



CLEAN & GREEN 2022 CAMPUS AWARD

CERTIFICATE OF RECOGNITION

AWARDED TO
DON BOSCO COLLEGE
KOHIMA, NAGALAND

FOR THE CLEAN & GREEN PRACTICES
FOLLOWED IN THE INSTITUTE


Keduolhoukho Chadi
Director
Earth Friendly Generation (EFG)
Chiephobozou Town Kohima Nagaland



23RD MAY 2022
DATE

In P Suresh
Principal
Don Bosco College
PB - 430
Kohima-797001 Nagaland





Office of the
EARTH FRIENDLY GENERATION (EFG)

Regd. No. HOME/SRC-6994 Dated 04-07-2016

Motto : "Serve for better life"

Ref. No. ...EFG/D-1/2022

Date...12th April 2022

CERTIFICATE

This is to certify that Don Bosco College Kohima has conducted detailed on Environment Audit of their campus and has submitted necessary data and credentials for scrutiny. The activities and measures carried out by the college have been verified based on the report submitted and was found to be satisfactory. The effort taken by the faculty and students towards environment and sustainability is highly appreciated and commendable.

KEDUOLHOUKHO CHADI

Director

Earth Friendly Generation EFG
Chiephobozou Town, Kohima.

Director
Earth Friendly Generation
Chiephobozou Town
Kohima : Nagaland



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EARTH FRIENDLY GENERATION (EFG)

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WITH REGARDS

(Signature)
(KEDUOLHOUKHO CHAO)
DIRECTOR

EARTH FRIENDLY GENERATION (EFG)

Director
Earth Friendly Generation
Chiephobozou Town
Kohima : Nagaland

CERTIFICATE OF RECOGNITION




THIS CERTIFICATE
IS PROUDLY PRESENTED
FOR HONORABLE ARCHIEVEMENT TO

DON BOSCO COLLEGE, KOHIMA

FOR THE PROPER WASTE SEGREGATION PRACTICES
FOLLOWED IN THE INSTITUTE

Director
Earth Friendly Generation
Chiephobozou Town
Kohima, Nagaland


Keduolhoukho Chadi

Director
Earth Friendly Generation
Chiephobozou Town Kohima Nagaland

19 June 2020'

DATE



Office of the
EARTH FRIENDLY GENERATION (EFG)

Regd. No. HOME/SRC-6994 Dated 04-07-2016

Motto : "Serve for better life"

Ref. No. EFG/D-2/2022

Date 05/09/2022.....

CERTIFICATE

This is to certify that Don Bosco College Kohima has conducted detailed on Green Audit of their campus and has submitted necessary data and credentials for scrutiny. The activities and measures carried out by the college have been verified based on the report submitted and was found to be satisfactory. The effort taken by the faculty and students towards environment and sustainability is highly appreciated and commendable.

KEDUOLHOUKHO CHADI

Director

Earth Friendly Generation EFG

Chiephobozou Town, Kohima.

Director
Earth Friendly Generation
Chiephobozou Town
Kohima : Nagaland

GOVERNMENT OF NAGALAND
OFFICE OF THE SUB-DIVISIONAL OFFICER
ELECTRICAL SUB-DIVISION NO-I
KOHIMA : NAGALAND

TO WHOM IT MAY CONCERN

This is to certify that an "Energy Audit" for Don Bosco College Kohima has been conducted in May to July 2023 to assess energy cost availability of supply of energy, energy conservation technologies and ways to reduce energy consumption.

AUDIT FINDINGS

- The communication process for awareness in relation to energy conservation is found adequate.
- Average power factor is maintained.
- Assessment of electrical load calculation has been done by the college.
- Monthly use of electricity in the college is not very high.
- Energy efficient equipment's are being used by replacement the old-energy efficient bulbs.
- Regular monitoring of equipment's and immediate rectification of any problems is being done.

Kohima
30/5/24
Sub-Divisional Officer
Electrical Sub-Division No.1
Kohima : Nagaland
S.D.O. (E) No 1
Kohima



DON BOSCO COLLEGE KOHIMA

GREEN CAMPUS INITIATIVE POLICY



DON BOSCO GREEN ALLIANCE

It is an international collective of young people from Salesian family institutions (134 countries with over 3000 institutions and organizations globally) that contributes to global environmental action, thought and policy.

The Alliance primarily focuses on creating a new generation of environmentally committed citizens and leaders, who ensure an environment that is safe and caring for all life on the planet.

YEAR OF ESTABLISHMENT

Don Bosco Campus Kohima started initiating 'Green Alliance' project in 2019

DON BOSCO CAMPUS KOHIMA GREEN ALLIANCE

- The college believes in : *“Let’s go green and keep our campus clean”*.
- Don Bosco Campus Kohima uses a “four Pillars” framework that integrates efforts to reduce campus ecological footprints, make campus environment healthier, and get the whole community and the youths and future generation think about solutions to the problems we face.

