus.
	Ensure that on the Environmental Committee there will be the Green Officer from an external agency who is engaged in the profession of providing guidance on environmental impact.	College has constituted ECOWARRIOR headed by one Convenor.
	Ensure that the Environmental Committee will review the Environmental Policy on an annual basis, and will monitor progress and set measurable targets wherever possible.	Environmental Committee has taken the responsibility to follow the environmental policy.
	Ensure that the Environmental Policy is enforced regardless of whether its requirements exceed the mandate of the law.	College practices and adopts the green policy.
	Require that every staff and student member recognize their responsibility to ensure that the commitments in the Environmental Policy are properly put into practice	Members of the Environmental Committee are following the practices.
	Ensure that an audit is conducted annually and action is taken on the basis of audit report, recommendation and findings.	'Green Audit' is conducted this year in June 2024.

Recommendations:

Following the audit, several recommendations were made to the management.

Criteria	Recommendations
Publication of Audit Report	Resolutions of the "College Environmental Committee" along with audit report to be published in the College website.
Maximize the proportion of waste that is recycled and minimize the quantity of non-recyclable refuse	1. The College should go for ISO9001:2015 Certification. 2. The College should install Effluents Treatment Plant (ETP) and Sewage Treatment Plant (STP). 3. College may go for partnership with local Asansol Municipal Corporation in monitoring of disposal of solid wastes through providing outreach program. 4. Disposal of chemical wastes, solid wastes through licensed agents.
Reduce energy consumption, especially of energy derived from fossil fuels	1. Use energy efficient lighting fully in and around the campus; outdoor lighting be managed and followed in the order of eco- friendly system. 2. Number of Energy and flow meters to be installed for monitoring of energy and water consumption building wise/department wise. 3. Replace conventional bulbs with energy-efficient LED lights across the campus. 4. Install solar panel to generate renewable electricity.
Maintenance of Campus and biodiversity	1. PUC (Pollution under control) certificate for all the vehicles entering the campus to be made mandatory and to be checked by security. 2. Development of maintenance of PBR year wise for different locations by students. 3. Choice-plantation, fruit-plantation, artificial nesting, etc., be strengthened to attract birds and other animals with in the campus. 4. Use eco-friendly fertilizers and compost made from campus-generated organic waste.
Proper cleaning of water storage Tanks	1. Proper initiative for cleaning the water tanks on regular basis considering the health & hygiene of the all stakeholders. 2. Wastage of water be managed carefully. 3. Ensure tanks are properly covered to prevent dust, debris, or animals from entering.
Project-based learning On Environment related subjects	1. More number of projects be initiated to start with technical, skill-oriented and hands-on-training programmes for environmental monitoring.

5.0 Objectives and Scope:

The purpose of this audit was to ensure that the Green Policy is followed and implemented in the campus, across all departments, administrative bodies and students.

6.0 Methodology:

The methodology includes- preparation and filling up of questionnaire, screening of the report, physical interaction with the members in presence of Principal and the Members of the College Environmental Committee as well as Members of IQAC, record checking and review of the submitted documentations, interviewing key persons and data analysis, measurements and recommendations. It works on the several aspects of Environmental Audit and Green Audit including Water Conservation, Tree Plantation, Waste Management, Paperless Work, Alternative Energy and Mapping of Biodiversity.

a. In order to meet these objectives, this audit was based on report submitted by the College authority and reviewing of relevant documents as far as possible and interviews with authority, Coordinator and staff members physically.
b. Review of the Documentations
c. For the purpose of this audit, the Green Policy of the institute was reviewed. Other relevant standards, Green audit framework etc., was also considered.

Interviews

Interviews were conducted with the Principal, IQAC Coordinator, Coordinators of various Departments of the College, Coordinator of the College Environmental Committee and also members of the Committee.

Physical Inspection

Physical inspection was made on 12th of June 2023 and report was prepared based on the physical verification and validation and interaction with the members of the College.

8.0 Declaration:

I agree with all the recommendation and observations mentioned

Date:12.06.2024

Place: BC College, Asansol.

Dept. of Zoology
Bidhan Chandra College
Asansol

Dept. of Botany
Bidhan Chandra College
Asansol

HISTORY OF GREEN AUDIT:

An environmental audit, also known as a green audit, is a comprehensive evaluation designed to identify environmental compliance and management system gaps, as well as recommend corrective actions. It is akin to financial audits but focuses on eco-friendly practices. The term "Green" signifies environmental friendliness. This concept can be abbreviated as "Global Readiness in Ensuring Ecological Neutrality" (GREEN). Another term for green auditing is "Environmental Auditing."

There are two main types of environmental audits: compliance audits and management systems audits. Compliance audits are more common in the US and within US-based multinationals. The term "protocol" in environmental audits refers to the checklist used by auditors to guide their audit activities. Current technology supports various computer-based protocols that simplify the audit process by converting regulatory requirements into yes, no, or not applicable questions.

A Green Audit involves the systematic identification, quantification, recording, reporting, and analysis of components of environmental diversity. It aims to analyse environmental practices within and outside a college campus, impacting the eco-friendly ambiance. The audit helps assess risks to health and the environment, providing direction on improving environmental conditions. Factors driving Green Audits include campus greenery, sustainability, adherence to green standards, and monitoring of environmental policies through awareness programs.

The purpose of the audit is to ensure that campus practices align with the institution's Green Policy. The methodology involves preparing and filling out questionnaires, physically inspecting the campus, reviewing documentation, interviewing key personnel, and analyzing data to make recommendations. Green Audit focuses on various aspects of a 'Green Campus,' including water conservation, tree plantation, waste management, paperless operations, alternative energy use, and biodiversity mapping.

It aims for a campus with zero environmental footprint, positive impact on occupant health and performance, and 100% graduates demonstrating environmental literacy. The goal is to reduce CO2 emissions, energy, and water use while creating a healthy learning environment for students. The college must focus on water conservation, tree plantation, waste management, paperless operations, alternative energy use, and biodiversity mapping for a 'Green Campus.'

Methodology

In order to perform green audit, the methodology included different tools such as preparation of questionnaire, physical inspection of the campus, observation and review of the documentation, interviewing key persons and data analysis, measurements and recommendations. The study covered the following areas to summarize the present status of environment management in the campus:

- Water management
- Energy Conservation
- Sustainable Procurement
- Environmental Impact Assessment
- Waste management
- E-waste management
- Greenarea management

A water audit is an on-site survey and assessment to determine the water use and hence improving the efficiency of its use. Water is used for drinking purpose, canteen, toilets, laboratory and gardening. Loss of water must be checked, neither by any leakages, nor by over flow of water from overhead tanks. The green audit practically involves use of renewable sources, conservation of the energy, rain water harvesting program, and efforts of carbon neutrality, plantation of trees, E-waste management and hazardous waste management.

1. GENERAL INFORMATION

1.1 Year of Establishment of college:1961

1.2 History behind the establishment of the college: Internationally renowned scholar and the then Vice President of India, Dr Sarvapally Radhakrishnan laid the founding stone of Bidhan Chandra College in Asansol and the College was established in 1961to serve the growing demands of the Asansol Burnpur industrial region. An initiative of the Asansol Educational Development Committee, Bidhan Chandra College also known as B.C. College named after one of the founding figures of West Bengal Dr. Bidhan Chandra Roy is government sponsored public university situated in Asansol **(23°40′36.91″N 86°57′09.67″E).** Sri Sasthi Narayan Gorai donated the sum of Rs.1,11,111 to support their noble cause in the establishment of the college. Bidhan Chandra College is currently affiliated to Kazi Nazrul University whilst previously affiliated to the University of Burdwan. Bidhan Chandra College (Government Sponsored), Asansol, District Paschim Burdwan, West Bengal is a co-educational institution established in the year 1961. The members of the Asansol Educational Development Committee, a Relief and Welfare Society took initiative in founding this college and Sri Sasthi Narayan Gorai donated the sum of Rs.1,11,111 to support their noble cause. The institution owes its name to Dr. Bidhan Chandra Roy – an illustrious son of Bengal and one of the early Chief Ministers, and its foundation stone was laid by Dr. Sarvapally Radhakrishnan, an internationally acclaimed scholar of Indian Philosophy and the then Vice President of India. Since then, we have been one of the major higher-educational institutions of West Bengal affiliated with Kazi Nazrul University and approved by the University Grants Commission.

1.3 Total campus area: 20.55 Acre or 83162.899 Square Meter
1.4 Total built up area: 10992.4 Square Meter
1.5 Total open space area:72170.499 Square Meter
1.6 Total green area: 65200 Square Meter
1.7 Whether the college is implementing the Green Policy for the first time: Yes, the college implements the green policy for the first time on 21.03.2018.

Whether green audit is followed annually, if so, please produce the year-wise recommendations of the auditor along with report.
Yes, the green audit is followed annually.

The Environmental Audit team has made short term and long-term suggestions for environmental protection. To improve the environmental quality and realization of values of environment and for sustainable development different Environmental Management system or procedure must be needed.

Some recommendations towards environmental management are as follows:(2023-24):

1. Sensor based energy conservation should be encouraged more.
2. Replacement of conventional ceiling fans with efficient ceiling fans.
3. Total replacement of conventional classroom tube lights with LED tube light.
4. It is observed that, there is no proper drainage system in Teaching Staff quarters which is urgently required.
5. Solar energy panels should be installed as alternative energy resources. The public lights within the campus may be run with solar panels.
6. Green habitat concept should be adopted for all the building construction activities of college.
7. Uses of bicycles should be promoted.
8. Separate toilets are required for different abled students.
9. Increase environmental promotional activities for spreading awareness among students in the campus.
10. Propose a system for collection and disposal of waste sorted out as organic and others on a daily basis, managed by the campus administration.
11. Considering contamination of water with coliform bacteria, water purification treatment facilities may be installed within the campus in order to ensure safe drinking water.
12. For water conservation manual water taps should be replaced with auto closed water taps. Drip irrigation for gardens can be initiated. Establish water treatment system to recycle drain water. Create automatic drip irrigation system during summer holidays.
13. All trees in the campus should be named scientifically.
14. Not just celebrating environment day but making it a daily habit. Encourage students not just through words but through action for making the campus green and eco-friendly.
15. College authorities are advised to dispose these-waste to only government authorized vendors.
16. Develop and implement procurement policies that prioritize the purchase of eco-friendly products, such as office supplies made from recycled materials, energy-efficient appliances, and sustainable food products in canteens.
17. Incorporate green roofs or vertical gardens on campus buildings to reduce the urban heat island effect, improve air quality, and enhance biodiversity.
18. Set up a system to regularly track the college's environmental impact, including energy consumption, water usage, waste generation, and carbon emissions. This data can be used to guide future policies and sustainability initiatives.

