



Pathsalai

# GREEN AUDIT REPORT

**B.H.B. COLLEGE, SARUPETA**

### **The Audit Team:**

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## **Introduction:**

Green is referred to as Global Readiness in Ensuring Ecological Neutrality in its acronyms (GREEN). The umbrella phrase "Green Auditing" is also known as "Environmental Auditing", and both words are used equally. Green accounting is the systematic identification, quantification, recording, reporting, and analysis of ecological diversity's component parts as well as its expression in monetary or social terms.

The green audit entails, in practice energy saving, the use of renewable resources, rainwater collection and water conservation, efforts to achieve carbon neutrality, reforestation, hazardous waste management, and E- waste management. The idea of a "green audit" can be applied as a management tool to assess environment standards, which will enable the business to develop sustainability.

Conducting a green audit on a college campus is vital because students need to be aware of it, its benefits for preserving the environment, and how it may help them become good citizens of our nation. Sustainable development and green auditing are closely intertwined. Strong green auditing procedures support sustainability and aid in reducing waste.

A process for recourse management includes a green audit. The actual usefulness of green audits resides in the fact that they should be performed at set intervals and the finding might show improvement or change over time, despite the fact that they are individual events. A detailed environment assessment of the B.H.B College campus has been prepared in this instance. Water, Waste, Energy and Green campus are the focus topics for this green audit.

## **About the College:**

Established on the 1<sup>st</sup> of July 1971, Bhawanipur, Hastinapur, Bijni (B.H.B.) College, an institution of higher learning at Sarupeta, has been imparting higher education to learners belonging to the economically backward region that consists of three revenue mouzas, which are mentioned in the very name of the college. Located in Bajali Sub- Division of Barpeta District,

B.H.B College is the oldest institution of this kind in 41- Bhawanipur Legislative Assembly Constituency, a segment of 5- Kokrajhar Parliamentary Constituency of Assam, which is a reserved seat for scheduled tribes.

The indomitable will and spirit of some visionaries of this locality, and their realization of the importance of higher education combined with their realization of the importance of higher education combined with their sheer persistence paid dividends, as their dreams was translated into reality with the establishment of the College. The prime objective behind establishment of this college was to have an institution at close quarters that could help the people here have ready access to higher learning. The socially and economically backward people of this locality had earlier found it quite difficult to afford for their ward's higher education at far off places, and the college emerged as a ceacon to illuminate their path towards social and economic progress. The vision of the collage includes providing education to students belonging to SC/ST/OBC and to minority communities. The thrust is also on providing education to girls students, who, both qualitively and quantitatively, are moving side by side with the boys.

Affiliated to Gauhati University, B.H.B College, Sarupeta has also been included under 2(f) and 12(B) of the U.G.C Act, 1965. The college, with its band of decided teachers, excels in imparting quality education to students and at the same time, in instilling in them the moral and ethical values necessary for living in consonance with others. The college is a medley of students belonging to different ethnic groups of cohabiting in perfect harmony. The college leaves no stone unturned to provide them with the where withal both academically and ethically so as to enable them to face the challenges of life the changing world scenario has thrown in, and also to turn them into ideal citizens fill of character and nationalistic feelings. Students of this college are given opportunities of all sorts to open themselves up, to showcase their innate talent and also to realize their tremendous potential.

### **1. Auditing Water Consumption:**

Water auditing is conducted for the evaluation facilities of raw water intake and determining the facilities for water treatment and reuse. The present investigation tries to find out a way that can be adopted and implemented to balance the demand and supply of water. It is

therefore essential that any environmentally responsible institution examine its water use practices.

Main water uses in the college (campus and hostel): Garden, cleaning, Canteen, Drinking, Toilets, Bathrooms, Hostel, Washing and Construction works and office uses.

