

GREEN AUDIT REPORT OF Siliguri B. Ed College

2022-23



AUDITED BY

Dr Indranil Ghosh

ENVIRONMENTAL SAFETY AND HEALTH AUDIT AGENCY (ESHAA)

Ref: GA/SBEd/2022-23/03

CERTIFICATE

This is to certify that Siliguri B. Ed. College, West Bengal has conducted detailed Environmental Green Audit for 2022-23 for their campus and submitted necessary data and credentials for scrutiny. The activity and measure carried out by the college and was found satisfactory. The efforts taken by the students, faculty members and the college authority towards Environment and Sustainability is Highly Appreciated and commendable.

Dr Indranil Ghosh
Environmental Safety Health Audit Agency (ESHAA)

Executive Summary

In accordance with the Environmental policy of Siliguri B. Ed College for 2022-23, the Environmental Safety Health Audit Agency (ESHAA) conducted a green audit of the college in October, 2023.

The purpose of the audit was to ensure that the practices followed in the campus are in accordance with the standard Green Policy adopted by different academic institution and the college itself. With this in mind, the specific objectives of the audit were to evaluate the adequacy of the management control framework of Environment Sustainability as well as the degree to which the College is in compliance with the applicable regulations, policies and standards.

During the initial planning of the audit, an analysis was conducted in order to identify, predict, evaluate and prioritize the parameters associated with the environmental sustainability. 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 System (EMS) in the campus. The criteria and methods used in the audit were based on the identified impacts. The methodology used included physical inspection of the campus, review of the relevant documentation and interviews.

Acknowledgement

We would like to thank Dr. Bibhuti Bhusan Sarangi, Principal Siliguri B. Ed College for his consent to conduct this audit. We would like to sincerely thank all the Departments, students, teaching and non-teaching staff for their kind cooperation with us during this survey.

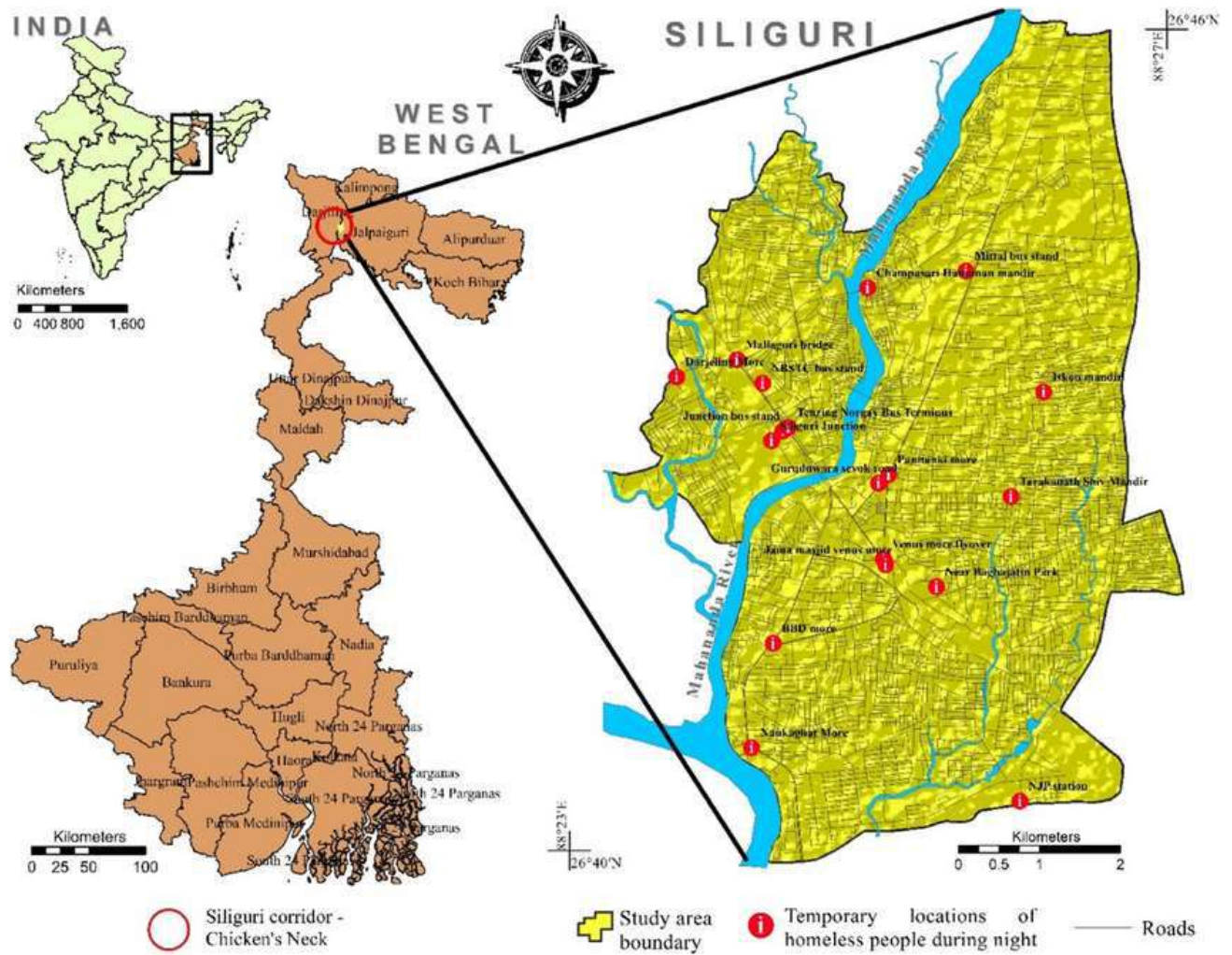
We would also like to express our special thanks to Dr. Rituparna Basak (DasGupta), Coordinator –IQAC, other faculty members, Mr Arindam Banerjee, Head Clerk, other administrative and support staff of the college for their dedicated and sincere effort to make the Audit complete.

Assurance

This audit has been conducted in accordance with the *International Standards for the Professional Practice of Auditing*.

In our professional judgment, sufficient and appropriate audit procedures were 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.