1.8 Whether college has constituted the "College Environmental Committee", "yes", "no" and "not applicable"(if so, give the details of it)

Yes, the college has constituted College Environmental Committee named as "**ECO WARRIOR".**

1.8.1 Name of the Committee members:

Mahammed Moniruzzaman, Kasturi Chatterjee, Sagarika Mukherjee, Anwesha Bandyopadhyay, Manjulika Dey, Sriparna Roy and Debdyuti Sengupta,

1.8.2 Number of meetings conducted so far: Total six meetings (each at a two months' interval) has been conducted.

1.8.3 Resolution of the meetings:

- Sensor based energy conservation should be encouraged more.
- Solar energy panels should be installed as alternative energy resources. The public lights within the campus may be run with solar panels.
- Green habitat concept should be adopted for all the building construction activities of college.
- Increase environmental promotional activities for spreading awareness among students in the campus.
- For water conservation manual water taps should be replaced with auto closed water taps. Drip irrigation for gardens can be initiated. Establish water treatment system to recycled rainwater. Create automatic drip irrigation system during summer holidays.
- All trees in the campus should be named scientifically.
- Not just celebrating environment day but making it a daily habit. Encourage students not just through words but through action for making the campus green and eco- friendly.
- Setting up a system to regularly track the college's environmental impact, including energy consumption, water usage, waste generation, and carbon emissions.
-

1.8.4 Action taken by the Committee:

• Energy Efficiency Improvements:

Action Taken: The committee reviewed the current energy consumption patterns and identified areas for improvement. As a result, installation of energy-efficient lighting has been initiated in specific areas, e.g., classrooms, corridors, and office spaces. Additionally, authority is in talk to introduce smart energy meters to monitor electricity consumption more effectively.

Outcome: A reduction in electricity consumption by approximately [specify percentage] is expected within the next 2-3 years.

• Water Conservation Measures:

Action Taken: To address water wastage, the committee recommended and implemented the installation of water-saving devices, such as low-flow faucets and dual-flush toilets. Water harvesting systems have also been set up on campus to capture rainwater and reduce dependency on external water sources.

Outcome: Water usage has been reduced by [at least 20%], and the rainwater harvesting system is now operational, supplying water to the gardens and lawns.

• Waste Management and Recycling:

Action Taken: A comprehensive waste segregation program was launched, with separate bins for dry and wet waste placed throughout the campus. A partnership with a local recycling firm has been established to ensure proper disposal of recyclable materials.

Outcome: The college has significantly improved waste management, with a 30% increase in the recycling rate. Staff and students have been regularly educated on waste segregation through workshops and campaigns.

- Reduction of Single-Use Plastics:

Action Taken: In alignment with the green audit's recommendation to reduce single-use plastics, the college is trying to stop the use of plastic bottles and introduced reusable water dispensers and cups. The canteen is now trying to use eco-friendly packaging materials.

Outcome: The reduction in plastic waste has been significant, and the campus is now closer to achieving the target of zero plastic usage by [insert target year].

- Afforestation and Green Cover:

Action Taken: The committee has overseen the planting of trees around the campus as part of the green audit's recommendation to increase the campus's green cover. A "Green Campus" initiative has been introduced to encourage students and staff to participate in the preservation of the environment.

Outcome: Increased green cover has improved the campus's biodiversity and contributed to better air quality. More tree plantation drives are planned for the upcoming seasons.

- Sustainability Awareness Programs:

Action Taken: A series of awareness programs and workshops have been conducted for both staff and students to foster a culture of environmental responsibility. Topics included waste reduction, energy conservation, and sustainable living practices.

Outcome: Participation in sustainability programs has been high, and there is greater awareness among students and staff about the importance of eco-friendly practices.

- Sustainability Reporting and Monitoring:

Action Taken: A monitoring system has been set up to track the progress of sustainability initiatives. The Green Audit Committee has agreed to conduct a mid-year review to assess the effectiveness of the actions implemented and adjust strategies as needed.

Outcome: Regular progress reports will be submitted to the college management, ensuring continued focus on sustainability goals.

- Carbon Footprint Reduction:

Action Taken: The college has taken measures to reduce its carbon footprint by encouraging the use of public transport and carpooling among students and staff. Additionally, efforts are being made to reduce the overall consumption of non-renewable resources.

Outcome: The college is on track to achieve a reduction in its carbon footprint by 25% by the next year.

1.8.5 Future programmes of the Committee:

Sustainability Awareness Campaigns:

Objective: To promote environmental awareness among students, staff, and the local community.

Action Plan:

Organize monthly awareness workshops and seminars on various topics such as climate change, sustainable living, energy conservation, and waste management.

Collaborate with environmental NGOs for guest lectures and webinars on emerging sustainability trends.

Establish a sustainability newsletter to share tips, success stories, and updates on the college's green initiatives.

Expected Outcome: Increased awareness and active participation in the college's sustainability

initiatives.

Zero Waste Campus Initiative:

Objective: To reduce the college's waste generation and promote a zero-waste culture.

Action Plan:

Introduce a comprehensive composting system for biodegradable waste across the campus.

Expand the recycling program to include electronic waste, batteries, and other hazardous materials.

Establish waste-reduction targets and encourage students and staff to minimize single-use items.

Expected Outcome: Achieving significant reduction in waste sent to landfills and a fully functional waste management system.

Carbon Footprint Reduction Program:

Objective: To reduce the college's carbon footprint and move towards carbon neutrality.

Action Plan:

Promote the use of electric vehicles and provide more bicycle parking spaces on campus.

Continue to encourage carpooling among staff and students and expand the use of public transport.

Measure and reduce energy consumption in non-academic areas by installing motion sensor lights, optimizing HVAC systems, and upgrading older equipment to more energy-efficient alternatives.

Expected Outcome: A significant reduction in carbon emissions by the end of the program.

Sustainable Green Campus Infrastructure:

Objective: To incorporate sustainability in campus infrastructure and building management.

Action Plan:

Retrofit older buildings with green technologies, such as solar panels, energy-efficient windows, and insulation materials.

Create more green spaces and urban gardens on campus to promote biodiversity and enhance the aesthetic environment.

Develop a campus-wide water management plan, focusing on rainwater harvesting, wastewater treatment, and water recycling.

Expected Outcome: Improved energy efficiency, enhanced biodiversity, and a more sustainable campus infrastructure.

Eco-friendly Transportation Solutions:

Objective: To reduce the environmental impact of transportation on campus.

Action Plan:

Develop a campus shuttle service using electric vehicles to reduce the reliance on personal cars.

Create carpooling systems through a mobile app for staff and students to facilitate sharing rides.

Promote walking and cycling as sustainable modes of transport within campus.

Expected Outcome: Reduced traffic congestion, fewer carbon emissions, and increased usage of eco-friendly transport options.

Green Certification and Recognition:

Objective: To gain external recognition for the college's sustainability efforts and encourage continuous improvement.

Action Plan:

Apply for green certifications such as LEED (Leadership in Energy and Environmental Design) or ISO 14001 for environmental management.

Participate in national and international sustainability awards to showcase the college's achievements.

Develop a recognition program for departments and individuals who contribute significantly to sustainability initiatives.

Expected Outcome: National and international recognition for the college's green initiatives, encouraging further participation in sustainability efforts.

Sustainability Research and Innovation Program:

Objective: To promote research in the fields of sustainability and environmental science.

Action Plan:

Launch a sustainability research grant program to support innovative projects focused on environmental protection, renewable energy, and resource conservation.

Collaborate with academic institutions and industry leaders to explore cutting-edge green technologies.

Establish a student-led sustainability innovation challenge to encourage practical, environmentally-friendly solutions.

Expected Outcome: Increased research output in sustainability, fostering a culture of innovation among students and faculty.

Sustainable Food Practices in the Canteen:

Objective: To promote sustainable food consumption on campus.

Action Plan:

Introduce more vegetarian, locally sourced, and organic food options in the college canteens.

Reduce food waste by implementing portion control and donating surplus food to local charities.

Transition to biodegradable packaging and utensils.

Expected Outcome: Reduced environmental impact from food consumption and increased awareness of sustainable eating practices.

Environmental Impact Reporting and Monitoring:

Objective: To monitor and assess the environmental performance of the college.

Action Plan:

Develop a system to track and report on key sustainability indicators, such as energy use, water consumption, waste generation, and carbon emissions.

Regularly assess the progress of the Green Audit Committee's initiatives and make adjustments based on data.

Publish an annual sustainability report that outlines the college's achievements and future goals.

Expected Outcome: Continuous tracking of sustainability metrics and a transparent, data-driven approach to green practices.

1.8.6 Policy enforcement strategies:

To achieve the goal of water conservation–Rain Water Harvesting, Drip irrigation and Sprinkler Irrigation.

To achieve the goal of Environmental Conservation and promote Eco friendly activities- Recycling campaigns, Electronic Waste Management, Anti-plastic campaigns and Tree plantation Programme.

To achieve Sustainable Development goals - Several Awareness Programme organized.

1.9 Whether college has conducted any awareness/responsibility programme among the staff members: "yes", "no" and "not applicable"

Yes, The college conducts awareness program at regular interval.

1.10 Whether all the departments/teachers/non-teaching members/students are aware about the need of the environmental protection and audit: "yes", "no" and "not applicable"

Yes, All the Departments, Teachers and Non-teaching members and Students are aware about the need of the Environmental Protection and Audit.

1.11 Whether college has involved the students as volunteers in greening programmes: "yes", "no" and "not applicable"

Yes, The College regularly involve Students as volunteers in greening programmes on Earth Day, Environment Day, Ozone Day and on International Bio diversity Day.

1.12 Whether construction/demolition/repairing are in compliances with green standard: "yes", "no" and "not applicable"

Yes. The construction/demolition/repairing of college are incompliances with green standard.

1.13 Whether college has conducted any workshop/seminar/lecture on environmental awareness programme inside and/or outside the campus: "yes", "no" and "not applicable"

Yes. National Seminar on **"Impacts of Open Cast Mining on Environment."**

1.14 Whether the institute has department of Law/Environmental Science/3-Year Degree Course/Course curriculum "yes", "no" and "not applicable"

(if so, how does it take part in greening programmes)

Yes, Different Departments regularly involve their students as volunteers in greening programmes on Earth Day, Environment Day, Ozone Day and on International Bio diversity Day etc.

1.15 Whether college provides any community services, if so, give details (as Annexure): "yes", "no" and "not applicable"

Yes, a village is adopted by NSS. Education of Children, sanitation, Waterlogging, Garbage dumping is looked after by NSS students.

1.16 Whether the students are aware about the use of medicinal plants (any lecture/seminar/conference organized on it): "yes", "no" and "not applicable"

Yes, The Students are aware about the use and importance of medicinal plants. A lecture was organized on that topic.

1.17 Comments on the following:

1.17.1 **Plantation program**: Yes, Plantation programmes organized at regular interval.

1.17.2 **Formation of Natural club/Eco club**: Eco club is present named as "Eco-Warrior".