The overall water consumption in the college:

Following are the areas of water consumption in the college and hostel campus:

Sl. No	Water Used For
1	Toilets & Urinals
2	Hostel (Bathroom & Toilet, Kitchen, Cleaning, washing and drinking)
3	Canteen
4	Gardening
5	Construction work
6	Leakage

The water installations available in the college are-

1. Water cooler with drinking water filtration facility
2. Urinals and toilets
3. Bathrooms
4. Water taps in common place, canteen etc

**Water Consumption:**

- Quantity of water pumped-8000 litres/day
- Number of water tanks for water storage (College& Hostel campus) – 04
- Amount of water stored-3000 L

Department	Water use per day	Rain water Harvest
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College	1500	Yes
Hostel	1500	

### **Water Audit Observations**

The reasons of water wastage are-

- Leaving the water taps open after use
- Leakages from taps
- Over use of water

### **2. Auditing Energy Management:**

Energy use, energy sources, energy monitoring, lighting, appliances, and automobiles are all included by this indication. Energy use is undoubtedly a crucial component of campus sustainability, thus its inclusion in the assessment doesn't call for any justification. Energy auditing focuses on ways to conserve energy and cut back on use that could lead to environmental damage. Any organization that cares about the environment must consequently review its methods for using energy.

#### **Following are the electrical installations in the college:**

- CFL bulbs
- LED bulbs
- Tube light
- Fans
- Electrical equipment
- Desktop and laptop computers
- Photocopier machine
- Solar Panel
- Gas cylinder requirements (Hostel & Canteen)

#### **Electrical consumption:**

- Electrical consumption per year was 22,704unit.

- Avg. Electrical consumption per month was 1892 units.
- Avg. Electrical consumption per day was 63.7 units.
- Mean Electricity charges average Rs. 20000/ per month.

Department/Office/ Hostel/ library or any others	No. of tubes	No. of CFL lights	No. of LEDs	No. of AC	No. of computer + printers	No. of photocopier	No. of Fans
Principal's office	03	-		01	01	-	02
Vice principal room	01	-	-	-	01	-	01
office	08	-	-	-	04	02	06
Teacher's common room	03	-	-	-	-	-	04
IQAC room	02	-	-	-	03	-	02
Examination Board	03	-	04	-	-	-	02
Classrooms	25	-	-	-	-	-	38
Departmental room	25	-	-	-	13	-	28
Boy's common room	02	-	-	-	-	-	03
Girl's common room	02	-	-	-	-	-	03
Library	08	-	05	-	05	01	03
Computer Lab	04	-	02	01	36	-	06
Canteen	02	-	-	-	-	-	04

#### **Electrical saving methods adopted in the college:**

1. Turn off electrical equipment when not in use.
2. Use energy efficient light-emitting diode (LED) bulbs instead of incandescent and CFL bulbs.
3. Maintain fault free appliances and replace old appliances.
4. Use computers and electronic equipment in power saving mode.

#### **Energy Audit Observations:**

- The college has assessed the electrical load calculation.
- Looking at the range of college activities and working hours, monthly use of electricity in the college is moderate.
- There are fans of older generation and non-energy efficient which can be phase out by replacing with new energy efficient fans.
- Regular monitoring of equipment and immediate rectification of any problems.
- Awareness on conservation on energy, water and fuel consumption needs to be communicated among the stakeholders.

