

GREEN AUDIT REPORT



Executive Summary -

The rapid environmental degradation at local, regional and global level is leading us to global “Environmental poverty”. Stabilization of human population, adoption of environmentally sound and sustainable technologies, reforestation and ecological restoration are crucial elements in creating an equitable and sustainable future for all humans in harmony with nature and natural resources. Thus, academic leaders must initiate and support mobilization of internal and external resources and knowledge so that their institutions respond to environmental challenges. The College is deeply concerned and unconditionally believes that there is an urgent need to address these fundamental problems and reverse the trends of environment degradation. We deeply subscribe to the fact that humans should be stewards of Mother Nature and that we all have a profound responsibility to protect the earth’s resources in perpetuity.

The college is aware of its responsibilities towards environmental issues and therefore has resolved to play a major role in the education, research, policy formation and information exchange necessary for a sustained environmental campaign. This report is based on the approaches and interventions done on part of the college to address the environmental concerns of the campus. The current environmental audit represents the first stage in our efforts to build environmental sustainability on the campus. The audit was conducted by a team of faculty of the college. This commitment of college has lead to actions whose reflection is visible remarkably on ground. This environmental audit conducted is not only significant for the institution, but also for the other institutions to emulate and adopt as a model and therefore contribute regionally as well as nationally in this endeavour of sustainable environment for all.

Introduction to environmental audit

Environmental audit or Green audit is a general term that reflects various kinds of evaluations intended to identify environmental compliance and management system, implementation gaps, along with related corrective actions. It aims to analyze environmental practices within and outside of the concerned sites, which will have an impact on the eco-friendly ambience. Green audit is a useful tool to determine how and where the most energy or water resources are being used; and can then considerations be given on how to implement changes and make savings. It can also be used to determine the type and volume of waste, which can be used for a recycling project or to improve waste minimization plan. It can create health consciousness and promote environmental awareness, values and ethics. It imparts a better understanding of Green impact on campus to staff and students.

Need for environmental audit

If self enquiry is a natural and necessary outgrowth of a quality education, it could also be stated that institutional self enquiry is a natural and necessary outgrowth of a quality educational institution. Thus, it is imperative that the college evaluates its own contributions toward a sustainable future. As environmental sustainability is becoming an increasingly important issue for the nation, the role of higher educational institutions in relation to environmental sustainability is more prevalent. The rapid urbanization and economic development at local, regional and global level has led to several environmental and ecological crises. On this background, it becomes imperative to adopt the system of the “Green Campus” for the Institutes which will lead to sustainable development and at the same time reduces a sizable amount of atmospheric carbon dioxide from the environment. The National Assessment

and Accreditation Council, Bengaluru (NAAC) has made it mandatory that all Higher Educational Institutions should submit an annual Green Audit Report. Moreover, it is part of Corporate Social Responsibility of the Higher Educational Institutions to ensure that they contribute towards the reduction of global warming through Carbon Footprint reduction measures.

Objectives of environmental audit

Concern about environmental degradation and realization of values of environment are logical consequences of scholarly research, teaching and learning process. In its pursuit for improving environmental quality and to maintain a pristine environment for the future generations of students, BGSB College has made a self-inquiry on environmental quality of the campus with the following objectives to achieve:

- i. Establishing a baseline of existing environmental conditions with focus on natural and physical environment;
- ii. Understanding the current practices of sustainability with regard to the use of water and energy, generation of wastes, purchase of goods, transportation, etc;
- iii. Awareness generation among students concerning real issues of environment and its sustainability .
- iv. Promotion of environmental awareness through participatory auditing process;
- v. To create a report that document baseline data of good practices and provide strategies and action plans towards improving environmental quality for future.

