

# **BINANDI CHANDRA MEDHI COLLEGE, RAMDIA**

**P.O-RAMDIA, DIST-KAMRUP (ASSAM), PIN-781102**

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**FIRST CYCLE NAAC ACCREDITATION, 2022**

## **CRITERION-7**

### **Institutional Values and Best Practices**

#### **7.1: Institutional Values and Social Responsibilities**

**7.1.3: Quality audits on environment and energy regularly undertaken by the Institution. The institutional environment and energy initiatives are confirmed through the following.**

- 1. Green Audit Report**

**SUBMITTED TO**



**THE NATIONAL ASSESSMENT AND ACCREDITATION COUNCIL**

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# **GREEN AUDIT REPORT, 2022-23**

## **BINANDI CHANDRA MEDHI COLLEGE, RAMDIA**

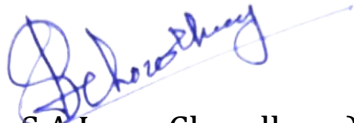


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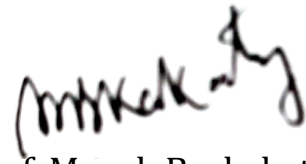
## CERTIFICATE

This is to certify that the Green Audit Team of Dimoria College has prepared this report on the basis of Primary data collected by visiting different areas of the college and secondary data collected from different stake holders of the college for the entire process. The team visited the College and taken many photographs of the sites and interacted with the Principal, IQAC coordinator and staff of the College. The report has been compiled by taking all reasonable care and based on information gathered.

We are thankful to the college authority for providing necessary data and information in making the report.



(Dr. S.A. Iman Choudhury)  
Coordinator, Green Audit Team  
Dimoria College, Assam




Prof. Manab Borkakati  
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Dimoria College, Assam

Counter signed By:



(Dr. Ashit Kr. Paul)  
Principal i/c  
B.C. Medhi College  
Assam



(Mr. Shahidul Islam)  
IQAC, Coordinator  
B.C. Medhi College  
Assam

## **CONTENTS:**

<b>Sl.No.</b>	<b>Topics</b>	<b>Page No.</b>
1	A Brief history of the College	1
2	Deptt, faculty members & Non teaching Staffs	2
3	What is Green Audit	3
4	Objectives of Green Audit	3
5	Benefits of Green Audit in the College	4
6	Environment Policy of the College	4
7	Preparation of Audit	5
8	Methodology	5
9	Biodiversity of the campus	6
10	Water Management	13
11	Energy Management	16
12	Waste Management	20
13	Air pollution	22
14	Noise Pollution	23

## **A BRIEF HISTORY OF THE COLLEGE:**

Binandi Ch. Medhi College, Ramdia (formerly known as Ramdia College) situated at Ramdia, an institution for higher education was established on August 13, 1992. The College is located in the western part of Sri Sri Hayagriba Madhab Dewalaya, and Poa Mecca, Hajo of Assam, which is about 30 K.M from Gauhati University. The College is located at Majorkuri village in Ramdia Mouza under Hajo revenue circle of Kamrup District, Assam

A group of dedicated persons covering the greater area of Ramdia, Bangalpara, Tokradia, Khetrihardia, Barhardia, Sobancha, Dampur etc. with their relentless and untiring effort has established this institution to provide quality higher education. Later on, the college was renamed as Binandi Chandra Medhi College, Ramdia in the name of the donor's Dr. jyoti Prasad Medhi's father as a gesture of gratitude.

Originally, the college started in "Ramdia Puthibharal Aru Samuhik Sanskritik Kendra" from 13/08/92. The college also obtained permission for concurrence on 29-12-1999 and obtained the Govt. concurrence up to part II level on 27-09-2004 and provincialised in 2013, according to the Assam Govt's Venture Institution provincialisation Act 2011. The college got permanent affiliation from G.U. on 18/12/09 and registered under Society Act XXI of 1860 on 12/03/2012. The College is included under 2 (f) And 12 (B) of UGC Act. 1956.

Till today the college gets financial support from No.1 Ramdia samabai samiti, Public donation, Theatrical performance, lottery and the financial assistance received from the Govt of Assam.

## **DEPARTMENTS, FACULTY MEMBERS AND NON TEACHING STAFFS:**

There are total eight departments in the College which offers both H.S level and undergraduate courses. The names of the departments of the College are:

A) Assamese

b) Arabic

c) Economics

d) Education

e) English

f) History

g) Mathematics

h) Political Science

The College offers **Honours Courses in B.A** in the following subjects:

Assamese, Economics, Education, English, Political Science

Besides these, the college runs **Generic Elective subjects like-** Elective Assamese, Economics, Education, Political Science, Arabic, History and Mathematics.

There are total nineteen numbers of faculty members in the college to teach the above mentioned subjects. Besides Principal, there are total twelve numbers of office staff including Librarian.

## **WHAT IS GREEN AUDIT?**

Green Audit can be defined as systematic identification, quantification, recording, reporting and analysis of components of environmental diversity. Green Audit was initiated with the beginning of 1970s with the motive of inspecting the work conducted within the organizations whose exercises can cause risk to the health of the inhabitants and the environment. The main aim of conducting Green Audit in a particular institute or College is not only to upgrade the environment condition of inside the campus of the institute but also to the surrounding environment of that organization. It is carried out by taking different parameters which includes: water Management, Waste Management, Energy management, Biodiversity etc. and the analysis of these parameters help to make the institute environment friendly.

## **OBJECTIVES OF GREEN AUDIT:**

- The objective of carrying out Green Audit is securing the environment and cut down the threats posed to human health.
- To make sure that rules and regulations are taken care of.
- To avoid the interruptions in environment that are more difficult to handle and their correction requires high cost
- To suggest the best protocols for adding to sustainable development.
- To assess environmental performance.



- To promote environmental awareness.

### **BENEFITS OF GREEN AUDIT IN THE COLLEGE:**

The Audit helps the universities or Colleges to take necessary steps or plan and polices and implements them for the campus.

The Audit assists in self assessment and the decision making process.

The Audit also develops environmental awareness amongst the stakeholders.

The Audit also helps to implement sustainable development wit efficient resource management.

It also reduces the cost in resource optimization.

### **ENVIRONMENT POLICY OF THE COLLEGE:**

B.C.Medhi College, Ramdia always tries to protect and conserve the ecological system in and around the campus. The College takes different initiatives to protect its environment by organizing activities and tries to make the campus pollution free. The College works with all stakeholders and the local community to raise awareness. The College tries to continuously improve the efficient use of all resources like water, energy, papers etc. B.C.Medhi College takes its own responsibility to preserve the work carried out on the campus related to the environment.

## **PREPARATION OF AUDIT**

The College Administration of B.C.Medhi College,Ramdia was very much interested to conduct Green Audit and keen in taking up the recommendations suggested by Audit Team. In consideration to this, the Principal of the College approached the Green Audit Team of Dimoria College which offering services of Green Audit of the institutions. As per request of the Principal of B.C.Medhi College, the Green Audit Team of Dimoria College agreed to conduct the audit. After this ,the Audit team visited the College campus and decided to set up different criteria, and prepared number of questionnaire that are required to prepare audit.

### **METHODOLOGY:**

The purpose of the green audit of B.C.Medhi College,Ramdia is to ensure that the practices followed in the campus are in accordance with the Green Policy of the country. The Green Audit team of Dimoria College visited the B.C.Medhi College, Ramdia on 27th of March; 2023.The team first met the Principal and IQAC coordinator to get a preliminary idea of the college. The team visited the different sites of the college to determine the parameters. The methods include the following parameters: Biodiversity of the campus, Water Management, waste Management, Energy Management, Air and Sound pollution etc. To fulfill this methodology ,a detailed questionnaire for each mentioned criteria was prepared based on physical inspection of the Campus, collection of data from different stakeholders, taking photographs of different

locations, photograph of flora and fauna of the campus and then observation and review of the documentation and data analysis.

The Green Audit team decided to take up the following criteria for preparation of green audit. The main criteria are as follows:

**1. Biodiversity of the campus**

**(a)Flora of the campus**

**(b)Fauna of the campus**

**2. Water Management**

**3. Energy Management**

**4. Waste Management**

**5. Air Pollution**

**6. Noise Pollution**

**BIODIVERSITY OF THE CAMPUS:**

B.C.Medhi College is situated in a rural area of Kamrup District of Assam where farming and agriculture are being practiced in and around the campus. The College is trying to maintain the campus biodiversity by planting different varieties of plants in and around the campus and they are also trying to imbibe the local practices and culture in preserving local biodiversity within the campus. The College campus biodiversity includes different species of plants animal and aquatic ecosystems. The campus has different species of trees in and around the campus and a small pond on backside of the college where contains different varieties of local as well as exotic

species of fishes, crabs, frogs, snakes and other aquatic animals and planktons. Plantation improves aesthetics and helps as a buffer in reducing noise level, maintaining temperature of the area. Thus the College authority is planning to grow different varieties of fruit bearing trees that may attract variety of insects, birds and thus increasing the biodiversity.

### FLORA OF THE CAMPUS:

Sl.No.	Local Name	Scientific Name
1	Ahaot	<i>Ficus religiosa</i>
2	Ajar	<i>Lagerstroemia speciosa</i>
3	Radhachura	<i>Caesalpinia pulcherrima</i>
4	Krishnasura	<i>Delonix regia</i>
5	Debdaru	<i>Polyalthia longifolia</i>
6	Arjun	<i>Terminalia arjuna</i>
7	Dambaru	<i>Gardenia latifolia</i>
8	Pine	<i>Pinus roxburghii</i>
9	Bakul	<i>Mimusops elengi</i>
10	Neem	<i>Azadirachta indica</i>
11	Mohaneem	<i>Melia azedarach</i>
12	Mango	<i>Mangifera indica</i>
13	Jamu	<i>Syzygium cumini</i>
14	Kothal	<i>Artocarpus heterophyllus</i>
15	Narikol	<i>Cocos nucifera</i>
16	Tamul	<i>Areca catechu</i>
17	Silikha	<i>Terminalia chebula</i>
18	Aamlokhi	<i>Phyllanthus emblica</i>
19	Bogori	<i>Zizyphus mauritiana</i>
20	Jolphai	<i>Elaeocarpus serratus</i>
21	Kordoi	<i>Averrhoa carambola</i>
22	Modhuri	<i>Psidium guajava</i>
23	Pati Bet	<i>Schumannianthus dichotomus</i>
24	Simalu	<i>Bombax ceiba</i>

## 8

25	Karabi	<i>Nerium indicum</i>
26	Joba	<i>Hibiscus rosa sinensis</i>
27	Sewali	<i>Nyctanthus arbor-tristis</i>
28	Kodom	<i>Hymenodictyon excelsum</i>
29	Baah	<i>Bambusa nutans</i>
30	Norohinga	<i>Murraya koenigii</i>
31	Bhedailota	<i>Hedyotis scandens</i>
32	Togor	<i>Tabernaemontana coronarea</i>





### FAUNA OF THE CAMPUS: (Birds & Other animals)

Sl.No.	Local Name	Scientific Name
1	Panikawori	<i>Microcarbo niger</i>
2	Boga Bogoli	<i>Bubulcus ibis</i>
3	Konamuchari	<i>Ardeola grayii</i>
4	Siloni	<i>Milvus migrans</i>
5	Kopau	<i>Spilopelia chinensis</i>
6	Ghonchirika	<i>Passer domesticus</i>
7	Baduli	<i>Pteropus medius</i>
8	Pecha	<i>Tyto alba</i>
9	Paro	<i>Columba livia</i>

10

10	Bhatou	<i>Psittaciformes spp.</i>
11	Hudu	<i>Bubo bubo</i>
12	Salika	<i>Acridotheres tristis</i>
13	Masruka	<i>Halcyon smyrnesis</i>
14	Dauk	<i>Amaurornis phoenicurus</i>
15	Kuli	<i>Cuculus micropterus</i>
16	Tuni	<i>Orthotomus sutorius</i>
17	Deohah	<i>Asaarconis scutulata</i>
18	Deuraz hah	<i>Anser anser</i>
19	Gahori	<i>Sus domesticus</i>
20	Neul	<i>Herpestes edwardsii</i>
21	Mati pheti	<i>Ramphotyphlops braminus</i>
22	Gowala saap	<i>Bungarus fasciatus</i>
23	Bandor	<i>Macaca mulatta</i>
24	Dhora saap	<i>Xenochrophis piscator</i>
25	Gum saap	<i>Ptyas korros</i>





### Aquatic animals found in College Pond:

1	Puthi	<i>Systemus sarana</i>
2	Rohu	<i>Labeo rohita</i>
3	Borali	<i>Wallago attu</i>
4	Mua	<i>Amblypharyngodon mola</i>
5	Goroi	<i>Channa punctata</i>
6	Kuchia	<i>Anguillidae</i>
7	Bhangan	<i>Labeo bata</i>
8	Magoor	<i>Clarias batrachus</i>
9	Bhakua	<i>Labeo catla</i>
10	Chitol	<i>Chitala chitala</i>
11	Common carp	<i>Cyprinus carpio</i>
12	Kuri	<i>Labeo gonius</i>
13	Grasscarp	<i>Ctenopharyngodon idella</i>



14	Kawoi	<i>Anabas testudineus</i>
15	Kandholi	<i>Notopterus notopterus</i>
16	Kholihona	<i>Trichogaster fasciata</i>
17	Gadgadi	<i>Nandus nandus</i>
18	Singi	<i>Heteropneustes fossilis</i>
19	Singora	<i>Mystus vittatus</i>
20	Aari	<i>Sperata seenghala</i>
21	Borolia	<i>Aspidoparia morar</i>
22	Dorikona	<i>Esomus danricus</i>
23	Chonda	<i>Chanda nama</i>
24	Tura	<i>Macrornathus aral</i>
25	Bami	<i>Mastacembelus armatus</i>
26	Chengeli	<i>Channa orientalis</i>



### RECOMMENDATIONS:

1. It is advisable to grow for more plantation specially fruit bearing plants inside the college campus.
2. The plant should be properly identified and scientific names of each plant are desirable with local names.
3. More awareness program related to plantation is necessary.
4. The backside pond of the College needs cleaning and proper maintenance is required for preservation of aquatic life.
5. The College should establish a horticultural as well as medicinal garden in the campus.

**WATER MANAGEMENT:**

All plants and animals need water to survive. There can be no life on earth without water. So water is a basic necessity. There's a scarcity of water. To avoid this scarcity, water is saved and managed efficiently. Water management is the activity of planning, developing, distributing and managing the optimum use of water resources. Therefore, the audit team visited the different water sources of the college campus and noticed that for consumption of water main source is tube well water. The College also has one bore well in the campus which is sometime used for water withdrawal. The water after coming out of the tube well as well as bore well stored in the water tank which moves into different buildings. The college authority uses the aqua guard for drinking purposes. The water to irrigate the plants and other construction purposes usually collected from ponds but it has been noticed that sometimes tube well water is also used in construction work. The ponds of the College require proper maintenance as well as cleanness for aquatic animals. The 2870 to 3000 liters (approximately) of water is used per day by the college for different purposes. 150 L of water per day is lost through the leaking of pipes and through tube well. The water consumption in the summer season is significantly high compared to other months. The College authority can install rain water harvesting system to reduce the tube well as well as boring water. The College has two water tanks that are installed in two different blocks and for different purposes. The capacity one of them is 8000litres and another one is 15000litres.

### Details of tube well and boring water consumption per day:

Type of activity	Water uses/ person / day/Avg(L)	No.of persons using water	Total water consumptions per day (L)
Drinking	1.0	570	570.00
Washing hands and face	2.0	350	700.00
Toilet Flash	10	80	800.00
Cooking in canteen(Avg)	200		200.00
Washing utensils(Avg)	300		300.00
Water losses during uses(Avg)	300		300.00
<b>Total Consumption</b>			<b>2870.00</b>



15



## RECOMMENDATIONS:

1. It is advisable to use the water judiciously and reduce the loss of water.
2. Rain water harvesting system is required in the college campus.

3. The backside pond of the College requires proper maintenance so that the water for construction and other activities of the college can be used.
4. 'Save Water' posters to be affixed in the classrooms, hand washing areas.
5. Repair water leaks and leaky toilets.

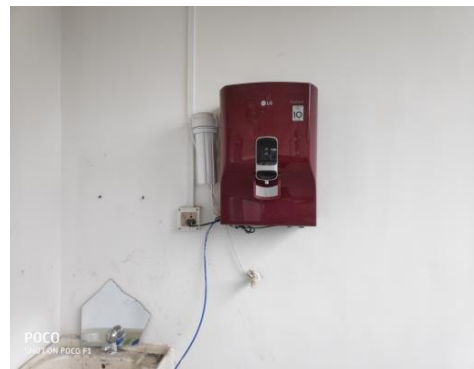
### **ENERGY MANAGEMENT:**

Our world is already fraught with rising energy demands. But favorably, employing an energy management system in a building – that aims to make use of the energy sources efficiently. Energy management is the proactive, organized, and systematic coordination of procurement, conversion, distribution, and use of energy to meet the requirements, taking into account environmental and economic objectives. Therefore the main objectives of energy management are resource conservation, environment protection and cost savings. It has been observed that common electricity meter is provided for the entire college. The electricity bill for every month is not fixed and it varies time to time. But as per information received from office the latest college electricity bill (month of March, 23) is around Rs. 5000/-. But the consumption of electricity increases in summer seasons and electricity bill also increases. Currently the College is using both tube light as well as LED Bulb. Besides these, the College is also using gas (One to two Cylinders per month) for preparing food items in the canteen. The electricity consumption in the college campus is as follows:

<b>Sl No.</b>	<b>Instruments used</b>	<b>Total numbers</b>
1	Computer	<b>15</b>
2	Printer	<b>03</b>
3	Xerox machine	<b>04</b>
4	Ceiling fan	<b>90</b>
5	Tube lights	<b>45</b>
6	Aqua guard	<b>02</b>
7	Stand fan	<b>02</b>
8	Exhaust	<b>04</b>
9	Inverter	<b>04</b>
10	Water pump	<b>02</b>
11	Light used in the night (Tube + Bulb)	<b>05</b>
12	LED	<b>40</b>

It has been observed that the students, teachers as well as office staff switch of the lights, fans, computers, Xerox machine etc. when not in use. The College authority has taken initiative to replace the incandescent bulbs and tube lights with LED bulbs. The College also tries to run the water pump one time daily to minimize the consumption of electricity. The solar light present in front of the gate is dysfunctional.





## RECOMMENDATIONS:

1. It is advisable to use solar light in the campus for night instead of tube lights or LED bulb to reduce the electricity cost.
2. It is advisable to put stickers on the switch board of the classroom displaying the switch off the light and fan when there is no class.
3. Gradual replacement of existing non LED based lights to LEDs can further bring down costs for lighting.



**WASTE MANAGEMENT:**

Waste management is important as it saves the environment from the toxic effects of inorganic and biodegradable element present in waste. Mismanagement of waste can cause water contamination, soil erosion and air contamination. Waste management refers to the activities conducted to manage waste from its collection to eventual disposal. So, waste management methods seek to reduce or eliminate the negative impacts that waste has on society. Waste management is an important element of environmental protection. Its purpose is to provide hygienic, efficient and economic solid waste storage, collection, transportation and treatment or disposal of waste without polluting the atmosphere, soil or water system. It is important to segregate the biodegradable wastes from non-biodegradable ones.

The waste water of the college is mainly released from washing, toilets, kitchen of the college. There are 7-8 bathrooms or washrooms are available in the college. Currently, waste water generated from canteen, washroom and other sources are deposited in the backside of the College which is connected to the roadside drainage system. It has been noticed that the College is maintaining drainage system to some extent inside the campus to release rain water stored in the campus.

The solid wastes generated from the college campus includes mainly, paper waste, kitchen waste, dry leaves of the plants. There are number of Plastic containers used as waste bins are provided in the office and many other locations of the college campus to collect the paper and other solid wastes. Being a College with non-residential facility, the quantity of wet (food wastes) waste generated in the premises is minimum. The organic kitchen wastes

## 21

are deposited in the well made by NSS volunteers of the college which are sometimes used as fertilizer. The College being an academic institution, paper waste is one of the main solid wastes. It has been known that the college authority has taken steps to minimize the paper usage and also tries to reuse the one side used printed paper for internal communication.



### RECOMMENDATIONS:

1. To keep the dry waste and wet wastes a proper concrete chamber should construct.
2. It is required to proper drainage system in the campus to release the waste water'

1. It is advisable to use environment friendly bamboo waste bean inside the campus instead of plastic beans.
2. Bio-waste: Composting system to be adopted.

### **AIR POLLUTION:**

Air pollution is the contamination of air due to the presence of substances in the atmosphere that are harmful to the health of humans and other living beings, or cause damage to the climate or to materials. Air pollution occurs when dangerous particles, gases, and chemicals are released into the air. The rate of air pollution increases every day in the atmosphere. The combustion of fossil fuels, burning of biomass such as firewood, agricultural wastes and animal wastes are the principal source of air pollution. B.C.Medhi College, Ramdia is situated in rural area, and the College campus is almost free from air pollution. The surroundings of the college are covered mainly by paddy field, trees and marshy areas. The transportation of vehicles inside the college is minimum. Around 05 four wheelers and 20 two wheelers are coming to the college every day. It has been noticed that the vehicles are usually parked inside the college campus and that may release smokes and carbon emission. This may not be sufficient to pollute the air but it is advisable to park the vehicle outside or backside of the college campus that is little bit away from the main college buildings. The authority is planning to make the parking area in one corner of the college so that it will not hamper the environment of the campus. The College burns the dry leaves and some other wastes inside the campus once or twice in a month which may pollute air of the campus.



### **RECOMMENDATIONS:**

1. The vehicles should be parked in proper parking area to reduce the air pollution.
2. It is advisable to burn the waste material like dry leaves little away from campus.
3. Encourage the use of bicycles and public transport system by the community, particularly the student community.

### **SOUND POLLUTION:**

Noise pollution, or sound pollution, is the propagation of noise or sound with ranging impacts on the activity of human or animal life, most of which are harmful to a degree. The source of outdoor noise worldwide is mainly caused by machines, transport, and propagation systems. . It has been noticed that the very less number of vehicles coming to the college every day and these vehicles usually comes in the morning and left the college in the afternoon. So, there is less chance of making any sound pollution during college hours. There is no Disel Generator and any other electrical appliances to produce sounds. There is no chance of sound pollution from the vehicles plying in the road as the college is situated in the rural area. Though the College is situated beside the main road but the vehicles plying in the road is very less in number.



**RECOMMENDATIONS:**

- 1.** The vehicles should be parked in proper parking area to reduce the sound pollution.
- 2.** Encourage the use of bicycles and public transport system by the community, particularly the student community.

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FIRST CYCLE NAAC ACCREDITATION, 2022

## CRITERION-7

### Institutional Values and Best Practices

#### 7.1: Institutional Values and Social Responsibilities

7.1.3: Quality audits on environment and energy regularly undertaken by the Institution. The institutional environment and energy initiatives are confirmed through the following.

1. Energy Audit Report

SUBMITTED TO



THE NATIONAL ASSESSMENT AND ACCREDITATION COUNCIL

A REPORT ON  
ENERGY AUDIT AT BINANDI CHANDRA MEDHI COLLEGE, RAMDIA

SUBMITTED TO  
THE PRINCIPAL  
BINANDI CHANDRA MEDHI COLLEGE, RAMDIA



SUBMITTED BY

Sub Divisional Engineer  
Hajo Electric Sub Division  
APDCL, LAR, Hajo



## CONTENTS

1. Background-----	3
2. Introduction to energy Audit-----	3
3. Scope of work-----	3
3.1 Assessment of actual operating load and scope of optimizing the load	
3.2 Study of individual units and conservation of electrical power	
3.3 Energy conservation in water pump system	
4. Energy scenario of Binandi Chandra Medhi College, Ramdia -----	4
5. Methodology of energy Audit -----	4
6. Walk in audit, Observation and evaluation-----	5
7. Acknowledgement -----	8





## 1. Background

India is a developing country with more than 130 crores plus population. The energy consumption of the nation is gradually increasing. At the present stage the country import 80% of its fossil fuel to move the economy. About 70% of the electricity in India is generated from fossil fuel of which major component is coal. India has to depend on fossil fuel to sustain its GDP and to raise quality of life of the people. In contrast burning of fossil fuel like coal, diesel, petrol emanates CO<sub>2</sub> leading to accumulation of greenhouse gases in atmosphere. Accumulation of greenhouse gasses in atmosphere is an anthropogenic factor leading to global warming. In order to reduce adverse impact of climate change emission of greenhouse gasses have to be reduced. It is at this juncture that electricity and water need to be used efficiently. We need to remove inefficiencies in use of electricity so as to use its efficiently. Binandi Chandra Medhicollege, Ramdia is embarking on a road map to use electricity efficiently. It has taken the lead to carry on energy audit.

## 2. Introduction to Energy Audit

Energy audit is better way to increase energy efficiency and reduce energy consumption. It is an assessment of energy consumed within a time frame in a given location to find out inefficiencies. As per Energy conservation Act, 2001, Energy Audit is defined as “the verification, monitoring and analysis of use of energy including submission of technical report containing recommendation for improving energy efficiency with cost benefit analysis and an action plan to reduce energy consumption.”

In the provision of Energy Conservation Act, 2001 the Bureau of Energy Efficiency has been set up under the ministry of power. The parliament of India passed the bill on conservation of energy bill in 2001 and there by enlisting a set of rules to make efficient use of energy.

## 3. Scope of the Work

- **Assessment of actual operating load and scope for optimizing**
- Review of existing electrical load in the campus
- Review of electrical load based on actual requirement
- **Study of Individual units and means to conserve electrical power**
- Study of existing use of power
- Review of unit wise electrical load based on requirement



- Recommendation for saving electricity
- **Energy conservation in water pumping system**
- Observation in use of power and water
- Methods to save power and water

#### 4. Energy Scenario of Binandi Chandra Medhi college, Ramdia

Sl. No	Data on power supply	Values
1.	Rating of distribution Transformer	100kva
2.	Connected Load	85kw
3.	Connected Demand	70kw
4	Billed Electricity Consumption in kwh (1 <sup>st</sup> January -31 <sup>st</sup> December	3381Kwh
5.	Annual Bill for Maximum Demand	
6.	Annual cost of electricity charges	61,326
7.	Working Hours	8 hours
8.	Sub-meter in individual units	Nil

#### 5. Methodology for energy Audit

The methodology for energy audit consists of preliminary audit and post audit stages.

##### Step 1-Building a team for Energy conservation (ECC)

During the preliminary audit of Energy Conservation Committee(ECC) is formed with Principal as the team leader. The idea of Energy audit is a collective effort. It is essential that an energy conservation team is formed to carry forward the objective of energy audit. A meeting is scheduled between the auditor and team of to start with process. Agenda of the meeting focuses on objectives, scope of works, rule and regulation,roles and responsibilities of team members and description and scheduled project activities. During meeting the team is enlightened about power system within the campus. energy system specification, standard operating practices, importance of saving electricity and safety measures to be adopted during operation of various electrical equipment.

##### Step-2.Walk inAudit

After formation of ECC members along with energy auditor goes round the entire campus to take stock of various electrical power consuming devices including lighting system, fan, and various laboratory equipment.

##### Step-3.Documents Verification-



In this phase various documents like energy bill, agreements with utility are verified.

#### **Step-4. Identification of energy consuming devices**

After a study of the facilities energy consuming devices are identified and where appropriate field measurements are collected to substantiate findings.

#### **Step-5. Bills by utility for analysis.**

This is one of the steps where bills served by utilities have to be verified to ascertain if cost incurred on electricity charges are reasonable. It also seeks to verify balance between energy actually required and energy consumed.

#### **Step-6. Evaluation and feasibility of Energy Conservation Measures.**

After walk in audit, security of relevant data, information based on available documents, measurements where required feasibility of conservation measures is studied with pay back method. This may be segregated to short-medium-and long term period.

#### **Step-7. Preparation of Audit finding report.**

The findings of recommendation of audit are documented in the audit report. This report includes description of the existing power network within the campus and focuses on areas of major energy consuming locations. A discussion with the Energy Conservation Committee highlights the need for saving energy. This will lead to save cost of electricity consumption and recommended the short, medium and long-term measures. This energy saving measures tries to rationalize the use of electricity and estimates payback period after implementation of the recommendations.

#### **Step-8. Post Audit Period.**

The energy conservation measures will bring benefits of energy and costs saving only after the recommendation are implemented. The use is on the user and stake holders of the institution to implement the ECM. The energy auditor has to highlight the importance of implementing ECM so as to achieve broader goal of efficient use of energy as stated in the energy Conservation Act 2001.



## 6. Energy conservation committee, Walk-in audit, observation and evaluation.

### 6.1 Energy Conservation Committee(ECC)

As a part of energy audit exercise energy auditor visited Binandi ChandraMedhiCollege, Ramdia 22<sup>nd</sup> Feb, 2022. The purpose was to have first hand information of electrical loads, consumption pattern and prospect of saving energy. Conserving energy is always a team work and collaborative action. The management of B.C.M.College was committed to exercise of energy audit. In the process of forming ECC and to ensure full participation of stake holders including teachers, staff and students and energy conservation committee is formed with principal as the team leader. ECC included following members.

1. Dr. Ashit Kr. Paul, Principal B.C.M. College - Chairman.
2. Abu Lais Ahmed -- - Convenor
3. Sri. Lalit Ch. Bharali. --- Member
4. Mr. Shahidul Islam. --- Member.
5. Mr. Ramen Das ---- Member

### 6.2 Walk in audit and observation:

Walk in audit forms a part of preliminary audit. In this exercise energy auditor along with Energy Conservation Team (ECC) takes a round of the college campus to observe use of electrical energy at different blocks and departments of the College and have objective assessment. The purpose of walk-in-audit is to have an insight into electrical network and power consuming devices and explore if there was any possibility of saving power. The devices included lights both LED & CFL, Fans, Plug points (both 6 and 16 amps), Computers, Projectors, audio visual systems, incinerator, diesel generator, water pumps, air conditioners and so on. The team went round different blocks of college including office of the Principal administrative block, central library and laboratory. The team also had a round of departments and class rooms of English, Economics, Education, Political Science, History, Arabic and Mathematics, canteen and toilets etc. This was a learning experience for members and energy auditor to observe and evaluate the need for electricity at location in an objective manner. This walk-in audit helped the team to judge whether there can be saving of power by its optimum use.

#### Some Observations during walk in audit:

- I. There were a number of plug points (6 and 16 amps) in the laboratory of the department of Education which were rarely used.



- II. CFL lamps used for illumination needed to be replaced by LED lamps to save power.
- III. The 100 Kva transformer needs to be checked for oil level. If oil level is low it has to be topped up to ensure cooling of coils of transformer. The terminal joints of conductors needed to be checked for any loose connection to avoid energy loss due to spark.
- VI. There was a scope to install roof top solar system on roof facing south direction.
- V. Water taps in toilets needed to be leak proof to prevent wastage of water.
- VI. All class rooms should have a M.C.B (miniature circuit breaker) to put off electrical appliances after classes over.
- VII. There could be some hoarding in prominent places in the campus to highlight about need to save power.
- VIII. There was substation use to day light in some of class rooms which could help save grid power.
- IX. The illumination level of class rooms and toilets need to be optimized.

### 6.3 Data Collection:

Walk in audit is followed by data collection, information related to bills served by the utility (Assam Power Distribution Company Limited), relevant documents related to use of electricity.

Relevant data have been tabulated in various tables for scrutiny and analysis.

I. Table-1 shows list of room wise electrical devices installed starting from Principal office room.

II. Table-2 shows list of devices used in college. Connected load is calculated on assumption that they are in used daily for 6 hours for 30 days a month. Monthly power consumption is estimated on some basis.

III. Table-3 illustrates monthly energy bills for power consumption of college on basis of bills served by the utility.

IV. A pie chart illustrates the component of billed amount for energy, maximum demand and electricity duty as component of total electricity bills served by the utility for a year.

V. The pie chart illustrates components of electrical loads like light, fan and others.

## 7. Analysis and Evaluation and Recommendation

I. It was evident from walk in audit that there was 378 no of 6A and 199 no of 16A plug points which increased connected load and could be done away with. It is to be reviewed if such numbers are actually required.



II. In all utility bills the contract demand was mentioned as 106 kva. However the recorded kva was not available in the utility bills. The utility (APDCL) should mention recorded maximum demand in energy bills. It will help us to determine actual required maximum demand and to review requirement of contract basis.

III. All CFL lamps need to be removed and replaced by LED lights.

## 8. Acknowledgement:

We express our thanks and gratitude to the management of Binandi Chandra Medhi College, Ramdia for giving us the opportunity to conduct the Energy Audit at B. C.M. College, Ramdia.

We are also grateful to Dr. Ashit Kr. Paul Principal of Binandi Chandra Medhi College, Ramdia, Kamrup, Assam for his valuable comments/feedback and for support with which we could prepare this audit report.

We express our sincere thanks to all other concerned officials for their support and guidance during the exercise of energy audit.

Date: 11/04/22.

*Krishanu Das*

Sub Divisional Engineer

*Rishi*  
Sub-Divisional Engineer  
Hajo Electrical Sub-Division  
APDCL, Hajo

Hajo Electric Sub Division

APDCL, LAR, Hajo



# BINANDI CHANDRA MEDHI COLLEGE, RAMDIA

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**FIRST CYCLE NAAC ACCREDITATION, 2022**

## CRITERION-7

### Institutional Values and Best Practices

#### 7.1: Institutional Values and Social Responsibilities

7.1.3: Quality audits on environment and energy regularly undertaken by the Institution. The institutional environment and energy initiatives are confirmed through the following.

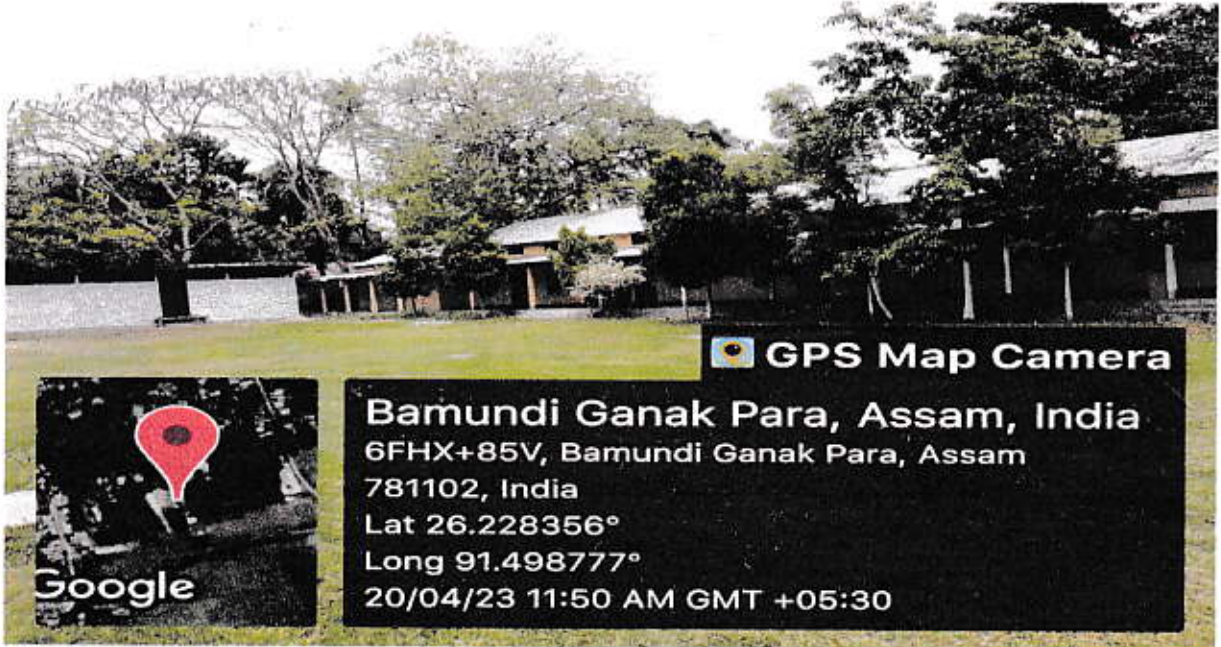
1. Clean and Green Campus Initiatives

**SUBMITTED TO**



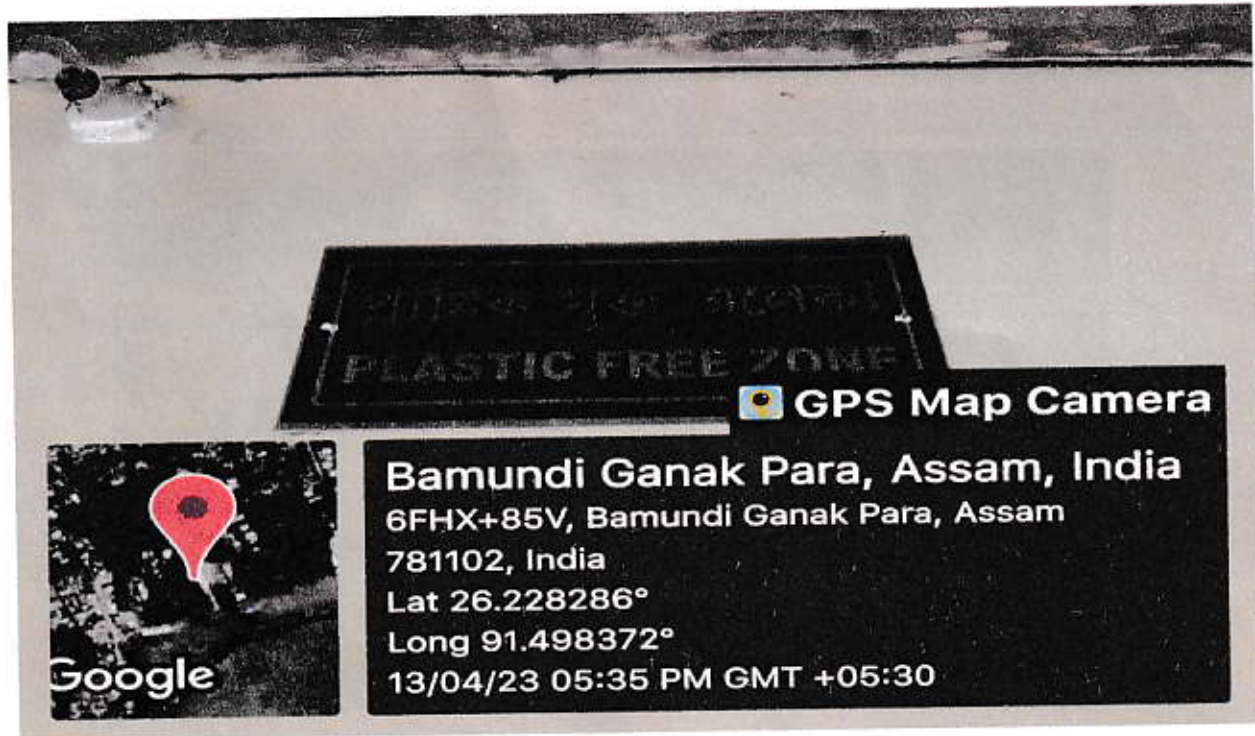
**THE NATIONAL ASSESSMENT AND ACCREDITATION COUNCIL**

## Vehicle Free College Campus



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Principal i/c  
Binandi Chandra Medhi College  
Ramdia, K...





**PLASTIC FREE ZONE**  
**TOBACCO FREE ZONE**



*[Signature]*  
Principal i/c  
Binandi Chandra Medhi College  
- Ramdia - Kamrup



**Waste Management System**



**DUSTBIN**



*Bin*  
 Principal i/c  
 Binandi Chandra Medhi College  
 Ramdia, Kamrup



Principal i/c  
 Binandi Chandra Medhi College  
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Plantation Drive

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Free Coaching For TET Examination



Awareness Programme For Covid-19



Principal  
Binandi Chandra Medhi College  
Ramdia : Kamrup



Face Mask Distribution



*Arul*  
Principal i/c  
Chandra Medhi College  
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**FIRST CYCLE NAAC ACCREDITATION, 2022**

## CRITERION-7

### Institutional Values and Best Practices

#### 7.1: Institutional Values and Social Responsibilities

7.1.3: Quality audits on environment and energy regularly undertaken by the Institution. The institutional environment and energy initiatives are confirmed through the following.

1. Beyond the Campus Environmental Promotion Activities

**SUBMITTED TO**



**THE NATIONAL ASSESSMENT AND ACCREDITATION COUNCIL**

### 7.1.3 REPORT ON ENVIRONMENTAL PROMOTIONAL ACTIVITIES CONDUCTED BEYOND THE CAMPUS (2017-18 to 2021-22)

The various departments and cells of the college conducted environmental promotional activities beyond the campus from time to time in association of IQAC. A brief report of the activities are given year wise bellow-

#### Year 2017-18

On 17 November 2017 a field trip was organized to Topatoli (Sonapur), for the students of BA 4<sup>th</sup> semester by the department of Environment Studies. The main aims of the trip was to give the knowledge to the students about the importance of forest and wild life for greenness of the earth.



The economics department of the college organize a field trip to Ukium, Meghalaya on 28 October 2017. The main aims of the trip was to give the knowledge to the students about the 3 rivers- Tiri, Siri and Kulsi which has combined in one point. The inhabitation of Ukium is basically Khasi having Christian religion where the students interacted with them about their culture, religion, tradition and life style.



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Ramdia : Kamrup



Year 2018-19

The department of environmental studies organized a field trip on 29/04/2019 to Hahim for the 4<sup>th</sup> semester students. The main aim of the trip is to give the knowledge about the preservation of environment and for the importance of plantation in the hilly and plain areas.



The NSS unit of the college organized Swaccha Bharat Abhiyan on 21<sup>st</sup> march 2019. Accordingly a large number of students including NSS volunteers and a few teachers visited Nampara chowk neighbouring area of the college and cleaned the market area. The aim of the program is to aware the people in general for maintaining cleanliness.

Year 2019-20

The NSS unit of the college organized an awareness program about Covid 19 related to maintain cleanliness and sanitization on 17/03/2020. Accordingly a few students, NSS volunteers and a few students visited Bangalpara, a feeder village of the college. The main aim of the program is to aware the people about cleanliness, maintain social distance, using face mask etc.



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Ramdia : Kamrup

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The IQAC of the college organized plantation program in collaboration with TCS group, Guwahati on 18/01/2020. In this program the regional manager of TCS group Mr. S.J. Baishya donated 23 saplings including *debadaru*, *neem*, *khilikha* and some flower plants which had planted in the college campus as well as the outside of the college campus.



The IQAC of the college organized an awareness program on Covid 19 pandemic on 08/02/2020. Accordingly a few teachers, IQAC members and a numbers of student visited Bangalpara chowk and organize awareness camp among the people to maintain cleanliness and uses of face muck to prevent the pandemic.



Year 2020-21



*[Signature]*  
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Binandi Chandra Medhi College  
Ramdia, Kamrup

The NSS unit of the college organized a free health check up camp in collaboration with Gate Hospital, Guwahati, in initiative of IQAC of the college on 26/12/2021. In this program 58 patients of the neighbouring areas checked their health free of cost.



The IQAC of the college organized Covid 19 awareness program on 18/12/2020. Accordingly a group of teachers and students visited the neighbouring area of the college – Milpara, Satlabori, Tapabori and Nadia. They gathered some people and explained about the measures to safe from the pandemic and how to maintain health and hygiene.



  
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Year 2021-22

The economics department of the college organized an educational tour to Rani, Kapili (Kamrup District) border area of Assam and Meghalaya on 23/01/2022. The main aim of the tour is to give the knowledge to the students about geographical and natural beauty of the area.



The department of environmental studies visited to Hahim (Meghalaya) for the environmental studies on 27/03/2022. The main aim of the trip is to give the knowledge of environment and bio diversity of the hilly area.



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