Locational map of Siliguri

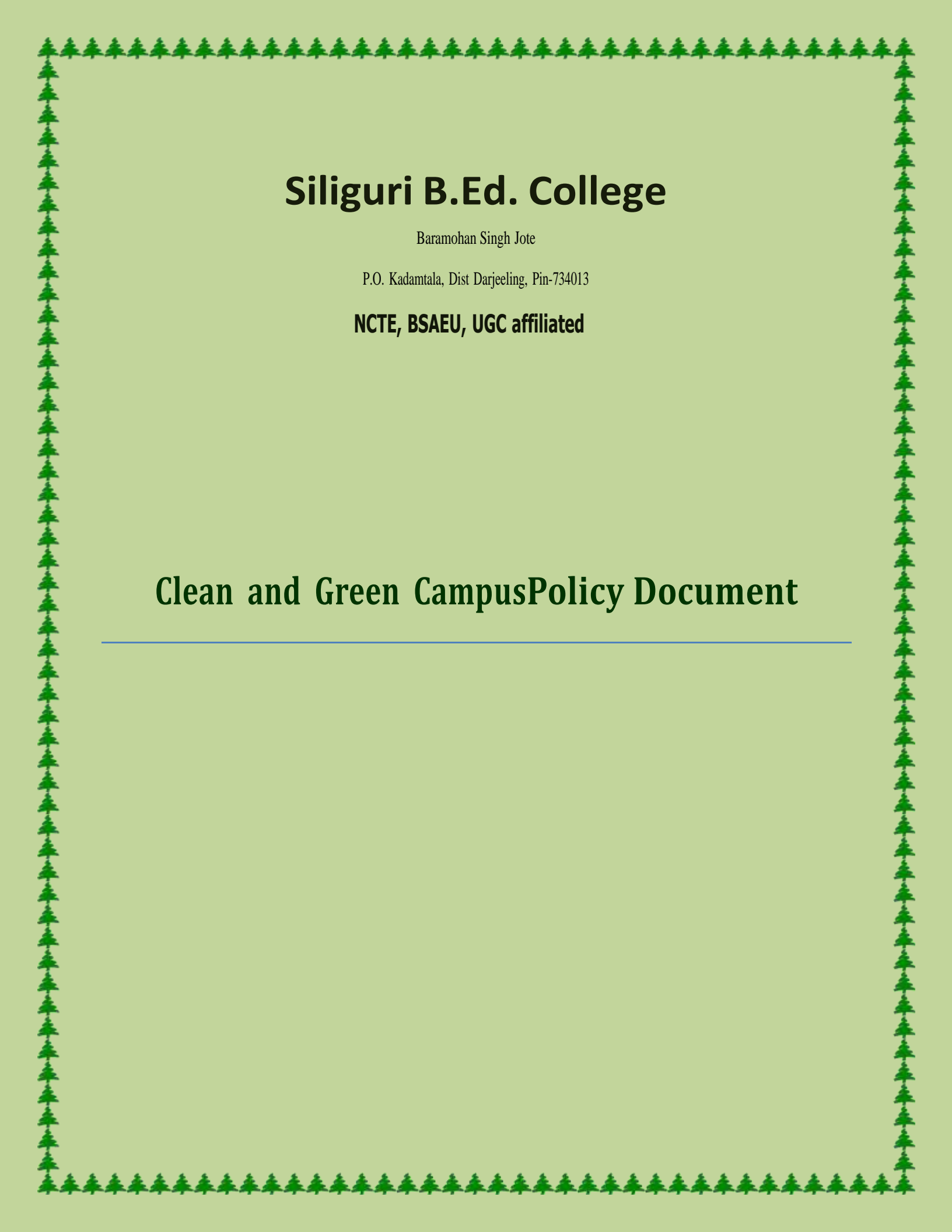




Siliguri Town



Panoramic view of Siliguri

A decorative border of small green tree icons surrounds the entire page. The trees are arranged in a rectangular frame, with a slightly thicker line of trees at the top and bottom edges.

Siliguri B.Ed. College

Baramohan Singh Jote

P.O. Kadamtala, Dist Darjeeling, Pin-734013

NCTE, BSAEU, UGC affiliated

Clean and Green Campus Policy Document

About the College:

Siliguri B.Ed. College is situated in the wonderful landscape of North Bengal where the mountain Himalaya touches the plain. It was established on 28th August, 1989 under the affiliation of University of North Bengal to fulfill a long cherished dream of people of this region. After a long wait and persistent effort, ultimately the college started its own building in 1990. Since then, this college has been serving as one of the premier Teachers' Training Colleges not only of North Bengal but the entire West Bengal also. Since 2017, the college came under the West Bengal University of Teachers' Training, Education Planning and Administration (WBUTTEPA), now renamed as Baba Saheb Ambedkar Education University (BSAEU). It is also recognized by the National Council of Teacher Education (NCTE).

Taking into account the necessity of protecting environment for a sustainable, pollution-free and healthy life on the planet Earth in the coming years, the college has formed its Green Protocol. The college is determined to follow the policy strictly by implementing it. The college also acts to create environmental consciousness among the trainees, staff and the local community in general on a continuous basis through various related activities within and outside campus. The college is dedicated to create a clean, green and healthy environment in the campus.

Clean and Green Campus Policy:

The Clean and Green Campus Policy of the college aims towards a Clean and Green campus where environmental friendly practices and education combine to promote sustainable and eco-friendly practices in the campus and beyond the campus. It also offers the institution an opportunity to redefine its environmental culture through inculcating environmental ethics among the students and staff.

Taking into account the necessity of protecting environment for a sustainable, pollution-free and healthy life on the planet Earth in the coming years, the college has formed its Green Protocol. The college is determined to follow the policy strictly by implementing it. The college also acts to create environmental consciousness among the trainees, staff and the local community in general on a continuous basis through various related activities within and outside campus. The college is dedicated to create a clean, green and healthy environment in the campus.

Aims:

It aims to create environmental consciousness among the community and acts towards a sustainable, pollution-free and healthy environment, hence to protect our mother earth.

Objectives:

- ❖ To aware the students and the staff to minimize the use of polluting products and use environment-friendly products and services.
- ❖ To inculcate the importance of cleanliness for a healthy life among the staff, trainees and the society.
- ❖ To create environmental awareness by organizing various activities inside and outside the campus.
- ❖ To aware the trainees, staff, local community and in general the society about the proper disposal of wastage and adopt health & environment friendly practices.

Initiatives implemented to follow the Policy:

To implement this policy, the following measures have been taken:

Plantation of Trees and Plants:

The college campus is fully protected by a well-constructed boundary wall on all sides. The college has a large green campus with both big trees and small shrubs which offer a very eye-soothing view to all.

Cleaning the campus on regular basis:

Every year all the staff and trainees participate in the cleaning programme as an inseparable part of Swachh Bharat initiative. Social awareness programmes are organized to spread awareness regarding various environment related contemporary issues.

Observance of "Environment Day":

Every year the World Environment Day is celebrated with much enthusiasm and vigor to spread the values and importance of environment in our life. Every year plantation initiatives are taken and saplings are planted both in the ground and earthen pots.

Motivating the Society to take part in green initiative:

The college has started to include gifting plants in the felicitation of guests and resource persons as a part of GREEN INITIATIVE.

Creating a small space garden of Medicinal Plants:

One small garden for medicinal plants has been constructed . Some basic medicinal plants e.g. Ocimum sanctum, Aloe vera, Ocimum gratissimum, Andrographis paniculata, Phyllanthus emblica, Curcuma longa, Amomum subulatum, Syzygium aromaticum, Azadirachta indica, Catharanthus roseus etc. are grown here.

Reducing the use of plastic and converting the campus as "No Smoking Zone":

The entire campus is a "No smoking zone". Use of plastic has been drastically minimized. The observance of the World Environment Day focused on "Reduce Plastic" this year.

Waste Water management:

Two soak pits have been constructed inside the college campus to achieve the aim of waste water management and recycling of waste water.

Motivating the Stakeholders to take part in Green Initiatives:

There is a practice to plant saplings of indigenous trees (prepared in the college) each year at the grounds of internship schools. Plant saplings are gifted to other places also.