1.17.3 **Management of natural resources, wildlife, conservation of species**:

Yes, the students are aware of "Management of Natural Resources, wildlife, and conservation of species"

1.17.4**Any project sponsored by national funding agency/NGO, independent project related to environmental issues: Y/ N**

No. In future college will take initiative to perform this.

1.17.5 **Is there any incidence of burning of plastics containing garbage within the campus for necessary reduction: Y/ N:** No. The Biodegradable and the Non-Biodegradable substances are separated through two bin concepts.

1.17.6 **Celebration of 5th June, Ozone Day, Earth Day etc.: Y/N**

Yes. Students observed World Environment Day, Ozone Day, Earth Day, International Biodiversity Day, Water Day etc.

1.17.7 **Number of field visits / survey records: Y/N (if Y number)**

Total number of field visit=**14**

Department of Environment=**1**

Department of Botany = **2**

Department of Geography = **2**

Department of Zoology = **6**

Department of B.B.A and B.C.A = **2**

Department of Chemistry = **1**

1.17.8 **Campus biodiversity register**

Campus Biodiversity Register is maintained.

1.18 General aspects (express in statements)

1.18.1 Campus cleanliness

Campus regularly clean by Staff and Students.

1.18.2 Rain water harvesting

The college practices the process of Rain Water Harvesting.

2 rain water harvesting ponds are present of dimensions 25 ft.×20 ft.×6 ft. and 20 ft. × 20 ft. × 6 ft. respectively to store rainwater and use it for various purposes.

1.18.3 Solar street lamps

No, there is no provision of solar streetlamp.

1.18.4 Carbon dioxide neutrality on the campus by developing greenery

Yes, Carbon dioxide minimize through developing greenery.

1.18.5 Man-made nest to attract some birds to maintain ecological balance:

Yes. There is manmade nest to attract birds.

1.18.6 Restriction in use of plastic and plastic products

The college initiate awareness program on ill impacts of plastic products on Environment. India taking all steps to ensure it becomes free single use of plastic by 2022:

Prime minister Modi pledged to make the country free of single use of plastic. So we took several steps in this direction. We perform plastic free campus campaign at the regular interval of time. The main motto of these programs is to eradicate the use of plastic. The NSS volunteers and Eco club members of our college have taken an initiative to organize a program of plastic free around the campus.

Another program was organized by the eco club members of the college on17/9/2022 on International Ozone Day.

On 05.06.2023 on the day of world Environment Day we organized another plastic free campus campaign.

Campaign around the campus.

Holding pluck cards volunteers were reaching all the shops nearby area and made sure the rules and regulations about the usage of plastics are followed.

Awareness was made on all the harmful effects of plastic on environment.

Volunteers remove all plastic from the campus and they took necessary action around the college area, specially they visit all shops near our college and take all the plastic from those shops and told all shop keeper not to use plastic bags...

All the volunteers cleaned all the plastic papers around our college campus.

Our Initiatives to protect the environment from plastic:

- ❖ Our college discourage the use of plastic wrappers to bring lunch.
- ❖ Students will be encouraged to carry lunch in a steel Tiffin box and water in steel/glass bottle.
- ❖ We use eco-friendly disposable plates when we arrange any events in our campus.
- ❖ Wealwaysspreadawarenessaboutplasticfreeenvironmentamongourstudentsin college area.

1.18.7 Culture of some ducks, swans etc., for scenic beauty in pond or any water body resources (if available)

No.

1.19 Green monitoring by green committee / volunteers / team

Yes, Green Monitoring performed and report prepared by Eco club.

1.20 Training on vermicomposting

Yes, Training on Benefits of Vermicomposting organized.

Benefits of vermicomposting

- o It recycles the biodegradable waste.
- o It offers an eco-friendly alternative to traditional composting methods.
- o Low-cost procedure or practically free.
- o It destructs pathogens and kills weed seeds.
- o Reduces mass, volume and odour.
- o Vermicomposting reduces methane emissions associated with organic waste decomposition in landfills, which helps mitigate climate change.

1.20.1 Celebration of 'No vehicle Day' on a particular day

No.

1.20.2 Dams inside the campus to meet the demand for water

Not Applicable.

1.20.3 Installation of fire safety instruments in all the buildings/departments

Yes. The Fire Safety instruments are present in all the buildings.

1.20.4 Toilets/separate toilets for differently abled students

Yes, the separate toilet facility for differently abled students is present.

1.20.6 Overall noise level

Sl no.	Inside campus area	Outside campus	Class room	Lawn	Office	Laboratory	Canteen
Unmeasured							

1.21 Is there any device (preferably HVS: High Volume Sampler) for measuring ambient air quality in the campus (if so, pl mention the data month wise):"yes", "no" and "not applicable"

No, there are no devices are present to measure ambient air quality.

2 WATER MANAGEMENT

2.1 Whether college has an efficient and hygiene water storage mechanism to minimize the loss of water during storage

"Yes", "no" and "not applicable"

Yes, the college has efficient and hygiene water storage mechanism to minimize the loss of water during storage. The main source of water in our college is municipal water by AMC which is available 24/7 but there is also a water tank of dimensions 20 ft. × 13 ft. × 5 ft. 7 inch for emergency purposes.

2.2 Whether college is using water filter with RO, Aqua Guard and/or large water filter with cooler at the strategic locations in the college. If so, are they under AMC: "yes", "no" and "not applicable"

Yes, The College is using water filter, Aqua Guard and water filter with cooler at the strategic locations in the college. They are not under AMC.

2.3 Whethercollegehasitsownmechanisminrepairingofwaterleakage:"yes","no" and "not applicable"

Yes, The College has its own mechanism in repairing of water leakage.

2.4 Is there any rainwater harvesting unit in college: "yes", "no" and "not applicable"
(If so, what are the uses of this water:)

There are two rain water harvesting units in college.

a) Recharging ground water.

b) Gardening.

2.5 Whether college has developed any reuse and recyclable of water system: "yes", "no" and "not applicable"

No

2.6 Is there any scope of measurement of water quality parameters used in hostel, lab, office, canteen, tap water (if so, parameters: pH, EC, TDS *etc*.)

2.7 Lab-wise water consumption (lt/d) Chemistry: 90 lt/d (approx.)
Zoology: 5 lt (approx.)
Botany: 2 lt/d (approx.) Physiology: N/A (approx.) Geography: 2lt/d(approx.)

2.8 Whether college has sufficient/adequate drainage system: "yes", "no" and "not applicable"

Yes, the college has sufficient and adequate drainage system.

3 ENERGYCONSERVATION

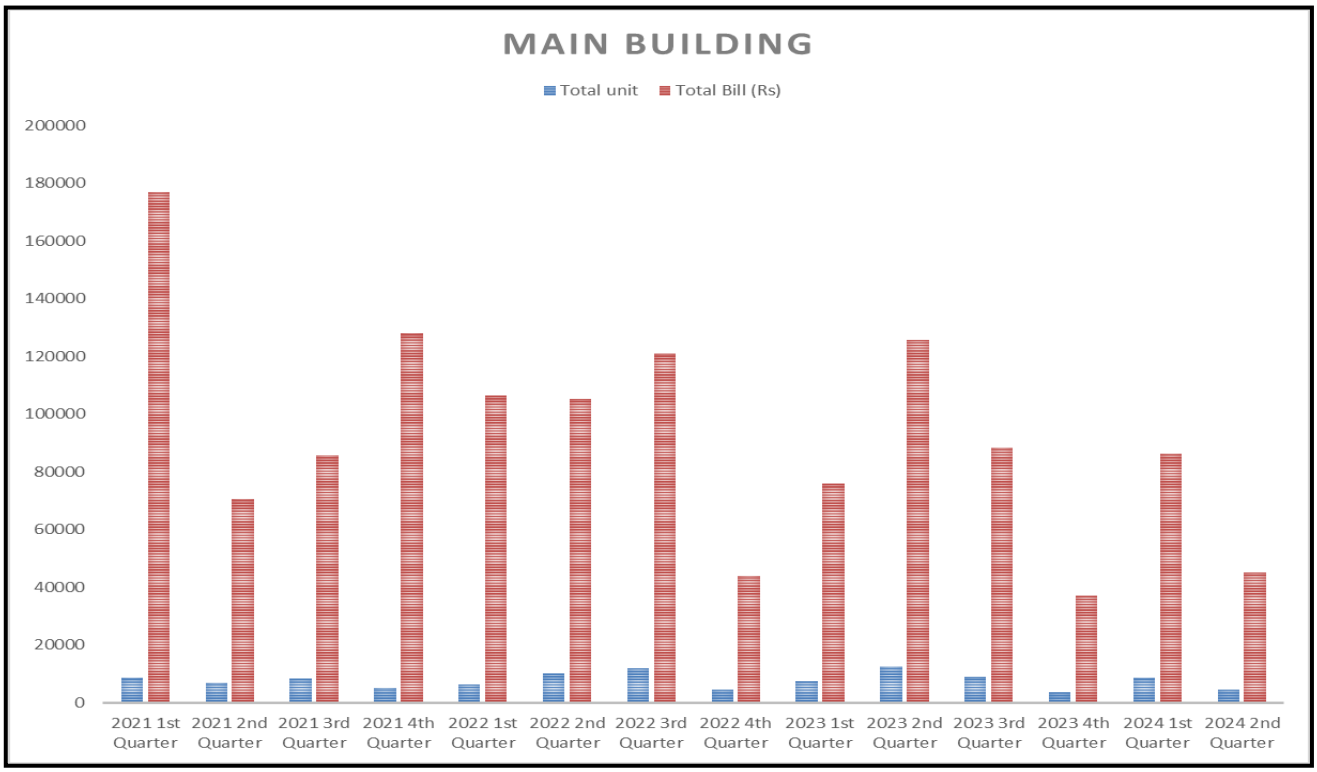
3.1 Reduction of energy consumptions, especially fossil fuel energy