### **5. Auditing solid Waste Generation:**

Solid waste pollution is unsightly and leads to a lot of garbage in our communities, which can have a negative impact on our health. For birds and other animals, plastic bags and discarded ropes and strings can be quite deadly. This indicator covers trash generation and disposal, recycling, and waste of plastic, paper, and food. General garbage and hazardous waste are the two categories into which solid waste can be separated. What is typically thrown away in households and colleges is referred to as general garbage such as trash, paper, plastic and metal objects, pencils, glass and plastic bottles, and so forth. Waste that poses a risk to human health or the environment, such as gasoline and cleaning products, is referred to as hazardous waste. Unscientific landfills might contain dangerous pollutants that seep into the ground and water supplies and release greenhouse gases that contribute to climate change. Furthermore, solid trash frequently contains unused material resources that may be recycled, repaired, or reused to provide better services. Therefore, a sustainable college must reduce its solid waste output. Here, Attempts have been made to assess the current trash disposal practices and make recommendation for the most effective solutions to the issues. The students, faculty and staff, are the main persons which results in the daily product of a sizable volume of solid waste. The College's classrooms, labs, staffrooms, offices, library, canteen, grounds, and hostel are the main sources of solid waste. In addition to liquid waste, solid waste is generated on campus in the



form of biodegradable, non- biodegradable, hazardous, and E-waste.

### Disposal:

- B.H.B College throws waste into dustbins to maintain the cleanliness of the college campus.
- The college makes an effort to negotiate a buy- back or removal from the site agreement for damaged equipment and batteries during replacement.
- Bicycles: There is bicycle stand for the students and staff, but a small bike stand inside the college campus is available, which is insufficient for all. There are two garages in front of the college, but the space for all cars is quite inadequate.
- Public Transportation: Many students use public transportation to get to college, such as automobiles, e- rickshaws, and so on.
- There is a total ban on the use of plastic inside campus.
- Reusing the blank side of used paper for rough work helps to reduce paper waste. It is not advised to print documents unless absolutely essential. The college currently offers its publications and materials in digital form rather than in print form.
- Biodegradation waste is transformed into useable compost by employing waste assimilators, which are containers for assimilation of biodegradation waste via microbial growth and vermin composting.

### Characteristic and Disposal Practices:

The types of solid waste generated have been characterized and the quantity assessed as follows:

Sl. No.	Source	Type of waste Generated
1	Classroom	Paper, Plastic wrappers, plastic bottles, pens, cardboard, thermocol, etc
2	Laboratories	Paper, filter paper, plastic bottles, broken glass, pins etc
3	Staffrooms	Paper, plastic wrappers, plastic bottles, pens

4	office	Paper, plastic wrappers, plastic bottles, pens, metal clips, pins rubber band etc
5	Computer Centre	Paper, metal clips, pins, old printer cartridges, old CDs etc
6	Canteen	Disposal plates, cups, paper boxes, plastic wrappers, aluminium foil, vegetable peels, rotten vegetables, leftover food, plastic bottles, etc
7	Library	Paper, plastic, etc
8	Toilets	Paper, plastic, sanitary napkins
9	Ground	Grass cuttings, dry leaves, etc
10	Hostels (including toilets and the kitchen)	Paper, plastic wrappers, plastic bottles, broken glass, vegetables peels, rotten vegetables, rotten vegetables, leftover food, sanitary napkins
11	Campus	Construction bricks, broken furniture, unserviceable equipment batteries etc

Departmental/ office/ Hostel/ Library or any other	Food/organic waste/day (G)	Paper waste/ day (g)	Plastic/ thermocool g/Day	Other E- waste)g/year	Liquid waste/ day (L)	Waste dumping pit?
Canteen	1500	100	50	100	25	yes
Hostel	500	100	100	150	50	yes
office	-	100	100	500	20	yes

### **Auditing for E- waste management**

The college is equipped with a sizable number of computers, printers, and Xerox machines. E-waste and damaged computer lab equipment are being properly stored. The institution has made the decision to get in touch with an authorized E- waste Management and disposal facility in order to dispose of E-waste properly.

## Waste Disposal Done at BHB College.

B.H.B. College, Feb 2, 2023: As per the MoU signed with Swachh Campus Initiative Cell, Bijni College a disposal activity was done today at B.H.B. College, Sarupeta. A total weight of 1.78-ton waste materials were taken by Swachh Campus Initiative Cell, Bijni College. As per the MoU, both the college will supply and receive the waste and disposals from the academic and official exercise to MAA KAMAKHYA TRADERS, Bongaigaon, an agency which compose waste materials for recycling and it was the first initiative in this regard.





