CERTIFICATE OF GREEN AUDIT

THIS IS TO CERTIFY THAT

NALBARI COMMERCE COLLEGE

JAPARKUCHI, P.O - CHOWKBAZAR NALBARI - 781335 ASSAM, INDIA HAS SUCCESSFULLY UNDERGONE "GREEN AUDIT" ON 30TH DECEMBER 2022 TO ASSESS THE GREEN INITIATIVE PLANNING AND EFFORTS CARRIED OUT IN THE CAMPUS TO KEEP ENVIRONMENT FRIENDLY ATMOSPHERE TO THE STAKEHOLDERS WAS FOUND **SATISFACTORY**.

DECEMBER 30, 2022

PROF. DR. SUBHENDU SEKHAR BAG, *CCHEM, FRSC, FICS*
DEPARTMENT OF CHEMISTRY & CENTRE FOR THE ENVIRONMENT
INDIAN INSTITUTE OF TECHNOLOGY GUWAHATI, GUWAHATI, ASSAM, INDIA

CERTIFICATE OF ENERGY AUDIT

THIS IS TO CERTIFY THAT

NALBARI COMMERCE COLLEGE

JAPARKUCHI, P.O - CHOWKBAZAR NALBARI - 781335 ASSAM, INDIA HAS SUCCESSFULLY UNDERGONE "ENERGY AUDIT" ON 30TH DECEMBER 2022 TO ASSESS THE ENERGY CONSERVATION INITIATIVE PLANNING AND EFFORTS CARRIED OUT IN THE CAMPUS TO KEEP ENVIRONMENT FRIENDLY ATMOSPHERE TO THE STAKEHOLDERS WAS FOUND **SATISFACTORY**.

DECEMBER 30, 2022

PROF. DR. SUBHENDU SEKHAR BAG, *CCHEM, FRSC, FICS*
DEPARTMENT OF CHEMISTRY & CENTRE FOR THE ENVIRONMENT
INDIAN INSTITUTE OF TECHNOLOGY GUWAHATI, GUWAHATI, ASSAM, INDIA

CERTIFICATE OF ENVIRONMENTAL AUDIT

THIS IS TO CERTIFY THAT

NALBARI COMMERCE COLLEGE

JAPARKUCHI, P.O - CHOWKBAZAR NALBARI - 781335 ASSAM, INDIA HAS SUCCESSFULLY UNDERGONE "ENVIRONMENTAL AUDIT" ON 30TH DECEMBER 2022 TO ASSESS THE INITIATIVE PLANNING AND EFFORTS CARRIED OUT IN THE CAMPUS TO KEEP ENVIRONMENT FRIENDLY ATMOSPHERE TO THE STAKEHOLDERS WAS FOUND **SATISFACTORY**.

DECEMBER 30, 2022

PROF. DR. SUBHENDU SEKHAR BAG, *CCHEM, FRSC, FICS*
DEPARTMENT OF CHEMISTRY & CENTRE FOR THE ENVIRONMENT
INDIAN INSTITUTE OF TECHNOLOGY GUWAHATI, GUWAHATI, ASSAM, INDIA

GREEN AUDIT

NALBARI COMMERCE COLLEGE

2022-2023

Centre for the Environment
Indian Institute of Technology Guwahati
Guwahati-781039, Assam, India

GREEN AUDIT

NALBARI COMMERCE COLLEGE

2022-2023

Under the consultation of
Prof. Dr. Subhendu Sekhar Bag, *CChem, FRSC, FICS*
Professor, Department of Chemistry & Centre for the Environment

Centre for the Environment
Indian Institute of Technology Guwahati
Guwahati-781039, Assam, India

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EXECUTIVE SUMMARY

A formal assessment of a college's environmental impact is known as a "green audit." Internal environmental audits (also known as "Green Audits") are carried out as part of this practice to assess the campus's real situation. A green audit may be a helpful tool for a college to identify where and how they are consuming the most resources, such as water and electricity. The college can then think about how to make adjustments and save money. In order to better waste reduction plans or start recycling projects, it may also be used to determine the kind and volume of garbage. Green audits and the application of mitigation strategies benefit the college, the students, and the environment as a whole. Additionally, it can develop environmental awareness, ethical conduct, and health consciousness. It helps employees and students understand the effects of going green on campus.

Green auditing encourages financial savings by utilising resources less. It offers students and instructors the chance to build a sense of personal ownership and social responsibility. It may be said that institutional self-enquiry is a natural and necessary outgrowth of a quality educational institution if self-enquiry is a natural and necessary offshoot of a quality education. The college must thus assess its own contributions to a sustainable future. The importance of higher education institutions in regard to environmental sustainability is on the rise as it becomes a national issue that affects the entire country.

Initial management interviews were conducted as part of the audit process at Nalbari Commerce College in order to explain policies, actions, records, and the staff's and students' participation in putting mitigating measures into place. Interviews with staff and students came next, and then data was gathered via a questionnaire, records were reviewed, practises were observed, and observable results were noted. The strategy also made sure that management and employees were engaged in the college's green auditing process. The Nalbari Commerce College baseline data will serve as a helpful resource for resource management, project planning, campus greening, and the implementation of sustainable development at the college. The college will be able to compare its programmes

and operations with those of comparable institutions, identify areas that require development, and decide which initiatives should be implemented first using the data that is already available. We anticipate that management will be dedicated to putting the green audit suggestions into practice.

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CHAPTER 1

INTRODUCTION

Nalbari Commerce College, Nalbari, is a premier co-educational institution of higher education, primarily imparting education in commerce. Experiencing the vacuum and realising the urgent need for such an institution, a good number of personalities from different walks of life, comprising educationists and intellectuals, social workers, thinkers, and businessmen, made a drive to establish Nalbari Commerce College in the late eighties of the past century. The pioneering zeal and endeavour of those learned persons gave birth to the college on August 18, 1979. It is located in the southern part of the district headquarter and at a distance of about 72 kilometres from the state capital. Started as a single-faculty commerce college affiliated to Gauhati University, the college came under the deficit grants-in-aid system in 1992, and then in 2005, the college was provincialized by the Govt. of Assam as per the provisions of the Assam College Employees (Provincialization) Act, 2005. The college celebrated its Silver Jubilee in 2009, a few years later than its actual time due to some constraints. The college was assessed and accredited (1st cycle) by the National Assessment and Accreditation Council (NAAC) in 2004 with a "C+' grade. But in 2016, the college was reaccredited with an "A' grade (CGPA 3.10) by NAAC in its assessment and accreditation of the college for the 2nd cycle. Initially, the college started a Pre-University Course in Commerce under Gauhati University, and then in 1984, it started a Bachelor of Commerce (B.Com.) Programme under the same university, offering majors in Accountancy, Management, and Finance. Then, in the academic session 2015–2016, the college started the Master of Commerce (M.Com.) programme after obtaining the necessary permission from Gauhati University. Besides, the college was also granted permission to start the Post-Graduate Diploma in Computer Application (PGDCA) in regular mode by the affiliating university in the academic session 2015–2016. Further, in 2017, the Govt. of Assam selected Nalbari Commerce College, Nalbari, along with four other colleges of the state, and granted financial assistance for introducing the Bachelor of Vocational Education in Information Technology under Gauhati University in

regular mode, which was introduced in the Academic Session 2017–2018. The objective of the course is to induce skill-based knowledge in order to promote self-dependency and employability. As per the direction of the Directorate of Higher Education, Assam, the college decided to start the Arts Stream from the Academic Session 2017-2018, offering a Higher Secondary Course in Arts Stream under the Assam Higher Secondary Education Council, Guwahati, and a Bachelor of Arts (B.A.) under Gauhati University, Guwahati, and accordingly, the decision was implemented from 2017-18. It is a matter of pride that the college has also been sanctioned grants for introducing the Bachelor of Vocation (B.Voc.) Programme in Retail Management by the University Grants Commission, New Delhi, recently with the objective of producing skilled human resources to fit into the present job situations in the retail sector. Accordingly, the college has decided to start the programme in the academic session 2019–2020, and in this regard, the college has arranged all necessary infrastructure and human resources for implementing the course. Moreover, the college also provides the opportunity to learn certain short-term computer courses as well as certain vocational courses on a self-finance basis so that the students can accommodate themselves in the current job market immediately after their graduation. The college has been offering various PG and UG programmes simultaneously in distance mode under Krishna Kanta Handiqui State Open University (KKHSOU), Assam, and the Institute of Distance and Open Learning (IDOL), Gauhati University. There is also a Study Centre of Assam State Open Schooling (ASOS) under the Assam Higher Secondary Education Council (AHSEC) where learners can pursue higher secondary education in arts and commerce streams. Besides, the college has been offering the D.El.Ed. Programme under NIOS, Guwahati, since 2017.

1.1 VISION

Vision

The vision of the college is to motivate and strengthen new entrants to the institution to acquire practical education for being self-employed, making them job-givers rather than job-seekers, and also to inject work culture so as to confront the challenges that have been emerging.

1.2 TOTAL CAMPUS AREA & COLLEGE BUILDING SPREAD AREA

Campus area 6889 m^2.

Built up area 2787 m^2.

List of places from where students commute

Adabari	Burlitpar	Khalihapara
Adattari	Chakirghat	Kharkaldi
Ahta	Chanda	Khudra Chinadi
Amrattari	Dagapara	Kurihamari
Angradi	Damal	Lawtola
Badaniakhia	Darangi Para	Lawtolipara
Baitha Bhanga	Dirua	Loharkhatha
Bakri Kuchi	Domdoma Pathar	Lowthari
Balarchar	Garia Angradi	Madhya Kazia
Balikuchi	Gharua Baha Gaon	Meruattari
Bamunangradi	Gharua Baha Pathar	Mugdi
Bamunbari	Ghoga	Mukalmua
Bamundittari	Ghorathal	Mulaghata
Bangnapota	Goldighala	N.C. Pubkazia
Baramara	Hamlakur	Na Para Pam
Bardhap	Hanapara	Nadia
Barnibari	Howlighat	Naptipara
Barsulia	Kalarchar	Narayanpur
Batamara	Kalardia	Natun Chaprapara
Belbeli	Kaldi	No.1.Balattari
Bhanganmari	Kalputa	No.1.Barbala
Bhelakhaiti	Kaltali	No.1.Bhelamari
Bhelamari No.4	Kandhbari	No.1.Bhelengimari
Bhelengimari	Kaorekhaiti	No.1.Bortola
Bhelengimari	Kasua Pathar	No.1.Doulasai
Bonpura	Khagrakati	No.1.Ghorathal

No.1.Joysagar
No.1.Kaplabari
No.1.Kekan Kuchi
No.1.Larkuchi
No.1.Narua
No.1.Natun
Chaprapara
No.2.Balattari
No.2.Barbala
No.2.Bhelamari
No.2.Bhelengimari
No.2.Bortola
No.2.Doulasal
No.2.Joysagar
No.2.Kaplabari
No.2.Kekankuchi
No.2.Larkuchi
No.2.Narua
No.2.Natun
Chaprapara
No.3.Barbala
No.3.Bhelamari
No.3.Bhelengimari
No.3.Bortola
No.3.Larkuchi
No.3.Natun
Chaprapara
No.4.Barbala
No.4.Bortola
No.5.Barbala
Pachim Kazia
Paikan Bonmaza
Paikandirua
Peradhara
Pubkazia
Puran Akhia
Puran Chaprapara
Rampur
Rowmari Domdoma
Sapkata
Sarusulia
Satemari
Sidalkuchi Lachima
Sobhamari
Sungarbari
Sutarkuchi
Tegheriattari
Tilardia
Tupkar Char
Alengidal
Amaya-Pur
Arara
Balakuchi
Balikoria Kharjara
Balikuchi
Balilesha
Bar Khanajan
Bar-Agra
Bar-Agra
Barchenikuchi
Bardhantali
Barkura
Barmurikona
Barpipalia
Barsarkuchi
Bhadra
Bhutkatra
Bhuyarkuchi
Bistupur
Budru Kuchi
Chandra Kuchi
Charia
Chengnoi
Cherabari
Dakhin Bejera
Dehar Katara
Deharkalakuchi
Dhamdhama
Dhantala
Dhekiabari
Dokuchi
Garemara
Gobindapur
Guakuchi
Haripur
Jaha
Jaijabari
Jamtola
Janigog
Japarkuchi
Joy Mangla
Kardohola
Katahkuchi
Katla Barkuchi
Kendukuchi
Khat-Katra

Khudra Katra
Khudra Sankara
Khudra Sonkara
Khudrachenikuchi
Khudrakatla Barkuchi
Khudrapipalia
Kumarikata
Madan-Mohan
Sakhowa
Madhapur
Mairadonga
Majdia
Makal Daba
Mugkuchi
Nalbari Gaon
Namati
Namdonga
Nanda Gaon
Nankar Bhaira
Niz-Batahgila
Pachimkhatar
Kalakuchi
Paikarkuchi
Paila
Pajipar
Parowa
Pitnipara
Porakuchi
Pub-Kalakuchi
Sahpur
Sandha
Sandha Kairara
Sariahtali
Tantra Sankara
Terechia
Tilana
Amani
Bagurihati
Barhelacha
Bari
Barkhetri Barni
Barnarddi
Batshor
Bhairaghol
Bihampur
Bihampur
Billeswar
Chamata
Churchuri
Dahudi
Dangardi
Dehar Bolawa
Fulguri
Gamarimari
Gandhia
Gangapur
Ghilazari
Goalpara
Godira
Jagara
Kaihati
Kandubari
Kathla
Khakhrisal
Khatarupiabathan
Khelua
Khudra Khetribarni
Kutnikuchi
Lakhapur
Larakuchi
Mohbiyani
Mohkholi
Nadla
Nalicha
Niz Mularkuchi
Nizpokowa
Niztapa
Pahlanpara
Panigaon
Pukhura
Santheli
Simalia
Solmari
Sukekuchi
Thutikata
Akna
Amara
Arora
Baghmara
Balipara
Balitara No.1
Balitara No.2
Balitara No.3
Balitara No.4
Bangaon
Bar Bistupur