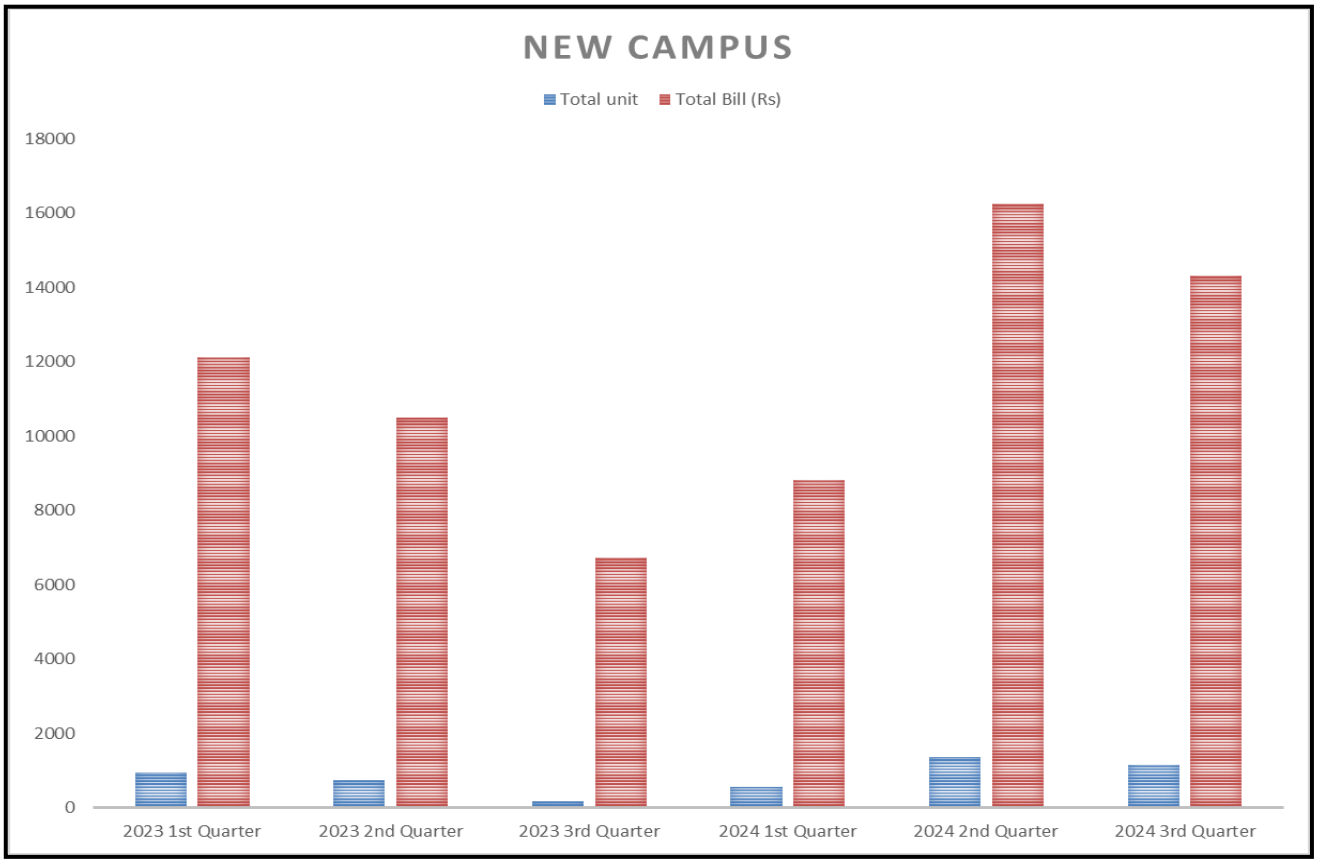
3.1.1 Average electric consumption amount ..... KWH/Yr

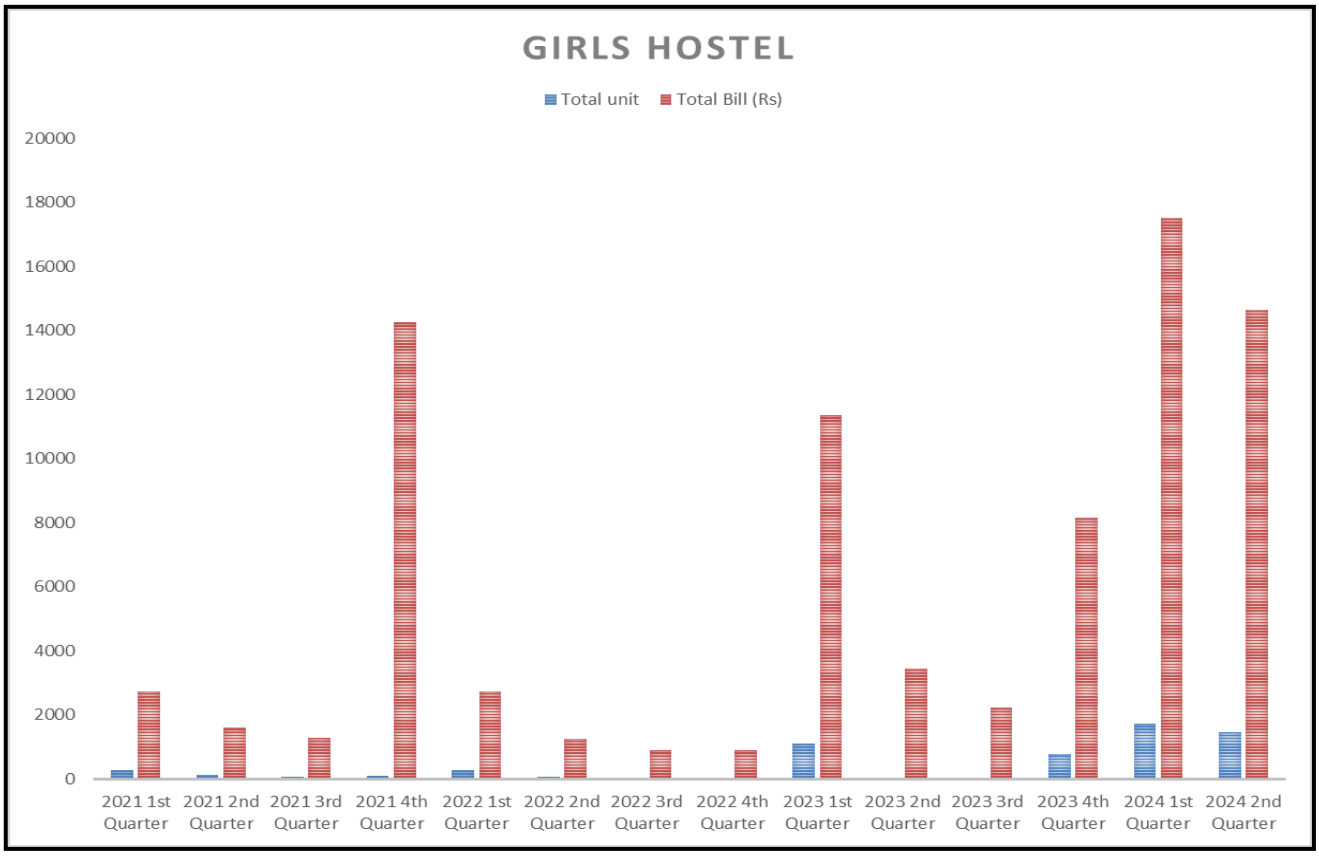
Rs. 226453 (2021)
Rs. 640833 (2022)
Rs. 494001 (2023)
Rs. 168336 (2024)

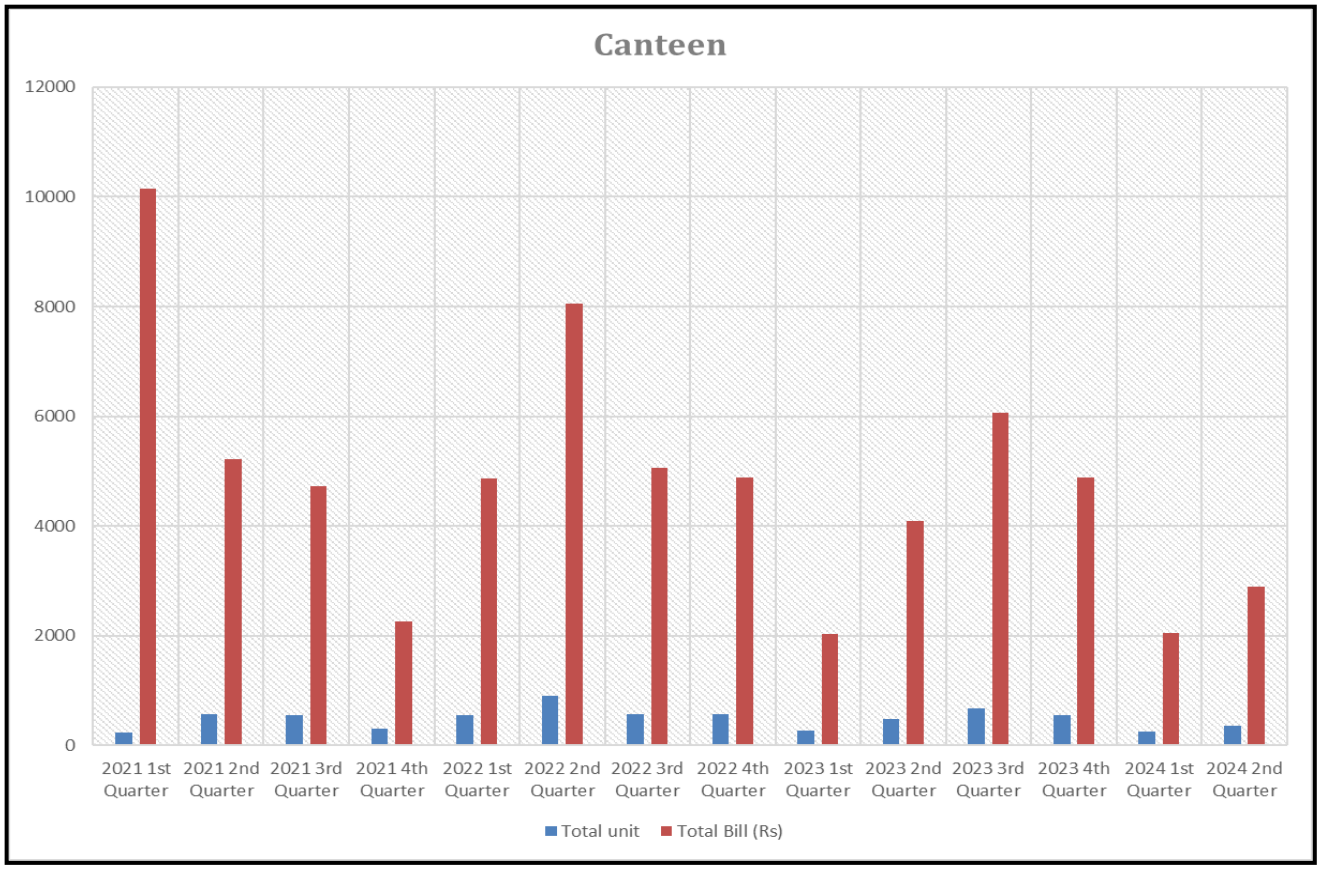
3.1.2 Average electrical consumption in a month…