## Green Campus Auditing

The plants on the college campus and in the surrounding areas serve a significant ecological role both on the campus and in the surrounding areas. Additionally, a variety of bird species use these as roosting grounds and food sources. Additionally, these have improved the areas aesthetic appeal. The campus areas biodiversity status has been evaluated, paying particular attention to floral diversity and avian diversity.

Through the NSS and NCC units, ECO Club, IQAC and various cells and committees of the institution, the institute has held different Plantation programme inside and outside of the college campus and nearby village. A variety of attractive fruit bearing and medicinal plant species are planted as part of the plantation effort. The monsoon season begins in May and June, when this activity is carried out. This programme aims in preserving an environmentally friendly environment both on and off campus.

To generate interest on the nature conservation and also to inculcate social responsibility towards a green and clean environment, the college undertakes several eco-friendly initiatives within and outside campus. Some of the activities are-

- Plantation and caring of plants in the campus and outside the campus.
- Timely disposal of wastes from the campus.

- Celebration of important days like World Environment Day, Bio-diversity day, Earth Day with great importance to generate awareness among the students.
- Paperless office.
- Distribution of plant saplings for welcoming guests.
- Grow potted indoor plants in every department wherever it is possible.

#### **Plantation Programme:**

The institute has organized various Plantation programme in and outside the college campus and nearby villages through NSS unit and environment cell of the college. The plantation program includes plantation of various types of ornamentals, fruit bearing and medicinal plant species. This activity is done during the month of May and June i.e., onset of the monsoon season. This program helps to maintain eco-friendly environment within and outside the campus as well.

#### **Routine Green Practices**

The college celebrates days like world Environment Day, Biodiversity day with great importance generate awareness amongst the students, faculties as well as staff members. Popular talks on environmental problems are organized. Besides, distribution of saplings, poster competition etc. are some activities carried out to celebrate the day.



Plantation Programme on 5<sup>th</sup> June World Environment Day..



**College Scenery**





**Pond, B.H.B College, Sarupeta**



**B.H.B College, Gateway**





**Water Filter Aquaguard, B.H.B College**



**Mussaenda Flower, within College Campus**



**College Garden, B.H.B College**



**College Front Garden, B.H.B College**



**Guava tree inside the College campus.**



**Tree Plantation on the occasion of World Environment Day, B.H.B College, Sarupeta.**



**One Day Workshop on Waste Management, B.H.B College, Sarupeta.**



## **Celebration on World Environment Day, B.H.B College, Sarupeta.**

### **Vermi Composting**

The institute is has started vermi composting within the college and hostel campus since 2016. The main purpose of this is to reduce disposable waste in the college campus and manure thus produce is used in the floricultural activities within the campus. The main benefit of the process is to reduce the waste in the environment and also to generate awareness among students.



### **Vermi Compost, B.H.B College, Sarupeta.**

#### **Eco Friendly Environment:**

The college has adopted best out of waste practices, thereby inculcating values like recycle, reduce, re-used among the students. There are also bird-feeders in the college campus where students develop healthy ways of feeding the birds at the college and contribute to the local eco-system.

#### **Biodiversity available in the campus:**

B.H.B College is enriched with diverse tress, fruit bearing, medicinal and flower bearing plants. Within the limited college campus areas, the college has ensured to maintain a green campus. The college is resident to different species of birds, insects, squirrels' monkeys etc.