Barajal
Baralkuchi
Barbhag Nalbari
Bardhanara No.1
Bardhanara No.2
Barghopa
Barigaon
Barjabari Hati
Bhadra Bangal
Bhanukuchi
Bhitha Mahal
Bilpar
Burburi
Chenikuchi
Choto Alliya
Ciling
Dalbari Kaniha
Datara
Dhurkuchi
Dihjari
Dolua
Gatiyan
Ghohkuchi
Gathiakuchi
Ghongar Kuchi
Gorguri
Guakuchi
Hablakha
Hahdali
Jab-Jab Kuchi
Jugurkuchi Sripur
Katakiya
Kathora
Katuriya
Kayajeni
Kayakuchi
Keherua
Khatikuchi
Khudra Bistupur
Kundar Gaon
Kundargaon
Jaberihati
Madhapur
Majarbari
Mayusiral
Nagaon
Naharbari
Namati
Narayangaon
Narikuchi
Narpara
Nilpur
Nimualatima No.1
Niz-Barigog
Niz-Barsial
Niz-Kh-Agta
No.1 Sagarkuchi
No.2 Nimualatima
No.2 Sagarkuchi
No.3 Sagarkuchi
No.4 Sagarkuchi
Pachim Nalbari
Paisara
Panbari
Panimazkuchi
Patkata
Ponar Kowniya
Pub-Barsiral
Rampur Agagara
Rangafali
Sahanbistupur
Sankuriha
Sataibari
Sathamou
Satra
Tini Pukhuri
Uttar Barsial
Velamari
Bakuajari
Bali
Bamunbari
Bangaon
Bar Makhibaha
Barbari
Barbhagjari
Barkachuajar
Bhalukdonga
Bhathuakhana
Bhojkuchi
Bhurkuchi
Borgaon
Chapara
Daloigaon
Digheli
Goboradol
Haribhanga

Heramjhar
Jalkhana
Khudra Makhibaha
Madhapur
Mathurapur
Murmela
Nakhara
Nakuchi
Narnartari
Niz Khana
Niz Namati
No.1.Nathkuchi
No.2.Nathkuchi
Parmankhowa
Piplibari
Ranakuchi
Ratanpur
Saktipara
Saru Kachuajhar
Sathikuchi
Thaikarakuchi
Arangamou
Arikuchi
Athgharia
Bajali Udaypur
Bala
Bangalmur
Bar Barara
Barbukia
Bargacha
Bari Datara
Barkhola
Barkulhati
Barkuriha
Barsimaliya
Baushi Udaypur
Bezkuchi
Bhabanipur
Bihdia
Chatma
Dehar Kuchi
Dhaniagog
Ding Dingi
Dokoha
Jugurbari
Jugurkuchi
Kahikuchi
Kalag
Kamarkuchi
Karia
Katalkuchi
Katpuha
Khudra Dingdingi
Khudra Kulhati
Kismat
Larmabatakuchi
Moura
Nakheti
Nanoi
Pajipar
Panbari
Pandula
Porakuchi
Purna Daichapara
Purna Kamdev
Raimadha
Raitkuchi
Ranakuchi
Samarkuchi
Sanekuchi
Saru Barara
Simalia
Sonkani
Sonkuriha No.1
Sonkuriha No.2
Tarmatha
Thanpatkuchi
Ukhara
Ulabari
Uttarkuchi
Balizar
Banbhag Solmari
Bangnabari
Barkhetri Banekuchi
Barnagar Banekuchi
Baushipara
Bechimari
Buri Nagar
Danguapara
Jawardi
Kachimpur
Kaithalkuchi
Kathalbari
Kendukuchi
Kharsitha
Khata Numbarbhog

Khukhundi
Madhupur
Niz-Banekuchi
Rajakhat Banekuchi
Sandheli
Suplekuchi
Taumura
Agchia
Akhara
Alagjhar
Anandapur
Badulipara
Bangalipara
Barama
Barimakha
Barsimlaguri
Batachara
Bhogpur
Borjhar
Dahkaunia
Dangarmakha
Debacharia
Dipta
Dolbari
Dongpar
Gelpajhar
Gormara
Jaripar
Kadamtola
Kaklabari
Kaljhar
Khairabari
Kharua
Kharuajan
Khetrapara
Khutirpathar
Kumarpara
Lakhipar
Mahkharia
Merkuchi
Murkuchiapara
Niz-Juluki
Puran Sripur
Saukuchi
Silakuti
Suradi
Thanguri
Tokankata
Amingaon
Angardhua
Baganpara
Barikadanga
Benchimari
Bher Bheri
Boglamari
Boglamari NC
Bongaon
Dakhin Muthiabari
Dakhinkuchi
Dhamdhama
Dhekibhanga
Diapar
Diringapur
Gerua
Ghoramara
Goalbil
Gorbhitor
Holapar
Horhoria
Jartaluk
Jopadong
Kadamtola
Khagrabari
Khairani
Madaltana
Mohina
Monipur
Muktapur
Muthiabari
Nichilamari
Odala
Polokata
Roumari
Sameridar
Santipur
Simlabari
Subankhata
Subankhata NC
Thalkuchi
Tupalia
Udaypur
Uttar Kuchi
Uttar Subankhata
Uttarpara

1.3 PREVIOUS NAAC GRADING

NAAC accreditation First cycle: **C+** Grade, **63** (Overall Score) in **2004.**

NAAC re-accreditation Second cycle: **A** Grade, **3.10** (CGPA) in **2016.**

1.4 CAMPUS INFRASTRUCTURE

Auditorium

The college has an auditorium with a seating capacity of 300, which is the convergence point of academic and cultural activities.

Girls' Common Room

The college has one girls' common room, which can accommodate 30 girls, aimed at conducting rehearsals for small-scale events like music, dance, and drama club activities and meetings of various student support organisations.

Boys' Common Room

The college has one boys' common room, which can accommodate 50 boys, aimed at conducting rehearsals for small-scale events like music, dance, and drama club activities and meetings of various student support organisations.

Information and Career Guidance Cell (ICGC) and Conference Room

The college has two rooms well equipped with audio-visual facilities for the smooth conduct of seminars, conferences, and other activities.

IQAC Room

The IQAC room has the offices of the coordinators of IQAC.

Library

The college library is fully computerised and digitalized with a machine-readable cataloguing facility and has a collection of over 14,957 books, 2 journals, 9 magazines, 1 national and 2 regional newspapers, 13 lakh e-books and e-journals. Internet browsing facilities are also available.

Computer Lab

One well-equipped computer lab with 60 PCs is available at the college.

Canteen

The college has one clean and hygienic canteen, and the caterers provide nutritional foods to the staff and students at subsidised rates. The canteen functions from 9 a.m. to 5 p.m.

Women's Hostel

Girls may stay at a full-service hostel that has been operating for the past ten years and is equipped with all the latest conveniences. 33 seats total, distributed based on merit. Girls from areas with poor communication and transportation infrastructure, however, are given preference.

Indoor Sports Complex

The college has an indoor sport complex with state-of-the art equipment. It provides facilities for indoor sports and games.

National Service Scheme (NSS)

The college has a separate room for the National Service Scheme (NSS).

National Cadet Corps (NCC)

The college has a separate room for the National Cadet Corps (NCC).

Bharat Scouts & Guides

The college has a separate room for Bharat Scouts and Guides.

Krishna Kanta Handiqui State Open University Centre

The college has a separate room for the Krishna Kanta Handiqui State Open University (KKHSOU) Centre.

CHAPTER 2

PRE-AUDIT STAGE

A pre-audit meeting provided an opportunity to reinforce the scope and objectives of the audit, and discussions were held on the practicalities associated with the audit. This meeting is an important prerequisite for the green audit because it is the first opportunity to meet the auditee and deal with any concerns. It was held at Nalbari Commerce College on November 28, 2022. The meeting was an opportunity to gather information that the audit team could study before arriving on site. The audit protocol and audit plan were handed over at this meeting and discussed in advance of the audit itself. The Nalbari Commerce College pre-audit meeting was conducted successfully, and necessary documents were collected directly from the college before the initiation of the audit processes. The actual planning of audit processes was discussed in the pre-audit meeting. The audit team was also selected in this meeting with the help of staff and the college management. The audit protocol and audit plan were handed over at this meeting and discussed in advance of the audit itself. The audit team worked together, under the leadership of the lead auditor, to ensure completion within the brief and scope of the audit.

2.1 COMMITMENT OF THE COLLEGE MANAGEMENT

The management of the college has shown its commitment to green auditing during the pre-audit meeting. They were ready to encourage all green activities. It was decided to promote all activities that are environment-friendly, such as awareness programmes on the environment, campus farming, planting more trees on the campus, etc., after the green auditing. The management of the college was willing to formulate policies based on the green audit report.

2.2 SCOPE AND GOALS OF GREEN AUDITING

A clean and healthy environment aids effective learning and provides a conducive learning environment. There are various efforts around the world to address environmental education issues. A green audit is the most efficient and ecological way to manage environmental problems. It is a kind of professional care that is the responsibility of each individual who is part of an economic, financial, social, or environmental factor. It is necessary to conduct a green audit on college campuses because students become aware of the benefits of a green audit and its advantages for saving the planet, and they become good citizens of our country.

Thus, a green audit becomes necessary at the college level. A very simple indigenous system has been devised to monitor the environmental performance of Nalbari Commerce College. It comes with a series of questions to be answered on a regular basis. This innovative scheme is user-friendly and totally voluntary. The aim of this is to help the institution set environmental examples for the community and to educate the young learners.

2.3 BENEFITS OF THE GREEN AUDITING

- ✓ To provide a basis for improved sustainability
- ✓ To create a green campus
- ✓ To enable waste management through reduction of waste generation, solid waste, and water recycling
- ✓ To create a plastic-free campus and evolve health consciousness among the stakeholders
- ✓ More efficient resource management
- ✓ Recognise cost-saving methods through waste minimization and management.
- ✓ Point out the prevailing and forthcoming complications.
- ✓ Authenticate conformity with the implemented laws
- ✓ Empower the organisations to frame better environmental performance.
- ✓ Enhance the alertness for environmental guidelines and duties.
- ✓ Impart environmental education through a systematic environmental management approach and improve environmental standards.
- ✓ Benchmarking for environmental protection initiatives
- ✓ Financial savings through a reduction in resource use
- ✓ Development of ownership and personal and social responsibility for the college and its environment
- ✓ Enhancement of the college profile
- ✓ Developing an environmental ethic and value system in youngsters

Green auditing should become a valuable tool in the management and monitoring of environmental and sustainable development programmes at the college.

2.4 TARGET AREAS OF GREEN AUDITING

A green audit forms part of the resource management process. Although they are individual events, the real value of green audits is the fact that they are carried out at defined intervals, and their results can illustrate improvement or change over time. The eco-campus concept mainly focuses on the efficient use of energy and water, minimising waste generation or pollution, and economic efficiency. All these indicators are assessed in the process of "green auditing of educational institutes." Eco-campus focuses on the reduction of emissions, procures a cost-effective and secure supply of energy, encourages and enhances energy use conservation, promotes personal action, reduces the institute's energy and water consumption, reduces waste to landfills, and integrates environmental considerations into all contracts and services considered to have significant environmental impacts. Target areas included in this green audit are water, energy, waste, a green campus, and carbon footprint.

2.4.1 AUDITING FOR WATER MANAGEMENT

Water is a natural resource; all living things depend on it. While freely available in many natural environments, in human settlements, potable (drinkable) water is less readily available. We need to use water wisely to ensure that drinkable water is available for all now and in the future. A small drip from a leaky tap can waste more than 180 litres of water per day; that is a lot of water to waste—enough to flush the toilet eight times! It is therefore essential that any environmentally responsible institution examine its water use practises. Water auditing is conducted for the evaluation of facilities for raw water intake and the determination of facilities for water treatment and reuse. The concerned auditor investigates the relevant methods 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 practises.

2.4.2 AUDITING FOR ENERGY MANAGEMENT

Energy cannot be seen, but we know it is there because we can see its effects in the forms of heat, light, and power. This indicator addresses energy consumption, energy sources, energy monitoring, lighting, appliances, and vehicles. Energy use

is clearly an important aspect of campus sustainability and thus requires no explanation for its inclusion in the assessment. An old incandescent bulb uses approximately 60 to 100 W, while an energy-efficient light-emitting diode (LED) uses only less than 10 W. Energy auditing deals with conservation and methods to reduce consumption related to environmental degradation. It is therefore essential that any environmentally responsible institution examine its energy use practises.

2.4.3 AUDITING FOR WASTE MANAGEMENT

Pollution from waste is aesthetically unpleasing and results in large amounts of litter in our communities, which can cause health problems. Plastic bags and discarded ropes and strings can be very dangerous to birds and other animals. This indicator addresses waste production and disposal, plastic waste, paper waste, food waste, and recycling. Solid waste can be divided into two categories: general waste and hazardous waste. General wastes include what is usually thrown away in homes, schools, and colleges, such as garbage, paper, tins, and glass bottles. Hazardous waste is waste that is likely to be a threat to health or the environment, like cleaning chemicals and gasoline. Unscientific landfills may contain harmful contaminants that leach into soil and water supplies and produce greenhouse gases, contributing to global climate change. Furthermore, solid waste often includes wasted material resources that could otherwise be channelled into better service through recycling, repair, and reuse. Thus, the minimization of solid waste is essential to a sustainable college. The auditor diagnoses the prevailing waste disposal policies and suggests the best way to combat the problems. It is therefore essential that any environmentally responsible institution examine its waste processing practises.

2.4.4 AUDITING FOR GREEN CAMPUS MANAGEMENT

Biodiversity is facing serious threats from habitat loss, pollution, overconsumption, and invasive species. Species are disappearing at an alarming rate, and each loss affects nature's delicate balance and our quality of life. Without this variability in the living world, ecological systems and functions would break down, with detrimental consequences for all forms of life, including human beings.

Newly planted and existing trees decrease the amount of carbon dioxide in the atmosphere. Trees play an important ecological role within the urban environment, as well as supporting improved public health and providing aesthetic benefits to cities. In one year, a single mature tree will absorb up to approximately 21 kg of carbon dioxide from the atmosphere and release it as oxygen. The amount of oxygen that a single tree produces is enough to provide one day's supply of oxygen for people. Trees on the campus impact the mental health of the students as well; studies have shown that trees greatly reduce stress, which is a huge deal considering many students are under some amount of stress.

2.4.5 AUDITING FOR CARBON FOOTPRINT MANAGEMENT

The commutation of stakeholders has an impact on the environment through the emission of greenhouse gases into the atmosphere resulting from the burning of fossil fuels (such as gasoline). The most common greenhouse gases are carbon dioxide, water vapour, methane, nitrous oxide, and ozone. Of all the greenhouse gases, carbon dioxide is the most prominent, comprising 412.5 ppm of the Earth's atmosphere in 2020, higher than at any point in at least the past 800,000 years. The release of carbon dioxide gas into the Earth's atmosphere through human activities is commonly known as carbon emissions.