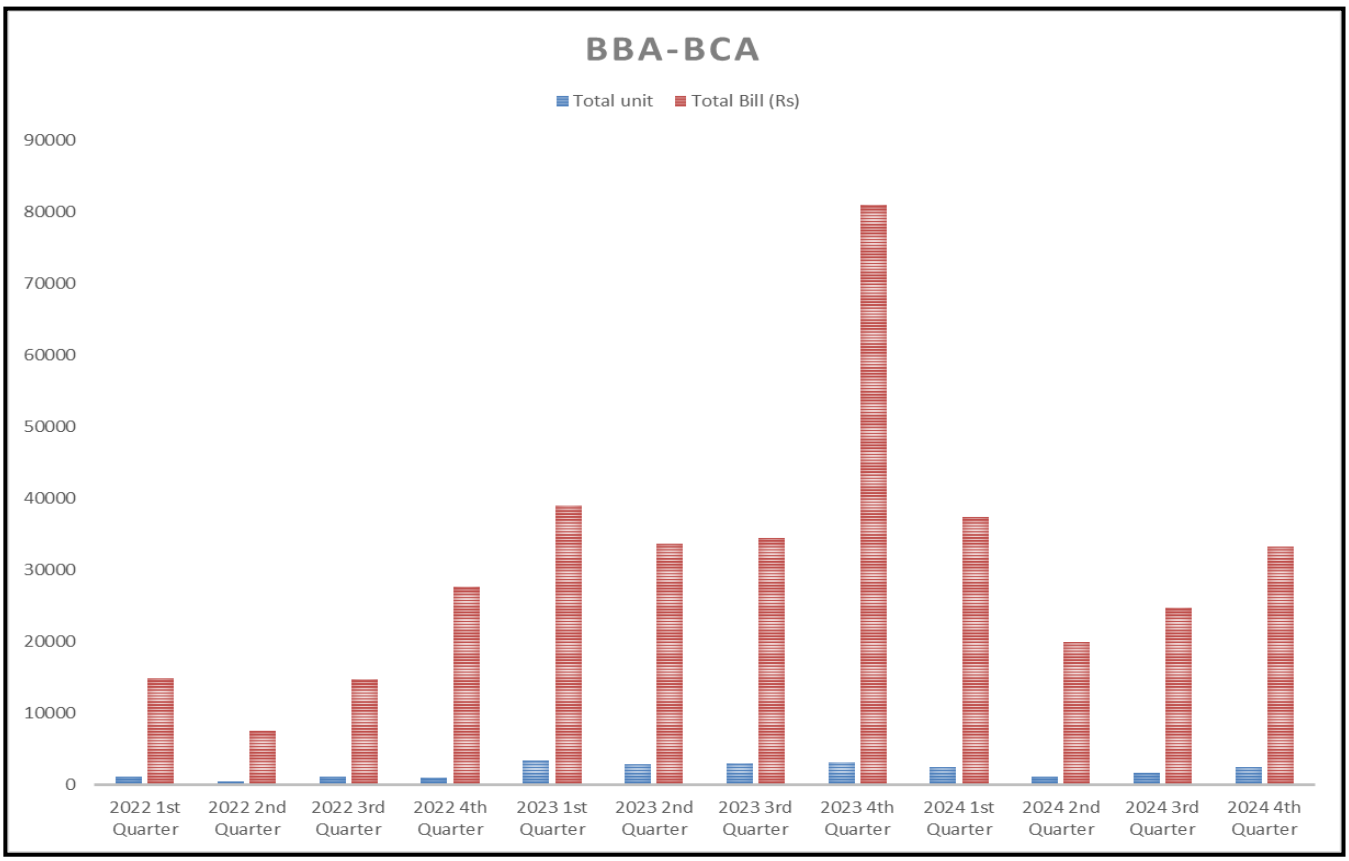
Rs. 53402.75
2255.58 KWH/Month, 16671 Unit (2024)

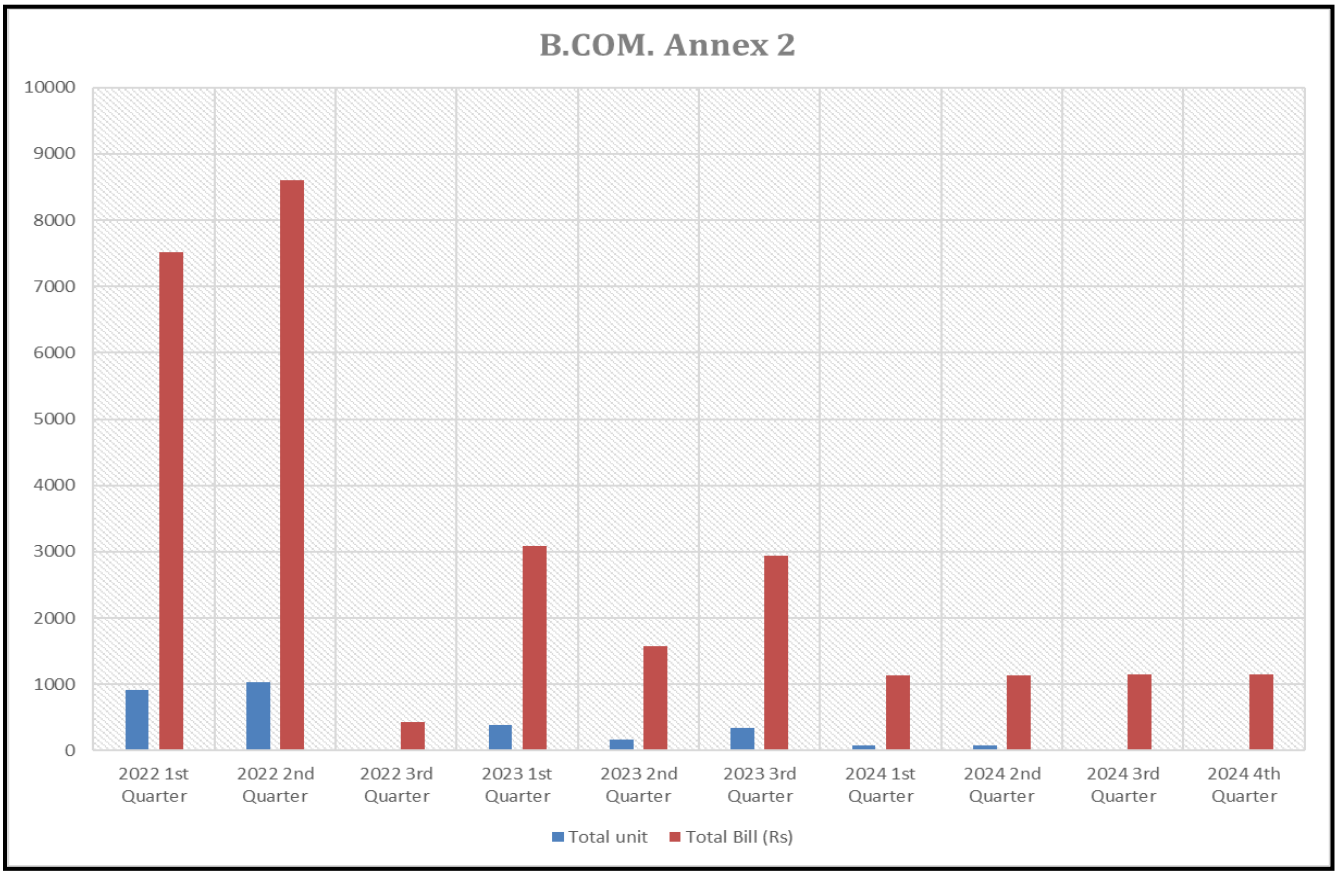

MAIN BUILDING
Total unit
Total Bill (Rs)
200000
180000
160000
140000
120000
100000
80000
60000
40000
20000
0
2021 1st Quarter
2021 2nd Quarter
2021 3rd Quarter
2021 4th Quarter
2022 1st Quarter
2022 2nd Quarter
2022 3rd Quarter
2022 4th Quarter
2023 1st Quarter
2023 2nd Quarter
2023 3rd Quarter
2023 4th Quarter
2024 1st Quarter
2024 2nd Quarter


NEW CAMPUS
Total unit
Total Bill (Rs)
18000
16000
14000
12000
10000
8000
6000
4000
2000
0
2023 1st Quarter
2023 2nd Quarter
2023 3rd Quarter
2024 1st Quarter
2024 2nd Quarter
2024 3rd Quarter


GIRLS HOSTEL
Total unit
Total Bill (Rs)
20000
18000
16000
14000
12000
10000
8000
6000
4000
2000
0
2021 1st Quarter
2021 2nd Quarter
2021 3rd Quarter
2021 4th Quarter
2022 1st Quarter
2022 2nd Quarter
2022 3rd Quarter
2022 4th Quarter
2023 1st Quarter
2023 2nd Quarter
2023 3rd Quarter
2023 4th Quarter
2024 1st Quarter
2024 2nd Quarter


Canteen
12000
10000
8000
6000
4000
2000
0
2021 1st Quarter
2021 2nd Quarter
2021 3rd Quarter
2021 4th Quarter
2022 1st Quarter
2022 2nd Quarter
2022 3rd Quarter
2022 4th Quarter
2023 1st Quarter
2023 2nd Quarter
2023 3rd Quarter
2023 4th Quarter
2024 1st Quarter
2024 2nd Quarter
Total unit
Total Bill (Rs)


BBA-BCA
Total unit
Total Bill (Rs)
90000
80000
70000
60000
50000
40000
30000
20000
10000
0
2022 1st Quarter
2022 2nd Quarter
2022 3rd Quarter
2022 4th Quarter
2023 1st Quarter
2023 2nd Quarter
2023 3rd Quarter
2023 4th Quarter
2024 1st Quarter
2024 2nd Quarter
2024 3rd Quarter
2024 4th Quarter


B.COM. Annex 2
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
2022 1st Quarter
2022 2nd Quarter
2022 3rd Quarter
2023 1st Quarter
2023 2nd Quarter
2023 3rd Quarter
2024 1st Quarter
2024 2nd Quarter
2024 3rd Quarter
2024 4th Quarter
Total unit
Total Bill (Rs)

3.1.3 Total No. of

1. **LED and CFL - 205**
2. **Tube lights - 412**
3. **Fans – 232 (All)**
4. **Air conditioners/Air Coolers - AC 26**
5. **Bulb - 130**
6. **Projector - 13**
7. **Desktop - 91**
8. **Printer cum Scanner and Xerox Machine - 8**
9. **Printer - 5**
10. **Laptop - 6**
11. **Lamination Machine -1**
12. **Barcode Scanner - 4**
13. **Colour printer - 2**

Statement of ICT Enable class rooms and seminar halls

Sl. No.	Room No.	Room Details	ICT Tools used
1.	**106**	**Classroom (ICT Enable)**	**Projector and Wifi**
2.	**113**	**Classroom (ICT Enable)**	**Projector and Wifi**
3.	**114**	**Classroom (ICT Enable)**	**Projector and Wifi**
4.	**128**	**Classroom (ICT Enable)**	**Projector and Wifi**
5.	**131**	**Classroom (ICT Enable)**	**Projector and Wifi**
6.	**211**	**Classroom (ICT Enable)**	**Projector and Wifi**
7.	**213**	**Classroom (ICT Enable)**	**Projector and Wifi**
8.	**216**	**Classroom (ICT Enable)**	**Projector and Wifi**
9.	**222**	**Classroom (ICT Enable)**	**Projector and Wifi**
10.	**307**	**Classroom (ICT Enable)**	**Projector and Wifi**
11.	**316**	**Classroom (ICT Enable)**	**Desktop, Sound system, Smart Board, Projector And Wifi**
12.	**323**	**Classroom (ICT Enable)**	**Projector and Wifi**
13.	**H-208**	**Classroom (ICT Enable)**	**Projector and Wifi**
14.	**H-306**	**Classroom (ICT Enable)**	**Projector and Wifi**

3.1.4 Whether college has any provision/choice of renewable and carbon-neutral electricity options: "yes", "no" and "not applicable"

No, the college does not have any provision/choice of renewable and carbon-neutral electricity options. The college is planning to build up solar energy panels.