Campus Infrastructure

The college is situated 2 km from railway station of Bhatapara, is well connected by rail and road. Spread over an area of 13 acres, the college has 06 buildings housing 37 classrooms, UG and PG labs, library, computer lab, administrative office, Principal's room, etc. The following table gives details –

Sl. No.	Name of Building Purpose
1. Main Block	Class rooms, staff rooms, research labs, Department, Staff rooms, Administrative office, computer lab, Seminar hall, Day care centre, Gymnasium, Counseling centre, Rest room for girls and Women staff etc.
2. RUSA Block	Laboratory, Career guidance centre, etc. UG and PG class rooms, Zoology, Botany, Physics laboratory, NSS, RUSA Rest room for girls and Women staff etc.
3. Chemistry block (Old)	Chemistry laboratory, Departmental library, Rest room for girls and Women staff etc.
4. Auditorium for Common functions	
5. Canteen Food , Central Library	
6. Girls Hostel	
7. Sports Complex indoor sports	

Methodology

This compilation is based on the Survey by Questionnaire. The survey was done in the whole campus by dividing it into six sections. On the basis of data requirement, set of questionnaires about water consumption, waste generation, solid waste collection and transport were prepared.

Analysis and reporting

The completed questionnaires were tabulated as per their modules in excel spreadsheets. This tabulated data was used for further analysis. Average and percentage values were determined to avoid complications. With the help of student volunteers, the major part of the data was compiled, which the committee analysed. The data regarding the plantation was assessed by the Department of Botany. Data on energy and water was assessed by the Department of physics, where assessment of data on solid waste generation was carried out by the Department of Botany. The results are depicted graphically to have a quick glance of the status and interpretation of the results of the audit.

Data Analysis

Land use- College is using land for diverse purposes so that facilities are provided to all concerned for the smooth functioning and working. The College covers an area of 38283.27. After digital image processing of the area, the information about the area occupied by the various land uses from the map is gathered. The data is reflected in Table.

Area under various land uses in the college Campus

Landuse	Area (in Sqm)
Built up	38283.27
Green Spaces	1394.25
Playground	6990.00
Road	4402.50
Vehicle Parking Spaces	450.00
Total Area	0

Water audit

Water audit is conducted periodically to determine water supplied in the distribution system as well as water lost and/or used within a distribution system. It aims to establish the water consumption pattern in individual sections, so as to realise the consumption levels with respect to exploring various pollution prevention and waste water minimisation opportunities. Water audit also helps to establish the existing water distribution system as well as waste water collection and recycling, if any. The water is supplied in the College by municipal supply as well as by the ground water supply. The storage capacity of water in the College is shown in Table.

Table : Total water storage capacity in the College

S.N.	Storage Resources	Number	Storage Capacity (in liters)	Total capacity
1	Water Tanks	04	1000	4000
2	Water Tanks	02	500	1000
3	Water Tanks	08	1500	12000
	TOTAL STORAGE CAPACITY			0

The total water consumption in the Campus is 15000 liters per day. The per capita utilization of the College is 110 Liters per capita per day. The utilizations of such a huge resource of water include usage for drinking, cleaning, laboratory use, garden use, leakages and overflows sometimes. The waste water generated is disposed off into the underground sewage tanks through waste water drainage to municipal server. Besides water tanks the College is sustained by perennial springs dispersed all over in the Campus. These water bodies have contributed to greening the neighborhood and attracting bird and environment. Moreover, Construction of bunds, terraces and drains has led to collection the runoff and thus conserving the rainwater as well.

Solid waste audit

The solid waste management is in order with the installation of dust bins and their daily cleaning. The College has its own collection facility that collects the solid wastes daily from Residential complex, Hostels and Departments. This helps in maintaining the cleanliness by providing an efficient, safe and regulated management of solid wastes in the Campus. However, no segregation of the waste takes place during collection and Land filling is the general waste management strategy adopted by the College. However, there is no management plan for managing inorganic waste, especially plastics. Studies were carried to assess the composition of the waste generated in the College. The data showed that the total generation of solid waste in the Campus is 5 kg per day. Out of which non biodegradable is 4 kg per day while the biodegradable is 1 kg per day. The study showed that biodegradable waste constitutes significant component of solid waste in the College. The non biodegradable component of solid waste is recyclable. Among there cyclable materials, paper constitutes the maximum share while glass, cardboard and plastics also make a significant share.