Engaging the Alumnus in green initiatives:

The alumni of this college have always been involved in all good and positive initiatives undertaken by the college. After registration of the Alumni Association, they organized a meet on the theme of environmental awareness. Plantation has been done. One of our alumnus who is a renowned environmentalist, river specialist cum freelance journalist, awarded as “Green teacher” delivered a talk on the theme to aware all and also suggest few measures to protect our earth.

Paperless work and communication:

The college has a policy to minimize the use of paper in all types of official/academic Work and communication through E- Communication. The use of paper is substantially reduced through digitization. One-side blank pages are re-used for rough work to avoid wastage of paper. All the college staff, faculty and trainees have been provided the college E-mail IDs through LMS “Google Workspace for Education. They communicate for the required official and college-related academic activities through What’s app - Class-wise groups, Department wise groups, Committee wise groups and Activity wise groups that have reduced the usage of paper in notices and circulars. Moreover, the college has avoided massive usage of paper by introducing the "Learning Management System" wherein references, notes, syllabi, question banks, study material are stored and shared on the e-platform. Some departments have also started accepting E-assignments. The admission procedure has been performed totally online. Examination form fill-up, marks up-loading, etc. are also been performed through online portal. Examinations and classes are also held online in the year of COVID/Lockdown. Library has also been fully automated with the software package KOHA. As a result paper use has been minimized otherwise required for book processing and circulation process. The college also has one virtual classroom to teach virtually. These practices has been proved highly beneficial to save money, boost productivity, save space, make documentation and information sharing easier, and help the environment.

To encourage using Bi-cycles in the campus and reducing the use of Diesel-Petrol:

Trainees are encouraged to use bi-cycle instead of diesel-petrol vehicles. Some of them and Teachers use by-cycle also.

Display Boards to Promote Environmental Sensibility on College Campus:

Boards including Quotes that promote environmental awareness and ethics including air-pollution control, plastic-free campus, conservation of energy, recycling of resources, tree plantation, Nature conservation, etc. are displayed for all the stakeholders of the college.

Environment Consciousness through creative Wall Magazine:

Wall Magazine was especially dedicated on “Environmental awareness” theme recently in the year 2019-20 and 2021-22. Otherwise every year a few writings are taken on the theme.

Environment awareness through various activities:

The college organized various activities and programs such as street play, rally in the local area, tree plantations, and cultural activities to aware all the stakeholders and the society.

Solid Waste Management:

All the Departments, laboratories, and Classrooms are provided with dustbins for dry wastage disposal. Segregation of the waste into dry and wet waste is done through the separately allotted dustbins at strategic locations in the college.

Landfills: Throwing daily waste /garbage in the landfills are done which eliminates odors and dangers of waste.

Composting: The remains of the dead plants and kitchen waste from the hostel and canteen is turned into nutrients rich food for plants in the form of compost.

Faculty and college students are motivated to segregate plastic from normal waste and dispose of it accordingly. Regular waste management is done by selling off the unwanted material to the local vendors.

E-waste Management:

Old batteries, computers and wires are segregated and sold off at regular intervals. The college repairs the old broken items instead of buying new ones.

Use of LED Bulbs/Tubes and Power Efficient Equipment:

We are trying to maximize the use of LED bulbs, tubes and power efficient equipment. **Solar Plant**

in the College:

Initiatives have been taken to implant solar plant in the college. Inspection has been done, proposal approved and work are in progress.


PRINCIPAL

Siliguri B.Ed. College

Principal
Siliguri B.E I. College

1.0 Introduction

Green Audit can be defined as it is a systematic, documented, periodic and objective review by regulated entities of facility operations and practices related to meeting the environmental requirements. The 'Green Audit' aims to analyze environmental practices within and outside the college campus, which will have an impact on the eco-friendly ambience. It was initiated with the motive of inspecting the work conducted within the organizations whose exercises can cause risk to the health of inhabitants and the environment as whole. Through Green Audit, one gets a direction as how to improve the condition of environment and there are various factors that have determined the growth of carrying out Green Audit.

There is a relationship between Green Audit and Sustainable Development of the any organization. The primarily needs for achieving the sustainable development of any organization are to determine the Green Audit policy, Green Audit Framework, Accurate implementation, and Result analysis of it. Strong Green Audit process can help to achieve the sustainability. Green Audit framework helps to achieve the goal set by an organization. Green Audit is linked to Sustainable development process. Green Audit and sustainable development process help to reduce the wastage and associated cost as well as increases the product quality.

Green audit is assigned to the criteria 7 of NAAC, National Assessment and Accreditation Council which is a self-governing organization of India which declares the institutions as Grade A, B or C according to the scores assigned during the accreditation.

1.1 About the College

The demand for a dedicated B. Ed college in Siliguri was materialized in the year 1989 with the establishment of Siliguri B. Ed College at Shree Narasingha Vidyapith with permitted intake of 75 trainees. The formal commencement of academic activity began from 28th of August, 1989. The college aims to impart education to students irrespective of caste, creed or social position. The college believes in "Education is the manifestation of the perfection already in man".

The College holds special position in whole North Bengal for its wide academic offerings, enviable faculty and multicultural ambience. As a Govt.-aided college recognized by UGC, accredited by NCTE and affiliated to the Baba Saheb Ambedkar Education University, Siliguri B Ed college always tries to keep the spirit of academics high and become the best place of higher education in West Bengal.

The college is located on a beautiful campus of 1.77 Acre. The campus is located at Shiv Mandir Rd College Para, Kadamtala, Siliguri . The main road is around 1 Kilometer away from the college buildings. There is one three storied building in the campus . The total built up area is 0.43 acre. No industrial area is located in the 5 km radius of the college campus.

The college has only one shift and starts from 10:45 am and closes at 4:30 pm. Total 100 students are studying in the Teachers Training program.

The college is thinking about to adopt the 'Green Campus' system for environmental conservation and sustainability. There are three main pillars i.e.

- Zero environmental foot print
- Positive impact on occupational health performance
- 100% graduates demonstrating environmental literacy.

The goal is to reduce CO₂ emission, energy and water use, while creating an atmosphere where students can learn and be healthy. The college administration works on the several factors of 'Green Campus' including Water Conservation, Tree Plantation, Waste Management, Paperless Work, Alternative Energy and Mapping of Biodiversity.

1.2 Objectives of the Study

The main objective of the green audit is to promote the Environment Management and conservation in the College Campus. The purpose of the audit is to identify, quantify, describe and prioritize framework of Environment Sustainability in compliance with the applicable regulations, policies and standards. The main objectives of carrying out Green Audit are:

1. Verifying compliance: Verifying compliance with standards or best available techniques.
2. Identifying problems: Detecting any leakage, spills or other such problems with the operations and processes.
3. Formulating environmental policy: Formulating the organization's environmental policy if there is no existing policy.
4. Measuring environmental impact: Measuring the environmental impact of each and every process and operation on the air, water, soil, worker health and safety and society at large.
5. Measuring performance: Measuring the environmental performance of an organization against best practices.
6. Confirming environmental management system effectiveness: Giving an indication of the effectiveness of the system and suggestions for improvement.
7. Providing a database: Providing a database for corrective action and future plans.
8. Developing the organization's environmental strategy: Enabling management to develop its environmental strategy for moving towards a greener corporate and performance culture.
9. Communication: Communicating its environmental performance to its stakeholder's though reporting will enhance the image of the company.