3.1.5 Whether college has planned to install solar panels: "yes", "no" and "not applicable" (if so, Project installed/working: Date/Month/Year)

Not Yet. The college is planning to build up solar energy panels.

3.1.6 Whether college has efficient water heating system: "yes", "no" and "not applicable"

Not Applicable.

3.1.7 Whether the staff member so fall sectors are concerned in turning off electrical appliances when not in use in both commercial and residential area: "yes", "no" and "not applicable"

Yes. The staff members of all sectors are concerned in turning off electrical appliances when not in use in both commercial and residential area.

3.1.8 Is there any monitoring system – like put off the main switch where there is no need of electricity: "yes", "no" and "not applicable"

Yes.

3.1.9 Whether the users follow the appropriate and measurable targets for a reduction of energy, such as, computer, printers, electrical equipment when not in use: "yes", "no" and "not applicable"

Yes, the users follow the appropriate and measurable targets for a reduction of energy, such as, computer, printers, electrical equipment when not in use through standby mode.

3.1.10 Isthereanyoptionsforequipment'srunningonstandbymode:"yes","no"and "not applicable"

Yes. options for equipment's running on standby mode are present in every electrical equipment.

3.1.11 Whether college has taken initiative to purchase efficient and environmentally sound appliances in order to fulfill the green budget: "yes", "no" and "not applicable"

Yes, the college has taken initiative to purchase efficient and environmentally sound appliances in order to fulfill the green budget.

3.1.12 Whether college has its own mechanism in repairing of electrical fault: "yes", "no" and "not applicable"

Yes.

3.1.13 Whether the classrooms are with sufficient illumination in daytime and ventilation: "yes", "no" and "not applicable"

Yes.

Number of lights and fans in classroom (average): 5 Fans and 5 Tube light.
Use of light and fans in the daytime (average hours): 5 hours.
Number of windows per class:6.
Natural light source in daytime (in hours) (average per class): 5 hours.

3.1.14 How many (%) e-notice generated by the college for academic/administrative purposes in a month

85%

3.1.15 How many (%) paper-notice generated by the college for academic/administrative purposes in a month

15%

3.1.16 Total number of computers, printer, Laptop, Xerox machine

3.1.16.1 Desktop - 95

3.1.16.2 Printer cum Scanner and Xerox Machine - 8

3.1.16.3 Printer - 5

3.1.16.4 Laptop - 6

3.1.16.5 Lamination Machine - 1

3.1.16.6 Barcode Scanner - 4

3.1.16.7 Colour printer - 1

3.1.16.8 Xerox Machine - 2

3.1.17 Whether college has organized lectures on energy conservation in order to give awareness to the students:

"yes", "no" and "not applicable"

Yes. The college organized lectures on energy conservation in order to give awareness to the students.

3.2 Energy conservation strategies

3.2.1 Whether the architectural design for college is based upon use of natural lighting & ventilation, to save extra power for bulbs and fans: "yes", "no" and "not applicable"

Yes. The architectural design for college is based upon use of natural lighting & ventilation, to save extra power for bulbs and fans.

3.2.2 Whether florescent bulbs are replaced with CFL bulbs/LEDs: "yes", "no" and "not applicable"

Yes. They are replaced by CFL Bulbs or LED Bulbs.

Two Generators in case of Emergency

3.3 Minimize the use of unsustainable transport

3.3.1 What are the available/maximum transport facility used by the staff members/students etc., - mention the number (in average per day):

Two Wheelers - Scooty and Motor Cycle - 80 to100 (Approx.)
Four Wheeler- 2 to 3 (Approx.)
Cycle -100 (Approx.)

3.3.2 Whether college has any common car sharing/car pool among the students and faculty: "yes", "no" and "not applicable"

Yes. The faculty members, Students and Non-Teaching Staffs follow common car Sharing or Car pool Method to minimize Air Pollution by vehicular emission.

4 WASTEMANAGEMENT

4.1 Maximization of the process of wastes and minimization of non-renewable refuse

4.1.1 Is there any method of segregation of waste materials? "yes", "no" and "not applicable"

Yes. The method of segregation of waste materials performs in the college campus.

Approximate amount of waste generated per day (in Kilograms/month)

Biodegradable	Non-biodegradable	Hazardous Waste
45 kg	3-5 kg	0.5-1 kg

4.1.2 Total amount of solid waste generated in the campus (including tree droppings & Lawn wastes) 90-100 kg per month (Approx.)
Total number of staff 140.
capita production per day 3 to 5 Kg per day.

	Male	Female	Total
Teachers	50	40	87
Students	1637	1795	3432
Non-Teaching Staff(s)	Full-timer 10 Adhoc 33	Full-timer 02 Adhoc 05	Full-timer 12 Adhoc 38
Total	1730	1842	3572

4.1.3 Whether college arrange any workshop/seminar/conference for awaring the students/staff for specific arrangements for recyclable wastes: "yes", "no" and "not applicable"

Yes. The college arrange workshop/seminar/conference to aware the students/staff or specific arrangements for recyclable wastes.

Eco-Club carried out numerous activities viz:

- Waste segregation and recycling
- Water conservation techniques
- Energy-saving practices (e.g., switching to LED lights, unplugging devices)
- Reducing single-use plastics
- Sustainable practices
- Group discussions on how to reduce individual carbon footprints.
- Hands-on demonstrations of waste segregation, composting, and making eco-friendly products (e.g., reusable bags, natural cleaning agents).

4.1.4 Whether college follow specific disposal method for solid or liquid waste in specific manner: "yes", "no" and "not applicable"

Yes,

- ✓ Composting
  Small Composting pits are available in the campus. Vermicomposting is also practiced in small scale for solid biodegradable substance.
- ✓ Recycling and Reusing
  Reuse of one side printed Paper for internal communication
- ✓ Sewage water is discharged to public Sewer. Domestic Waste is given to Municipal Corporation.
- ✓ Two types of Waste bins are provided at campus viz:
  a) Biodegradable
  b) Non-biodegradable waste
- ✓ Horticulture waste is also given to Municipal Corporation.
- ✓ Incinerator is used for managing sanitary waste.

As per new waste management rules all kind of waste is managed in an adequate manner without any deviation.

4.1.5 Whether the recycling/collection facilities are provided by the city Municipality and/or private suppliers (including glass, white plastic bottle, printer cartridges, cardboard, furniture, plastics, thermocol, waste papers, electrical goods & alliances, electronic gadgets, instruments, equipment, packing materials):
"yes", "no" and "not applicable"

Not Applicable.

4.1.6 Whether college has any composting ground/veterinary collection unit etc.: "yes", "no" and "not applicable"
(if yes, what is the percentage of waste undergone composting and the final use of the products)

No, Large Composting ground is not present here. The process of vermicomposting performs in small scale. It is about 10 % of total biodegradable waste.

4.1.7 Is there any mechanism of treatment/uses of domestic influent in the college campus (if so, what is the capacity of treatment plant/composting etc.): "yes", "no" and "not applicable"

Yes, the treatment or uses of domestic influent in the college campus performs through Composting. Composting pits are available in the campus. Vermicomposting is also practiced. The Capacity of the Vermicomposting Bins 20 Kg.

4.1.8 Minimize use of chemical pollutants

Sl. No.	Dept.	Name of the waste			Total (a+b+c)	Characterization (if any)	Method of disposal	Agency if any
		Chemical (a)	**Biological waste (b)**	**Microbial waste (c)**				
1	Chemistry	Common chemical wastes used for qualitative and quantitative analysis for inorganic and organic practical.	N/A	N/A	10 Kg (approx. /month)	Non-Hazardous	Disposed in Vat	N/A
2	Zoology	Common Chemicals.	Corpse of Cockroach	N/A	Negligible	Non-Hazardous	Disposed in Vat	N/A
3	Botany	Common Chemicals.	Leaves &plants residue	N/A	Negligible	Non-Hazardous	Disposed in Vat	N/A
4	Geography	Chemical wastes used for determination and estimation of soil pH, available Phosphate, available Potassium and organic carbon in soil.	N/A	N/A	Negligible	Non-Hazardous	Disposed in Vat	N/A

4.1.9 Records of dustbins / collection bins inside the campus

Sl no.	Location of dustbin	No. of dustbins			Quantity of collection (per day)	Disposal time	Cleaning by ecofriendly product Y/N
		Biodegradable	Non-biodegradable	Plastic waste	Total		
1	In front of chemistry Department (Ground floor)	1			B.D-3kg N.B.D- 1 kg	Morning 9 A.M	Yes
2	In front of Room No 116 (Ground floor)		1			Same	Yes
3	In front of Room No 119 (Ground floor)	1				Same	Yes
4	In front of Room No 128 (Ground floor)	1				Same	Yes
5	In front of Zoology Department (Ground floor)		1			Same	Yes
6	In front of Physics Department (First floor)	1	1			Same	Yes
7	In front of Room No 201(First floor)					Same	Yes
8	In front of Teachers Common Room (First floor)	1	1			Same	Yes
9	In front of Room No 301(Second floor)					Same	Yes
10	In front of Room No 304 (Second floor)	2				Same	Yes
11	In front of Room No 314 (Second floor)	1				Same	Yes
12	In front of Seminar Room (Second floor)	1				Same	Yes

4.1.9 Whether the cleaning products used by the college staff are ecofriendly and under the COSHH (Control of Substances Hazard to Health) regulations: "yes", "no" and "not applicable"

Yes. The cleaning products used by the college staffs are ecofriendly.

Whether the college is using fertilizers, pesticides for any purposes, if so, amount used per month and places of uses
Use of public transport: "yes", "no" and "not applicable"

No. The college is not using fertilizers, pesticides for any purposes.

5.E-WASTEMANAGEMENT

5.1 Quantity of e-waste generated:

5.2 Number of cartridges used month-wise:

2 cartridges used.

5.3 Number of cartridges disposed in a year (average):

2 cartridges disposed in a year (average)

5.4 Number of times refilling and reusing method of disposal of e-waste (if any)

Not applicable.

5.5 Whether college has conducted any awareness programme on e-waste management:
"yes", "no" and "not applicable"

Yes. The college has conducted awareness programme one-waste management.

5.6 Is there any means of disposal of unused computers, printers and electronic wastes through authorized agents: "yes", "no" and "not applicable"

No.