Plantation audit –

Many departments of the College maintain their own small gardens. Due to extensive plantation drives the campus is turned into a lush green spot with fair magnitude of biodiversity. More than 2 lac saplings planted in the college have assumed a full canopy now and have attracted a lot of faunal diversity including birds. More the 75% area of the campus is green having different species including pines, broad leaved trees, shrubs, and perennial herbs

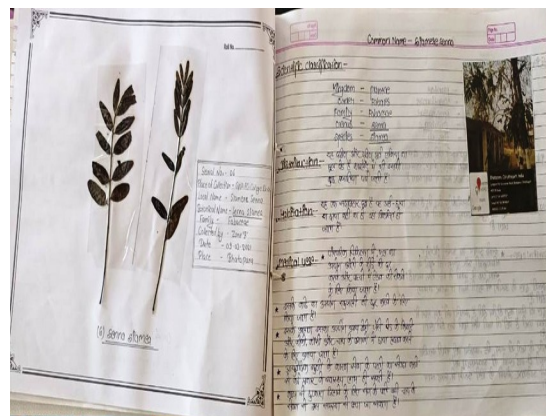
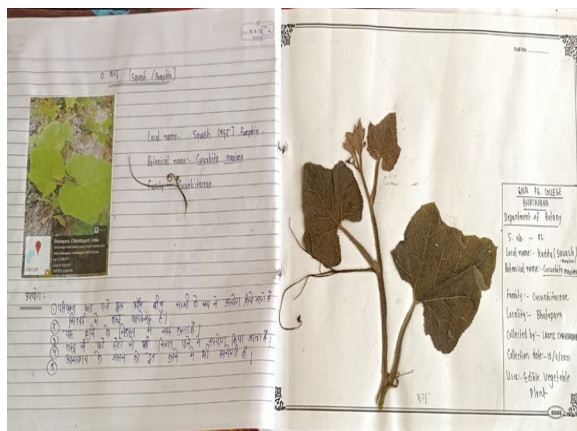
Green Spaces and Parks –

The College has established Lead Botanical Garden, lawn. The topography and altitudinal gradient of 1394.25 of the College campus helps it support diverse vegetation of the tropical and temperate types. Lead Botanic Garden is the conservatory of more than 754 Trees, 382 Shurbs, 294 Herbs and some bryophytes, Peteridophytes etc are also grown in the Garden of the Campus.



Photographs –





Herbarium made by the students of the college

Number of species of different types of vegetation –

S. No.	Flora	Number of Species
1.	Trees	754
2.	Shrubs	382
3.	Climbers	2
4.	Pteridophytes	2
5.	Bryophytes	2
6.	Grasses	All Gardens, Lawns
7.	Herbs	294

Recommendations–

The committee has made short term and long term suggestions to take environment protection to higher levels and it is hoped that this will receive due attention of college authorities and also all stake-holders of the college.

1. Environmental auditing may be conducted by the college in every two years. The College can also offer consultancy projects on environmental auditing for other academic and research institutions.
3. Specific waste management plans should be adopted to manage solid waste in the campus, with the assistance of State Swachhta Mission and use of plastic carry bags, thermocol cup, plate and flex boards should be banned inside the College.
4. Propose a system for collection and disposal of waste sorted out as organic and others on a daily basis, managed by the campus administration. The wastes generated can be used for promoting organic farming activities within the campus. There should be a system for the management of hazardous wastes.
5. The public lights within the campus may be run with solar panels and the replacement of existing lights should be done with LED lamps.
6. Frame a holistic campus development plan to foresee the future developmental needs in tune with green charter adopted by the college.
7. All the blocks in the Campus should develop a garden in front of the building and the expenditure for the same may be met from the Department Development Fund.
8. Green habitat concept should be adopted for all the building construction activities of the college in future, which may help a long way in reducing energy usage.
9. Fire safety instruments should be installed in all the buildings.
10. More public toilets/e-toilets may be established in the campus and in hostels; separate toilets are required for differently abled students.
11. Vehicle pooling should be promoted among both students and faculty and use of bicycles should be promoted as a policy of college.
12. Irrespective of the subjects, environmental education should be part of curriculum and for the post-graduate programmes at least one credit on environmental should be made compulsory. Alternatively, one credit may be given to students participating in environmental conservation/awareness activities.

Green Audit Committee

External

Shahid (Dr. Kaushilya Sahu)
Pt. Rajiv Pandey Govt. College,
Bhathagaon (C.G.)
Raipur

Internal

(Shri Jitendra Yadav)
Government G.N.A.P.G.
College, Bhatapara (C.G.)

Principal

Govt. G.N.A. P.G. College, Bhatapara
Dist. Baloda Bazar-Bhatapara (C.G.)