1.3 General steps of Audit

1. Systematic and comprehensive data collection
2. Documentation with physical evidences
3. Independent periodic evaluation with regulatory requirements and appropriate standards
4. Systematic and comprehensive improvement and management of existing system.



College Building



College Hostel Building



Initiatives towards the Sustainable Development

1.4 The audit process

1.4.1 Pre-audit activities

The pre-audit activities include the following:

1. The sites / area /division that are to be audited need to be determined and selected.
2. The Audit Team was informed of the date of the audit enabled them to adjust and become used to the concept.
3. The audit scopes were identified. Audit Team was consulted when establishing the scope.
4. The audit plan was designed in such a way that it accommodated changes based on information gathered during the audit and effective use of resources.
5. Audit team and assignment of responsibility were established.
6. The required working papers were collected. This facilitated the investigations of audit team on the sites.
7. The background information on the facility including the facility' organization, layout and processes, and the relevant regulations and standards, were collected.
8. The background information on the site's historical uses, and the location of soil and ground water contamination were collected.
9. The pre-audit questionnaire was informed to auditee.

1.4.2 Onsite audit activities

The onsite audit includes:

1. The opening meeting is the first step between the audit team and college authority. In this meeting the purpose of audit, the procedure and the time schedule were discussed.
2. Site inspection is the second step for onsite activity. In this step the audit team discovered matters which are important to the audit but which were not identified at the planning stage.
3. Onsite phase of the audit developed a working understanding of how the facility manages the activities that influence the environment and how any EMS, if there is one, works.
4. Assessed strengths and weaknesses, controls and risks associated with their failure were established.
5. Gathering audit evidence ie, collecting data and information using audit protocol.
6. Communicated with the Audit Team to obtain most information.
7. Evaluated the audit evidence against the objectives established for the audit.
8. An exit meeting to explain the audit findings.

1.5 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
- Waste management
- E-waste management
- Green area management
- Green Practices

2.0 Water Audit

Evaluating the facility of raw water intake and determining the facilities for water treatment. Water harvesting is the best technique that can be adopted by simply storing water and uses it at the time of scarcity.

2.1 Water Use

This indicator addresses water consumption, water sources, irrigation, storm water, appliances and fixtures. A water audit is an on-site survey and assessment to determine the water use and hence improving the efficiency of its use.

2.1.1 Observations

The study observed that underground water is major source of supply of water. Water is used for drinking purpose, toilets, canteen, street washing and gardening. During the survey, no loss of water is observed, neither by any leakages nor by over flow of water from overhead tanks. The data collected from all the departments is examined and verified. On an average the total use of water in the college is 2000 L/day during the monsoon (Toilet 900L + Garden 400 L+ Street washing 200 L+ Canteen 450 L+ Lab 50L).

Total 04 Water purifiers are using as water purifier.

The work on rain water harvesting is under process.

2.1.2 Recommendations

- Need of monitoring, controlling overflow is essential and periodically supervision drills should be arranged. In campus small scale/medium scale/large scale reuse and recycle of water system is necessary.
- Minimize wastage of water during water filtration process, if used.
- RO purified water is not recommended. RO purifiers filter out harmful pollutants through its semi permeable membrane and also some essential minerals so the water tastes flat too. RO is recommended for waters with total dissolved solutes above 500ppm but in hilly region (TDS) is below 500ppm
- Ensure that all cleaning products used by college staff have a minimal 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.

2.1.3 Audit Framework and detailed findings: Water management

Control objective	Control(s)	Audit Observation
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 water wastage. The overflow of water from the reservoir is minimised by installing sensor.
	Install appliances which reduce water consumption	Practised as much as possible.
	Encourage a decrease in water usage among staff, students and conference guests	No, college does not encourage a decrease in water usage among staff, students and conference guests because water consumption is minimal.
	Purchase the most efficient washing machines and dishwashers available which have an economy setting as default	No, college does not purchase the most efficient washing machines and dishwashers as these are not required by the college.
	Use an efficient and hygienic water storage mechanism is to minimize the loss of water during storage	The college cleans the reservoir in regular intervals (twice in a year) .
	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	The college has No RO to filtrate the water.
	Install Water recycling mechanism, such as rain water harvesting system	The college is trying to install the Rain water harvesting system to recycle the rain water.

3.0 Energy Audit

It deals with the energy conservation and methods to reduce the consumption and the related pollution.

3.1 Energy Conservation

This indicator addresses energy consumption, energy sources, energy monitoring, lighting, appliance, natural gas and vehicles. Energy use is clearly an important aspect of campus sustainability and thus requires no explanation for its inclusion in the assessment.

3.1.1 Observations

Total energy consumption is determined as 16532 KWH/Year by major energy consuming equipment. All the departments and common facility centres are equipped with CFL lamps. Approximately 326 LED tubes, 134 LED bulbs and 10 LEDbox lights and 228 numbers of ceiling fans are counted during survey. The college has one Air conditioning machine. Equipment like Computers (50 nos with TFT monitors) and printers (07) are used with power saving mode. Two photocopying machines are available in usable condition. The college conducts switch off drills at regular intervals (twice a year).

3.1.2 Recommendations

- 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.
- Appreciate that it is preferable to purchase electricity from a company that invests in new sources of renewable and carbon-neutral electricity.
- Installation of LED lamps instead of CFL.



Siliguri B.Ed. College

Baramohan Singh Jote

P.O. Kadamtala, Dist Darjeeling, Pin-734013

NCTE, BSAEU, UGC affiliated

Energy Policy Document

About the College:

Siliguri B.Ed. College is situated in the wonderful landscape of North Bengal where the mountain Himalaya touches the plain. It was established on 28th August, 1989 under the affiliation of University of North Bengal to fulfill a long cherished dream of people of this region. After a long wait and persistent effort, ultimately the college started its own building in 1990. Since then, this college has been serving as one of the premier Teachers' Training Colleges not only of North Bengal but the entire West Bengal also. Since 2017, the college came under the West Bengal University of Teachers' Training, Education Planning and Administration (WBUTTEPA), now renamed as Baba Saheb Ambedkar Education University (BSAEU). It is also recognized by the National Council of Teacher Education (NCTE).

The Environment and Energy Usage Policy of Siliguri B.Ed. College is to manage energy in such a systemic way to minimize its consumption in the institution and further lead to a sustainable environment. The policy aims to explore the energy resources to reduce the burden of consumption of energy and to find substitute natural resources as solutions to energy crisis. Our college is devoted to the cause of environmental awareness, undertakes green initiatives and conducts green literacy programs to save energy and protect the environment.

Policies

We are committed to responsible energy use and will practice energy efficiency in all facilities and processes, wherever it is cost- effective. To improve energy efficiency by establishing and implementing strategic energy management practices.

Mission:

The ultimate mission of this policy is to use the available energy effectively and reduce the energy consumption.

