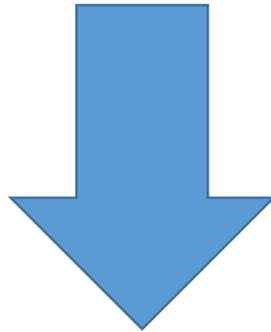


7.1.6 REPORT AND CERTIFICATION BY THE AUDITING AGENCY





DEPARTMENT OF ENVIRONMENTAL SCIENCE
THE UNIVERSITY OF BURDWAN
Golapbag, Purba Bardhaman-713104
West Bengal, India

0342 2558554,2656566
2656549. Extn 457
Office: 0342-2659255
Mob No. +91-9434003445
Fax: 0342-2530452
Website : www.buruniv.ac.in
E-mail: apurbaghosh2010@gmail.com

From

Dr Apurba Ratan Ghosh
Professor

Ref. No.

11/06/2022

Date

To

The Principal
B C College
Asansol
Paschim Bardhaman
West Bengal

Sir,

In accordance with the application format of 'Green Audit' here, we have prepared the Audit Report of your Institution for the consecutive years 2019-'20 and 2020-'21 in the attached sheet as an Annexure-1.

We request you to please acknowledge and oblige.

Yours,

Dr Apurba Ratan Ghosh
Professor, Environmental Science
The University of Burdwan
Purba Bardhaman

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 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 HE 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 HEIs 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 India which declares the Institutional Grade.

1.1 About the College

B C College, Asansol, Paschim Bardhaman was established in 1961 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 and 2020-'21. Audit was conducted in the month of June 2022. 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.

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 08 meetings during the years 2020-'21 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. College has organized one National Seminar on "Impact of Open Coal Mining on Environment"
7. College is maintaining the disposal of all sorts of wastes, e-wastes and hazardous chemicals wastes.
8. NSS has adopted two villages and are engaged in awaring the rural people on education of children, sanitation, waterlogging, garbage dumping, etc.
9. College has conducted Environmental Awareness programmes and workshop on importance of medicinal plants.

However, after detailed paper examinations and physical verification it is noted that, some of the practices are required to be followed by the College in implementing the Green Policy of the institution and the applicable standards. In addition, certain processes could benefit from further review in order to improve their efficiency, fairness and consistency.

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

5.0 Audit Framework and detailed findings

The following audit framework is used for conducting Green Audit in years 2019-'20 and 2020-'21. The framework also lists the findings and observations for every criterion.

Control objectives	Control(s)	Audit Observations
Maximize the proportion of waste that is recycled & minimize the quantity of non-recyclable refuse	Reduce the absolute amount of waste that it produces from the Institute & Staff offices.	The College has used some controls to reduce the absolute amount of waste that it produces from the departments, staff offices <i>etc.</i>
	Make full use of all recycling facilities provided by City Municipality and private suppliers, including glass, cans, white, coloured and brown paper, plastic bottles, batteries, print cartridges, cardboard and furniture.	College has to take the advantages of waste management through Asansol Municipality. Formal MoU be maintained for long-term basis and periodical monitoring.
	Compost, or cause to be composted, all organic waste, green waste and un-recycled cardboard produced in or collected from kitchens, gardens, offices and rooms.	The College uses different colour bins for disposal of differently segregated wastes. Un-recycled cardboard produced in or collected from departments, gardens, offices and class rooms are disposed as solid wastes.
	Recycle or safely dispose of white goods, computers and electrical appliances.	Some safe disposal methods has been adopted for electrical wastes, e-wastes, printer cartridges <i>etc.</i>
	Use reusable resources and containers and avoid unnecessary packaging where possible	No, the College has not so far used reusable resources and containers and unnecessary packaging where possible.
	Provide sufficient, accessible and well-publicized collection points for recyclable waste, with responsibility for recycling clearly allocated	The College has limited scope of accessible and well-publicized collection points for recyclable waste.
Maximize the proportion of waste that is recycled & minimize the quantity of non-recyclable refuse	Make specific arrangements for events, such as cultural Events, internal and external seminars and conferences, where significant recyclable waste is likely to be produced, in order to both minimize the waste produced and maximize what is recycled/reused	The College practices a few arrangements for events, such as Cultural Events, International and National seminars and Conferences, where significant recyclable wastes are likely to be produced.
	Promote reuse of items and waste recycling among staff, students and conference guests through training, posters and incentives	The College has limited scope of reuse of items and waste recycling among staff, students