## List Of Species:

### Common Resident Birds:

1. *Columbalivia* (Pigeon)
2. *Passer domesticus* (House Sparrow)
3. *Acridotherestrictis* (Mynah)
4. *Eudynamysscolopaceus* (Koel)
5. Parrot
6. *Pycnonotuscafer* (Bulbul)
7. *Corvuscorone* (Crow)
8. *Spilopeliachinensis* (Spotted Dove)
9. *Gallus domesticus* (Hen)
10. *Milvusmigrans* (Kite)
11. *Ninoxscutulata* (Owl)
12. *Orthotomussutorious* (Tailor Bird)

### List of Animals:

1. Felicitous (Cat)
2. *Canislupusfamiliaris* (Dog)
3. Squirrels
4. Cow
5. Goat
6. Fox
7. Ox.

### List of Insect:

1. Butterfly
2. Dragonfly
3. Hairy Cater pillar
4. Grasshopper



5. Bess
6. Lizard
7. Housefly

**Name of the plants with Scientific name found in the College campus:**

Type	Botanical Name	Local Name
Timber-yielding tree	<i>Polyalthialongifolia</i>	Debdaru
Timber-yielding tree/Medicinal tree	<i>Dalbergiasisso</i>	Sissoo
Ornamental tree	<i>Lagerstroemia speciosa</i>	Azar
Timber-yielding tree	<i>Gmelinaarborea</i>	Gomari
Timber-yielding tree	<i>MicheliachampacaL.</i>	Titasopa
Timber yielding tree	<i>Tectonagrandis</i>	Segun
Timber-yielding tree	<i>Betulautilis</i>	Bhoj
Fruit-bearing Plants		Aam
Fruit-bearing tree and Medicinal tree	<i>Terminaliachebula</i>	Hilikha
Timber-yielding tree	<i>Bombaxceiba</i>	Himolu
Ornamental tree	<i>Delonixregia</i>	Krishnasura
Medicinal tree	<i>Azadirachtaindica</i>	Mahaneem
Ornamental and Medicinal tree	<i>Mimusopselengi</i>	Bokul
Ornamental Plants	<i>Mesuaferrea L.</i>	Nahar
Timber Yielding and Ornamental Tree	<i>Samaneasaman</i>	Sirish
Timber-yielding and Medicinal tree	<i>Aquilariamalaccensis</i>	Sasi
Ornamental tree	<i>Caesalpinia pulcherrima</i>	Radhasura
Ornamental tree	<i>Cassia fistula</i>	Sonaru
Ornamental	<i>Araucaria heterophylla</i>	
Fruit tree	<i>Pinangagracilis</i>	MumaiTamul
Flowering plant	<i>Mussaendaphilippca</i>	Madhusanda
Flowering	<i>Tabernaemontanadivaricata</i>	Kothonaphul
Flowering	<i>Murrayapaniculata</i>	Kanchenjunga
Fruit-bearing	<i>Ziziphusmauritiana</i>	Bogori
Fruit -bearing	<i>Ananascomosus</i>	Anaras
Ornamental	<i>Dracaena Indivisa Spike</i>	
Ornamental	<i>Excoecariacochinchinensis</i>	
Ornamental	<i>Clitoriaternatea</i>	Aparajita
Ornamental	<i>Dracaena Victoria</i>	
Ornamental	<i>Dracaena deremensis</i>	
Fruit-bearing	<i>Hibiscus sabdariffa</i>	Tengamora
Ornamental	<i>Tradescantiapallida</i>	
Ornamental	<i>Arudinagraminifolia</i>	
Ornamental	<i>Euphobiapulcherrima</i>	