Objectives:

- *To reduce air pollution emissions using eco- friendly vehicles, including bicycles, and public transportation and save fuels.*
- *To develop a systematic waste management mechanism.*
- *To undertake a tree plantation drive.*
- *To monitor and respond to emerging environmental and energy issues.*
- *To strengthen our employee's and trainee's environmental knowledge and skills to improve our environmental performance.*
- *To Achieve and maintain compliance with applicable legal and other requirements.*

Implementation:

To implement this policy, the following measures have been taken:

- **Talks to spread awareness:**
The college motivates trainees and staff of our college in giving talks, making seminar presentations etc. on energy conservation.
- **Seminar at State Level:**
On 12.11.2023 one **state level seminar on Energy Conservation** was organized at the college in collaboration with PCRA in which one resource person made a presentation and conducted a quiz competition to spread the awareness about energy conservation among the trainees and two trainees of 1st semester made PPT presentations on the said topic.
- **Annual magazine and wall magazine:** *The college annual magazine and wall magazine* frequently focus on energy conservation issues. The institution tries its best to adhere to the energy conservation policies as laid in our institutional guidelines.



- **Waste Water Management:**

Two soak pits have been constructed inside the college campus to achieve the aim of waste water management and recycling of waste water.

- **Use of LED Bulbs/Tubes and Power Efficient Equipment:**

We are trying to maximize the use of LED bulbs, tubes and power efficient equipment to save energy.

- **Solar Plant in the College:**

Initiatives have been taken to implant solar plant in the college to save electricity. Inspection by BDO has been done, proposal approved and work are in progress.

- **To encourage using Bi-cycles in the campus and reducing the use of**

Diesel-Petrol:

Trainees are encouraged to use bi-cycle instead of diesel-petrol vehicles. Some of them and Teachers use by-cycle also.

- **Reducing the Wastage of energy and saving energy:**

The issue of energy conservation is seriously discussed in the various meetings of the important decision making committees and councils and brainstorming discussions on ways of saving energy like the teaching and non-teaching staffs of this college make sure that all the lights, fans, air conditioners and computers are switched off when not in use. We give preference to manual equipment rather than electrical ones. The backside of used pages are reused for official works. All rough works are done in these unused pages thus saving papers, and thus conserving energy resources.

PRINCIPAL

Siliguri B.Ed. College

Principal

Siliguri V.E.I. College

3.1.3 Audit Framework and detailed findings: Energy management

Control objective	Control(s)	Audit Observation
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.	No, the college does not have any choice of 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.
	Appreciate that it is preferable to purchase electricity from a company that invests in new sources of renewable and carbon-neutral electricity	The College have no choice other than <i>WEST BENGAL STATE ELECTRICITY DISTRIBUTION COMPANY LIMITED</i> . The company is a PSU of govt of West Bengal. The company which invests Roof top Solar PV systems.
	Look in to the possibility of on-site micro-generation of renewable electricity.	No provision of renewable energy generation is available.
	Give preference to the most energy efficient and environmentally sound appliances available, this includes only using energy-saving light bulbs	The College are using CFL/ LED as much as practicable. The existing filament bulbs and fluorescent tubes and CFL are gradually replacing by the LED.
	Provide energy efficient heating systems, with adjustable controls for individual heating appliances wherever possible, and ensure that comprehensible instructions are available to staff and students on the use of heating controls.	No Heater is used in winter season.
	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	Misuse of electricity is controlled by turning off the appliances when not required. Visible reminders are not observed.

	residential rooms	
	Monitor and understand the importance of different sources of college energy consumption, and set appropriate and measurable targets for a reduction in certain areas of consumption and/or in the overall consumption of energy.	Disconnect the supply of electricity when not required.(Specially during the month long vacation).
	Conduct switch off drills at regular intervals	College conducts switch off drills at regular intervals.
	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	All electronic and electrical equipment's are switched off when not in use. Equipment are configured in power saving mode when such option is available.
	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	Equipment running on standby mode.

4.0 Waste Management Audit

This indicator addresses waste production and disposal of different wastes like paper, food, plastic, biodegradable, construction, glass, dust etc. and recycling. Furthermore, solid waste often includes wasted material resources that could otherwise be channeled into better service through recycling, repair, and reuse. Solid waste generation and management is a burning issue. Unscientific handling of solid waste can create threat to everyone. The survey focused on volume, type and current management practice of solid waste generated in the campus. The different solid wastes collected as mentioned above.

4.1 Waste Conservation

Good waste management does more than just clean up the environment – it can also provide diverse benefits for communities that engage in waste management activities.

The broader challenge towards the waste management is to develop local/intuitional waste management strategies and to embed local processes to ensure sustainability.

4.1.1 Observations

The total solid waste collected in the campus is 16 Kg/day. Waste generation from tree droppings and lawn management is a major solid waste generated in the campus. Separate recyclebins are maintained for disposing dry waste and wet waste. The waste is segregated into two categories: bio degradable and non – bio degradable. These are then put into separate containers which are colour coded. The container with non - biodegradable waste product is then handed over daily to the Municipality. The waste is segregated at source by providing separate recycle Bins for *Bio-degradable* (Green colored bins) and Plastic waste (Blue colored bins). Single sided used papers reused for writing and printing in all departments. Unimportant and non-confidential reports/ papers are sent for pulping and recycling after completion of their preservation period. Very less plastic waste (0.1Kg/day) is generated by some departments, office, garden etc but it is neither categorized at point source nor sent for recycling. Metal waste and wooden waste is stored and given to authorized scrap agents for further processing. The college has practice of paperless office work administration as much as possible and as a result there is less carbon emission from printers, no carbon copy of bills, filing of cartridge outside the office (if necessary) is observed. one number of sanitary napkin vending machine is available with incinerator is available to reduce the solid waste.

Separate pits are maintained and cleaned regularly. The degradable items generated in the campus, primarily leftover food items from the college canteen, is collected regularly and put in a dedicated pit, to process it as organic manure that is then used for the medicinal plant garden maintained in the college campus.

Solid waste from canteen like food wastes are stored in bins and later deposited in pits; these wastes and vegetables wastes are collected into pits for making manure. College has two pits measuring 36m³ each, this manure is utilized in college gardens; liquid wastes are disposed carefully through well drainage system.

4.1.2 Recommendations

- Reduce the absolute amount of waste that it produces from college staff offices.
- Make full use of all recycling facilities provided by Siliguri Municipality and private suppliers, including glass, cans, white, coloured and brown paper, plastic bottles, batteries, print cartridges, cardboard and furniture.
- Provide sufficient, accessible and well-publicized collection points for recyclable waste, with responsibility for recycling clearly allocated.
- Single sided papers to be used for writing and photocopy.

4.1.3 Audit Framework and detailed findings: Waste Management

Control objective	Control(s)	Audit Observation
	Reduce the absolute amount of waste that it produces from college staff offices.	No, the college have not used any controls to reduce the absolute amount of waste that it produces from staff offices.
	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.	Yes. College uses the facilities provided by the local authority to recycle the wastes.
	Compost, or cause to be composted, all organic waste, green waste and un-recycled cardboard produced in or collected from kitchens, gardens, offices	No. College has not waste composting facility.