		and conference guests through training, posters and incentives.
	Dispose all waste, whether solid or otherwise, in a scientific manner and ensure that it is not released directly to the environment	Yes, the College disposes all wastes, whether solid or otherwise, but not released directly to the environment.
Reduce energy consumption, especially of energy derived from fossil fuels	Support renewable and carbon-neutral electricity options on any energy-purchasing consortium, with the aim of supplying all college properties with electricity that can be attributed to renewable and carbon-neutral sources.	College has not been able to install Solar panels. For maintaining all other properties College is dependent on energy-purchasing consortium.
	Appreciate that it is preferable to purchase electricity from a company that invests in new sources of renewable and carbon-neutral electricity	The College has no choice other than State Electricity Board.
	Look into the possibility of on-site micro-generation of renewable electricity.	Proposal of installation of Solar panels has been initiated.
	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 (40%) as much as practicable. Atleast 80% of e-notice is generated for academic & administrative purposes.
Reduce energy consumption, especially of energy derived from fossil fuels	Encourage staff, students and conference guests to save energy through visible reminders, incentives and information to increase awareness. This particularly concerns turning off electrical appliances when not in use in both communal and residential rooms	Misuse of electricity is controlled by turning off the appliances when not required. All the stakeholders are aware 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 there are equipment's running on standby mode, reduce the energy consumption on standby mode or minimize the running of equipment's on standby mode	Some of the equipment's are running on standby mode.
	Purchase efficient and environmentally sound appliances in order to fulfill the commitments in section 2, and consider replacing old stock with 'greener', more 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	Make available information about bicycle and pedestrian routes, public transport services and car share schemes to staff and students.	The College is well connected through bus and train services, so all of them mostly avail bus/train services.
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.
	Promote car sharing / car pool among the students and faculty members	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	Practised as much as possible.
	Encourage a decrease in water usage among staff, students and conference guests	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 is to minimize the loss of water during storage	College has a hygienic water storage mechanism to minimize the loss of water during storage.
	Minimize wastage of water and use of electricity during water filtration process, if used, such as RO filtration process and ensure that the equipment's used for such usage, are regularly serviced, and the wastage of water is not below the industry average for such equipment's used in similar capacity	Water filters with RO, aqua guards are installed at the strategic locations in the campus for the students.
	Install Water recycling mechanism, such as rain water harvesting system	Two harvesting pits are prepared to collect rainwater from the main buildings.
	Ensure that all cleaning products used by the University/Institute staff have a minimal detrimental impact on the environment, <i>i.e.</i> , are biodegradable and non-toxic, even where this exceeds the Control of Substances Hazardous to Health (COSHH) regulations	Negligible amount of cleaning/washing liquids are used in the College 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 amount of fertilizers and pesticides are used in the campus for maintenance of tree <i>etc.</i>
	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.
	Reduce the practice of burning plastic and other materials that emit the harmful gas on burning is prevented in the campus.	No such burning.
	Establish a Garden in the campus	College has a garden of some medicinal plants within the Campus.
	Encourage the faculties and students to plant trees 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, <i>etc.</i> , 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	Conduct environmental awareness workshops as a part of the program.	Environmental awareness programmes are organized for conservation of nature and natural resources, wildlife, and biodiversity. College celebrates World Environment Day, Ozone Day, <i>etc.</i>
Ensure that environmental awareness is created	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.
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.
Ensure that the Environmental Policy is enacted, enforced and reviewed	Establish the University/Institute Environmental Committee that will hold responsibility for the enactment, enforcement and review of the Environmental Policy. The	College has an Environmental Committee in the name of ECOWARRIOR and conducted

	Environmental Committee shall be the source of advice and guidance to staff and students on how to implement this Policy	so far three (08) meetings since 2018.
	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 Committee is constituted by the representative from all such sections to maintain the campus.
Ensure that the Environmental Policy is enacted, enforced and reviewed	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 recognizes 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	First 'Green Audit' is conducted this year in June 2022.



6.0 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 be published in the College website.
Maximize the proportion of waste that is recycled & minimize the quantity of non-recyclable refuse	<ol style="list-style-type: none">1. The College should go for ISO 9001:2015 Certification.2. The College should install Effluents Treatment Plant (ETP) and Sewage Treatment Plant (STP).3. Vericomposting system may be developed for bio-wastes.4. College may go for partnership with local Asansol Municipal Corporation in monitoring of disposal of solid wastes through providing outreach program.5. Disposal of chemical wastes, solid wastes through licensed agents
Reduce energy consumption, especially of energy derived from fossil fuels	<ol style="list-style-type: none">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.
Maintenance of Campus and biodiversity	<ol style="list-style-type: none">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, <i>etc.</i>, be strengthened to attract birds and other animals within the campus.
Proper cleaning of water storage Tanks	<ol style="list-style-type: none">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.
Project-based learning on Environment related subjects	<ol style="list-style-type: none">1. More number of projects be initiated to start with technical, skill-oriented and hands-on-training programmes for environmental monitoring.

7.0 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.

8.0 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, Coordinator of College Environmental Committee and also members of the Committee.

Physical Inspection

Physical inspection was made on 11th of June 2022 and report was prepared based on the physical verification and validation and interaction with the members of the College.

9.0 Declaration

I agree with all the recommendation and observations mentioned in this report.

Date: 11/06/2022

Place: B C College, Asansol



Signed by
College Principal with Seal

Principal
Bidhan Chandra College
Asansol

Dr Apurba Ratan Ghosh
Professor, Environmental Science
The University of Burdwan
PurbaBardhaman