An important aspect of doing an audit is being able to measure your impact so that we can determine better ways to manage it. In addition to the water, waste, energy, and biodiversity audits, we can also determine what our carbon footprint is based on the amount of carbon emissions created. One aspect is to consider the distance and method travelled between home and college every day. It undertakes the bulk measurement of carbon dioxide equivalents exhaled by the organisation through which the carbon accounting is done. It is necessary to know how much the organisation is contributing to sustainable development. It is therefore essential that any environmentally responsible institution examine its carbon footprint.

2.5 METHODOLOGY OF GREEN AUDITING

The purpose of the audit was to ensure that the practises followed on campus are in accordance with the green policy adopted by the institution. The criteria,

methods, and recommendations used in the audit were based on the identified risks. The methodology includes: preparation and filling up of the questionnaire; physical inspection of the campus; observation and review of the document; interviewing responsible persons; and data analysis, measurements, and recommendations. The methodology adopted for this audit was a three-step process comprising:

2.5.1 DATA COLLECTION

In the preliminary data collection phase, exhaustive data collection was performed using different tools such as observation, surveys, communicating with responsible persons, and measurements.

The following steps were taken for data collection:

- ✓ The team went to each department, centre, library, canteen, etc.
- ✓ Data about the general information was collected by observation and interview.
- ✓ In some cases, the power consumption of appliances was recorded by taking an average value.

2.5.2 DATA ANALYSIS

Detailed analysis of the collected data includes calculation of energy consumption, analysis of the latest electricity bill for the campus, and understanding the tariff plan provided by the Assam Power Distribution Company Limited (APDCL). Data related to water usage was also analysed using appropriate methodology.

2.5.3 RECOMMENDATION

On the basis of the results of data analysis and observations, some steps for reducing power and water consumption were recommended. Proper treatments for waste were also suggested. The use of fossil fuels has to be reduced for the sake of community health. The above target areas, particular to the college, were evaluated through a questionnaire circulated among the students for data collection. Five categories of questionnaires were distributed. The formats of these are given in the next page.

2.6 SURVEY FORMS

FORM I

Auditing for water management

1) List the uses of water in your college.
2) What are the sources of water in your college?
3) How many tube wells or bore wells are there in your college?
4) number of motors used for pumping water from each well?
5) What is the total horsepower of each motor?
6) What is the depth of each tube well or bore well?
7) What is the present depth of water in each tube well or bore well?
8) How does your college store water?
9) Quantity of water stored in your overhead water tank? (in litres)
10) Quantity of water pumped every day? (in litres)
11) If there is water waste, specify why.
12) How can the waste be prevented or stopped?
13) Locate the point of entry for water and the point of exit for waste water in your college.
14) Where does waste water come from?
15) Where does the waste water go?
16) What are the uses of waste water in your college?
17) What happens to the water used in your labs? Whether it gets mixed with ground water
18) Is there any treatment for the lab water?
19) Write down four ways that you could reduce the amount of water used in your college.
20) Record water use from the college water metre for twelve months.
21) Bimonthly water charges paid to water connections, if any
22) number of water coolers Amount of water used per day? (in litres)
23) number of water taps Amount of water used per day?
24) No. of bath rooms in staff rooms, common, hostels, amount of water used per day?

25) number of toilets and urinals Amount of water used per day?
26) number of water taps in the canteen. Amount of water used per day?
27) Amount of water used per day for garden use.
28) Total use of water in each hostel?
29) At the end of the period, compile a table to show how many litres of water have been used in the college for each purpose.
30) Is there any water used for agricultural purposes?
31) Does your college harvest rainwater?
32) If yes, how many rainwater harvesting units are there? (Approx. amount)
33) How many of the taps are leaky? Amount of water lost per day?
34) Are there signs reminding people to turn off the water? Yes or No
35) Are there any waterless toilets? _____
36) How many water fountains are there? _____
37) How many water fountains are leaky? _____
38) Is drip irrigation used to water plants outside? YES/NO
39) How often is the garden watered?
40) Quantity of water used to water the ground
41) Quantity of water used for bus cleaning (Litres per day)
42) Amount of water for other uses? (items not mentioned above)
43) Area of the college land without a tree or building canopy.
44) Is there any water management plan at the college?
45) Are there any water-saving techniques followed at your college? What are they?
46) Please share some ideas for how your college could save more water.

FORM II

Auditing for energy management

1) List ways that you use energy in your college. (Electricity, electric stove, kettle, microwave, LPG, firewood, petrol, diesel, and others).
2) Electricity bill amount for the last year (by month)
3) Amount paid for LPG cylinders for the last year (by month)
4) Weight of firewood used per month and amount of money spent.
   Also, mention the amount spent on gasoline, diesel, or others for generators.
5) Are there any energy-saving methods employed at your college? If yes, please specify. If not, suggest some.
6) How much money does your college spend on energy such as electricity, gas, firewood, etc. in a month? (Record monthly for the year 2022–23.)
7) How many CFL bulbs has your college installed? Mention use (hours used per day for how many days in a month).
8) Energy used by each bulb per month? (For example, a 60-watt bulb x 4 hours' x the number of bulbs = kwh.)
9) How many LED bulbs are used in your college? Mention the use (hours used/day for how many days in a month).
10) Energy used by each bulb per month? (kwh).
11) How many incandescent (tungsten) bulbs has your college installed? Mentions use (hours used per day for how many days in a month)
12) Energy used by each bulb per month? (kwh).
13) How many fans are installed in your college? Mention use (hours used per day for how many days in a month).
14) Energy used by each fan per month? (kwh)
15) How many air conditioners are installed in your college? Mention use (hours used per day, for how many days in a month).
16) Energy used by each air conditioner per month? (kwh).
17) How much electrical equipment, including weighing balances, is installed in your college? Mention the use (hours used/day for how many days in a month).

18) Energy used by each piece of electrical equipment per month? (kwh).
19) How many computers are there at your college? Mention the use (hours used/day for how many days in a month).
20) Energy used by each computer per month? (kwh)
21) How many photocopiers are installed at your college? Mention use (hours used per day for how many days in a month).
22) How many cooling apparatuses are installed in your college? Mention use (hours used per day for how many days in a month).
23) Energy used by each cooling apparatus per month? (kwh)
    Mention use (hours used per day for how many days in a month).
24) Energy used by each photocopier per month? (kwh) Mention the use (hours used/day for how many days in a month) of how many inverters your college installed. Mentions use (hours used per day for how many days in a month)
25) Energy used by each inverter per month? (kwh)
26) How much electrical equipment is used in the different labs at your college? Mention the use (hours used/day for how many days in a month).
27) Energy used by each piece of equipment per month? (kwh)
28) How many heaters are used in the canteen of your college? Mention the use (hours used/day for how many days in a month).
29) Energy used by each heater per month? (kwh)
30) No street lights in your college?
31) Energy used by each street light per month? (kwh)
32) No TV in your college and hostels?
33) Energy used by each TV per month? (kwh)
34) Any other item that uses energy (please write the energy used per month). Mention the use (hours used/day for how many days in a month).
35) Are any alternative or nonconventional energy sources employed or installed in your college? (photovoltaic cells for solar energy, windmills, energy-efficient stoves, etc.) Specify.
36) Do you run "switch off" drills at college?
37) Are your computers and other equipment in power-saving mode?

38) Does your machinery (TV, AC, computer, weighing balance, printers, etc.) run on standby mode most of the time? If yes, how many hours?
39) What are the energy conservation methods adopted by your college?
40) How many boards are displayed for saving energy awareness?
41) How much ash is collected after burning firewood per day in the canteen?
42) Write a note on the methods, practises, or adaptations by which you can reduce the energy use on your college campus in the future.

Calculation of energy for electrical appliances

Appliances	Power used in (watt)	Usage per day (hours)	Number of appliances	Average kWh per day (Watt X hours X Number X 1000)	Average kWh per month (Watt X hours X Number X 1000 x 30)
LED bulbs					
Fans					
Tube Lights					
Computers					
Laptops					
Photocopiers					
10 KVA UPS					
Inverters					
LED Televisions					
LCD Televisions					
Air Conditioners					
CCTV Cameras					
Printers					
Projectors					
Sound Systems					
Exhaust Fans					
Water Purifier					
Water Cooler					
Refrigerators					
Wifi Routers					
Water Pumps					

FORM III

Auditing for Waste Management

1) What is the total strength of students, teachers, and non-teaching staff in your college?

	No. of Students	No. of Teachers No.	Non-teaching staff
Gents			
Ladies			
Total			

2) Which of the following are available at your college? Give the area occupied and the number

Garden area	Garbage dump (number)
Playground area	Computer Lab
Kitchen	Canteen
Toilets (number)	Car/scooter shed area
Number of class rooms	Office rooms
Others (specify)	

3) Which of the following are found near your college?

Mark the level of disturbance it creates for the college on a scale of 1 to 9.

Municipal dump yard

Garbage heap

Public convenience

Sewer line

Stagnant water

Open drainage

Industry: (Mention the type)

Bus or railway station

Markets, shopping complexes, and public halls

WASTE

Does your college generate any waste?

If so, what are they? How much quantity? Number or weight

E-waste

Hazardous waste (toxic)

Solid waste

Dry leaves

Canteen waste

Liquid waste

Glass

Unused equipment

Medical waste, if any

Napkins

Others (Specify)

Is there a waste treatment system in the college?

Is there any treatment for toilet, urinal, or sanitary napkin waste?

4) What is the approximate quantity of waste generated per day? (in Kilograms)

Office

Approx	Bio degradable	Non-Bio degradable	Hazardous	Others
< 1 kg.				
2 - 10 kg				
> 10 kg.				

Computer Lab

Approx	Bio degradable	Non-Bio degradable	Hazardous	Others
< 1 kg.				
2 - 10 kg				
> 10 kg.				

Canteen/kitchen

Approx	Bio degradable	Non-Bio degradable	Hazardous	Others
< 1 kg.				
2 - 10 kg				
> 10 kg.				

5) Why is waste a problem?

6) Whether waste is polluting ground or surface water How?

7) Whether waste is polluting the air in the college How?

8) How is the waste generated at the college managed? Methods
   Composting
   Recycling
   Reusing
   Others (specify)
9) How many separate boxes do you think you would need to put in a classroom to start a waste segregation and recycling campaign? What should be the purpose of each box? (Develop a colour code with reasons.)
10) Do you use recycled paper in college?
11) Is there any waste-to-wealth programme practised in the college?
12) How would you spread the message of recycling to others in the community? Have you taken any initiatives? If yes, please specify.
13) Can you achieve zero garbage in your college? (Reduce, Recycle, Reuse, Refuse) If yes, how?

FORM IV

Auditing for green campus management

1) Is there a garden at your college? Area?
2) Do students spend time in the garden?
3) List the plants in the garden, with approximate numbers of each species.
4) Suggest plants for your campus. (Trees, vegetables, herbs, etc.)
5) List the species planted by the students, with numbers.
6) Whether you have displayed the scientific names of the trees on campus
7) Are there any plantations on your campus? If yes, specify the area and type of plantation.
8) Is there a vegetable garden at your college? If yes, how much area?
9) Is there a medicinal garden at your college? If yes, how much area?
10) What are the vegetables cultivated in your vegetable garden? (Mention the quantity of harvest in each season.)
11) How much water is used in the vegetable garden and other gardens? (Mention the source and quantity of water
12) Who is in charge of gardens in your college?
13) Are you using any type of recycled water in your garden?
14) List the name and quantity of pesticides and fertilizers used in your gardens?
15) Whether you are doing organic farming in your college? How?
16) Do you have any composting pit in your college? If yes, what are you doing with the compost generated?
17) What do you doing with the vegetables harvested? Do you have any student market?
18) Is there any botanical garden in your campus? If yes give the details of campus flora.
19) Give the number and names of the medicinal plants in your college campus.
20) Any threatened plant species planted/conserved?
21) Is there a nature club in your college? If yes, what are their activities?
22) Is there any arboretum in your college? If yes details of the trees planted.

23) Is there any fruit yielding plants in your college? If yes details of the trees planted.
24) Are there any groves in your college? If yes details of the trees planted.
25) Is there any irrigation system in your college?
26) What is the type of vegetation in the surrounding area of the college?
27) What are the nature awareness programmes conducted in the campus? (2022-23)
28) What is the involvement of students in the green cover maintenance?
29) What is the total area of the campus under tree cover? Or under tree canopy?
30) Share your IDEAS for further improvement of green cover.

FORM V

Auditing for Carbon Footprint

1) What is the total strength of students and teachers in your college?

	No. of Students	No. of Teachers	No. of non-teaching staff
Gents			
Ladies			
Total			

2) Total number of vehicles used by the stakeholders of the college. (per day)
3) No. of cycles used
4) No. of two-wheelers used (average distance travelled, quantity of fuel, and amount used per day)
5) No. of cars used (average distance travelled, quantity of fuel, and amount used per day)
6) No. of persons using common (public) transportation (average distance travelled, quantity of fuel used, and amount used per day)
7) No. of persons using college conveyance by the students, non-teaching staff, and teachers (average distance travelled, quantity of fuel, and amount used per day)
8) Number of parent-teacher meetings in a year? Parents turned up (approx.)
9) Number of visitors with vehicles per day?
10) Number of generators used per day (hours). Give the amount of fuel used per day.
11) Number of LPG cylinders used in the canteen (give the amount of fuel used per day and the amount spent).
12) The amount of taxi or auto charges paid and the amount of fuel used per month for the transportation of vegetables and other materials to the canteen
13) Amount of taxi or auto charges paid per month for the transportation of office goods to the college
14) Average amount of taxi and auto charges paid per month by the stakeholders of the college.

15) Use of any other fossil fuels in the college (give the amount of fuel used per day and amount spent).
16) Suggest methods to reduce the quantity of fuel used by the stakeholders, students, teachers, and non-teaching staff of the college.