Maximize the proportion of waste that is recycled & minimize the quantity of non-recyclable refuse	and rooms.	
	Recycle or safely dispose of white goods, computers and electrical appliances.	Safe disposal through authorized agents for computers and electrical wastes.
	Use reusable resources and containers and avoid unnecessary packaging where possible	College tries to use reusable resources and avoid unnecessary packaging where possible
	Always purchase recycled resources where these are both suitable and available.	College tries to purchase recycled resources where these are both suitable and available.
	Provide sufficient, accessible and well-publicized collection points for recyclable waste, with responsibility for recycling clearly allocated	Yes. College has sufficient, accessible and well-publicized collection points for recyclable waste, with responsibility for recycling clearly allocated
	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	Yes! College arranged the events with least production of waste.
	Promote reuse of items and waste recycling among staff, students and conference guests through training, posters and incentives	Yes!, the college has promoted reuse of items and waste recycling among staff, students and conference guests through training, posters and incentives
	Promote reuse of items and waste recycling among staff, students and conference guests through training, posters and incentives	Yes, the college dispose all waste, whether solid or otherwise, in a scientific manner and ensure that it is not released directly to the environment.
	Adoption of paperless office to reduce waste.	Yes! College has implemented paper less office partially.

5.0 E-waste Management Audit

E-waste can be described as electronic equipment that is near or at the end of its useful life. E-waste makes up about 5% of all municipal solid waste worldwide but is much more hazardous than other waste because electronic components contain cadmium, lead, mercury, and Polychlorinated biphenyls (PCBs) that can damage human health and the environment.

5.1 E-waste Management System

Electronic waste or e-waste is generated when electronic and electrical equipment become unfit for their originally intended use or have crossed the expiry date. Computers, servers, mainframes, monitors, compact discs (CDs), printers, scanners, copiers, calculators, fax machines, battery cells, cellular phones, transceivers, TVs, iPods, medical apparatus, washing machines, refrigerators, and air conditioners are examples of e-waste (when unfit for use).

E-waste typically consists of metals, plastics, cathode ray tubes (CRTs), printed circuit boards, cables, and so on. Valuable metals such as copper, silver, gold, and platinum could be recovered from e-wastes, if they are scientifically processed. The presence of toxic substances such as liquid crystal, lithium, mercury, nickel, polychlorinated biphenyls (PCBs), selenium, arsenic, barium, brominated flame retardants, cadmium, chrome, cobalt, copper, and lead, makes it very hazardous, if e-waste is dismantled and processed in a crude manner with rudimentary techniques. E-waste poses a huge risk to humans, animals, and the environment. The presence of heavy metals and highly toxic substances such as mercury, lead, beryllium, and cadmium pose a significant threat to the environment even in minute quantities.

Consumers are the key to better management of e-waste. Initiatives such as Extended Producer Responsibility (EPR); Design for Environment (DfE); Reduce, Reuse, Recycle (3Rs), technology platform for linking the market facilitating a circular economy aim to encourage consumers to correctly dispose their e-waste, with increased reuse and recycling rates, and adopt sustainable consumer habits.

5.1.1 Observation

E-waste generated in the college is very less. It is handled, treated and disposed in scientific way. There are 50 computers (with TFT monitors), 07 printers and 02 photo copiers are available in the college. The college generates some e-waste like chips, bulbs, circuit boards, mother boards, computers, batteries, relays, and switches. The non-working computers, spare parts and other non-working electrical equipment are stored in separate places. The college has intention to adopt the Buyback policy. E-waste handled is 50 kg (approx) per year and disposed off through authorized vendors.

5.1.2 Recommendations

- Recycle or safely dispose of white goods, computers and electrical appliances.
- Use reusable resources and containers and avoid unnecessary packaging where possible. Always purchase recycled resources where these are both suitable and available.

5.1.3 Audit Framework and detailed findings: E Waste Management

Control objective	Control(s)	Audit Observation
Reduce the E waste generation	<p>Adoption of Extended Producer Responsibility (EPR), Design for Environment (DfE); Reduce, Reuse, Recycle (3Rs).</p> <p>The EPR is an environment protection strategy that makes the producer responsible for the entire life cycle of the product, especially for take back, recycle and final disposal of the product.</p>	College has no specific policy for E waste management.

6.0 Green area Management Audit

This includes the plants, greenery and sustainability of the campus to ensure that the buildings conform to green standards. This also helps in ensuring that the Environmental Policy is enacted, enforced and reviewed using various environmental awareness programs.

6.1 Green Area

Green spaces are important reservoirs of biodiversity, providing resources, ecosystem services and habitats for species of interest, improving functional and structural connectivity at the urban level.

6.1.1 Observations

There are approximately 1.5 acres land is available as green area. Campus is located in the vicinity of different types (species) plants. The campus is enriched by different bio diversities like bryophytes, pteridophytes, arthropod, Mollusca and reptiles. Various tree plantation programs are being organized at college campus. This program helps in encouraging eco-friendly environment which provides pure oxygen within the institute and awareness among local people. The plantation program includes various types of indigenous species of ornamental and medicinal wild plant species. There is garden which is maintained by the gardener.

6.1.2 Recommendations



- Reviews periodically the list of trees planted in the garden, allot numbers to the trees and keep records. Give scientific names to the trees.
- Promote environmental awareness as a part of course work in various curricular areas, independent research projects, and community service.
- Create awareness of environmental sustainability and takes actions to ensure environmental sustainability.
- Establish a College Environmental Committee that will hold responsibility for the enactment, enforcement and review of the Environmental Policy if any. The Environmental Committee shall be the source of advice and guidance to staff and students on how to implement this Policy.
- Ensure that an audit is conducted annually and action is taken on the basis of audit report, recommendation and findings.





6.1.3 Audit Framework and detailed findings: Green Area Management

Control objective	Control(s)	Audit Observation
Development of green area to compensate CO ₂ .	Proper Land use pattern to develop green area.	No. There is no proper land use policy of the college.
	Proper Taxonomical identification of plants in the campus.	The plants inside the campus is identified scientifically and marked properly.
	Conduct Environment Awareness program.	Environment Awareness program regularly organized by the college authority.