5.7 Disposal methods Not applicable.

Sl No.	Location	Amount of generation	Method of disposal	Name of the Agency (if any) for disposal
	Not applicable	-	-	-
	-	-	-	-
	-	-	-	-

6. GREEN AREA MANAGEMENT

6.1 Is there any garden in the college campus/outside the campus under college custody: "yes", "no" and "not applicable"

Yes. 65200 Square meter area is under the green coverage.

6.2 Whether the garden is watered by using drip/sprinkler irrigation system: "yes", "no" and "not applicable"

No. The college is trying to establish the methods of advance and modern Irrigation like Sprinkler and Drip Irrigation.

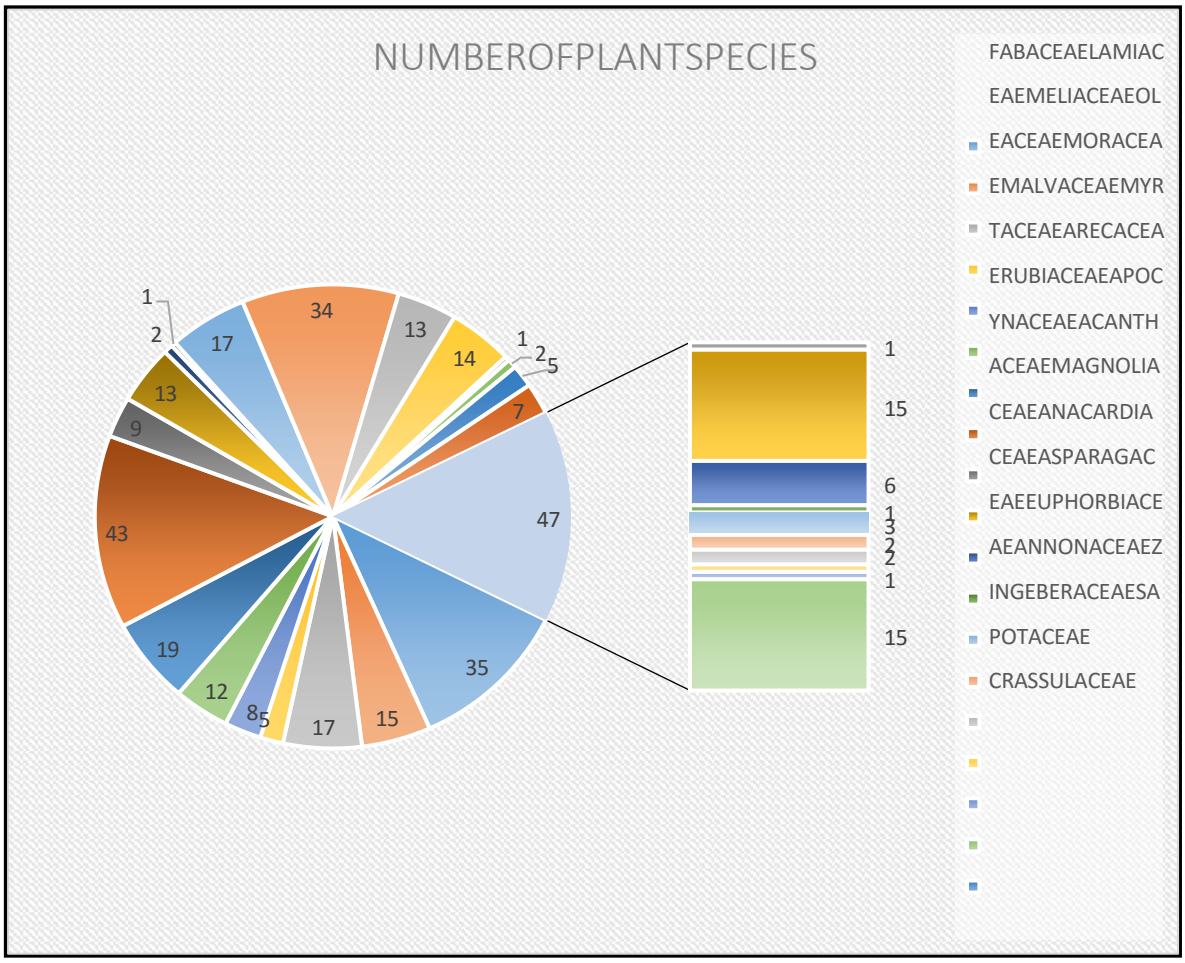
6.3 Is there any mechanism of review of periodical monitoring of tree species: "yes", "no" and "not applicable"

Yes, Review of periodical monitoring of tree species is maintained by the Botany Department.

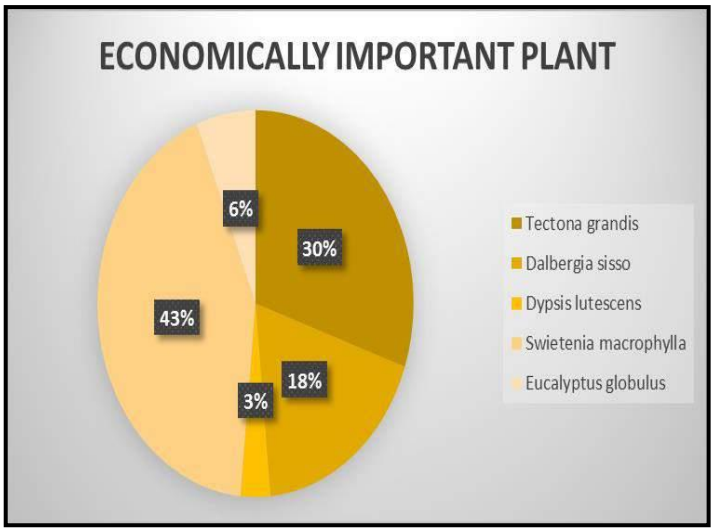
6.4 Whether the college has taken any programme for plantation of some fruit trees which can attract birds, bees *etc*.
"yes", "no" and "not applicable"

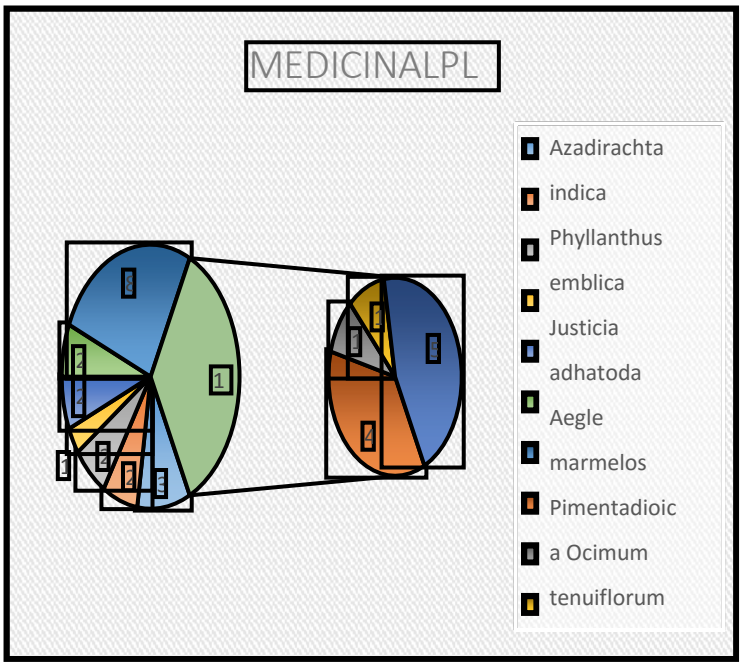
Yes, the college has taken programme for plantation of fruit trees which can attract birds, bees etc.

6.5 Biodiversity Mapping of the college campus:
Name of the place and area: B. C. COLLEGE, ASANSOL



Biodiversity Calculator





Catharanthus roseus

Duranta repens

Swietenia mahagoni

Euphorbia hirta

LIST OF TREES

SL NO.	BOTANICAL NAME	FAMILY
1	*Swietenia macrophylla*	Meliaceae
2	*Samanea saman*	Fabaceae
3	*Peltophorum pterocarpum*	Fabaceae
4	*Tectona grandis*	Lamiaceae
5	*Sterculia foetida*	Malvaceae
6	*Dalbergia sissoo*	Fabaceae
7	*Mangifera indica*	Anacardiaceae
8	*Ficus benghalensis*	Moraceae
9	*Syzygium cumini*	Myrtaceae
10	*Annona squamosa*	Annonaceae
11	*Mimusops elengi*	Sapotaceae
12	*Ficus religiosa*	Moraceae
13	*Polyalthia longifolia*	Annonaceae
14	*Adenanthera pavonina*	Fabaceae
15	*Ficus virens*	Moraceae
16	*Bridelia retusa*	Phyllanthaceae
17	*Pterospermum acerifolium*	Sterculiaceae
18	*Elaeocarpus ganitrus*	Elaeocarpaceae
19	*Psidium guajava*	Myrtaceae
20	*Gardenia jasminoides*	Rubiaceae
21	*Acacia auriculiformis*	Fabaceae
22	*Azadirachta indica*	Meliaceae
23	*Hyophorbel agenicaulis*	Arecaceae
24	*Albizia lebbeck*	Fabaceae
25	*Saraca asoca*	Fabaceae
26	*Phyllanthus emblica*	Phyllanthaceae
27	*Trophisaspera*	Moraceae
28	*Artocarpus heterophyllus*	Moraceae
29	*Aegle marmelos*	Rutaceae
30	*Areca catechu*	Arecaceae
31	*Cocos nucifera*	Arecaceae
32	*Neolamarckia cadamba*	Rubiaceae
33	*Spondias pinnata*	Anacardiaceae

34	*Manilkara zapota*	Sapotaceae
35	*Magnolia champaca*	Magnoliaceae
35	*Magnolia champaca*	Magnoliaceae
36	*Plumeria rubra*	Apocynaceae
37	*Ficus hispida*	Moraceae
38	*Eucalyptus globulus*	Myrtaceae

LIST OF HERBS		
SL.NO.	**BOTANICALNAME**	**FAMILY**
1	*Acalypha indica*	Euphorbiaceae
2	*Achyranthes aspera*	Amaranthaceae
3	*Ageratum conyzoides*	Asteraceae
4	*Alternanthera philoxeroides*	Amaranthaceae
5	*Alternanthera sessilis*	Amaranthaceae
6	*Amaranthus viridis*	Amaranthusviridis
7	*Andrographis paniculata*	Acanthaceae
8	*Blumea lacera*	Asteraceae
9	*Catharanthus roseus*	Apocynaceae
10	*Cleome rutidosperma*	Capparidaceae
11	*Commelina benghalensis*	Commelinaceae
12	*Cynodon dactylon*	Poaceae
13	*Cyperus rotundus*	Cyperaceae
14	*Eclipta prostrata*	Asteraceae
15	*Eleusine indica*	Poaceae
16	*Eragrostis tenella*	Poaceae
17	*Kyllinga monocephala*	Cyperaceae
18	*Ocimum sanctum*	Lamiaceae
19	*Oldenlandia corymbosa*	Rubiaceae
20	*Peperomia pellucida*	Piperaceae
21	*Ruellia tuberosa*	Acanthaceae
22	*Phyllanthus niruri*	Phyllantheceae
23	*Euphorbia hirta*	Euphorbiaceae
24	*Lindenbergia indica*	Scrophulariaceae
25	*Scoparia dulcis*	Scrophulariaceae
26	*Solanum nigrum*	Solanaceae
27	*Vandellia crustacea*	Scrophulariaceae
28	*Vernonia cineria*	Asteraceae