Ornamental	<i>Dracaena reflexa</i>	
Fruit berry	<i>Emblica officinalis</i>	Amlokhi
Fruit bearing	<i>Elaeocarpus serratus</i>	Jalpai
Medicinal	<i>Terminalia arjuna</i>	Arjun
Medicinal	<i>Withania somnifera</i>	Aswagandha
Medicinal	<i>Asparagus racemosus</i>	Satmul
Medicinal	<i>Aloe barbadensis</i> Miller	Aloevera
Medicinal	<i>Tridax procumbens</i>	Bishalyakarani
Ornamental	<i>Tagetes erecta</i>	Gendhamalati
Ornamental	<i>Tabernaemontana divaricata</i>	Togor
Ornamental	<i>Hibiscus rosa-sinensis</i>	Joba
Ornamental	<i>Rosa chinensis</i>	
	<i>Rosa rubiginosa</i>	Gulab
Ornamental	<i>Lilium</i>	
Medicinal	<i>Paederia foetida</i>	Bhedai Lota
Timber yielding and Medicinal	<i>Shorea robusta</i>	Sal
Medicinal	<i>Murraya koenigii</i>	Narohingha
Vegetable	<i>Moringa oleifera</i>	Sajana
Ornamental	<i>Murraya paniculate</i> L.	Kamini Kanchan
Fruit bearing	<i>Areca catechu</i>	Tamul
Fruit bearing	<i>Cocos nucifera</i>	Narikal
Fruit bearing	<i>Citrus limon</i>	Nemutenga
Fruit bearing	<i>Carica papaya</i>	Amita
Timber-yielding		Jiyagos
Timber-yielding	<i>Trewia nudiflora</i>	Bhelkor
Ornamental and religious value	<i>Datura stramonium</i>	Datura
Timber-yielding	<i>Ficus religiosa</i>	Pakori
Timber-yielding	<i>Albizia odoratissima</i>	Koroi
Timber-yielding	<i>Toona ciliata</i>	Poma
Medicinal	<i>Leucas aspera</i>	Durum Phool
Medicinal	<i>Solanum ferocissimum</i>	Khora Bengna/ Bhot Bengena
Medicinal	<i>Solanum torvum</i>	Tita Bhekuri
Timber-yielding	<i>Bambusa vulgaris</i>	Baah
Timber-yielding	<i>Albizia chinensis</i>	Saugos
Fruit bearing	<i>Syzygium cumini</i>	Jaamu
Ornamental	<i>Hibiscus mutabilis</i>	Sthala Padma
Medicinal	<i>Eucalyptus globulus</i>	Eucalyptus
Ornamentals	<i>Catharanthus roseus</i>	Nayantara
Medicinal	<i>Leucas plukenetii</i>	Doroon
Medicinal	<i>Centella asiatica</i>	Bor Maanimuni
Medicinal	<i>Hydrocotylesibthorpiodes</i>	Xoru Maanimuni
Medicinal	<i>Chenopodium album</i>	Zilmil Xaak

Medicinal	<i>Colocasia esculenta</i>	Kola koshu
Vegetable	<i>Cucurbitamoschata</i>	Ranga Lau
Spices	<i>Cinnamomum tamala</i>	TezPaat
Spices	<i>Sinapis</i>	Xoriyoh
Ornamental	<i>Bougainvillea spectabilis</i>	Bougainvillea
Medicinal	<i>Amaranthus viridis</i>	Khutura
Medicinal	<i>Alocasia indica (Roxb.)</i>	Maankoshu
Medicinal	<i>Alocasia macrorrhiza L.</i>	Borkoshu
Medicinal	<i>Chromola odorata (L.)</i>	Jarmani bon
Commercial and Medicinal	<i>Ricinus communis Linn.</i>	Era gos
Medicinal	<i>Capsicum chinense</i>	BinhJolokia
Ornamental	<i>Mussaenda erythrophylla</i>	

### Recommendation if any:

- All leaking tapes to be repaired.
- Installation of rain water harvesting system.
- Involve students by giving them real time projects on water conservation and maintenance of ecological balance.
- Use of tap water can be controlled by regulating discharge per hour. Provide push- button taps limiting the time for 30 seconds.
- Installation of water treatment system.
- Installation of solar panel and other alternate sources of energy.
- Energy saving through the replacement of tube lights to LED lights.
- Energy efficient electrical equipment's especially fans and pump sets may be replaced against old ones.
- Awareness programme for the stakeholders to save energy for sustainability in the utilization of various energy sources.

**Signatures of the Audit Committee:**

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