6.1.4 Taxonomical identification of plants in the campus

Herbal Plants




Sl. No.	Common Name	Scientific Name	Picture
1	Arjun Tree	<u><i>Terminalia arjuna</i></u>	
2	Neem Tree	<u><i>Azadirachta indica</i></u>	





3	Holy Tulsi	<u><i>Ocimum sanctum</i></u>	
4	Large Tulsi	<u><i>Ocimum gratissimum</i></u>	
5	Ghritkumari	<u><i>Aloe barbadensis</i></u>	
6	Bitterweed	<u><i>Andrographis paniculata</i></u>	



7	Amla/ Indian Gooseberry	<u><i>Phyllanthus emblica</i></u>	
8	Turmeric	<u><i>Curcuma longa</i></u>	
9	Hill Cardamom	<u><i>Amomum subulatum</i></u>	
10	Clove	<u><i>Syzygium aromaticum</i></u>	

<p>11</p>	<p>Nayantara/ Rose Periwinkle</p>	<p><u><i>Catharanthus roseus</i></u></p>	
<p>12</p>	<p>Nilkanth/Butterfly Pea</p>	<p><u><i>Clitoria ternatea</i></u></p>	

Indigenous Trees

Sl. No.	Common Name	Scientific Name	Picture
1	Gulmohar/Krishna-chura	<u><i>Delonix regia</i></u>	
2	Jackfruit/Kanthal	<u><i>Artocarpus heterophyllus</i></u>	
3	Palash Tree	<u><i>Butea monosperma</i></u>	
4	Deodar tree	<u><i>Polyalthia longifolia</i></u>	

5	Golden-shower tree	<u><i>Cassia fistula</i></u>	
6	Banyan tree	<u><i>Ficus benghalensis</i></u>	
7	Golden Rumph's Fig/Pakur	<u><i>Ficus rumphii</i></u>	
8	Custard Apple tree	<u><i>Annona squamosa</i></u>	

9	Mango tree	<u><i>Mangifera indica</i></u>	
10	Coconut tree	<u><i>Cocos nucifera</i></u>	
11	Chinese Honey-suckle/Madhabilata	<u><i>Hiptage benghalensis</i></u>	
12	Yellow Oleander/Kolke	<u><i>Cascabela thevetia</i></u>	

Ornamental Trees

- Palm tree (*Chamaedorea elegans*)
- Sago palm (*Cycas revoluta*)
- Stromanthe triostar
- Common spider plant (*Chlorophytum comosum*)
- Arrowhead plant (*Syngonium podophyllum*)
- Moss-rose purslane (*Portulaca grandiflora*)
- Bolivian Jew plant (*Callisia repens*)
- Silver inch plant (*Tradescantia zebrina*)
- Oyster plant (*Tradescantia spathacea*)
- Garden croton (*Codiaeum variegatum*)
- Golden Dewdrop (*Duranta erecta*)





Common Tree frog (*Polypedates leucomystax*)



Garden snail (*Cornu aspersum*)



Common Indian earthworms (*Pheretima posthuma*)

7.0 Green Practices

"Going **green**" means to pursue knowledge and **practices** that can lead to more environmentally friendly and ecologically responsible decisions and lifestyles, which can help protect the environment and sustain its natural resources for current and future generations.

Green Practice includes

1. **Green purchasing**
2. **Green transportation**
3. **Treatment of chemical waste**
4. **Campaign for Go Green**
5. **Green Policy**

7.1 Observation

Major Green practice Initiatives in the campus:

- Institute community Garden
- Recycling bin for e-waste
- Use of LED
- Restricted entry of vehicles
- Restricted Parking
- Usage of bicycles and public transport
- Pedestrian friendly Road
- Paperless office
- Plastic free campus

Awareness camps, seminars. Workshop etc held regularly by the college related to environment.

Programmes organized during the session 2022 – 2023 are listed below.

1. World Environmental day observation on 5th June
2. Tree Plantation program on 12.06.2023 by College Staff and Alumni members
3. Awareness program- Street Play on Environmental Issues, 2022
4. Awareness Rally for Domestic Waste Management 28.08.2023
5. Different Environment Friendly Initiatives taken by Siliguri B.Ed. College over the Years
6. Awareness Rally for Reducing Pollution and plantation of Trees

7.1.2 Recommendations

- The Environmental Protection Committee should be empowered to look after all the green practices in the college
- More Seminar/ workshop should be organized to create the awareness of Environmental conservation among the students and other stake holders.

7.1.3 Audit Framework and detailed findings: Green Practice Audit

Control objective	Control(s)	Audit Observation
Ensure that improvements, purchases and developments are environmentally sound	Seek and act upon professional advice in order to minimize the adverse environmental impact of any new developments and exceed government regulatory requirements. This includes efficient heating and water systems, appropriate space for recycling, and the use of recycled and/or sustainable building materials where possible	No, the college have not contacted for and act upon professional advice in order to minimize the adverse environmental impact of any new developments and exceed government regulatory requirements.
	Purchase efficient and environmentally sound appliances	College is positive about increasing greenery by planting in front of the college and maintaining potted plants scientifically as much as possible.
	Purchase food that has been produced and delivered with minimal impact on the environment, this includes buying locally produced, organic and free range food wherever possible	No, college does not purchase food stuff as the canteen facility is available since 11 am to 4 pm in every working day.
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 with good surface transport. Faculty members, Office staff and students are attending the college by public transport or by own transport like Bicycle, motor cycle etc. A well maintained parking place is available for the two wheelers.
	Reduce the proportion of travel on College business carried out in private transport and eliminate unnecessary and inefficient use of college vehicles	No, college has no vehicle. College uses hired vehicle whenever it's required. Most of the time use Public transport for the official works.

	Promote car sharing / car pool among the students and faculty members	Both students and faculty members use either public transport or own vehicle.
Minimize the use of chemical pollutants	Ensure that all cleaning products used by college staff have a minimal 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	Negligible amount of washing liquids are used in the college and all the toilet cleaners are Eco friendly.
	Dispose the chemical waste generated from the laboratories in a scientific manner	No chemical have been generated in the laboratory as its not included the curriculum.
	Reduce the practice of burning Plastic and other material that emits harmful gas on burning is prevented in the campus.	The whole campus is plastic free. Students are made aware about the need to reduce the use of plastics and curb the tendency to throw food wrappers indiscriminately everywhere.
	Establish a Garden in the campus	The college has already maintained garden. Regular pruning and nurturing of garden by gardener.
	Minimize the use of fertilizers and pesticides in college grounds, opting for the use of compost produced on site wherever possible	Negligible amount of fertilizers and pesticides are used in the college.
	Encourage the faculties and students to plant trees in the garden.	Faculty members and students know the importance of the tree plantation.
	Reviews periodically the list of trees planted in the garden	No such review conducted.
Ensure that environmental awareness is created	Conduct environmental awareness workshops as a part of the program.	The College regularly organizes camps, seminar, and workshops.
	Conduct events such as plant trees to spread environmental awareness among the students	The different groups of College students usually do that.
	Create awareness of environmental sustainability and takes actions to ensure environmental sustainability.	Seminars and awareness programmes are conducted on Nature and natural resources, wildlife for the conservation of Biodiversity.
	Reduce the rate of contributes to the depletion and degradation of natural resources	College does not directly or indirectly involve 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	As per UGC guidelines the subject Environmental Studies has introduced in the curriculum of all the streams. Environment and Population Education under 4th Semester of 6 Credit (4 Credit for theory and 2 Credit for practicum)
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	The college building is more than 10 years old. The building follows the standard architecture norms.

	buildings, offering greatest efficiency for energy and water usage, and reducing carbon emission	
Ensure that the Environmental Policy is enacted, enforced and reviewed	Establish a College Environmental Committee that will hold responsibility for the enactment, 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	The college has no Eco Club who looks after the Environment Protection and Campus Beautification. But the students regularly monitor the environment protection measures and development of Green Area.
	Ensure that on the Nature Club there will be appropriate representatives of the relevant college departments and authorities – such as catering, gardening, maintenance, cleaning and finance	The college has no official Eco Club comprising the students of different departments.
	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	The college has no such Green Officer.
	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 Protection Committee review periodically.
	Ensure that the Environmental Policy is enforced regardless of whether its requirements exceed the mandate of the law	Environmental policy of the college: No to water & Electricity misuse; Optimal waste management
	Require that every staff and student member recognizes their responsibility to ensure that the commitments in the Environmental Policy are properly put into practice	Every staff and student member recognizes their responsibility to ensure that the commitments to the Environment.
	Ensure that an audit is conducted annually and action is taken on the basis of audit report, recommendation and findings	Green audit is conducted annually.





8.0 Conclusions

Considering the fact that the institution is predominantly an under-graduate college, there is significant concern over the environmental conservation both by faculty and students. The environmental awareness initiatives are substantial. The official process of installation of solar panels, an alternative source of energy, is going on. The paperless work system is noteworthy. Besides, environmental awareness programs initiated by the administration show how the campus is going green. Few recommendations are added to curb the menace of waste management using Eco-friendly and scientific techniques. This may lead to the prosperous future in context of Green Campus & thus sustainable environment and community development.

As part of green audit of campus, we also carried out the environmental monitoring of campus includes Illumination, Noise level, Ventilation and Indoor Air quality of the class room. It was observed that Illumination and Ventilation is adequate considering natural light and air velocity present. Noise level in the campus is below 50 dB at day time which is well within the limit.

Appendix 1: Air Quality

Device Location	Siliguri WBPCB Office		
Relative Humidity	75.68 %	Temperature	29.75 °C
Latitude	26.7228917	Longitude	88.3901084
Date and Hour	2023-10-11, 16 hours		

Pollutant	Average	Minimum	Maximum
PM 2.5	49.20 µg/m ³	37.28 µg/m ³	68.62 µg/m ³
PM 10	95.25 µg/m ³	66.99 µg/m ³	140.24 µg/m ³
Temperature	28.75 °C	26.12 °C	33.13 °C
Humidity	81.44 %	63.40 %	91.11 %
Wind Direction (°)	N 52°40' W	-	-
Wind Speed (m/s)	0.02	0.00	0.07

Disclaimer: West Bengal pollution Control Board has developed a sensor based air pollution Monitoring network. The sensors are periodically calibrated against the reference-grade monitors and are being used for air quality management for the state. The data represent broad trends of air pollution in the locality. These data are being used for the purpose of research only and not to meant for regulatory intent.

24-Hourly NAAQS	
PM 2.5 (ug/m3)	PM 10 (ug/m3)
60	100

Source: West Bengal pollution Control Board

Day

10/12



31° Hi

RealFeel® 38°

RealFeel Shade® 35°

Partly sunny

Max UV Index	6 High	Precipitation	0.5 mm
Wind	SSE 7 km/h	Rain	0.5 mm
Wind Gusts	15 km/h	Hours of Precipitation	0.5
Probability of Precipitation	46%	Hours of Rain	0.5
Probability of Thunderstorms	13%	Cloud Cover	24%

Night

10/12



20° Lo

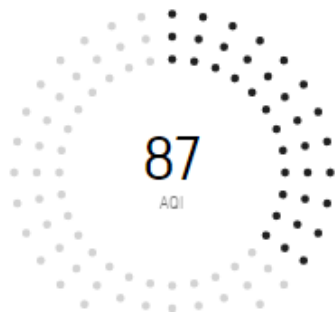
RealFeel® 20°

Mainly clear

Wind	NNE 7 km/h	Probability of Thunderstorms	4%
Wind Gusts	15 km/h	Precipitation	0.0 mm
Probability of Precipitation	16%	Cloud Cover	22%

CURRENT AIR QUALITY

TODAY
10/13



Poor

The air has reached a high level of pollution and is unhealthy for sensitive groups. Reduce time spent outside if you are feeling symptoms such as difficulty breathing or throat irritation.

Based on Current Pollutants

[Learn More](#)

<p>PM_{2.5}</p> <p>Poor</p>	<p>Fine Particulate Matter are inhalable pollutant particles with a diameter less than 2.5 micrometers that can enter the lungs and bloodstream, resulting in serious health issues. The most severe impacts are on the lungs and heart. Exposure can result in coughing or difficulty breathing, aggravated asthma, and the development of chronic respiratory disease.</p>	<p>87</p> <p>26 µg/m³</p>
<p>PM₁₀</p> <p>Poor</p>	<p>Particulate Matter are inhalable pollutant particles with a diameter less than 10 micrometers. Particles that are larger than 2.5 micrometers can be deposited in airways, resulting in health issues. Exposure can result in eye and throat irritation, coughing or difficulty breathing, and aggravated asthma. More frequent and excessive exposure can result in more serious health effects.</p>	<p>60</p> <p>52 µg/m³</p>
<p>O₃</p> <p>Excellent</p>	<p>Ground-level Ozone can aggravate existing respiratory diseases and also lead to throat irritation, headaches, and chest pain.</p>	<p>16</p> <p>48 µg/m³</p>
<p>NO₂</p> <p>Excellent</p>	<p>Breathing in high levels of Nitrogen Dioxide increases the risk of respiratory problems. Coughing and difficulty breathing are common and more serious health issues such as respiratory infections can occur with longer exposure.</p>	<p>10</p> <p>5 µg/m³</p>
<p>CO</p> <p>Excellent</p>	<p>Carbon Monoxide is a colorless and odorless gas and when inhaled at high levels can cause headache, nausea, dizziness, and vomiting. Repeated long-term exposure can lead to heart disease</p>	<p>3</p> <p>301 µg/m³</p>
<p>SO₂</p> <p>Excellent</p>	<p>Exposure to Sulfur Dioxide can lead to throat and eye irritation and aggravate asthma as well as chronic bronchitis.</p>	<p>3</p> <p>3 µg/m³</p>

Appendix 2: Noise Quality

Device	Siliguri WBPCB Office	
Zone	Commercial	
District	Darjeeling	
Timestamp	October 11th 2023, 5:04 pm	
Parameter	Value	
LAs	53.37	
LCs	62.94	
LZs	65.90	
LAeqt	54.47	
LCeqt	62.54	
LZeqt	62.54	
LApeakt	82.86	
LCpeakt	87.50	
LZpeakt	87.65	

National Noise Standard		
Noise Limit	DAY (6 AM - 10 PM) in dB(A)	NIGHT (10 PM - 6 AM) in dB(A)
Industrial	75	70
Commercial	65	55
Residential	55	45
Silence	50	40

Source: West Bengal pollution Control Board

Appendix 3: Water Quality Parameter

Parameter	Bureau of Indian Standards (BIS 2009) acceptable limit	WHO standard 2011 desirable limit
pH	6.5 - 8.5	7.0 - 8.5
TDS	500	600
Alkalinity	200	300
DO	5	NA
EC	750	750
Salinity	100 PPT	100 PPT
Turbidity	1 NTU	1 NTU
Na ⁺	200	50
Mg ²⁺	30	30
Ca ²⁺	75	100
F ⁻	1	1.5
Cl ⁻	250	250
NO ₃ ²⁻	50	50
SO ₄ ²⁻	200	250

NA - Not Available