LIST OF SHURBS

SL. NO.`	BOTANICALNAME	FAMILY
1	*Ixora coccinea*	Rubiaceae
2	*Lantana camara*	Verbenaceae
3	*Sida acuta*	Malvaceae
4	*Sida rhombifolia*	Malvaceae
5	*Sida acuta*	Malvaceae
6	*Tabernaemontana divaricata*	Apocynaceae
7	*Nerium indicum*	Apocynaceae
8	*Adhatoda vasica*	Acanthaceae
9	*Hibiscus rosa-sinensis*	Malvaceae

PLANT SURVEY

Scientific Name	Local Name	Family	Numbers
Swietenia macrophylla	Mahogany	Meliaceae	14
Samanea saman	Khirish,RainTree	Fabaceae	1
Peltophorum pterocarpum	Radhachura	Fabaceae	12
Tectona grandis	Shagun	Lamiaceae	1
Sterculia foetida	Bakshabadam	Malvaceae	4
Dalbergia sisso	Sisso	Fabaceae	6
Mangifera indica	Aam	Anacardiaceae	15
Ficus benghalensis	Bot	Moraceae	1
Syzygium cumini	Jam	Myrtaceae	6
Annona squamosa	Aata	Annonaceae	2
Mimusops elengi	Bakul	Sapotaceae	1
Ficus religiosa	Peepul	Moraceae	2
Polyalthia longifolia	Debdaru	Annonaceae	12
Codiaeum variegatum	GardenCroton	Euphorbiaceae	8
Dracena marginata	Dragontree	Asparagaceae	24
Kalanchoe pinnata	Pathorkuchi	Crassulaceae	5
Acalypha wilkesiana	CurlyAcalypha	Euphorbiaceae	4
Ixora finlaysoniana	Sadarongon	Rubiaceae	1
Trema orientalis	Chikan,Indian nettle tree	Tiliaceae	7
Tabernaemontana divericata	Tagor	Apocynaceae	6
Cinnamomum tamala	Tejpata	Lauraceae	1
Cordyline fruticosa	BabydollTiplant	Asparagaceae	10
Terminalia catappa	Indianalmond	Combretaceae	1
Adenanthera pavonina	Raktachandan	Fabaceae	1
Ficus virens	Pakur	Moraceae	1
Bridelia retusa	Kosoi,Gilo,Kuhir	Phyllanthaceae	1
Pterospermum acerifolium	Muchkund, Muskanda	Sterculiaceae	2

Elaeocarpus ganitrus	Rudraksha	Elaeocarpacea e	1
Cinnamomum camphora	Camphor Tree	Lauraceae	1
Mussaenda erythophylla	Mussaenda	Rubiaceae	1
Bauhinia variegata	Raktakanchan	Caesalpiniacea e	1
Thuja orientalis	Mandirjhau	Cupressaceae	15
Hibiscus rosa-sinensis	Jaba	Malvaceae	8
Psidium guajava	Peyara	Myrtaceae	9
Gardenia jasminoides	Gardenia	Rubiaceae	1
Nerium oleander	Karabi	Apocynaceae	4
Ixora coccinea	Lal rangan	Rubiaceae	5
Acacia auriculiformis	Akashmoni	Fabaceae	10
Azadirachta indica	Neem	Meliaceae	3
Hyophorbe lagenicaulis	Bottle palm	Arecaceae	33
Bauhinia acuminata	Sadakanchan	Fabaceae	3
Albizia lebbeck	Sirish	Fabaceae	2
Saraca asoca	Ashoka	Fabaceae	1
Phyllanthus emblica	Amloki	Phyllanthaceae	2
Justicia adhatoda	Basak	Acanthaceae	2
Combretum indicum	Madhobilata	Combretaceae	1
Trophis aspera	Sheora	Moraceae	3
Artocarpus heterophyllus	Kathal	Moraceae	1
Aegle marmelos	Bel	Rutaceae	1
Areca catechu	Supari	Arecaceae	7
Cocos nucifera	Narkel	Arecaceae	3
Neolamarckia cadamba	Kadam	Rubiaceae	1
Murraya paniculata	kamini	Rutaceae	3
Spondias pinnata	Aamra	Anacardiaceae	2
Duranta erecta	Duranta	Verbenaceae	15
Manilkara zapota	Sabeda	Sapotaceae	1
Pimenta dioica	Allspice	Myrtaceae	2
Magnolia champaca	Swarnochampa	Magnoliaceae	1
Plumeria rubra	Frangipani	Apocynaceae	3
Rosa sp	Rose	Rosaceae	6
Jasminum sambac	Beli	Oleaceae	1
Ficus hispida	Dumur	Moraceae	1
Dypsis lutescens	Arecapalm	Arecaceae	14
Eucalyptus globulus	Eucalyptus	Myrtaceae	2
Ocimum tenuiflorum	Krishnatulsi	Lamiaceae	8
Ocimum sanctum	Tulsi	Lamiaceae	6
Nymphaea nouchali	Lalshaluk	Nymphaeceae	1
Cleistanthus collinus	Parashi	Euphorbiaceae	1
Nyctanthes arbor-tristis	Shuili	Oleaceae	4
Curcuma longa	Halud	Zingiberaceae	1

ANIMAL SURVEY

- **List of Annelids found in the College Campus**

1. *Eisenia fetida* (Common Name: Red Wigglers)
2. *Perionyx excavates*
3. *Phertima sp.*

- **List of Arthropods found in the College Campus**

1. *Rhysida* sp. (Common Name: Common Centiped)
2. *Scolopendra* sp.
3. *Periplaneta* sp.
4. Family: Scutelleridae (Common Name: Jewel Bug)
5. Family: Coccinellidae (Common Name: Lady Bird Beetles)
6. *Culex* sp.
7. *Aedes* sp.
8. Chironomous Larva
9. *Musca domesticus*
10. Millipeds
11. *Apis* sp.
12. *Cyclops sp.*
13. *Mantis sp.*
14. *Macrotermes*
15. *Papilio demodocus (Lime Butterfly)*
16. *Junonia atlites (Grey Pansy)*
17. *Appias olferna (Black veined albatross)*
18. *Euremahecabe (Common grass yellow butterfly)*
19. *Diplacodes trivialis (Ground skimmer butterfly)*
20. *Acraea terpsicore (Tawny Coaster)*
21. *Kalidasa lanata*
22. *Tutubing kalabaw*
23. *Ceriagrion coromandelianum*
24. *Crocothemis servilia*

Acraea terpsicore

Photographs of a few arthropods at B. C. College Campus

List of Molluscs found in the College Campus

1. *Pila sp*
2. *Achatina sp.*

List of Amphibia Found in the College Campus:

1. *Bufo sp.*
2. *Rana sp.*

List of Reptiles found in the College Campus

1. *Vipera sp.*
2. *Fowl eapiscaletor*
3. *Calotes versicolor*
4. *Chamaeleo zeylanicus*
5. *Amphiesma stolatum*
6. *Oligodon arnensis*
7. *Ahaetulla nasuta*
8. *Hemidactylus*

List of Aves found in the College Campus

1. *Columba sp.*
2. *Pycnonotus sp.*
3. *Psittacula sp.*
4. *Passe rsp.*
5. *Corvus sp.*
6. *Eudynamys sp.*
7. *Centropus*
8. *Acridotheres*
9. *Spilopelia*
10. *Turdoides*
11. *Cinnyris*
12. *Bubo*
13. *Dicurus*
14. *Upupa*
15. *Copsychus*
16. *Hoopoe*

List of Mammals found in the College Campus

1. *Canis sp.*
2. *Felis sp.*
3. *Funambulus sp.*
4. *Rattus norvegicus*
5. *Sorex sp.*

Discussion and Conclusion:

A Green Audit is a vital tool for a college to assess their environmental impact and develop sustainable strategies for the future. By embracing eco-friendly practices, colleges not only reduce their ecological footprint but also contribute to the global movement toward sustainability. The audit process thus enables the institution to achieve operational efficiencies, engage the community, and set a powerful example of environmental stewardship for students and staff.

The campus of Bidhan Chandra College is rich in faunal biodiversity. The arthropod biodiversity as well as avian biodiversity of this campus is very high which is due to abundance of a lot of trees within the campus. The interaction of the flora and fauna within the campus are depicted in most of the pictures attached with this report. The recommendations from the previous audit focused on implementing the improvements with a clear roadmap that includes setting measurable goals, integrating green practices into the curriculum, and encouraging active student participation. Additionally, in future, investing in renewable energy solutions, such as solar or wind power, could significantly enhance the college's sustainability profile while reducing long-term operating costs. In conclusion, the Green Audit would serve as a vital tool for Bidhan Chandra College to track its progress toward sustainability and environmental stewardship. By acting on the recommendations, the college can lead by example, reduce its environmental footprint, and contribute positively to the global sustainability movement.

Reference:

1. BS EN ISO 14001: "Environmental management systems. Requirements with guidance for use" (2004)
2. BS EN ISO 14004: "Environmental management systems. General guidelines on principles, systems and support techniques" (2010)
3. Jump up to:a b "Environmental management".
4. BS EN ISO 19011: "Guidelines for auditing management systems" (2011)
5. BS EN ISO/IEC 17021: "Conformity assessment. Requirements for bodies providing audit and certification of management systems" (2011)
6. "Examples of ISO Environmental Management Standards used in support of other public policies". policy.iso.org. International Organization for Standardization.
7. EA-7/04: "Legal Compliance as a part of Accredited ISO 14001:2004 certification Archived 2012-04-20 at the Wayback Machine", European co-operation for Accreditation (2010).
8. International standards and private standards. International Organization for Standardization. 2010. ISBN 978-92-67-10518-5.
9. Not Fit-for-Purpose The Grand Experiment of Multi-Stakeholder Initiatives in Corporate Accountability, Human Rights and Global Governance. San Francisco: Institute for Multi-Stakeholder Initiative Integrity: MSI Integrity. July 2020.
10. Baue, Bill. The Lost Decade: Sustainability Standards Sabotage Sustainability. 2023. Papelallee 78-79 10437 Berlin, Germany: r3.0 (Redesign for Resilience & Regeneration).
11. "COMPENDIUM of Country Papers on Environmental Auditing" (PDF). environmental-auditing.org. International Organization of Supreme Audit Institutions.

Green Initiative Program in the College Campus: