



# RAMKRISHNA NAGAR COLLEGE


RAMKRISHNA NAGAR:: KARIMGANJ :: ASSAM :: 788166

7.2.1

Best Practice : 1

The College campus is spread in a large tract of landscape with big playground, Lawns, Garden covered with grasses, herbs and trees



  
20/07/2023

PRINCIPAL  
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Ramkrishnanagar, Karimganj  
Assam



# RAMKRISHNA NAGAR COLLEGE

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## Report on the Activities For Celebration of World Environment Day – 2022

Ramkrishna Nagar College celebrated the World Environment Day on 5<sup>th</sup> June 2022, by organizing many activities. It was the first such activity of ECO club of Ramkrishna Nagar College. The Club was set up on 10.2.2020, but owing to COVID 19 from 2020 to 2021, World Environment Day could not be observed. However, in the year 2022, the programme was jointly organized at the aegis of NCC unit, NSS Cell and Eco Club of the college. The Lions Club of Ramkrishna Nagar was also collaborated with the celebration. Around 50 numbers of saplings of fruits and shaded tree were planted in prominent locations of the college. An Awareness lecture on the motto of the celebration of the day and importance of afforestation was delivered by both Dr. Jayeeta Sen, co-ordinator, eco club and Sri Dipankar Das, HoD Chemistry before the students of the College.




20/07/2022

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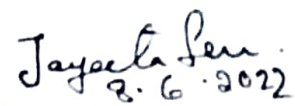


certified

  
18.07.2023

Principal  
R.K. Nagar College

PRINCIPAL  
Ramkrishna Nagar College  
Ramkrishnanagar, Karimgan  
Assam

  
2.6.2022  
Dr. Jayeeta Sen  
Coordinator, Eco-Club  
R.K. Nagar College

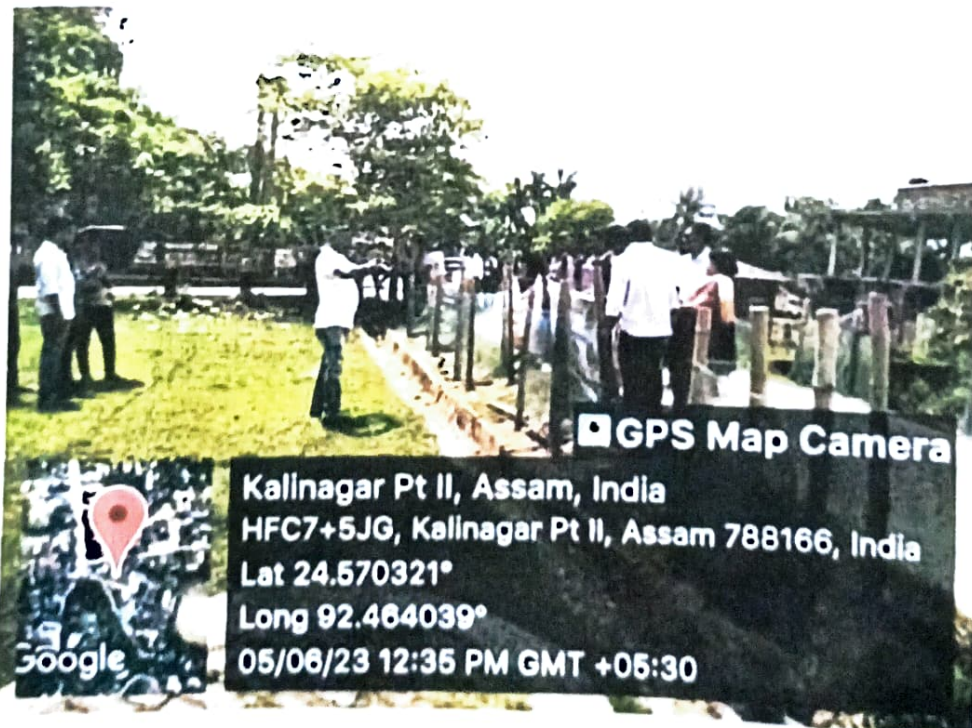


# RAMKRISHNA NAGAR COLLEGE

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## Report on the Activities For Celebration of World Environment Day—2023.

The Eco club of R.K.Nagar College in collaboration with NCC unit, NSS cell and ACTA, R.K.Nagar College unit, organized a program on the event of World Environment Day on 5<sup>th</sup> June, 2023. The celebration was marked with plantation of around 40 numbers of saplings of ornamental and shade trees in the college campus. The principal of the college, Co-ordinator, NSS cell and co-ordinator, Eco club of the college briefly spoke on the relevance of the celebration of the day in the light of recent global warming of climate change and role of aforestration for future of the earth. The program was a successful one and ended with a vote of thanks from the coordinator Eco-club.





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05/06/2023

Principal  
R.K. Nagar College  
PRINCIPAL  
Ramkrishna Nagar College  
Ramkrishnanagar, Karimganj,  
Assam

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Dr. Jayeeta Sen  
Coordinator, Eco- Club  
R.K. Nagar College



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Use of LED Bulbs in every necessary area of the college.



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**RAIN WATER HARVESTING**

**TRANSFER OF RAIN WATER TO THE WATER RESERVOIR**





# RAMKRISHNA NAGAR COLLEGE

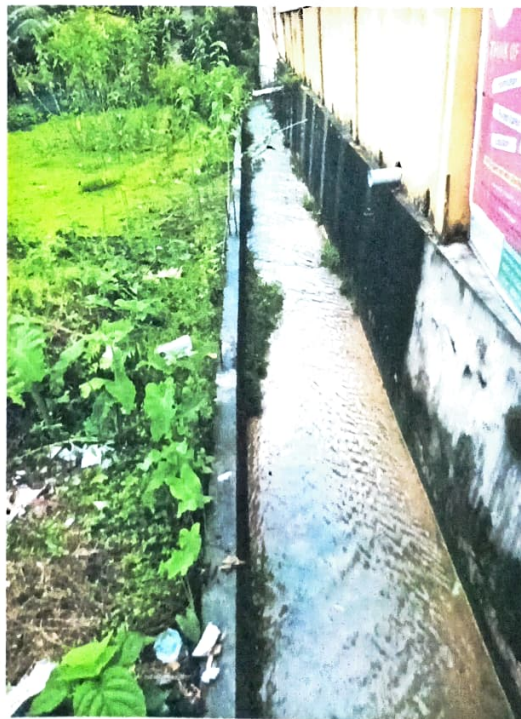
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## ARRANGEMENT OF GROUND WATER RECHARGE



## DRAINAGE SYSTEM OF THE COLLEGE



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20/07/2023  
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# RAMKRISHNA NAGAR COLLEGE

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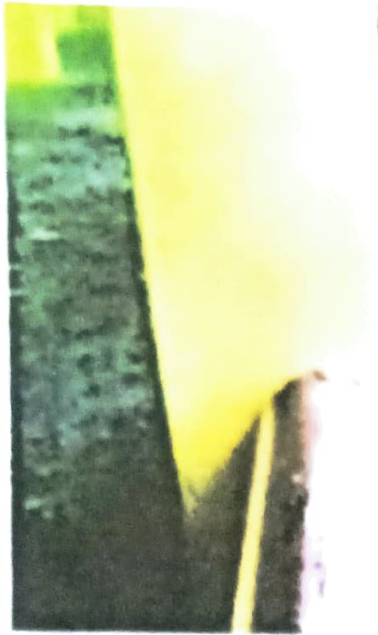
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Assam



*20/07/2023*

Dr. Surajit Chakrabarty  
Principal  
Ramkrishna Nagar College  
Ramkrishnanagar, Karimganj  
Assam

# **ENVIRONMENTAL AUDIT**

**Ramkrishna Nagar College**



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## Pollution Control Board::Assam

(An ISO 9001:2008 & BS OHSAS18001:2007 Certified Organisation)

Head Office: Bamunimaidam, Guwahati-781021, Assam : India,

Regional Laboratory Cum Office, Silchar

(Department of Environment & Forest:: Government of Assam)

(1st. Floor of Silchar Development Authority Building; P.W.D. Road)

P.O.: Silchar-1; Dist: Cachar, Assam.

Phone No.-(03842-262205), E-mail:rosilchar.pcba@gmail.com



Dated Silchar, the 14<sup>th</sup> July, 2023

To,

The Principal, Ramkrishna Nagar College,  
P.O. Ramkrishna Nagar,  
Dist Karimganj, Assam.  
PIN 788166

This is to certify that the Environment Energy & Green Audit Report prepared by Internal Committee for Environment/Energy/Green Audit of Ramkrishna Nagar College, Karimganj Assam has been thoroughly scrutinised and found to be satisfactory

I wish for excellent academic atmosphere in the days to come.

(K. Basumatary)

Regional Executive Engineer

PCBA, RLO, Silchar.



## 2.0 Disclaimer

The Ramkrishna Nagar College Audit Team has prepared this report with the best of its confidence in accordance with the data provided by the faculty members of the institute.

It is further informed that the information provided in this report have been gathered from several sources and under the best judgement and estimates of the Audit Team.No representation, warranty or undertaking, express or implied, is made and no responsibility is accepted by the audit team in this report for any direct or consequential losses arising from any use of this information or any of the statements made in this report.

Further, the audit team maintains that no responsibility shall be taken regarding the absolute accuracy of the data provided in the report, as the information has been collected from several sources with variable reliability.





## 3.0 Context

**Green Audit** or **Environmental Audit** focuses on promoting a green campus, consisting of practices that involve sustainable waste management, water pollution, air pollution, electricity usage, local biodiversity and conservation. It specifically focuses on steps taken by the institution management to reduce the carbon footprint of the campus as a whole. The concept, structure, objectives and scopes of the Green Audit has been elaborated upon in details in the following pages.

## 4.0 Concept

An environmental audit of a college is a comprehensive assessment and evaluation of the institution's environmental performance, policies, and practices. It involves examining the college's activities, operations, and facilities to identify potential environmental impacts, assess compliance with environmental regulations and standards, and recommend measures for improvement.

Although there is no universal definition of a Green Audit, many leading organizations and institutions follow the basic philosophies and approach described in the 1989 publication of **Environmental Auditing** by the **International Chambers of Commerce (ICC)**:

*“A management tool comprising a systematic, documented, periodic and objective evaluation of how well environmental organization, management and equipment are performing with the aim of safeguarding the environment and natural resources in its operations/projects.”*

## 5.0 Introduction

Awareness about **Environmental Health** and well-being are quickly becoming an integral part of any developed society and culture. It is without a question that development has to be sustainable and the only way to ensure that is to find a synergy between reliable development and ecological stability. The vanguards of the acceptance and understanding of environmental health in a society are the **Educational Institutions**, which ensures that the future generations are not only courageous pioneers of development but also stalwart defenders of the environment as well.

The practical approach to laying down the groundwork for building the awareness of environmental health in the students of an educational institution begins with sensible and thorough practices undertaken by the members of the institution itself, including concepts such as maintaining the ecosystems of the campus, promoting energy saving, reducing water waste, managing plastic pollution, etc. In other words, developing a **Green Campus** is the ultimate goal of any educational institution wishing to focus on preserving the environment. Another key aspect to the matter of institutionalizing the concept of environmental health is to inspire and awaken a love for the environment and the biodiversity in the future generations by showcasing, documenting and preserving the flora and fauna found in the campus.

However, there is often a significant gap between the **Environmental Performance** of an institution and its **Environmental Policies**. It is with the intention to bridge that gap, that the concept of Environmental Auditing has been put into place. It looks into the impact that a college has on the environment and also ensures that that environmental policies do not remain merely as words on paper but are translated into tangible and meaningful activities that bring about real change. It also provides valuable data regarding the performance of the college in terms of waste minimization, volume of waste generated and other environmental policies during the preceding years, which sheds light into the pathways through which higher degrees of environmental performance might be achieved.

Most essentially, it provides the staff and the students with proof of the real-time impact that their efforts have resulted in. This is a key motivating factor that is paramount for the long-term maintenance of the initiative of a green campus.

The significance of conducting an environmental audit in a college setting can be summarized as follows:

1) **Environmental Compliance:** An audit helps ensure that the institution is in compliance with local, regional, and national environmental regulations. It identifies areas

where the institution may be falling short in meeting legal requirements and enables corrective action to be taken.

**2) Sustainability Assessment:** An environmental audit provides an opportunity to assess the institution's sustainability practices. It evaluates the institution's resource consumption, waste management, energy efficiency, water usage, and greenhouse gas emissions. By identifying areas of improvement, the audit helps the institution adopt more sustainable practices and reduce its ecological footprint.

**3) Risk Management:** An audit helps identify environmental risks and liabilities that the institution may be exposed to. It assesses potential hazards such as hazardous waste handling, air and water pollution, and improper disposal of chemicals. By addressing these risks proactively, the college can minimize potential negative impacts on the environment and human health.

**4) Cost Savings:** Conducting an environmental audit can lead to cost savings in the long run. By identifying inefficiencies and wasteful practices, the college can implement measures to reduce energy and water consumption, optimize resource usage, and minimize waste generation. This not only benefits the environment but also lowers operational costs for the institution.

**5) Reputation and Stakeholder Relations:** Environmental responsibility is increasingly important for educational institutions. Conducting an environmental audit demonstrates the college's commitment to sustainability and responsible practices. It enhances the institution's reputation, improves stakeholder relations (including students, faculty, staff, and the local community), and attracts environmentally conscious students and partners.

**6) Education and Awareness:** The process of conducting an environmental audit raises awareness about environmental issues among the college community. It provides an opportunity for students, faculty, and staff to learn about sustainability practices and their importance. The audit can also serve as a platform for educational initiatives, promoting environmental stewardship and inspiring behaviour change.

In summary, an environmental audit of an institution is significant as it ensures compliance with regulations, assesses sustainability practices, manages environmental risks, promotes cost savings, enhances reputation, and fosters environmental education and awareness. By conducting such audits, colleges can contribute to a more sustainable future and create a positive impact on the environment and society as a whole.

## 6.0 Audit Scope

The scope of an environmental audit can vary depending on the specific objectives and requirements of the audit. However, the following aspects are typically considered within the scope of an environmental audit:

- 1) **Legal Compliance:** Assessing the institution's compliance with relevant environmental laws, regulations, permits, and licenses. This includes evaluating adherence to air quality standards, water pollution regulations, waste management guidelines, and other applicable environmental requirements.
- 2) **Environmental Management Systems (EMS):** Reviewing the effectiveness of the institution's environmental management system, if present. This involves evaluating the implementation of policies, procedures, and practices aimed at minimizing environmental impacts, promoting sustainability, and ensuring continuous improvement.
- 3) **Resource Consumption:** Assessing the college's usage of natural resources such as energy, water, and raw materials. This includes examining energy efficiency measures, water conservation practices, waste reduction initiatives, and resource optimization strategies.
- 4) **Waste Management:** Evaluating the institution's waste management practices, including waste generation, segregation, recycling, and disposal methods. This involves assessing compliance with waste management regulations and identifying opportunities for waste reduction, reuse, and recycling.
- 5) **Pollution Control:** Examining the college's measures to prevent or control pollution. This includes evaluating air emission controls, wastewater treatment systems, hazardous substance handling and storage practices, and spill prevention and response procedures.
- 6) **Environmental Impact Assessment:** Assessing the potential environmental impacts of the college's activities, operations, and expansion plans. This involves considering aspects such as land use, biodiversity, ecosystem services, and impacts on air, water, and soil quality.
- 7) **Environmental Reporting and Communication:** Reviewing the institution's environmental reporting practices, including the transparency and accuracy of environmental disclosures. This also involves assessing communication efforts to engage stakeholders and raise awareness about environmental initiatives and performance.

8) **Training and Education:** Evaluating the institution's programs and initiatives to educate students, faculty, and staff about environmental issues, sustainability, and responsible practices. This may include reviewing curriculum integration, awareness campaigns, and training programs.

It is important to note that the scope of an environmental audit can be tailored to the specific needs and priorities of the college. It may also consider any industry-specific environmental considerations or additional areas of focus identified by the institution.



# 7.0 Executive Summary

## 7.1 Introduction:

This executive summary provides an overview of the key findings and recommendations from the environmental audit conducted within Ramkrishna Nagar College. The purpose of the audit was to assess the institution's environmental performance, identify areas of improvement, and develop strategies for sustainable practices. The audit encompassed various aspects of the institution's operations, including energy consumption, waste management, water usage, and compliance with environmental regulations.

## 7.2 Key Findings:

### Energy Consumption:

The audit revealed that energy consumption within the institution is relatively high, primarily driven by inefficient equipment, outdated technologies, and lack of awareness among employees regarding energy conservation. The analysis showed significant potential for energy savings through the implementation of energy-efficient technologies, behavior change programs, and regular monitoring of energy consumption patterns.

### Waste Management:

The assessment identified several areas for improvement in waste management practices. The college generates a substantial amount of waste, and while recycling efforts are in place, there is room for enhancement. Implementing a comprehensive waste management strategy, including waste reduction, recycling, and proper disposal measures, will significantly contribute to the institution's sustainability goals.

### Water Usage:

The audit highlighted areas where water usage can be optimized. The college currently lacks efficient water management practices, resulting in excessive consumption and potential wastage. The report suggests the implementation of water-efficient technologies, such as low-flow fixtures and water-recycling systems, as well as the adoption of awareness programs to educate the staff and the students about the importance of water conservation.

### Compliance with Environmental Regulations:

The audit assessed the institution's compliance with relevant environmental regulations and identified minor non-compliance issues. These primarily relate to record-keeping, reporting, and documentation requirements. The report recommends strengthening internal



processes, providing regular training to the staff, and establishing a robust monitoring system to ensure ongoing compliance with environmental regulations.

## **7.3 Recommendations:**

### **Energy Efficiency:**

Invest in energy-efficient technologies, conduct energy audits, and establish employee training programs to raise awareness about energy conservation practices. Implementing energy management systems and setting energy reduction targets will help the institution achieve significant cost savings and reduce its environmental footprint.

### **Waste Management:**

Develop and implement a comprehensive waste management plan, encompassing waste reduction strategies, recycling initiatives, and proper disposal methods. Enhance staff and student engagement through awareness campaigns and provide clear guidelines for waste segregation and recycling practices throughout the institution.

### **Water Conservation:**

Adopt water-efficient technologies and practices to minimize water consumption. Implement water-saving measures such as low-flow fixtures, water recycling systems, and rainwater harvesting. Promote water conservation awareness among employees and establish water usage monitoring systems to track and reduce consumption.

### **Compliance and Reporting:**

Strengthen internal processes to ensure compliance with environmental regulations. Conduct regular audits to monitor compliance and establish clear protocols for record-keeping and reporting. Provide regular training to the staff and the faculty members to enhance their understanding of environmental requirements and responsibilities.

## **7.4 Conclusion:**

The environmental audit has provided valuable insights into the environmental performance of Ramkrishna Nagar College and opportunities for improvement. By implementing the recommended strategies, the institution can significantly enhance its environmental sustainability, reduce operational costs, and demonstrate its commitment to responsible business practices. Embracing these recommendations will not only benefit the college but also contribute to a greener future for the institution and the community at large.

# 8.0 Audit Questionnaire

## 8.1 General Information:

a. What is the name and location of the college?

**Response:** *Ramkrishna Nagar College. It is located in the town of Ramkrishna Nagar in the district of Karimganj, Assam.*

b. How many students, faculty, and staff members are associated with the college?

**Response:**

c. Are there any specific environmental goals or sustainability initiatives in place at the college?

**Response:** The specific environment goals include:

- (i) More plantation in barren land
- (ii) Use of organic fertilizer instead of common chemical fertilizers.
- (iii) Restriction on fossil fuel based vehicles inside the campus.
- (iv) Restriction on burning of dry leaves & filters in the campus.
- (v) Restriction on use of single use plastic, plastic bottles, plastic utensil in any event inside the campus
- (vi) Segregation of dry waste from wet waste.
- (vii) Use of LED Bulb and 5 star electrical gadget.
- (viii) Preparation of organic manures from left out tree leaves.
- (ix) Biodiversity and environment workshop for awareness.

## 8.2 Energy Consumption:

a. What is the annual energy consumption of the college? (in kilowatt-hours or equivalent units)

**Response:**

b. Does the college track and monitor energy consumption? If yes, how frequently?

**Response:** The College has issued strict notification for judicious use of electrical energy like.

1. Switching off light and fans when not in use
2. Using of water judiciously
3. Using of all sorts of electrical gadgets judiciously. But the college does not have a mechanised protocol for tracking & monitoring energy consumption.

c. What are the primary sources of energy used by the college? (e.g., electricity, natural gas, renewable energy)

**Response:** Primary sources of energy used in the college are

- (i) Electricity

**(ii) LPG****(iii) Solar energy using solar panels.**

d. Are there any energy-efficient technologies implemented in buildings and facilities? If yes, please provide details.

**Response:** The college has adopted the principle of use of energy-efficient electrical gadget. But the college lacks energy-efficient technologies in building & facilities.

e. Are there any energy-saving measures or programs in place, such as energy awareness campaigns or energy audits?

**Response:** The college has enforced strict rule for judicious use of electrical energy like

(1) Switching off light, fans and other electrical gadget when not in use.

(2) Using water judiciously. The college currently lacks efficient water management practices.

(3) Using energy-efficient electrical gadget, 5 star rated gadget and LED bulbs. Further College authority has given strict instruction to complete all necessary work day time so that no work is required in light using electricity. Students & staff members are sensitized regularly on energy saving measures.

### 8.3 Waste Management:

a. How is waste managed within the college premises? Are there designated recycling and waste disposal systems?

**Response:** The College work on the principle of minimal waste production. As digitization continues less waste paper generated, plastic are reused & very less used in day today use. It requires implementation of a comprehensive waste management strategy including waste reduction, recycling and proper disposal measures.

b. What types of waste are generated (e.g., paper, plastics, hazardous materials)? Please provide an estimate of the quantities generated.

**Response:** The use of paper, Plastics & hazardous material cannot be completely avoided but very less amount of waste is generated. Efforts are made to use less so that less waste is generated, very less chemicals are utilized in chemistry lab so that less hazardous materials are disposed of in environment.

c. Does the college have a waste reduction strategy in place? If yes, please provide details.

**Response:** The three R'S is the waste reduction strategy, Reduce, Reuse & Recycle. Efforts are on to produce very less waste. Manual separation of solid waste components is accomplished to achieve the reuse, recycle or recovery of material Biodegradable waste are collected separately & converted to useful products like organic manures. Implementation of a comprehensive waste management strategy is the need of the hour.

d. Are recycling programs implemented and promoted? If yes, what materials are targeted for recycling, and how effective are these programs?

**Response:** The college on principal aims at achieving recycling programs and its promotion but it lacks the necessary recycling strategies & components to achieve its goal.

e. How is hazardous waste handled, stored, and disposed of on campus?

**Response:** The hazardous waste mainly comes from chemistry Lab. These hazardous material are confined to limited area & are not allowed to flow freely on ground are disposed to underground by different means. These chemicals are handled & stored in the laboratory as per the safety norms prescribed. Other liquid hazardous wastes are allowed to go into the pit dug in some corner of the college, beyond the reach of students & other.

## 8.4 Water Usage:

a. What is the annual water consumption of the college? (in gallons or equivalent units)

**Response:**

b. Are there water-saving measures implemented in buildings and facilities, such as low-flow fixtures or water recycling systems?

**Response:** The college currently lacks water saving measures such as low flow fixtures & water recycling system. Authority occasionally takes up awareness program to educate the staff & the students about the importance of water conservation.

c. Are there any water conservation awareness programs or campaigns for students, faculty, and staff?

**Response:** Water conservation is a very important & relevant issue these days and as usual water conservation has found a place in EVS course at undergraduate level. The College conducts awareness programme & campaigns on 22<sup>nd</sup> March every years, "The World Water Day".

d. Does the college monitor water usage regularly? If yes, how frequently?

**Response:** The college has strict instruction on judicious use of water, accordingly the college authority monitors the water usage regularly using the manual work force available Students as well as are sensitized regularly on judicious use of water & importance of water conservation.

e. Are there any strategies in place to address water leakage or wastage?

**Response:** Manual water leakage repairing system is put in place in the college and students & staff members are sensitized regularly on reducing water wastage in the campus.

## 8.5 Transportation:

a. What are the primary modes of transportation used by students, faculty, and staff to access the college?

**Response:** Primary mode of transportation for the bulk of the students population is public transportation system, also college bus facility is available for students, many faculty & staff members come to college by walk, a few use personal cars for the same.

b. Does the college promote sustainable transportation options such as public transportation, carpooling, or cycling?

**Response:** Public transportation is the primary mode of transportation for most of the students who come from far flung areas, most of them can not afford car & two wheelers for poor economic background. Few use cycles & many stay in walk able distance from the college. College itself has its own bus service facilities for its students.

c. Are there any programs or initiatives in place to reduce the carbon footprint associated with transportation? If so, please elaborate on the goals of such programs.

**Response:** Carbon emission is less in the surrounding areas as traffic is less in a semi rural area like R.K. Nagar and pollution level is also low so apart from certain events that are observed in the college, no such initiative is practically taken to reduce carbon footprint associated with transportation. Program are practically limited to planting trees and keeping the college campus litter free clean. Occasionally college authority suggest its staff member & students to use electric vehicles instead of fossil fuel run vehicles.

## 8.6 Compliance and Regulations:

a. Is the college aware of and compliant with relevant environmental regulations and laws?

**Response:** The college is aware of relevant environment regulations even though minor non-compliance issues exist and comply with. The non-compliance issues relate to record keeping , reporting and documentation requirements.

b. Are there any specific permits or licenses required for certain activities or facilities on campus?

**Response:** Along with other specific permits or licences for activities related to environment specific permits or licences are required from the college for similar activities or from other appropriate authorities facilities inside the campus.

c. How does the college ensure proper documentation and record-keeping related to environmental compliance?

**Response:** The audit found that there are certain minor non-compliance issues relevant to environmental regulations. These issues primarily relate to record keeping, reporting and proper documentation.

## 8.7 Biodiversity and Green Spaces:

a. Does the college have green spaces or natural areas on campus?

**Response:** Yes, the college has expanding green spaces & natural areas in its spacious campus. The college campus has a variety of plant and animal species that do exist within the natural & landscaped areas of the college campus.

b. Are there any efforts to preserve and enhance biodiversity on campus, such as native plantings or wildlife conservation measures? If so, please elaborate on the nature of those efforts.

**Response:** The college was originally established in an area which was originally a Bio-diverse area with huge green-covers. All efforts are being made to preserve its original green covers in its backside as far as possible by planting valuable trees medicinal plants. Efforts are being made to develop building infrastructure keeping the natural habitat undisturbed. The college plant to create natural habitats for local flora & fauna, local bio-diversity & to provide refuge for migratory species. Occasionally snake charmers are requested to rescue snakes entering the building campus area.

c. Are there any programs or initiatives in place to educate the college community about the importance of biodiversity and ecosystems? If so, please elaborate on the goals of those programs.

**Response:** As students & all community members are aware of the global climate change, they know the importance of biodiversity of ecosystem. The students & entire college community are sensitized about plantation, reforestation, a forestation etc. They are encouraged to keep the campus, green, clean and on the occasion of world Environment Day they are motivated to go for plantation drive in and around college. The specific goal of the college community is to enhance the green cover of the college & to make the campus a Biodivers Zone.

## 8.8 Stakeholder Engagement:

a. How does the college engage with students, faculty, staff, and the community regarding environmental initiatives?

**Response:** The college has adopted two villages as part of its community out - reach program. In the visits to the villages, Village people are, made aware of the climate changes its impacts & for revival of the same students are suggested to take the initiatives. Students faculty members staff and the local community come together on the occasion of tree planting campaigns. These activities promote environmental education & create a shared sense of provide in the campus environmental.

b. Are there any platforms or channels for feedback and suggestions related to environmental sustainability?

**Response:** Community out reach programs taken up by NSS & other platform like alumni association provide the necessary feedback. Community participation in various program in the college is a suitable channel for feedback & necessary suggestion.

## 8.9 Future Goals and Plans:

a. What are the future goals of the college concerning environmental sustainability?

**Response:** As of now, enhancing green cover of the college, campus keeping the

campus clean & conducive for survival of flora & fauna are among the top priority pertaining to environmental sustainability.

b. Are there any specific plans or projects in the pipeline to enhance the college's environmental performance?

**Response:** The college has plans to improve its overall environmental performance, plans include proper waste management, pollution control, environmental impact assessment, environmental report, record keeping, documentation, regular monitoring & documentation of energy consumption, proper water usage, compliance with environmental regulation, water conservation, resource consumption, habitat preservation & specifically a bio-divers zone creation that will add to the cultural and aesthetic value thereby connecting to the environment. Importantly the environment of the college has to be resilient to the changing climatic condition.

**Additional Comments:**

Please provide any additional comments or information regarding the college's environmental practices, challenges, or opportunities.

# 9.0 Campus Biodiversity

## 9.1 Introduction:

Campus biodiversity refers to the variety of plant and animal species that exist within the natural and landscaped areas of the college campus. It encompasses everything from trees, shrubs, and flowers to insects, birds, and small mammals. Campus biodiversity is an essential component of a healthy and sustainable environment and plays a crucial role in the overall well-being of the college community. Understanding and conserving campus biodiversity is of paramount importance in promoting ecological balance, educational opportunities, and the overall quality of life on campus.

## 9.2 Importance of Campus Biodiversity:

### Ecosystem Services:

Campus biodiversity provides various ecosystem services that benefit the college community and the environment. Trees and plants improve air quality by absorbing pollutants and releasing oxygen, contributing to a healthier campus atmosphere. Biodiversity also enhances soil health, reduces erosion, and helps manage storm-water runoff, mitigating the impacts of flooding and preserving water quality.

### Education and Research:

A biodiverse campus provides a living laboratory for students and faculty to study ecological processes, species interactions, and conservation practices. It offers unique opportunities for research, field studies, and hands-on learning experiences. Students can engage in biodiversity assessments, ecological surveys, and wildlife monitoring, deepening their understanding of the natural world and fostering environmental stewardship.

### Habitat Preservation:

A diverse campus landscape with native plants, trees, and natural areas creates habitats for various species, including birds, butterflies, and small mammals. These habitats support local biodiversity and provide refuges for migratory species. Conserving campus biodiversity contributes to the preservation of regional ecosystems, supporting the overall health and resilience of the surrounding natural environment.

### Cultural and Aesthetic Value:

The presence of diverse and well-maintained green spaces on campus enhances its aesthetic appeal, providing a pleasant and inviting atmosphere for students, faculty, and



visitors. Natural areas, such as gardens, woodlands, and wetlands, can serve as tranquil spaces for relaxation, reflection, and recreation. Campus biodiversity adds to the cultural heritage and identity of the college, fostering a sense of connection to the environment.

### Climate Change Resilience:

Biodiverse campuses can act as microcosms of natural ecosystems and contribute to climate change resilience. Trees and vegetation sequester carbon dioxide, helping to mitigate climate change by reducing greenhouse gas emissions. Additionally, diverse plant species are better equipped to adapt to changing climatic conditions, making the campus more resilient to the impacts of climate change, such as heatwaves, droughts, and storms.

### Community Engagement:

Promoting campus biodiversity provides opportunities for community engagement and involvement. Conservation initiatives, such as tree planting campaigns, butterfly gardens, or bird-watching programs, can bring together students, faculty members, staff, and the local community. These activities foster a sense of environmental responsibility, promote environmental education, and create a shared sense of pride in the campus environment.

## 9.3 List of Flora and Fauna found within the Campus:

The following species of Plants and Animals were recorded within the College Campus:

### Flora:

No.	Species	Common Name	Endemic/Cultivated
1	<i>Rosa chinensis</i>	Chinese Rose	Cultivated
2	<i>Portulaca umbraticola</i>	Wingpod Purslane	Endemic
3	<i>Tithonia rotundifolia</i>	Red Sunflower	Cultivated
4	<i>Clitoria mariana</i>	Butterfly Pea	Cultivated
5	<i>Ixora coccinea</i>	Jungle Flame	Endemic
6	<i>Tabernaemontana divaricata</i>	Pinwheel Jasmine	Endemic
	<i>Catharanthus roseus</i>	Cape Periwinkle	Cultivated
	<i>Ligularia dentata</i>	Leopard Plant	Cultivated

9	<i>Gardenia augusta</i>	Yellow Gardenia	Cultivated
10	<i>Hibiscus rosa-sinensis</i>	Chinese Hibiscus	Endemic
11	<i>Hibiscus mutabilis</i>	Cotton Rose	Endemic
12	<i>Hibiscus cf. fragalis</i>	The Mandrinette	Cultivated
13	<i>Cascabela thevetia</i>	Kaner/Yellow Oleander	Endemic
14	<i>Ocimum tenuiflorum</i>	Tulsi/Holy Basil	Endemic
15	<i>Allamanda schottii</i>	Bush Allamanda	Cultivated
16	<i>Rosa landora</i>	Yellow Celebration	Cultivated
17	<i>Euphorbia tirucalli</i>	Fire Stick	Cultivated
18	<i>Artocarpus heterophyllus</i>	Jackfruit	Endemic
19	<i>Kalanchoe blossfeldiana</i>	Flaming Katy	Cultivated
20	<i>Mangifera indica</i>	Indian Mango	Endemic
21	<i>Mallotus paniculatus</i>	Turn-In-The-Wind	Endemic
22	<i>Areca catechu</i>	Betel nut	Endemic
23	<i>Cocos nucifera</i>	Coconut	Endemic
24	<i>Averrhoa carambola</i>	Star Fruit	Endemic
25	<i>Ziziphus mauritiana</i>	Indian Jujube (Boroi)	Endemic
26	<i>Azadirachta indica</i>	Indian Lilac (Neem)	Endemic
27	<i>Elaeocarpus serratus</i>	Indian Olive (Jalpai)	Endemic

**Fauna:**

No.	Species	Common Name	Endemic/Invasive
1	<i>Calotes versicolor</i>	Oriental Garden Lizard	Endemic
2	<i>Hemidactylus frenatus</i>	Asian House Gecko	Endemic
3	<i>Duttaphrynus melanostictus</i>	Asian Common Toad	Endemic
4	<i>Heteropoda venatoria</i>	Pantropical Huntsman Spider	Endemic
5	<i>Lissachatina fulica</i>	Giant African Snail	Invasive
6	<i>Copsychus saularis</i>	Oriental Magpie Robin	Endemic
7	<i>Hoplobatrachus tigerinus</i>	Indian Bullfrog	Endemic
8	<i>Macaca mulatta</i>	Rhesus Macaque	Endemic
9	<i>Papilio polytes</i>	Common Mormon Swallowtail Butterfly	Endemic
10	<i>Neurothemis fulvia</i>	Russet Percher Dragonfly	Endemic
11	<i>Fejervarya limnocharis</i>	Paddy Field Frog	Endemic
12	<i>Macrocheraia grandis</i>	Lohita Bug	Endemic
13	<i>Meghimatium bilineatum</i>	Chinese Slug	Endemic
14	<i>Melanitis leda</i>	Common Evening Brown Butterfly	Endemic
15	<i>Junonia lemonias</i>	Lemon Pansy Butterfly	Endemic

16	<i>Danaus chrysippus</i>	Plain Tiger Butterfly	Endemic
17	<i>Orthetrum sabina</i>	Slender Skimmer Dragonfly	Endemic
18	<i>Pantala flavescens</i>	Wandering Glider Dragonfly	Endemic
19	<i>Oecophylla smaragdina</i>	Asian Weaver Ant	Endemic
20	<i>Dicrurus macrocercus</i>	Black Drongo	Endemic
21	<i>Nephila pilipes</i>	Giant Golden Orbweaver Spider	Endemic
22	<i>Rhyothemis variegata</i>	Common Picturewing	Endemic
23	<i>Orthetrum pruinosum</i>	Crimson-tailed Marsh Hawk Dragonfly	Endemic
24	<i>Zemeros flegyas</i>	Punchinello Butterfly	Endemic
25	<i>Oxyopes shweta</i>	White Lynx Spider	Endemic
26	<i>Parawixia dehaani</i>	Abandoned-web Orbweaver Spider	Endemic
27	<i>Rhysida longipes</i>	Minor Blueleg Centipede	Endemic
28	<i>Isometrus maculatus</i>	Lesser Brown Scorpion	Endemic
29	<i>Callosciurus erythraeus</i>	Pallas' Squirrel	Endemic
30	<i>Trigoniulus corallinus</i>	Rusty Millipede	Endemic
31	<i>Plexippus paykulli</i>	Pantropical Jumping Spider	Invasive
32	<i>Acridotheres tristis</i>	Common Myna	Endemic
33	<i>Trilophidia annulata</i>	Carinate Locust	Endemic
34	<i>Vespa tropica</i>	Greater Banded Hornet	Endemic
35	<i>Corvus macrorhynchos</i>	Large-billed Crow	Endemic
36	<i>Pellorneum ruficeps</i>	Puff-throated Babbler	Endemic
37	<i>Eutropis multifasciata</i>	Common Sun Skink	Endemic
38	<i>Castalius rosimon</i>	Common Pierrot Butterfly	Endemic
39	<i>Agriocnemis femina</i>	Variable Wisp Damselfly	Endemic
40	<i>Cecropis striolata</i>	Striated Swallow	Endemic
41	<i>Polistes sagittarius</i>	Banded Paper Wasp	Endemic
42	<i>Euborellia annulipes</i>	Ring-legged Earwig	Endemic
43	<i>Delias descombesi</i>	Red-spot Jezebel Butterfly	
44	<i>Blattella asahinai</i>	Asian Cockroach	Endemic
45	<i>Clogmia albipunctata</i>	Bathroom Mothfly	Endemic
46	<i>Amata cyssea</i>	Seven-spotted Handmaiden Moth	Endemic

47	<i>Amata grotei</i>	Grote's Wasp Moth	Endemic
48	<i>Vespa affinis</i>	Lesser Banded Hornet	Endemic
49	<i>Xylocopa latipes</i>	Broad-handed Carpenter Bee	Endemic
50	<i>Odontomantis planiceps</i>	Asian Ant Mantis	Endemic
51	<i>Catharsius molossus</i>	Molossus Dung Beetle	Endemic
52	<i>Pycnoscelus indicus</i>	Indian Cockroach	Endemic
53	<i>Spilopelia chinensis</i>	Spotted Dove	Endemic
54	<i>Cassida circumdata</i>	Green Tortoise Beetle	Endemic
55	<i>Amphiesma stolatum</i>	Buff-striped Keelback Snake	Endemic
56	<i>Myrmaplata plataleoides</i>	Red Weaver Ant Mimicking Spider	Endemic
57	<i>Periplaneta australasiae</i>	Australian Cockroach	Endemic
58	<i>Artema atlanta</i>	Giant Dadd Long-legs Spider	Endemic
59	<i>Crossopriza lyoni</i>	Tailed Cellar Spider	Endemic
60	<i>Cynniris asiaticus</i>	Purple Sunbird	Endemic
61	<i>Rattus rattus</i>	Black Rat	Endemic
62	<i>Ampulex compressa</i>	Emerald Cockroach Wasp	Endemic
63	<i>Passer domesticus</i>	House Sparrow	Endemic
64	<i>Nephrotoma ferruginea</i>	Ferruginous Tiger Cranefly	Endemic
65	<i>Pycnonotus cafer</i>	Red-vented Bulbul	Endemic
66	<i>Onychargia atrocyana</i>	Black Marsh Dart Damsely	Endemic
67	<i>Psilopogon asiaticus</i>	Blue-throated barbet	Endemic
68	<i>Parus cinereus</i>	Cinereous Tit	Endemic
69	<i>Gekko gekko</i>	Tokay Gecko	Endemic
70	<i>Indotyphlops braminus</i>	Brahminy Blind Snake	Endemic
71	<i>Vespa tropica</i>	Greater Banded Hornet	Endemic

## 9.4 Documentation of Campus Flora and Fauna:



Butterfly Pea (*Clitoria marina*) flower at night.



Holy Basil (*Ocimum tenuiflorum*) next to a fence.



Broad-handed Carpenter bee (*Xylocopa latipes*).



Pantropical Huntsman Spider (*Heteropoda venatoria*).



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A Tokay Gecko (*Gekko gecko*) poses for a close-up.



© Ankur Nandi

A Russet Percher Dragonfly (*Neurothemis fulvia*) rests on a wire.



Wingpod Purslane (*Portulaca umbraticola*) flower under the sun.



Chinese Hibiscus (*Hibiscus rosa-sinensis*) after the rain.



An Oriental garden Lizard (*Calotes versicolor*) rests for the night.



A Lesser Banded Hornet (*Vespa affinis*) takes a break.





A Giant African Land Snail (*Lissachatina fulica*) next to a Chinese Slug (*Meghimatium bilineatum*).



Two Rhesus Macaques (*Macaca mulatta*) take turns grooming each other.



An Emerald Cockroach Wasp (*Ampulex compressa*) searches for its prey.



A Red Weaver Ant Mimicking Spider (*Myrmaplata platyleoides*) walks over a leaf.



A few False Ashoka trees (*Moonon longifolium*) against a college building.



A Northern White Cedar plant (*Thuja occidentalis*) against the sun.



A Flamboyant Peacock tree (*Delonix regia*) with flowers.



A Lemon Sapling (*Citrus limon*) showing steady growth



A planted Common Guava (*Psidium guajava*) next to a fence.



A Sacred Fig Tree (*Ficus religiosa*) overlooking the college.



A Coconut Palm tree (*Cocos nucifera*) stands tall in the sun.



An *Aloe vera* succulent in the shade.

## **9.5 Conclusion of Campus Biodiversity:**

Campus biodiversity is not merely a collection of plants and animals; it is a dynamic and interconnected web of life that contributes to the health and well-being of the college community and the environment as a whole. By valuing and conserving campus biodiversity, colleges and universities can promote sustainability, enrich educational experiences, enhance the campus environment, and contribute to the broader goals of ecological preservation and environmental stewardship. Recognizing the importance of campus biodiversity is a vital step towards creating a more sustainable and vibrant college campus for generations to come.

## 10.0 Conclusion

The environmental audit conducted for Ramkrishna Nagar College has provided valuable insights into the institute's environmental performance and sustainability practices. This comprehensive assessment has highlighted both commendable achievements and areas where improvements can be made to reduce the institution's environmental impact and promote a culture of sustainability.

Throughout the audit process, it became evident that Ramkrishna Nagar College has taken significant steps towards fostering environmental responsibility and integrating sustainable practices into its operations. The college has implemented several notable initiatives, such as the installation of energy-efficient systems, waste reduction and recycling programs, and the promotion of alternative transportation options. These efforts showcase the college's commitment to sustainable development and its recognition of the importance of protecting our planet.

However, the audit has also identified areas where further attention and action are required. For instance, while the institution has made progress in reducing energy consumption, there is still room for improvement in terms of optimizing energy efficiency, exploring renewable energy sources, and setting ambitious targets for greenhouse gas emissions reduction. Additionally, waste management practices could be enhanced by implementing strategies to minimize waste generation, increasing recycling rates, and promoting the use of sustainable materials across campus.

Furthermore, the audit emphasized the significance of promoting environmental awareness and education among the college community, especially the rural students. It is recommended that the institution continues to invest in educational campaigns, workshops, and events that empower students, faculty, and staff to adopt sustainable practices in their daily lives and academic pursuits. By fostering a culture of environmental stewardship, the college can inspire meaningful change and cultivate a generation of environmentally conscious individuals.

To achieve these goals, collaboration and engagement with stakeholders, including students, faculty, staff, and local communities, will be vital. Encouraging open dialogue, seeking input, and involving relevant parties in decision-making processes can foster a sense of ownership and shared responsibility for environmental sustainability.

In conclusion, the environmental audit has provided valuable insights and a roadmap for



Ramkrishna Nagar College to enhance its sustainability efforts. By building on existing achievements, addressing identified areas for improvement, and promoting environmental education, the college can further its commitment to sustainability and serve as a beacon of environmental stewardship within the higher education community. By taking these steps, the institution can contribute to a greener and more sustainable future for both its campus and the broader society

**A REPORT ON ENERGY AUDIT**  
**RAMKRISHNA NAGAR COLLEGE**  
**RAMKRISHNA NAGAR, KARIMGANJ, ASSAM, 788166**



*Prepared By*  
*Department of Physics*  
*Ramkrishna Nagar College*  
*Ramkrishna Nagar, Karimganj, Assam, 788166*

Study Team

1. Dr. Dipankar Paul, Assistant professor & Head of Department, Department of Physics.
2. J. Abedin, Assistant Professor (T), Department of Physics.
3. F.P. Laskar Assistant Professor (T), Department of Physics.

DECLARATION BY THE STUDY TEAM

We do hereby declare that we have studied recharged & have written a complete report on "ENERGY AUDIT" of Ramkrishna Nagar College, Ramkrishna Nagar, Karimganj. It has not been shared from & shared to any 3<sup>rd</sup> party for the partial/complete fulfillment of any degree or diploma or any Professional requirement.

Place:- Ramkrishna Nagar

Date:- 18-05-2023



Dr. Dipankar Paul

J. Abedin Jaimial Abedin

F.P. Laskar Farida prabin laskar

## ACKNOWLEDGEMENT

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## 1. INTRODUCTION:

### 1.1 Brief History

*Ramkrishna Nagar College is a Premier institute for higher education in Ratabari(SC) Constituency located about 55 Km to the East-South of karimganj district headquarter. Established in 12<sup>th</sup> January 1964, the college was originally affiliated to Gauhati University & at present it is affiliated to Assam University, Silchar. The college offers undergraduate courses in Arts & Science. The college was accredited with "B" grade by NAAC in 2004. It has a campus area of 41700 Sq.mt & build up area of 14900 sq.mt.*

### 1.2 What is Energy Audi?

*Energy audit means the routine procedure of verification, monitoring and analysis of the 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.*

### 1.3 Importance of Energy Audit.

*An energy audit will help identify energy saving opportunities, identify ways for cost reducing methods. It will help understand institutes energy usage and ways to use energy better. An energy audit can identify safety concerns with electrical system, wiring and ventilation thus making the college safer. It can suggest energy efficient technologies, energy saving equipment. It will ensure that energy saving practices are followed in an educational institution in a sustainable manner*

### 1.4 Objective of Energy Audit:

*The Primary goals of energy audits are:-*

- (1) To find ways for saving in energy consumption*
- (2) To find areas of possible energy losses*
- (3) To identify the quality and cost of energy inputs.*

(4) To create awareness for optimum use electric energy among students & staff.

(5) To identify safety concerns with electric system, wiring & Ventilation.

1.5 Scope of Energy Audit:

(i) Review of electricity consumption pattern.

(ii) Assessment of building wise electrical load

(iii) Lux level study of classroom as per recommendation level.

1.6 Components of Energy Audit.:

The major activities carried out during the audit are as follows:

(i) Verifications and inspection of entire electrical system, wiring & Ventilation.

(ii) Basic Information of Ramkrishna Nagar College regarding electricity power consumption.

Table - 1

Sl No.	Basic Data	Value
1	Connected load	82.3 KW
	Contract Demand	90 KW
2	Annual Electrical consumption (1 <sup>st</sup> August 2021-1 <sup>st</sup> August 2022)	168KW
3	Working hours(Academic + Administrative)	8 hrs

(iii) Month Wise electricity consumption data for the year 2021 and 2022.

Table - 2

Electricity Consumption pattern in Kwh for the last two years		
Months of the year	2021	2022
March	1298.09	1415.34
April	0	1209.36
May	0	2533.72
June	2368.05	2573.68
July	751.32	2863.42
August	989.11	2587.67
September	988.8	3866.52

October	3143.27	2313.92
November	1205	-----
December	1246	-----

(iv) Analysis of electrical distribution system.

Table - 3

Sl No.	Particular	Observation	Remarks
1	Is distribution of load satisfactory	YES	
2	Condition of electrical wiring	GOOD	
3	Type of wiring	Concealed and Open	All the open wiring should be concealed
4	Whether electrical equipment's are operating at specified voltage or current (with in the tolerance range)	YES	
5	Rating of Fuses / junction box are as per standards	YES	
6	Whether single isolating switch is available for the whole premises.	YES	250A MCCB
7	Earth pits identified	YES	12 Nos. in Total Identified
8	Condition of earthing	FAIR	Needs to be improved
9	Earth connection to equipment's - proper / not proper	PROPER	
10	Voltage between neutral and earth	0V	
11	Weather DG is provided with neutral earthing	YES	
12	Cable laying condition	GOOD	
13	Cable Terminations	PROPER	
14	Meter and Main Condition	GOOD	
15	Panel board Condition	GOOD	
16	Solar panels		
17	LED Lights and energy saving appliances	FAIR	
18	Rating of cables as per standard (YES/NO)	YES	
19	Generator Capacity & Condition	20kw & Good	
20	Solar Panel Capacity & Condition	Under Process	
21	Average energy produced by solar	5.56 kw	

*[Handwritten signature]*  
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Assam



## (v) Room or Department wise energy consumption.

Table - 4

Consumers Room Description	Fan	LED Light	CFL Light	Socket IN Ampere		A.C. (TON)	Computer	Printer/Scanner	Projector	Motor HP
<b>Admin Building</b>										
Principal office	2	8		1(16A)	1*16A=16A	1.5	1	1		
Conference Hall	3	3		2(6A)	2*6A=12A	1.5				
Main office	3	3	2	2(16A)	2*16A=32A		6	6		
Office rooms (2 <sup>nd</sup> floor)	2	4	1	2(6A)	2*6A=12A		3	3		
				1(16A)	1*16A=16A					
Computer lab	4	6	2	6(6A)	6*6A=36A		14			
Examination cell	4	8		2(6A)	2*6A=12A					
IQAC Room	2	3	2	2(6A)	2*6A=12A		4	5		
Auditorium	4	10	8	2(6A)	2*6A=12A					
Total no of items	24	45	15		160A		28	15		
Total in Watt	24*60W	45*8W	15*10W		160*120W		28*200W	15*200W		
	1440W	360W	150W		19200W		5600W	3000W		
Total in Kilo watt(KW)	29.75KW									
<b>Science Section</b>										
Physics Lab	6	8	8	2(6A)	2*6A=12A					
				1(16A)	1*16A=16A					
Chemistry Lab	4	6	6	2(6A)	2*6A=12A					
				1(16A)	1*16A=16A					
Chemistry Classroom	6	4	5	2(6A)	2*6A=12A					
Passage	1	4	4	1(16A)	1*16A=16A					
Mathematics Dept	4	1	4	2(6A)	2*6A=12A					
Total no of items	21	23	27		96A					
Total in Watt	21*60W	23*8W	27*8		96*120W					
	1260W	184W	216W		11520W					
Total in Kilo watt(KW)	13.18KW									
<b>Arts Section</b>										
Economics Dept	4	4	4	1(6A)	1*6A=6A		1			
English Dept	3	2		1(6A)	1*6A=6A		1			
Bengali Dept	1		1	1(6A)	1*6A=6A		1			
Philosophy Dept	3	2		1(6A)	1*6A=6A		1			
Classroom	6	6	6	1(6A)	1*6A=6A					
Political Sc. Dept	4	4	2	1(6A)	1*6A=6A		1			
History Dept	4	4	3	1(6A)	1*6A=6A		1			
Hindi Dept	6	4	3	1(6A)	1*6A=6A		1			
Classrooms	4	4	12	1(6A)	1*6A=6A					
Common Room	5	1	2	2(6A)	2*6A=12A					
Corridor		1	2							
Total no of items	40	32	35		66A		7			
Total in Watt	40*60W	32*8W	35*10W		66*120W		7*200W			
	2400W	256W	350W		7920W		1400W			
Total in Kilo watt(KW)	12.32KW									

  
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### Library Section

Library ground	12	3	20	2(6A)	2*6A=12A		4	1	
Computer Room	3	12		4(6A)	4*6A=24A		32		1
Total no of items	15	15	20		36		36	1no	1no
Total in Watt	15*60W	15*10W	20*8W		36*120W		36*200W	1*200W	1*300W
	900W	150W	160W		4320W		7200W	200W	300W
Total in Kilo watt(KW)	13.23KW								

### Other Rooms

Teacher's CR	2	4	2	1(6A)	*6A=6A	1.5			
Boy's CR	2	2		1 (6A)	1*6A=6A				
Girl's CR	2	3	1	1 (6A)	1*6A=6A				
GYM	2	2	1	1 (6A)	1*6A=6A				
VP Room	2	3		1(6A)	1*6A=6A				
Office room SU	2		2	1 (6A)	1*6A=6A				
Canteen	2	4		1(6A)	1*6A=6A				
Kitchen	1	1		1(6A)	1*6A=6A				1.5 HP
Sick Room	2		4	1 (6A)	1*6A=6A				
Total no of items	17	19	10		54A	1.5TON			1.5HP
Total in Watt	17*60W	19*10W	10*10W		54*120W	1.5*1000W			1.5*746W
	1020W	190W	1000W		6480W	1500W			1119W
Total in Kilo watt(KW)	11.3KW								

### Hostel Rooms

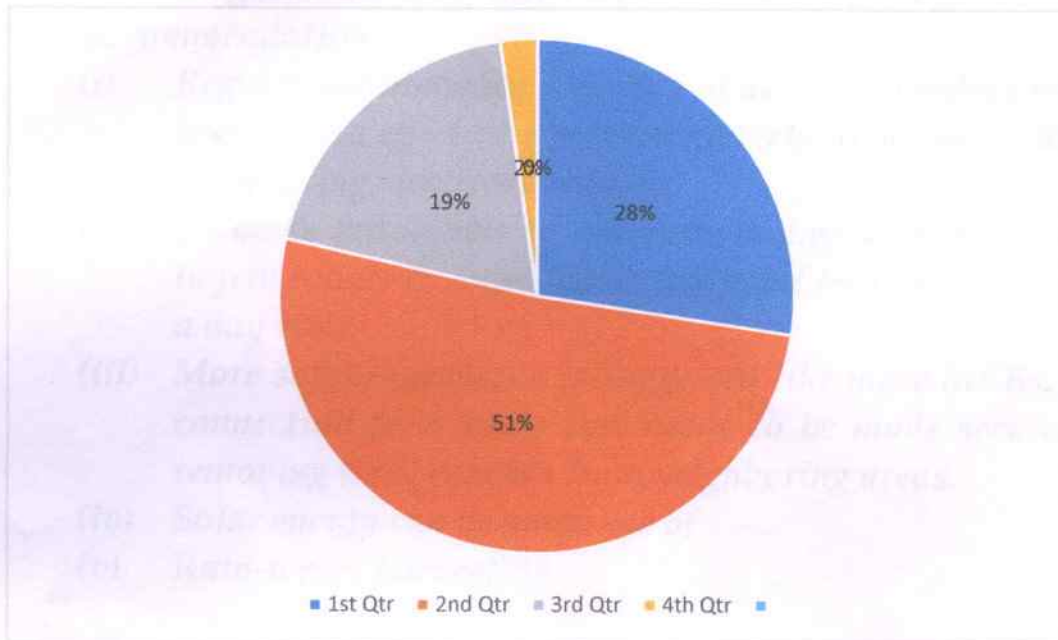
Toilet	3		6						
New Building Rooms	4	10							
Corridor		15							
Canteen	5	5		1(6A)	1*6A=12A				
Total no of items	12	30	6		12				
Total in Watt	12*60W	30*10	6*10W		12*120W				
	720W	300W	60W		1440W				
Total in Kilo watt(KW)	2.52KW								

  
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(VI) Lux level study

1.7 Assessment of Connected Load:

- (i) The total connected load has been assessed with details survey of all the building section of the college and it is found that ceiling fans, light load, computer and accessories, laboratory equipment contribute for significant energy consumption by the institute. The contribution of various category of load is fractional as below through a simple pie chart.



- (i) 1<sup>st</sup> Qtr. - Ceiling Fan  
(ii) 2<sup>nd</sup> Qtr. - Light Load  
(iii) 3<sup>rd</sup> Qtr. - Computer, accessories, Laboratory & Printer  
(iv) 4<sup>th</sup> Qtr. - other like pump etc.

- (ii) There is a good amount of day light penetration into various rooms of all the buildings of the college during normal working hours which reduces the need of electrical lightings. As an educational institute, the working hours is mainly on day time & hence the illumination study is carried out during the day time only (between 9 am to 3pm). Few rooms including the principal & office rooms do not have adequate day lighting which

*leads to the dependence on artificial lighting. Most of the lights are converted to LED to save energy.*

- (iii) The average power consumption (in kWh) from 1<sup>st</sup> August 2021 to 1<sup>st</sup> August 2022 is 14KWH.*
- (iv) The maximum demand (in kWh) is recorded an average of 14.9 KW for the period from May 2021 to June 2022.*
- (v) Connected load is 82.3 kW*
- (vi) Contracted demand is 90kw*
- (vii) Open wiring is observed in many places which is suggested to be replaced with concealed wiring.*

#### **1.8 Recommendation**

- (i) Regular maintenance, cleaning of devices to reduce energy losses. Less efficient electrical gadgets to be replaced by 5 stars rating electrical gadgets.*
- (ii) To make provisions to allow more day light penetration in few rooms & areas where artificial lighting required in a day time.*
- (iii) More safety provision is suggested like more MCBs, also connection from main line needs to be made secure like removing tree branches from neighboring areas.*
- (iv) Solar energy can be made use of*
- (v) Rain-water harvesting.*

**\*\*\*\*\*END OF ENERGY AUDIT\*\*\*\*\***