CHAPTER 3

AUDIT STAGE

With the assistance of Prof. Subhendu Sekhar Bag (*CChem, FRSC, FICS*), Professor, Department of Chemistry and Centre for the Environment, IIT Guwahati, and his team, which included various student groups and teaching and non-teaching personnel, green auditing was carried out at Nalbari Commerce College. The green audit started with the teams touring all of the college's facilities to identify the various utilities and appliances (lights, taps, toilets, refrigerators, etc.), measure usage per item (such as the Watts listed on an appliance or the amount of water used from a tap), and identify relevant consumption patterns (such as how frequently an appliance is used) and their effects. To learn more about the usage, occurrence, or general features of particular appliances, the staff and students were questioned. Data was gathered in the energy, waste, greening, carbon footprint, and water consumption sectors. Multiple times, college records and papers were checked in order to clarify the information gathered through surveys and talks. From the first of December 2022 to the twenty-first of December 2022, the entire procedure was finished in one month.

3.1 STUDENT AND STAFF INVOLVED IN GREEN AUDITING

General Co-Ordinator: Dr. Manoj Kumar Kalita

1. Water Management

Faculty-in-charge: Dr. Kabin Sarma

Members from Teaching & Non-teaching Staff:

1. Bibhuti Bhusan Das
2. Manoj Kumar Kalita
3. Dipankar Das
4. Md. Saidul Islam

Students:

1. Bhargav Bhattacharjya
2. Nilotpal Barman
3. Arnab Jyoti Barman

4. Dhritiraj Kalita

2. Green Campus Management:

Faculty-in-charge: Mercy Engtipi

Members from Teaching & Non-teaching Staff:

1. Bhagyashree Das
2. Priyanka Swargiary
3. Jupitara Dutta
4. Tapash Chakravarty

Students:

1. Darshana Devi
2. Rubi Das
3. Kaushik Kalita
4. Rajib Choudhury

3. Energy Management

Faculty-in-charge: Md. Saidul Islam

Members from Teaching & Non-teaching Staff:

1. Dipankar Das
2. Manoj Kumar Kalita
3. Mercy Engtipi
4. Pranab Jyoti Sarma

Students:

1. Sagardeep Kashyap
2. Rantu Barman
3. Prastuti Rani Kalita
4. Priya Choudhury

3.2 STUDENT CLUBS AND FORUMS

1. Eco Club

Faculty-in-charge: Dr. Rajat Bhattacharjee

Members from Teaching & Non-teaching Staff:

1. Dr. Nupur Kalita

2. Dr. Uddupana Gogoi
3. Dipankar Das
4. Papari Bujar Baruah

Students:

1. Nilay Dutta
2. Anish Barman
3. Rajarshi Rajbongshi
4. Debasish Dutta

2. Green Diary

Faculty-in-charge: Mercy Engtipi

Members from Teaching & Non-teaching Staff:

1. Bhagyashree Das
2. Priyanka Swargiary
3. Jupitara Dutta
4. Tapash Chakravarty

Students:

1. Kritartha Deka
2. Anish Jain
3. Mitali Dey
4. Syeda Waziyah Sultana

3. Women's Cell:

Faculty-in-charge: Bibha Das

Members from Teaching & Non-teaching Staff:

1. Dr. Ruplekha Thakuria Bania
2. Dr. Rimakhi Borah
3. Bhagyashree Das
4. Mercy Engtipi
5. Gitumani Baishya

Students:

1. Pallabi Narzary
2. Lucky Devi

3. Sonia Boro
4. Mridula Sarania

4. Career Counselling Cell:

Faculty-in-charge: Dr. Uddipana Gogoi

Members from Teaching & Non-teaching Staff:

1. Dr. Nupur Kalita
2. Manoj Kumar Kalita
3. Priyanka Swargiary
4. Himashree Mazumdar
5. Tapash Chakravarty

Students:

1. Dipsikha Talukdar
2. Pranab Hujuri
3. Swrangshree Swargiary
4. Deepsikha Basumatary

5. Music Club

Faculty-in-charge: Tapash Chakravarty

Members from Teaching & Non-teaching Staff:

1. Dr. Ruplekha Thakuria Bania
2. Dr. Uddipana Gogoi
3. Jupitara Dutta
4. Kuwali Deka

Students:

1. Hirakjyoti Baruah
2. Biswajit Talukdar
3. Mridula Sarania
4. Raktim Talukdar

6. Flora & Fauna

Faculty-in-charge: Dr. Rimakhi Borah

Members from Teaching & Non-teaching Staff:

1. Dr. Ruplekha Thakuria Bania
2. Dr. Rajat Bhattacahrjee
3. Dipankar Das
4. Smita Choudhury

Students:

1. Bijit Kalita
2. Bidisha Malakar
3. Rahul Pratim Deka
4. Bhaswati Devi

7. Entrepreneur Club

Faculty-in-charge: Mercy Engtipi

Members from Teaching & Non-teaching Staff:

1. Dr. Nupur Kalita
2. Dr. Kabin Sarma
3. Bhagyashree Das
4. Smita Choudhury

Students:

1. Kakali Baishya
2. Harshita Devi
3. Partha Pratim Das
4. Himjyoti Kalita

8. Student Support Services:

Faculty-in-charge: Manoj Kumar Kalita

Members from Teaching & Non-teaching Staff:

1. Bibhuti Bhusan Das
2. Dr. Kabin Sarma
3. Dr. Rimakhi Borah
4. Dipankar Das

Students:

1. Himangshu Thakuria
2. Akash Deep Kumar

3. Bishal Ray
4. Dipjyoti Dutta

9. National Service Scheme

Faculty-in-charge: Dr. Nupur Kalita

Members from Teaching & Non-teaching Staff:

1. Bibhuti Bhusan Das
2. Manoj Kumar Kalita
3. Dr. Kabin Sarma
4. Bhagyashree Das
5. Pranabjyoti Sarma

Students:

1. Asmita Kalita
2. Sourabh Medhi
3. Anindita Malakar
4. Harshita Devi

10. Bharat Scouts & Guides

Faculty-in-charge: Manoj Kumar Kalita, Rover Scout Leader

Members from Teaching & Non-teaching Staff:

1. Bibhuti Bhusan Das
2. Dr. Nupur Kalita
3. Priyanka Swargiary
4. Mercy Engtipi
5. Tapash Chakrabarty

Students:

1. Rajashree Bhattacharjya
2. Mintu Talukdar
3. Trisha Bezbaruah
4. Pragyashree Raymedhi

11. National Cadet Corps (NCC)

Faculty-in-charge: Manoj Kmar Kalita, ANO, 50 Assam Air Sqn (Flying) NCC

Members from Teaching & Non-teaching Staff:

1. Bibhuti Bhusan Das
2. Dr. Nupur Kalita
3. Dr. Kabin Sarma
4. Dr. Rimakhi Borah
5. Bhagyashree Das

Students:

1. Sanjay Kairala
2. Chinmoy Kalita
3. Bikash Sarma
4. Biswajit Deka

12. Sahitya Chora

Faculty-in-charge: Dr. Ruplekha Thakuria Bania

Members from Teaching & Non-teaching Staff:

1. Manoj Kumar Kalita
2. Dr. Kabin Sarma
3. Dr. Uddipana Gogoi
4. Dhritiraj Barman
5. Kuwali Deka

Students:

1. Deepmoni Deka
2. Tulika Das
3. Anjali Nath
4. Darshana Devi

13. Commerce & Economic Forum

Faculty-in-charge: Bibhuti Bhusan Das

Members from Teaching & Non-teaching Staff:

1. Dr. Nupur Kalita
2. Dr. Kabin Sarma

3. Mercy Engtipi
4. Pranabjyoti Sarma
5. Rupak Barman

Students:

1. Hebjul Anchari
2. Dipjyoti Baishya
3. Alakesh Kalita
4. Amit Mandal

14. Placement Cell

Faculty-in-charge: Bhagyashree Das

Members from Teaching & Non-teaching Staff:

1. Bibhuti Bhusan Das
2. Dr. Nupur Kalita
3. Md. Saidul Islam
4. Dr. Rimakhi Borah
5. Bhagyashee Das

Students:

1. Tulika Das
2. Alakesh Kalita
3. Mintu talukdar
4. Pragyashree Raymedhi

15. Grievance Redressal Cell

Faculty-in-charge: Dr. Nupur Kalita

Members from Teaching & Non-teaching Staff:

1. Bibhuti Bhusan Das
2. Dr. Ruplekha Thakuria Bania
3. Mercy Engtipi
4. Pranabjyoti Sarma
5. Chinkumani Adhikari

Students:

1. Sourabh Medhi

2. Himangshu thakuria
3. Sanjay Kairala
4. Tulika Das

16. Study Circle

Faculty-in-charge: Manoj Kumar Kalita

Members from Teaching & Non-teaching Staff:

1. Bibha Das
2. Dr. Ruplekha Thakuria Bania
3. Dr. Rimakhi Borah
4. Dr. Uddipana Gogoi
5. Himashree Mazumdar

Students:

1. Harshita Devi
2. Partha Pratim Das
3. Himjyoti Kalita
4. Bishal Roy

17. Anti-Raging Cell

Faculty-in-charge: Dr. Kabin Sarma

Members from Teaching & Non-teaching Staff:

1. Bibha Das
2. Manoj Kumar Kalita
3. Dr. Uddipana Gogoi
4. Dipankar Das
5. Gitumani Baishya

Students:

1. Sanjay Kairala
2. Tulika Das
3. Nupur Kalita
4. Hirak Jyoti deka

18. Red Ribbon Club

Faculty-in-charge: Dr. Nupur Kalita

Members from Teaching & Non-teaching Staff:

1. All teachers of non-teaching staff

Students:

1. Sanjay Kairala
2. Chinmoy Kalita
3. Bikash Sarma
4. Biswajit Deka

19. Research & Development Cell

Faculty-in-charge: Bibhuti Bhusan Das

Members from Teaching & Non-teaching Staff:

1. Bibha Das
2. Dr. Nupur Kalita
3. Dr. Ruplekha Thakuria Bania
4. Manoj Kumar Kalita
5. Dr. Rimakhi Borah

Students:

1. Upasona Deka Choudhury
2. Dhritisankar Talukdar
3. Partha Pratim Kalita
4. Bikash Sarma

20. Students' Union

Faculty-in-charge: Dr. Nupur Kalita

Students:

Sl. No.	Name	Designation
1	Nupur Kalita	President
2	Bhargab Goswami	Vice President
3	Partha Pratim Kalita	General Secretary
4	Hirakjyoti Kalita	Assistant General Secretary

5	Sourav Medhi	Cultural Secretary
6	Dhritisankar Talukdar	Games Secretary
7	Hirak Jyoti Deka	Magazine Secretary
8	Partha Pratim Baishya	Boys' Common Room Secretary
9	Upasona Deka Choudhury	Girls' Common Room Secretary
10	Kakali Baishya	Debating & Symposium Secretary
11	Prasanta Rajbongshi	Social Service Secretary

3.3 COMMENTS ON SITE TOUR

Along with the staff and students, the site was inspected. During the site visit, questionnaires were answered. The procedures used to obtain the data piqued the curiosity of both students and staff. It was really informative and amazing. For the pupils who took part in the green audits, it was a programme to raise environmental consciousness. For the majority of the students, the experience of conducting a green audit was completely new. They discussed their goals for a green campus and provided ideas for the audit recommendations.

3.4 REVIEW OF DOCUMENTS AND RECORDS

Data was gathered, and documents such as admittance registers, electricity registers, equipment registers, purchase registers, audited statements, and office registers were inspected. Data collection also included the verification of college calendars, college periodicals, the college's annual report, NAAC self-assessment reports, UGC reports, and other sources.

3.5 REVIEW OF POLICIES

The management of the college was consulted regarding its environmental management practises. The college's long-term goals were also discussed. In light of the green audits, the management would update the college's environmental and green policies. The goal of the green audit was to make sure that the campus's practises were in line with the institution's green policy.

3.6 INTERVIEWS

Different audit groups questioned the college's office personnel, the principal, teaching and non-teaching staff, students, parents, and other stakeholders in

order to gather information for the green auditing process. Additionally, discussions with the office holders were held to dispel any remaining questions on specific topics.

3.7 SITE INSPECTION

The audit teams visited and examined the college and its surroundings on multiple occasions to obtain data. Trees on campus were counted and categorised. For the purpose of data collection, it was also necessary to visit parking lots, playgrounds, canteens, libraries, and office spaces. The number and kind of cars used by the stakeholders were enumerated, and the user confirmed the fuel usage for each vehicle. The quantity of LPG cylinders utilised in the hostel kitchen, and canteen was also counted.

CHAPTER 4

POST AUDIT STAGE

Any green audit must start with results that are backed up by records and factual data. To make sure that previous actions, activities, events, and procedures are carried out correctly and in accordance with system requirements, the audit process aims to track past actions, activities, events, and procedures on a sampling basis. An integral aspect of a process is a green audit. The actual usefulness of green audits lies in the fact that they are conducted at predetermined intervals and that the findings might show progress or change over time, despite the fact that they are individual occurrences. Although policies, methods, defined systems, and objectives are used to test green audits, there will always be some amount of subjectivity involved. Finding out how well the environmental organisation, environmental management, and environmental equipment are performing is the core purpose of any green audit. For the organisation's environmental performance to satisfy the objectives outlined in its green policy, each of the three elements is essential. The degree to which the organisation's environmental performance is successful or unsuccessful will depend on how each individual is operating and how well integration has gone.

4.1 KEY FINDINGS AND OBSERVATIONS

4.1.1 WATER

Main water uses on campus

- ✓ Garden
- ✓ Cleaning and washing
- ✓ Canteen
- ✓ Drinking
- ✓ Toilets
- ✓ Bathrooms
- ✓ Hostel
- ✓ Guest house
- ✓ Office uses

- The sources of water in the college are bore wells.
- There are four bore wells in the college.
- There are four motors used for pumping the water in the college.
- Four motors of 1.5 horsepower are installed in the college.
- Each bore well has a depth of 100 feet.
- The present depth of water table is about 20 feet.
- The college stores its water in tanks.
- The number of water tanks for water storage is 6.
- The overhead water tanks have a capacity of 12,000 litres of water.
- On campus, 4000 litres of water are pumped each day.
- There is no water waste from the water supply process.
- The college authorities have implemented effective monitoring and preventative measures to reduce or avoid water waste.
- The number of water taps on campus is 59.
- The number of toilets and urinals on campus is 37.
- Number of water taps in canteen are 3.
- 40 litres of water are used per day for gardening.
- The amount of water used in the hostel is 2000 litres.
- There is no leaky tap on campus.
- 50 litres of water are used to water gardens and ground.
- Since there is no municipal water supply, colleges do not have to pay water fees when utilising water from private bore wells.

Overall utilization of water in the college

Sections	Water Use/day (in litres)
Toilets and urinals	1500
Hostel and bathrooms	2000
Canteen	450
Garden and ground	50
Leakage	0
Total	**4000**

4.1.2 ENERGY

- The college uses electricity, LPG, and diesel as its energy sources.
- The past month's electricity bill came to almost ₹16,000.
- ₹5,000 was spent last month on LPG cylinders.
- Each month, 10 litres of fuel are used for generators, costing ₹1000 in the previous month.
- Energy costs, including electricity, petrol, and fuel, total ₹22,000 per month. (Enter monthly data for 2022–2023.)
- The college does not use incandescent (tungsten) light bulbs.
- After use, all of the computers and other devices are turned off.
- Number of LED bulbs: 359
- Number of Fans: 243
- Number of Tube Lights: 32
- Number of Computers: 87
- Number of Laptops: 3
- Number of Photocopiers: 3
- Number of 10 KVA UPS: 2
- Number of Inverters: 4
- Number of LED Televisions: 2
- Number of LCD Televisions: 2
- Number of ACs: 7
- Number of CCTV Cameras: 34
- Number of Printers: 16
- Number of Gas Cylinders: 5
- Number of Projectors: 3
- Number of Sound Systems: 2
- Number of Exhaust Fans: 3
- Number of Water Purifier: 6
- Number of Water Cooler: 6
- Number of Refrigerators: 3
- Number of Wifi Routers: 4
- Number of Water Pumps: 4

Energy usage of LED bulbs in the college

Department/ area	Number of LED bulbs	Power Consumed (watts)	Power in (kW)	Working Time (hours per Day)	Energy Usage per month (kWh)
Principal Room	8	10	0.01	2	0.2816
Principal Office	3	10	0.01	2	0.1056
IQAC Room 1A	2	10	0.01	2	0.0704
Office	9	10	0.01	2	0.3168
Staff Toilet	1	10	0.01	2	0.0352
Information & Career Guidance Cell (ICGC)	1	10	0.01	2	0.0352
Faculty Canteen	2	10	0.01	2	0.0704
Student Canteen	4	10	0.01	2	0.1408
Krishna Kanta Handiqui State Open University Room No. 26	2	10	0.01	2	0.0704
Toilet	2	10	0.01	2	0.0704
Krishna Kanta Handiqui State Open University Store Room No. 27	4	10	0.01	2	0.1408
Main Gate Campus Flash Light	3	40	0.01	2	0.4224
Indoor Sports Complex Room No. 28	31	10	0.01	2	1.0912
Conference Hall	11	10	0.01	2	0.3872
Examination Control Room Room No. 5	2	10	0.01	2	0.0704
Auditorium	27	10	0.01	2	0.9504
Corridor lights	18	10	0.01	2	0.6336
Second Gate	3	10	0.01	2	0.1056
Campus Flash Light	3	40	0.04	2	0.4224
Ladies Toilet	3	10	0.01	2	0.1056
Class Room-1	8	10	0.01	2	0.2816
Class Room-2	8	10	0.01	2	0.2816
Class Room-3	8	10	0.01	2	0.2816
Class Room-4	8	10	0.01	2	0.2816
Room No. 14	3	10	0.01	2	0.1056
Room No. 15	2	10	0.01	2	0.0704
Room No. 16	2	10	0.01	2	0.0704
Room No. 18	2	10	0.01	2	0.0704

Room No. 19	8	10	0.01	2	0.2816
Scout Office Room No. 20	1	10	0.01	2	0.0352
PG 1	7	10	0.01	2	0.2464
PG 2	6	10	0.01	2	0.2112
PG 3	2	10	0.01	2	0.0704
PG 4	4	10	0.01	2	0.1408
Room No. 29	2	10	0.01	2	0.0704
Room No. 30	2	10	0.01	2	0.0704
Room No. 31	2	10	0.01	2	0.0704
Room No. 32	2	10	0.01	2	0.0704
Room No. 33	2	10	0.01	2	0.0704
Room No. 34	2	10	0.01	2	0.0704
Room No. 35	2	10	0.01	2	0.0704
Room No. 36	2	10	0.01	2	0.0704
Faculty Ladies Toilet	2	10	0.01	2	0.0704
Faculty Gents Toilet	1	10	0.01	2	0.0352
Computer Lab Room No. 37	10	10	0.01	2	0.352
Department of IT Room No. 38	1	10	0.01	2	0.0352
Room No. 39	4	10	0.01	2	0.1408
Room No. 40	2	10	0.01	2	0.0704
Room No. 41	3	10	0.01	2	0.1056
Room No. 42	10	10	0.01	2	0.352
Room No. 43	10	10	0.01	2	0.352
Student Union Office Room No. 22	1	10	0.01	2	0.0352
Room No. 23	11	10	0.01	2	0.3872
Library Room No. 24	28	10	0.01	2	0.9856
Women's Hostel	52	10	0.01	2	1.8304
Total Energy usage per month (kWh)					**13.2704**

Energy usage of Fans in the college

Department/ area	**Number of Fans**	**Power Consumed (watts)**	**Power in (kW)**	**Working Time (hours per Day)**	**Energy Usage per month (kWh)**
Principal Room	4	40	0.04	6	1.6896
Principal Office	2	40	0.04	6	0.8448
IQAC Room 1A	1	40	0.04	6	0.4224
Office	10	40	0.04	6	4.224

Information & Career Guidance Cell (ICGC)	3	40	0.04	6	1.2672
Faculty Canteen	1	40	0.04	6	0.4224
Student Canteen	3	40	0.04	6	1.2672
Krishna Kanta Handiqui State Open University Room No. 26	2	40	0.04	6	0.8448
Krishna Kanta Handiqui State Open University Store Room No. 27	2	40	0.04	6	0.8448
Conference Hall	7	40	0.04	6	2.9568
Examination Control Room Room No. 5	2	40	0.04	6	0.8448
Vice- Principle Room No. 4	1	40	0.04	6	0.4224
Auditorium	22	40	0.04	6	9.2928
Class Room-1	8	40	0.04	6	3.3792
Class Room-2	8	40	0.04	6	3.3792
Class Room-3	8	40	0.04	6	3.3792
Class Room-4	8	40	0.04	6	3.3792
Room No. 14	8	40	0.04	6	3.3792
Room No. 15	4	40	0.04	6	1.6896
Room No. 16	2	40	0.04	6	0.8448
Room No. 17	4	40	0.04	6	1.6896
Room No. 18	4	40	0.04	6	1.6896
Room No. 19	12	40	0.04	6	5.0688
Scout Office Room No. 20	1	40	0.04	6	0.4224
PG 1	6	40	0.04	6	2.5344
PG 2	4	40	0.04	6	1.6896
PG 3	1	40	0.04	6	0.4224
PG 4	4	40	0.04	6	1.6896
Room No. 29	2	40	0.04	6	0.8448
Room No. 30	2	40	0.04	6	0.8448
Room No. 31	2	40	0.04	6	0.8448
Room No. 32	2	40	0.04	6	0.8448
Room No. 33	2	40	0.04	6	0.8448
Room No. 34	2	40	0.04	6	0.8448
Room No. 35	2	40	0.04	6	0.8448
Room No. 36	2	40	0.04	6	0.8448
Computer Lab Room No. 37	8	40	0.04	6	3.3792
Department of IT	1	40	0.04	6	0.4224

Room No. 38					
Room No. 39	3	40	0.04	6	1.2672
Room No. 40	1	40	0.04	6	0.4224
Room No. 41	1	40	0.04	6	0.4224
Room No. 42	10	40	0.04	6	4.224
Room No. 43	10	40	0.04	6	4.224
Student Union Office Room No. 22	1	40	0.04	6	0.4224
Room No. 23	11	40	0.04	6	4.6464
Library Room No. 24	23	40	0.04	6	9.7152
Women's Hostel	16	40	0.04	6	6.7584
Total Energy usage per month (kWh)					**102.6432**

Energy usage of Tube Light in the college

Department/ area	**Number of Tube Lights**	**Power Consumed (watts)**	**Power in (kW)**	**Working Time (hours per Day)**	**Energy Usage per month (kWh)**
IQAC Room 1A	1	40	0.04	1	0.0704
Information & Career Guidance Cell (ICGC)	7	40	0.04	1	0.4928
Student Canteen	2	40	0.04	1	0.1408
Krishna Kanta Handiqui State Open University Room No. 26	1	40	0.04	1	0.0704
Conference Hall	8	40	0.04	1	0.5632
Vice- Principle Room No. 4	1	40	0.04	1	0.0704
Room No. 15	2	40	0.04	1	0.1408
Room No. 16	2	40	0.04	1	0.1408
Room No. 17	4	40	0.04	1	0.2816
Women's Hostel	4	40	0.04	1	0.2816
Total Energy usage per month (kWh)					**2.2528**

Energy usage of Computers in the College

Department/ area	Number of Computers	Power Consumed (watts)	Power in (kW)	Working Time (hours per Day)	Energy Usage per month (kWh)
Principal Room	1	200	0.2	6	2.112
Principal Office	1	200	0.2	6	2.112
IQAC Room 1A	1	200	0.2	6	2.112
Office	4	200	0.2	6	8.448
Krishna Kanta Handiqui State Open University Room No. 26	2	200	0.2	6	4.224
Room No. 29	1	200	0.2	6	2.112
Room No. 30	1	200	0.2	6	2.112
Room No. 33	1	200	0.2	6	2.112
Room No. 34	1	200	0.2	6	2.112
Room No. 35	1	200	0.2	6	2.112
Computer Lab Room No. 37	60	200	0.2	6	126.72
Library Room No. 24	13	200	0.2	6	27.456
Total Energy usage per month (kWh)					**183.744**

Energy usage of Laptop in the College

Department/ area	Number of Laptops	Power Consumed (watts)	Power in (kW)	Working Time (hours per Day)	Energy Usage per month (kWh)
IQAC Room 1A	1	40	0.04	2	0.1408
Office	1	40	0.04	2	0.1408
Department of IT Room No. 38	1	40	0.04	2	0.1408
Total Energy usage per month (kWh)					**0.4224**

Energy usage of Photocopiers in the College

Department/ area	Number of Photocopier	Power Consumed (watts)	Power in (kW)	Working Time (hours per Day)	Energy Usage per month (kWh)
Office	1	1000	1	2	3.52
Student Canteen	1	1000	1	1	1.76

Library Room No. 24	1	1000	1	1	1.76
Total Energy usage per month (kWh)					**7.04**

Energy usage of 10 KVA UPS in the College

Department/ area	**Number of 10 KVA UPS**	**Power Consumed (watts)**	**Power in (kW)**	**Working Time (hours per Day)**	**Energy Usage per month (kWh)**
Office	1	10000	10	1	17.6
Computer Lab Room No. 37	1	10000	10	1	17.6
Total Energy usage per month (kWh)					**35.2**

Energy usage of Air Conditioners in the College

Department/ area	**Number of AC**	**Power Consumed (watts)**	**Power in (kW)**	**Working Time (hours per Day)**	**Energy Usage per month (kWh)**
Principal Room	1	750	0.75	2	2.64
Information & Career Guidance Cell (ICGC)	1	750	0.75	1	1.32
Conference Hall	2	750	0.75	1	2.64
Computer Lab Room No. 37	2	750	0.75	6	15.84
Library Room No. 24	1	750	0.75	1	1.32
Total Energy usage per month (kWh)					**23.76**

Energy usage of water coolers in the college

Department/ area	**Number of Water cooler**	**Power Consumed (watts)**	**Power in (kW)**	**Working Time (hours per Day)**	**Energy Usage per month (kWh)**
Student Canteen	2	80	0.08	1	0.2816
Driniking Water Facility	3	80	0.08	1	0.4224
Women's Hostel	1	80	0.08	1	0.1408
Total Energy usage per month (kWh)					**0.8448**

Energy usage of refrigerators in the college

Department/ area	Number of Refrigerator	Power Consumed (watts)	Power in (kW)	Working Time (hours per Day)	Energy Usage per month (kWh)
Student Canteen	2	400	0.3	24	34.56
Women's Hostel	1	400	0.3	24	17.28
Total Energy usage per month (kWh)					**51.84**

Energy usage of projectors in the college

Department/ area	Number of Projector	Power Consumed (watts)	Power in (kW)	Working Time (hours per Day)	Energy Usage per month (kWh)
Information & Career Guidance Cell (ICGC)	1	300	0.3	1	0.528
Conference Hall	1	300	0.3	1	0.528
Room No. 17	1	300	0.3	1	0.528
Total Energy usage per month (kWh)					**1.584**

Energy usage of sound systems in the college

Department/ area	Number of Sound Systems	Power Consumed (watts)	Power in (kW)	Working Time (hours per Day)	Energy Usage per month (kWh)
Information & Career Guidance Cell (ICGC)	1	500	0.5	1	0.88
Conference Hall	1	300	0.3	1	0.528
Total Energy usage per month (kWh)					**1.408**

Energy usage of inverters in the College

Department/ area	Number of inverter	Power Consumed (watts)	Power in (kW)	Working Time (hours per Day)	Energy Usage per month (kWh)
IQAC Room 1A	1	250	0.25	1	0.44
Office	1	250	0.25	1	0.44
Krishna Kanta Handiqui State	1	250	0.25	1	0.44

Open University Store Room No. 27					
Library Room No. 24	1	250	0.25	1	0.44
Total Energy usage per month (kWh)					**1.76**

Energy usage of LED Television in the College

Department/ area	**Number of LED Television**	**Power Consumed (watts)**	**Power in (kW)**	**Working Time (hours per Day)**	**Energy Usage per month (kWh)**
Principal Room	1	60	0.06	1	0.1056
Women's Hostel	1	60	0.06	1	0.1056
Total Energy usage per month (kWh)					**0.2112**

Energy usage of LCD Television in the College

Department/ area	**Number of LCD Television**	**Power Consumed (watts)**	**Power in (kW)**	**Working Time (hours per Day)**	**Energy Usage per month (kWh)**
Principal Room	1	90	0.09	1	0.1584
Room No. 36	1	90	0.09	1	0.1584
Total Energy usage per month (kWh)					**0.3168**

Energy usage of printers in the College

Department/ area	**Number of Printers**	**Power Consumed (watts)**	**Power in (kW)**	**Working Time (hours per Day)**	**Energy Usage per month (kWh)**
Principal Room	1	250	0.25	1	0.44
Principal Office	1	250	0.25	1	0.44
IQAC Room 1A	3	250	0.25	1	1.32
Office	4	250	0.25	1	1.76
Krishna Kanta Handiqui State Open University Room No. 26	1	250	0.25	1	0.44
Room No. 36	1	250	0.25	1	0.44
Computer Lab Room No. 37	2	250	0.25	1	0.88

Department of IT Room No. 38	1	250	0.25	1	0.44
Library Room No. 24	2	250	0.25	1	0.88
Total Energy usage per month (kWh)					**7.04**

Energy usage of Wifi Routers in the College

Department/ area	**Number of Wifi Router**	**Power Consumed (watts)**	**Power in (kW)**	**Working Time (hours per Day)**	**Energy Usage per month (kWh)**
Principal Room	1	6	0.006	6	0.06336
Student Canteen	1	6	0.006	6	0.06336
Room No. 29	1	6	0.006	6	0.06336
Room No. 33	1	6	0.006	6	0.06336
Total Energy usage per month (kWh)					**0.25344**

Energy usage of water purifiers in the College

Department/ area	**Number of Water Purifier**	**Power Consumed (watts)**	**Power in (kW)**	**Working Time (hours per Day)**	**Energy Usage per month (kWh)**
Office	1	60	0.06	6	0.6336
Student Canteen	3	60	0.06	6	1.9008
Krishna Kanta Handiqui State Open University Room No. 26	1	60	0.06	6	0.6336
Room No. 29	1	60	0.06	6	0.6336
Total Energy usage per month (kWh)					**3.8016**

Energy usage of CCTV camera in the College

Department/ area	**Number of CCTV camera**	**Power Consumed (watts)**	**Power in (kW)**	**Working Time (hours per Day)**	**Energy Usage per month (kWh)**
Principal Room	1	6	0.006	24	0.3456
Office	2	6	0.006	24	0.6912
Conference Hall	2	6	0.006	24	0.6912
Examination Control Room Room No. 5	1	6	0.006	24	0.3456
Auditorium	1	6	0.006	24	0.3456
Generator Room	1	6	0.006	24	0.3456

5 KVA and 10 KVA					
Class Room-1	1	6	0.006	24	0.3456
Room No. 14	1	6	0.006	24	0.3456
Room No. 15	1	6	0.006	24	0.3456
Room No. 17	1	6	0.006	24	0.3456
Room No. 18	1	6	0.006	24	0.3456
Room No. 19	1	6	0.006	24	0.3456
PG 1	1	6	0.006	24	0.3456
PG 2	1	6	0.006	24	0.3456
PG 4	1	6	0.006	24	0.3456
Room No. 29	1	6	0.006	24	0.3456
Room No. 33	1	6	0.006	24	0.3456
Computer Lab Room No. 37	2	6	0.006	24	0.6912
Room No. 42	1	6	0.006	24	0.3456
Room No. 43	1	6	0.006	24	0.3456
Room No. 23	2	6	0.006	24	0.6912
Library Room No. 24	4	6	0.006	24	1.3824
Corridors	5	6	0.006	24	1.728
Total Energy usage per month (kWh)					**10.0224**

Energy usage of Exhaust Fans in the College

Department/ area	**Number of Exhaust Fan**	**Power Consumed (watts)**	**Power in (kW)**	**Working Time (hours per Day)**	**Energy Usage per month (kWh)**
Principal Room	1	40	0.04	1	0.0704
Staff Toilet	1	40	0.04	1	0.0704
Women's Hostel	1	40	0.04	1	0.0704
Total Energy usage per month (kWh)					**0.2112**

Energy usage of Water pumps in the College

Department/ area	**Number of Water pumps**	**Power consumed (watts)**	**Power in (kW)**	**Working time (hours per Day)**	**Energy Usage per month (kWh)**
Academic Buildings	3	1100	1.1	0.25	1.452
Women's Hostel	1	1100	1.1	0.25	0.484
Total Energy usage per month (kWh)					**1.936**

4.1.3 WASTE

The total strength of students, teachers and Non-teaching staff in the College

	No. of students	No. of faculty (Permanent)	No. of faculty (Temporary)	No. of Non-teaching Staff (Permanent)	No. of Non-teaching Staff (Temporary)
Gents	722	06	06	08	11
Ladies	328	08	08	02	01
Total	1050	14	14	10	12

The following are the area where waste is generated in the College

Garden area	4
Playground area	1
Kitchen	1
Canteen	1
Toilets	16
Car/scooter parking area	2
Number of class rooms	22
Office rooms	16

The following are the area found near the college

Mark the level of disturbance it creates for the college in a scale of 1 to 9.

Source	Scale
Municipal dump yard	1
Garbage heap	1
Public convenience	1
Sewer line	1
Stagnant water	3
Open drainage	2
Industry	1
Bus station	1
Shopping complex/public halls	1

The college generate waste of following type:

Type	**Amount**
Bio-degradable	Dry leaves 2 kg/day (Vermi-compost unit to be installed) Canteen/ kitchen waste 10 kg/day Office 0.25 kg/day
Non-Bio-degradable	0.05 kg/day

Sanitary Napkin	Sanitary Napkin (One incineration unit is to be installed in the women's hostel campus and one in girls' common room)

The approximate quantity of waste generated per day (in Kilograms)

Office

Approx	Bio degradable	Non-Bio degradable	Hazardous	Others
< 1 kg.	0.25 kg	0.05 kg	Nil	Nil

Canteen/kitchen

Approx	Bio degradable	Non-Bio degradable	Hazardous	Others
2 - 10 kg	10 kg	Nil	Nil	Nil

The waste generated in the college managed will be managed following methods

- ✓ Composting
- ✓ Recycling
- ✓ Reusing

Four separate buckets will be put in front of a classroom to start a waste segregation and recycling campaign.

- ✓ Blue bucket for paper and glass waste
- ✓ Green bucket for food waste
- ✓ Yellow bucket for plastic waste
- ✓ Red bucket for metal and e-waste

- ➢ The campus has 12 garbage collectors installed.
- ➢ Paper waste generated in the college is sold to paper waste collectors in the area.
- ➢ The college management practised a waste-to-wealth programme in the college.
- ➢ The college management is working very hard to achieve zero garbage in the campus college following the 4R principle: reduce, recycle, reuse, and refuse.

4.1.4 GREEN CAMPUS

Total number of plant species identified: 66

Garden area and tree cover of the campus: 450 m^2

Free space on campus: 1000 m^2

Plants in the Campus

Sl. No.	Scientific Name	Family	Number of plant
1	*Mangifera indica*	Anacardiaceae	3
2	*Monoon longifolium*	Annonaceae	24
3	*Annona reticulata*	Annonaceae	1
4	*Polyalthia fragrans*	Annonaceae	1
5	*Allamanda cathartica*	Apocynaceae	1
6	*Catharanthus roseus*	Apocynaceae	12
7	*Cascabela thevetia*	Apocynaceae	10
8	*Epipremnum aureum*	Araceae	1
9	*Aglaonema species*	Araceae	8
10	*Caladium bicolor*	Araceae	2
11	*Dieffenbachia seguine*	Araceae	1
12	*Polyscias fruticosa*	Araliaceae	2
13	*Araucaria columnaris*	Araucariaceae	5
14	*Dypsis lutescens*	Arecaceae	19
15	*Dypsis lutescens*	Arecaceae	4
16	*Cocos nucifera*	Arecaceae	1
17	*Dracaena trifasciata*	Asparagaceae	5
18	*Cordyline fruticosa*	Asparagaceae	1
19	*Chrysanthemum species*	Asteraceae	4
20	*Tagetes erecta*	Asteraceae	17
21	*Gerbera species*	Asteraceae	4
22	*Begonia cucullata*	Begoniaceae	1
23	*Tecoma stans*	Bignoniaceae	2
24	*Mesua ferrea*	Calophyllaceae	8
25	*Canna indica*	Cannaceae	1
26	*Carica papaya*	Caricaceae	1
27	*Terminalia chebula*	Combretaceae	4
28	*Terminalia arjuna*	Combretaceae	1
29	*Leucothoe axillaris*	Ericaceae	5
30	*Adenanthera pavonina*	Fabaceae	1
31	*Delonix regia*	Fabaceae	1
32	*Hydrangea macrophylla*	Hydrangeaceae	2
33	*Salvia splendens*	Lamiaceae	19
34	*Tectona grandis*	Lamiaceae	1
35	*Lilium lancifolium*	Liliaceae	5
36	*Punica granatum*	Lythraceae	1
37	*Magnolia champaca*	Magnoliaceae	2
38	*Magnolia figo*	Magnoliaceae	1
39	*Calathea ornata*	Marantaceae	1

40	*Azadirachta indica*	Meliaceae	5
41	*Ficus bengalensis*	Moraceae	1
42	*Ficus elastica*	Moraceae	1
43	*Ficus benjamina*	Moraceae	1
44	*Syzygium cumini*	Myrtaceae	3
45	*Psidium guajava*	Myrtaceae	2
46	*Syzygium aqueum*	Myrtaceae	1
47	*Bougainvillea species*	Nyctaginaceae	1
48	*Nyctanthes arbor-tristis*	Oleaceae	1
49	*Jasminum grandiflorum*	Oleaceae	5
50	*Fraxinus excelsior*	Oleaceae	1
51	*Ziziphus mauritiana*	Rhamnaceae	1
52	*Rosa rubiginosa*	Rosaceae	5
53	*Gardenia jasminoides*	Rubiaceae	4
54	*Ixora chinensis*	Rubiaceae	8
55	*Ixora coccinea*	Rubiaceae	1
56	*Neolamarckia cadamba*	Rubiaceae	1
57	*Coffea arabica*	Rubiaceae	2
58	*Gardenia jasminoides*	Rubiaceae	1
59	*Murraya paniculata*	Rutaceae	2
60	*Citrus limon*	Rutaceae	1
61	*Murraya koenigii*	Rutaceae	1
62	*Murraya koenigii*	Rutaceae	2
63	*Euodia Species*	Rutaceae	1
64	*Acer oblongum*	Sapindaceae	1
65	*Mimusops elengi*	Sapotaceae	4
66	*Cissus antarctica*	Vitaceae	1
Total number of plants			**241**

List of plants proposed for "Tree Plantation Programme" in college campus

Sl. No.	Botanical name	Family	Local name
1	*Abelmoschus manihot*	Malvaceae	Usipak
2	*Abelmoschus moschatus*	Malvaceae	Gorokhia koroi
3	*Abroma augusta*	Sterculiaceae	Gorokhia koroi
4	*Abrus precatorius*	Papilionaceae	Latumoni
5	*Abutilon indicum*	Malvaceae	Pera petari
6	*Acacia catechu*	Mimosaceae	Khair
7	*Achyranthes aspera*	Amaranthaceae	Hatisur
8	*Acarus calamus*	Araceae	Bach
9	*Actinodaphne angustifolia*	Lauraceae	Petarichawa
10	*Aegle marmelos*	Rutaceae	Bel
11	*Ajuga bracteosa*	Lamiaceae	Nilakantha

12	*Allium sativum*	Liliaceae	Naharu
13	*Alocasia macrorrhiza*	Araceae	Boro mankachu
14	*Aloe barbadensis*	Liliaceae	Sal konwari
15	*Alstonia scholaris*	Apocynaceae	Satiana
16	*Alternanthera sessilis*	Amaranthaceae	Mati-kanduri
17	*Altingia excelsa*	Altingiaceae	Jutuli
18	*Amaranthus spinosus*	Amaranthaceae	Khutura
19	*Andrographis paniculata*	Acanthaceae	Sirata
20	*Anthocephalus cadamba*	Rubiaceae	Kadom
21	*Antidesma accuminatum*	Euphorbiaceae	Bor-heloch
22	*Antidesma diandrum*	Euphorbiaceae	Abutenga
23	*Antidesma ghaesembilla*	Euphorbiaceae	Heloch
24	*Aquilaria malacensis*	Thymelaeaceae	Agaru, Sasi-goss
25	*Areca catechu*	Arecaceae	Tamul
26	*Argemone maxicana*	Papaveraceae	Kuhum kata
27	*Aristolochia tagala*	Aristolochiaceae	Belikol, chohu
28	*Asparagus racemosa*	Liliaceae	Satmul
29	*Azadirachta indica*	Meliaceae	Mahanim
30	*Azanza lampas*	Malvaceae	Bon kapah
31	*Baccaurea ramiflora*	Euphorbiaceae	Leteku
32	*Bacopa monnieri*	Scrophulariaceae	Brahmi
33	*Belamcanda chinensis*	Iridaceae	Surjakanti
34	*Blechnum orientale*	Blechnaceae	Dhekia
35	*Boerhavia diffusa*	Nyctaginaceae	Ponownua
36	*Bombax ceiba*	Bombacaceae	Simalu
37	*Brassica juncea*	Brassicaceae	Lai
38	*Butea monosperma*	Fabaceae	Palas
39	*Byttneria grandiflora*	Sterculiaceae	Tikani barua
40	*Calotropis gigantea*	Asclepiadaceae	Akan
41	*Calotropis procera*	Asclepiadaceae	Akan
42	*Camellia chinensis*	Theaceae	Sah goss (Tea plant)
43	*Cardiospermum helicacabum*	Sapindaceae	Kapalphuta
44	*Carallia brachiata*	Rhizophoraceae	Kanthekera
45	*Cassia alata*	Caesalpiniaceae	Khor goss
46	*Cassia fistula*	Caesalpiniaceae	Sunaru
47	*Catharanthus roseus*	Apocynaceae	Nayantara
48	*Cayratia carnosa*	Vitaceae	Ghepeta Iota
49	*Cedrela toona*	Meliaceae	Poma
50	*Centella asiatica*	Apiaceae	Manimuni
51	*Chenopodium album*	Chenopodiaceae	Jilmil sak
52	*Cinnamomum tamala*	Lauraceae	Tejpat
53	*Cinnamomum obtusifolium*	Lauraceae	Patihonda, patichanda
54	*Chukrasia tubularis*	Meliaceae	Boga poma
55	*Cissus rependa*	Vitaceae	Medmedia lota

56	*Clerodendrum colebrookianum*	Verbinaceae	Nephaphu
57	*Clerodendrum indicum*	Verbinaceae	Dhaptita
58	*Clerodendrum infortunatum*	Verbinaceae	Dhapatita
59	*Clitoria ternatea*	Fabaceae	Aparajita
60	*Coriandrum sativum*	Apiaceae	Dhania
61	*Costus speciosus*	Zingiberaceae	Jomlakhuti
62	*Crotalaria albida*	Fabaccae	Ban-methi
63	*Croton caudatus*	Euphorbiaceae	Lata-mahudi
64	*Croton joufra*	Euphorbiaceae	Mahudi
65	*Croton tighlium*	Euphorbiaceae	Koni bih
66	*Curcuma amada*	Zingiberaceae	Amada
67	*Curcuma aromatica*	Zingiberaceae	Ban-haladhi
68	*Curcuma caesia*	Zingiberaceae	Kola-haladhi
69	*Curcuma domestica*	Zingiberaceae	Haladhi
70	*Curcuma longa*	Zingiberaceae	Haladhi
71	*Cuscuta reflexa*	Convolvulaceae	Akashi-lota
72	*Cymbopogon flexuosus*	Poaceae	Lemon grass
73	*Datura fastuosa*	Solanaceae	Dhatura
74	*Datura stramonium*	Solanaceae	Kola-dhatura
75	*Deeringia amaranthoides*	Amaranthaceae	Rangoli lota
76	*Dillenia indica*	Dilleniaceae	Outenga
77	*Dillenia pentagyna*	Dilleniaceae	Akshi
78	*Dillenia scabrella*	Dilleniaceae	Banji-ou
79	*Dioscorea alata*	Dioscoreaceae	Kathalu
80	*Dioscorea bulbifera*	Dioscoreaceae	Kathalu
81	*Dischidia rafflesiana*	Asclepiadaceae	Honkha ojhar mana
82	*Dregea volubilis*	Asclepiadaceae	Khomal Iota
83	*Eclipta alba*	Asteraceae	Kenharaj
84	*Elaeocarpus sphaericus*	Elaeocarpaceae	Ridra rudrakhya
85	*Elsholtzia blanda*	Lamiaceae	Bon-tulasi
86	*Emblica officinalis*	Euphorbiaceae	Amlakhi
87	*Engelhardita spicata*	Juglandaceae	Lewa Lal-amiri
88	*Enhydra fluctuans*	Asteraceae	Helochi
89	*Entada phaseoloides*	Mimosaceae	Gila-lewa
90	*Erioglossum rubiginosum*	Sapindaceae	Abigran
91	*Eryngium foetidum*	Apiaceae	Jongoli-memedhu
92	*Erythrina stricta*	Fabaceae	Madar
93	*Eugenia jambolana*	Myrtaceae	Loha-jam
94	*Eugenia kurzii*	Myrtaceae	Bogijamuk
95	*Eupatorium cannabinum*	Asteraceae	Tong-loti
96	*Eupatorium odoratum*	Asteraceae	Jarmoni ban
97	*Euphorbia neriifolia*	Euphorbiaceae	Hiju
98	*Eurya japonica*	Theaceae	Saseni, murmura
99	*Euryale ferox*	Nymphaeaceae	Makhana

100	*Ficus bengalensis*	Moraceae	Bor goss
101	*Ficus benjamina*	Moraceae	Chilubor goss
102	*Garcinia cowa*	Clusiaccae	Kujithekera
103	*Garcinia morella*	Clusiaceae	Kujithekera
104	*Garcinia pedunculata*	Clusiaceae	Bor-thekera
105	*Gardenia campanulata*	Rubuaceae	Bitmara, bhi-mona
106	*Gmelina arborea*	Verbenaceae	Gomari
107	*Gloriosa superba*	Liliaceae	Agnisikha
108	*Glycosmis pentaphylla*	Rutaceae	Hengena poka
109	*Gnetum montanum*	Gnetaceae	Mameilet
110	*Grewia hirsuta*	Tiliaceae	Sukta-pata
111	*Gynocardia odorata*	Flacourtiaceae	Lamtem
112	*Hedychium spicatum*	Zingeberaceae	Karpur
113	*Hedyotis scandens*	Rubiaceae	Bhedeli -lota
114	*Hibiscus rosa-sinensis*	Malvaceae	Joba
115	*Hiptage benghalensis*	Malpighiaceae	Kerek-Iota
116	*Holarrhena antidysenterica*	Apocynaceae	Dudkhuri, kutuj
117	*Homonoia riparia*	Euphorbiaceae	Hil-kadam
118	*Horsfieldia kingii*	Myrsticaceae	Amol
119	*Hovenia dulcis*	Rhamnaceae	Chetia-bola
120	*Hydnocarpus kurzii*	Flacourtiaceae	Chalmugra, lamtem
121	*Hymenodictyon excelsum*	Rubiaceae	Kodam
122	*Ichnocarpus frutescens*	Apocynaceae	Lomakandol
123	*Impatiens tripetala*	Balsaminaceae	Koria bijol, dumdeuka
124	*Ipomea batats*	Convolvulaceae	Mitha-alu
125	*Ipomea eriocarpa*	Convolvulaceae	Kalmow
126	*Ixora coccinea*	Rubiaceae	Rangol
127	*Jatropha curcas*	Euphorbiaceae	Bongali bhotera
128	*Jatropha gossypifolia*	Euphorbiaceae	Bhotera
129	*Juglans regia*	Juglandaceae	Akhrot
130	*Justicia gendarussa*	Acanthaceae	Tita-bahek
131	*Kayea assamica*	Clusiaceae	Sia-nahar
132	*Kirganelia reticulata*	Euphorbiaceae	Amloki
133	*Knema angustifolia*	Myrtaceae	Mota-pasuti, tezranga
134	*Lagenaria siceraria*	Cucurbitaceae	Jati-lau, lau
135	*Lagerstroemia speciosa*	Lythraceae	Azar
136	*Laportea crenulata*	Urticaceae	Sorat goss
137	*Lawsonia inermis*	Lythraceae	Jetuka, mehendi
138	*Leea indica*	Vitaceae	Kukurathengia
139	*Leucas linifolia*	Lamiaceae	Doron bon
140	*Linostoma decandrum*	Thymelaeaceae	Bakalbih, ruteng
141	*Lithocarpus fenestratus*	Fagaceae	Kuhi
142	*Litsea glutinosa*	Lauraceae	Heluka, bagnala

143	*Litsea monopetala*	Lauraceae	Hoanlu
144	*Litsea salicifolia*	Lauraceae	Dighloti
145	*Macrosolen cochinchinensis*	Loranthaceae	Raghumola
146	*Maesa indica*	Myrsinaceae	Awuapat, maahpora
147	*Mallotus philippensis*	Euphorbiaceae	Jorat, losan
148	*Mangifera sylvatica*	Anacardiaceae	Bon-am
149	*Manihot esculenta*	Euphorbiaceae	Simalu-alu
150	*Melastoma malabathricum*	Melastomataceae	Phutuka
151	*Melia azedarach*	Meliaceae	Ghora-nim
152	*Merremia umbellata*	Convolvulaceae	Goria loti, kolia lata
153	*Mesua ferrea*	Clusiaceae	Nahor
154	*Meyna laxiflora*	Rubiaceae	Kutkura, moin
155	*Mezoneuron cucullatum*	Caesalpiniaceae	Bagh-anchora
156	*Michelia champaca*	Magnoliaceae	Titasopa
157	*Michelia Montana*	Magnoliaceae	Pansopa
158	*Microtoena insuavis*	Lamiaceae	Asomia patchouli
159	*Millettia pachycarpa*	Fabaceae	Bokol bih
160	*Mimosa pudica*	Mimosaceae	Nilajiban
161	*Mimusops elengi*	Sapotaceae	Bokul, gokul
162	*Mirabilis jalapa*	Nyctaginaceae	Gadhuli -gopal
163	*Mitragyna rotundifolia*	Rubiaceae	Timi
164	*Momordica dioica*	Cucurbitaceae	Bhatkarela
165	*Moringa oleifera*	Moringaceae	Sajina
166	*Morus alba*	Moraceae	Nuni goss
167	*Mucuna prurita*	Fabaceae	Bandar kekua
168	*Murraya koenigii*	Rutaceae	Narasingha
169	*Mussaenda glabra*	Rubiaceae	Sonarupa
170	*Myrica esculenta*	Myricaceae	Nagatenga
171	*Nelumbo nucifera*	Nymphaeaceae	Podum
172	*Nerium indicum*	Apocynaceae	Karabi
173	*Nyctanthus arbor-tristis*	Oleaceae	Sewali phul
174	*Nymphaea alba*	Nymphaeaceae	Bhet, kumud
175	*Nymphaea stellata*	Nymphaeaceae	Neel-padma
176	*Ocimum basilicum*	Lamiaceae	Tulasi
177	*Ocimum gratissimum*	Lamiaceae	Ram-tulasi
178	*Ocimum sanctum*	Lamiaceae	Kola-tulasi
179	*Oroxylum indicum*	Bignoniaceae	Bhatghila
180	*Osbekia nepalensis*	Melastomataceae	Boga-phutuka
181	*Oxalis corniculata*	Oxalidaceae	Tengeshi-tenga
182	*Paederia foetida*	Rubiaceae	Bhedeli-lota
183	*Phlogocanthus thyrsiflorus*	Acanthaceae	Tita-phul
184	*Phylanthus fraternus*	Euphorbiaceae	Bhui-amlakhi
185	*Phyllanthuis urinaria*	Euphorbiaceae	Bhui-amlakhi
186	*Phytolacca acinosa*	Phytolaccaceae	Jaiong
187	*Picrasma javanica*	Simaroubaceae	Bon-posala, nimita

188	*Piper betle*	Piperaceae	Pan
189	*Piper longum*	Piperaceae	Pipoli
190	*Piper nigram*	Piperaceae	Jaluk
191	*Pithecellobium clypearia*	Mimosaceae	Bhasahu
192	*Pithecellobium monadelphum*	Mimosaceae	Moj, Bhasahu
193	*Plumbago indica*	Plumbaginaceae	Ronga-agechi
194	*Plumbago zeylenica*	Plumbaginaceae	Boga-agechi
195	*Plumeria acuminata*	Apocynaceae	Gulanchi,gulancha
196	*Pongamia pinnata*	Fabaceae	Karchaw
197	*Pothos cathcartii*	Araceae	Hathi dhekiya
198	*Rauvilfia serpentina*	Apocyanaceae	Arachontita
199	*Rubia cordifolia*	Rubiaceae	Majathi
200	*Schima wallichii*	Theaceae	Makriasal, nogabhe
201	*Setaria italica*	Poaceae	Kaon
202	*Sida acuta*	Malvaceae	Boriala
203	*Sida cordifolia*	Malvaceae	Sun-borial
204	*Sida rhombifolia*	Malvaceae	Boriala
205	*Solanum indicum*	Solanaceae	Tid bhakuri
206	*Solanum nigrum*	Solanaceae	Pichkati
207	*Solanum torvum*	Solanaceae	Bhit-tita, hathibhekuri
208	*Spilanthus acmella*	Asteraccae	Pirazha
209	*Spondias pinnata*	Anacardiaceae	Amora
210	*Stephania hernandifolia*	Menispermaceae	Tubuki-lot, goldua
211	*Symplocos racemosa*	Symplocaceae	Kavirang, bhomroti
212	*Syzygium cumini*	Myrtaceae	Kalajam
213	*Tamarindus indica*	Caesalpinaceae	Tetuli
214	*Tectona grandis*	Verbanaceae	Ching-jagu
215	*Tephrosia candida*	Fabaccae	Boga medaloa
216	*Terminalia arjuna*	Combretaceae	Arjun
217	*Terminalia chebula*	Combretaceae	Hilikha
218	*Terminalia myriocarpa*	Combretaceae	Hollock
219	*Typhonium trilobatum*	Araceae	Samakosu
220	*Vesica adhatoda*	Acanthaceae	Bahek
221	*Viburnum colebrookianum*	Caprifoliaceae	Mezenga
222	*Vitex negundo*	Verbenaceae	Posotia
223	*Wedelia calandulacea*	Asteraceae	Maha -bhringraj
224	*Wrightia tomentosa*	Apocynaceae	Atkuri
225	*Xanthium strumarium*	Asteraceae	Agara
226	*Xanthozylum budrunga*	Rutaceae	Bajramani, bajranali

Celebration of World Environment Day – June 5

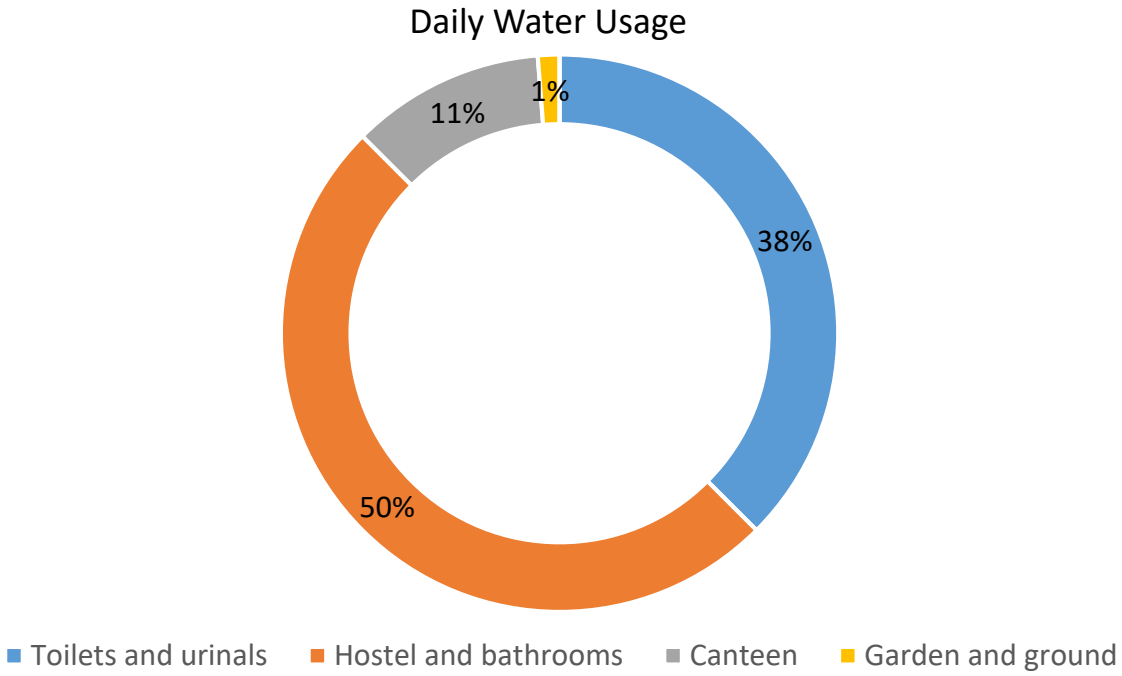
Awareness seminars are organised on various environmental problems. Distribution of fruit trees, poster exhibition, etc. are some activities on that day.

4.1.5 CARBON FOOTPRINT

- Number of persons using cycles: 80
- Number of people using cars: 12
- Number of people using two-wheelers: 56
- Number of persons using other transportation: 850
- Number of visitors per day: 8
- Number of students staying in the hostel: 33
- Number of faculty and staff staying in the quarters: 1
- Average distance travelled by stakeholder: 20x2 km/day
- Expenditure for transportation per person per day: ₹ 20/-

4.2 EVALUATION OF AUDIT FINDINGS

4.2.1 WATER



The institution requires 4000 litres of water each day for all of its purposes. Groundwater is the primary source of water. There is no use of water from the public water supply. By way of pipe leaks and other mistakes, there is no daily water loss. The quantity of water lost through outlets can be recovered and used for toilet flushing and gardening if water treatment systems are installed at the canteen and hostel. The management of sustainable water usage can greatly benefit from awareness campaigns at this college.

4.2.2 ENERGY

Energy Utilization

Appliances	Number of appliance	Units of current per month kWh
LED bulbs	359	13.2704
Fans	243	102.6432
Tube Lights	32	2.2528
Computers	87	183.744
Laptops	3	0.4224
Photocopiers	3	7.04
10 KVA UPS	2	35.2
Inverters	4	1.76
LED Televisions	2	0.2112
LCD Televisions	2	0.3168
Air Conditioners	7	23.76
CCTV Cameras	34	10.0224
Printers	16	7.04
Projectors	3	1.584
Sound Systems	2	1.408
Exhaust Fans	3	0.2112
Water Purifier	6	3.8016
Water Cooler	6	0.8448
Refrigerators	3	51.84
Wifi Routers	4	0.25344
Water Pumps	4	1.936
Total Energy usage per month (kWh)		**449.56224**

Currently used financial strategies in colleges

- Turn off electrical equipment when not in use, use energy-efficient light-emitting diode (LED) bulbs instead of incandescent and CFL bulbs, keep up with appliance maintenance, and swap out older items.
- Use the power-saving mode on equipment like PCs.

The estimated monthly energy consumption for the college's various operations is 450 units. Around ₹16,000 is spent on power per month. By replacing tube lighting with LED lighting, energy reduction might be accomplished. It is feasible to replace old electrical appliances, particularly fans, with energy-efficient ones. Programmes to inform stakeholders of the need for energy conservation may help increase the long-term profitability of using various energy sources.

4.2.3 WASTE

Total biodegradable waste = 12.25 kg/day

Non-biodegradable waste = 0.05 kg/day

The college's composting facility is inadequate for handling biodegradable waste produced by the restaurant, offices, vegetable garden, and campus cleaning activities. The biodegradable waste may be treated using a variety of techniques, including pit composting, vermicomposting, and bacterial composting employing bacterial consortia. It's possible to sell out of bottles, plastics, cans, shattered glass items, tins, etc. As part of a programme to raise awareness among the students, a model solid waste treatment system might be created at the institution.

4.2.4 GREEN CAMPUS

Total number of plant species identified: 66

Tree cover of the campus: 450 m^2

Total area for cultivation

There isn't much acreage available at the campus for environmental initiatives. On campus, there are 16 distinct kinds of trees. The campus has space to grow at least 20 different kinds of trees each year. For the following fiscal year, it is suggested that a rooftop vegetable garden and a garden of medicinal plants be established.

4.2.5 CARBON FOOTPRINT

- Petrol used by two wheelers per day: 56 litres (per person to and from 40 km = 1 litre).
- Fuel used by four-wheelers (12 people) 24 litres (per person to and from 40 km = 2 litres)
- Fuel for persons (totaling 850) travelling by common transportation is 68 litres (4 litres x 50 persons).
- Total fossil fuel use is 148 litres per day.
- Total fuel cost per day for transportation: ₹14800/- (148 litres x 100).
- Cost of gas cylinders used: ₹5000/month (5 cylinders).
- Cost of generator fuel: ₹1000/month (0.5 litre per day).

- Amount spent for transportation (office): ₹500/month (approx.)
- Amount spent for transportation (canteen): ₹500/month (approx.)
- Amount spent for transportation (visitors): ₹15000/year (approx.)

The use of fossil fuels is the main source and cause of carbon dioxide release in the atmosphere. Transportation to the college campus by students, faculty, and others is the main source of carbon dioxide pollution. It is advisable to plant more trees on campus to maintain ecological balance and reduce pollution.

4.3 LIST OF ECO-FRIENDLY ACTIVITIES GOING ON IN THE CAMPUS

- ✓ Planting and caring for trees on and around the campus.
- ✓ Timely disposal of waste from the campus
- ✓ Celebration of important days like World Environment Day with great importance.
- ✓ Plastic-free practises
- ✓ Distribution of fruit and medicinal plant saplings among students for plantation.

4.4 CONSOLIDATION OF AUDIT FINDINGS

We anticipate that students will have better respect for and comprehension of how their actions affect the environment. Through the different auditing procedures, they have effectively been able to identify the environmental implications. Through their participation in this green auditing process, students have learned the importance of sustainability on college campuses. It will raise awareness of how the Earth's resources are used in their town, college, and beyond.

4.5 MAJOR AUDIT OBSERVATIONS

- The environmental awareness initiatives are not substantial.
- The training in vegetable cultivation and composting practises is inadequate.
- There is no "green" or environmental policy statement indicating the commitment of the college towards its environmental performance.
- The gardens inside the college premises are well maintained.
- The use of notice boards and signs is inadequate to reduce overexploitation of natural resources.

- Programmes for green initiatives have to be increased. The campus has been declared plastic-free; stringent actions should be taken to maintain this.
- Rainwater harvesting systems, solar power generation, and environmental education programmes have to be strengthened.

4.5.1 WATER AUDIT

- There is no water consumption monitoring system on the college campus.
- The college does not have waste water treatment for waste water generated from canteens, hostel kitchens, toilets, bathrooms, and office rooms.
- The waste water from canteens, and kitchens is not suitably controlled and is not used for gardening.
- Nalbari Commerce College has started rainwater harvesting on campus.
- There are two rainwater harvesting units on campus with a total capacity of 2000 litres.
- The college has to take actions to strengthen rainwater harvesting. Rainwater harvesting for separate buildings is lacking. A measurement of the quantity of water obtained from rainwater harvesting should be done.
- An automatic switching system is not installed for pump sets used for overhead tank filling.
- Per day, the use of water is very high, and there is no control over the wastage of water.
- Display boards against the misuse of water are lacking.

4.5.2 ENERGY AUDIT

- The primary electrical wire that runs from the electrical post to the college's electric metre travels through a wall and must be relocated to a site that is safer.
- The communication process for raising awareness in relation to energy conservation is found to be inadequate.
- The monthly use of electricity at the college is low.
- There are fans of older generation that are non-energy efficient and can be phased out by replacing them with new energy efficient fans.
- Regular monitoring of equipment and immediate rectification of any problems.

4.5.3 WASTE AUDIT

- The solid waste management systems established are insufficient.
- The college has proper communication with the local body for regular collection of solid waste from the campus.
- Implementation of sustainable projects to attain set environmental goals is not in place.
- Waste bins in the class rooms, veranda, canteen, and campus are inadequate.
- Proper composting systems are lacking.

4.5.4 GREEN CAMPUS AUDIT

- The tree cover of the college with respect to stakeholder strength is not enough.
- Regular planting of trees on campus is inadequate.
- Display boards for all plants identified are lacking.
- No arboretum is set up on the college campus.
- There are only a very few fruit trees in the college to attract birds.
- The registry for flora and fauna on the campus is lacking.
- The uses of herbs cultivated in the medicinal garden are not displayed.

4.5.5 CARBON FOOT PRINT AUDIT

- The college has not yet taken any initiative for carbon accounting.
- Adequate common transportation facilities should be provided by the college.
- Encourage students to use cycles.
- 122 litres of fossil fuel are burned every day for transportation and the functioning of the college.

4.6 PREPARATION OF ACTION PLAN

Policies relating to college management and methods for using resources must be taken into account. For its sustainable development, the college should have a green or environmental policy. The college's management should be commended for their careful implementation of the environmental policy. The college should have a procurement policy (the college's policy for procuring supplies) as well as a policy on awareness-raising or training initiatives (for example, for kitchen or ground workers).

4.7 FOLLOW UP ACTION AND PLANS

The process of conducting a green audit produces a significant amount of useful management data. It is crucial to make sure that the audit's conclusions and recommendations are taken into account at the appropriate level within the organisation and that action plans and implementation programmes are developed as a result of the findings in order to be able to justify the time, effort, and cost involved in the exercise. Follow-up on audits is a step in the larger process of ongoing improvement. The audit becomes an isolated event without follow-up, quickly forgotten due to the demands of organisational priorities and the passage of time.

4.8 ENVIRONMENTAL EDUCATION

- Training programmes in solid waste management, liquid waste management, setting up a nursery for medicinal plants, water management, vegetable cultivation, tree planting, energy management, landscape management, pollution monitoring techniques, and rainwater harvesting techniques may be implemented in the college before the next green audit.
- Increase the quantity of informational signs on environmental awareness, such as "plastic-free campus," "save water, save electricity," "don't waste food or water," and "don't smoke."
- Encourage involvement from environmental clubs.
- For the purpose of giving pupils the necessary instruction, model rainwater collecting systems, rainwater pits, vegetable gardens, medicinal plant gardens, etc. should be set up.
- Hold a display of recyclable trash items.
- The carbon consumption awareness programmes on carbon emissions at the individual as well as societal level would assist in avoiding air and noise pollution on the campus due to automobiles.
- Students and staff members may be made fully aware of the pollution produced by the use of vehicles.

4.9 CONCLUSION AND FULL LIST OF RECOMMENDATIONS

The green audit aids in evaluating performance in the environmental sphere and is quickly turning into a crucial tool for decision-making at a college. The process of achieving an eco-friendly approach to the college's sustainable development is aided by the green audit reports. It is hoped that the outcomes of the green auditing report will inspire new initiatives and creative practises while also serving as a guide for educating the college community about the institution's current environmental practises and resource utilisation. Several suggestions are made to reduce the threat of waste management by utilising scientific and environmentally beneficial methods. In the framework of a green campus and, consequently, a sustainable environment and community development, this may result in a bright future. It has often been demonstrated that practical recommendations, alternatives, and insights gleaned from audits have benefited the organisation being audited. Staff who have been too close to issues or solutions are frequently helped to realise the worth of other strategies by an outside view, viewpoint, and opinion. When engaging with numerous stakeholders who need to be convinced that things are operating smoothly and systems and processes are coping with the inevitable changes and alterations that occur, a green audit report is a highly effective and important communication tool to utilise.

4.9.1 COMMON RECOMMENDATIONS

- Adopt an environmental policy for the college.
- Establish a purchase policy for environmentally friendly materials.
- Introduce the UGC Environmental Science course to all students.
- Conduct more seminars and group discussions on environmental education.
- Students and staff can be permitted to solve local environmental problems.
- Renovation of the cooking system in the canteen to save gas
- Establish water, waste, and energy management systems.

4.9.2 CRITERIA WISE RECOMMENDATIONS

4.9.2.1 RECOMMENDATIONS FOR WATER

- Remove damaged taps and install sensitive taps.
- Drip irrigation for gardens and vegetable cultivation can be initiated.
- Establish rainwater harvesting systems for each building.
- Establish water treatment systems.
- Awareness programmes on water conservation are to be conducted.
- Install display boards to control the exploitation of water.

4.9.2.2 RECOMMENDATIONS FOR ENERGY

- Employment of more solar panels and other renewable energy sources.
- Conduct more energy awareness programmes for students and staff.
- More energy-efficient fans should be replaced.
- Observe a power-saving day every year.
- Automatic power switch-off systems may be introduced.

4.9.2.3 RECOMMENDATIONS FOR WASTE

- Establish a functional biogas plant.
- A model solid waste treatment system is to be established.
- Practise of waste segregation to be initiated.
- A model vermicomposting plant is to be set up on the college campus.
- Establish a plastic-free campus.
- Avoid plastic plates and cups in the college.

4.9.2.4 RECOMMENDATIONS FOR GREEN CAMPUS

- All trees on campus should be named scientifically.
- Create more space for planting.
- Grow potted plants in both the corridor and class rooms.
- Create an automatic drip irrigation system.
- Not just celebrating Environment Day but making it a daily habit.
- Beautify the college building with indoor plants.
- Providing funds to the nature club for making the campus greener.

4.9.2.5 RECOMMENDATIONS FOR CARBON FOOTPRINT

- Establish a system of carpooling among the staff to reduce the number of four-wheelers coming to the college.
- Introduce college bus services to the students and staff.
- Encourage students and staff to use cycles.
- Establish a more efficient cooking system to save gas.
- Discourage the students from using two-wheelers for their commute.
- The use of generators every day should be discouraged.

CHAPTER 5

EXIT MEETING

Prof. Subhendu Sekhar Bag conducted the exit meeting. Prior to finishing the audited report, it served as a means to give management and employees extensive comment on the audit team's first findings. The last meeting took place on December 21, 2022, at the college. The audit team asked the college's administration and personnel for clarification on some of the data they had obtained.

DRAFT AUDIT REPORT

A draught audit report was created using the data the audit team acquired. The audit team and others who were directly involved in the audit were then given copies of this draught report to review for correctness. In the departure meeting, the draught green audit report was also covered.

FINAL AUDIT REPORT

The final audit report, which has been revised, provides the audit's conclusions and recommendations. Because some of the tests and analyses that must be done in the future are based on the information it includes, it will also serve as one of the foundations for future audits. A final audit report was delivered to the college principal on December 30, 2022.

FOLLOW UP AND ACTION PLANS

Green audits are a regular element of a process. To make the college ecologically sustainable, cutting-edge green projects must be developed and put into action every year. Before the next audit, comprehensive follow-up programmes for green auditing recommendations should be completed.

NEXT AUDIT

The following green audit should be carried out in 2025 in order to encourage ongoing development.

TRANSPARENCY OF GREEN AUDIT REPORT

One effective way to show an organisation's commitment to honesty and openness is through a green audit report. An organisation should be confident enough to make its green audit reports openly available to anyone who requests them if it truly feels it has nothing to hide from its stakeholders. The general norm is that all stakeholders should have access to green audit reports.

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