The four Pillars are:

1. Strive to be environmentally friendly
2. Sustainable resource use
3. Green campus and healthy space
4. Teach, learn and engage

MISSION

- To mark the importance of taking responsibility and action to ensure that the world is a better place to live in.
- For monitoring and advising the cleaning staff on good energy practices.

- Understanding how fulfilling once own needs will affect the needs of people in the future.

VISION

- Help students to appreciate their natural environment and learn to live in harmony with it.
- Set an example to the students and the community in reducing the waste of natural resources.
- To strive in making Don Bosco a Green Campus.

IMPORTANT ENVIRONMENTAL INITIATIVES IMPLEMENTED IN THE COLLEGE ARE :

- Use of renewable energy
- Rain water harvesting
- Zero water discharge
- Waste segregation
- Plastic free zone
- Tobacco free zone
- Solid Waste Management
- Liquid Waste Management and
- E-Waste Management
- Vermicompost
- Rain water harvesting
- Solar energy
- Solar sanitary vending machine
- Organic garden

DON BOSCO COLLEGE KOHIMA IS COMMITTED TO:

- 1) Go for plastic-free.
- 2) Use less paper and promote electronic notes.
- 3) Always remember five R's (Refuse, reduce, reuse, re-purpose, and then recycle)
- 4) Go all green on the home front
- 5) Conduct environmental drills for students, nature based outings where they are given specific projects to learn/do from the place where they visit.
- 6) Create awareness on Health and Hygiene, Sanitation, Climate change, deforestation.
- 7) Promote best practices of waste management.
- 8) Observe of environmental day/week/earth day

OBJECTIVE OF THE POLICY

1. To reduce local air pollution emissions using environment-friendly vehicles including bicycles, public transportation and use of pedestrian-friendly roads
2. To count CO₂ emissions generated by our means of transportations- vehicles.
3. To encourage use of advanced technology to minimize energy consumption, atmospheric emissions and noise, particularly from our vehicle fleets.
4. To install photovoltaic solar panels for the generation of alternate energy.
5. To install LED bulbs in the campus to save energy.
6. To develop systematic waste management mechanism.
7. To develop rain water harvesting unit.
8. To undertake tree plantation drive.
9. To maintain organic garden.
10. Landscaping the campus with trees and plants.
11. To educate students and staff on Vermi-composting.
12. To protect and conserve ecological systems and resources within the campus.
13. To engage in dialogue with the government agencies, municipal corporation and the affiliating university and actively work with the local organizations in the areas of environment, energy efficiency and sustainable development
14. To ensure judicious use of environmental resources to meet the needs and aspirations of the present and future generations.
15. To integrate environmental concerns into policies, plans and programmes for social development and outreach activities,

16. To strengthen our employees' and students' environmental knowledge and skills in order to improve our own environmental performance.
17. To provide information and training opportunities on energy saving measures
18. To offer opportunities for employees and students to engage in initiatives those contribute to environmental protection.
19. To work with all stakeholders and the local community to raise awareness and seek the adoption of environmental good practice and the reduction of any adverse effects on the environment.
20. To continuously improve our contribution to climate protection and adaptation to climate change and to the conservation of global resources,
21. To continuously improve the efficient use of all resources, including energy and water, and to reduce consumption and the amount of waste produced, recovering and recycling waste where possible.
22. To make the campus plastic free.
23. To conduct environmental and energy audits from time to time.
24. To train our employees and students through our Bosco Green Alliance to make them 'Go Green Specialists and partners to plant trees each year.
25. To minimize the use of paper in administration through having policy for E-governance.

COMPOSITION OF GREEN ENVIRONMENT COMMITTEE

1. The Principal (Chairman)
2. Co-ordinator (Asst. Professor from the college)
3. Assistant Co-ordinator(Asst. Professor from the college)
4. One person to be nominated by the governing Body of the college for a period of 5 years
5. Dean of Student's Affair (Asst. Professor from the college)
6. Green ambassadors (College students)
7. A member of NGO office

Term: Term of Green Environment Committee will be 5 years.

Meetings: The Green Environment Committee will meet at least once a year.

The committee will be responsible to ensure the following (Modus operandi)

1. Maintenance of a clean pollution free campus.

2. Creating awareness towards cleanliness and conservation of natural resources amongst students, teachers and employees.
3. Ensure maintenance of greenery on the campus by undertaking tree plantation program on a regular basis.
4. Organize different types of competitions addressing environmental protection and conservation.
5. Invite renowned environmentalists on the campus to deliver expert lectures.
6. Organize rallies in the neighboring area for keeping the residential colonies neat and clean.
7. Coordinate with NSS in interrelated areas covering greenery, pollution free campus and awareness creation activities
8. Proper management of E-waste and handing it over to pollution control board for disposal.
9. Vermicomposting by using the food waste of teacher's quarter and canteen
10. Co-ordinate with the care takers and students to maintain the vermicompost and Organic Garden.
11. The committee will monitor the funds related to
 - Expenditure and income on Organic Garden and Vermicomposting
 - Workshops and Seminars
 - Expenditure on meetings of the Governing body and committees
 - Extension activities

Committee on Air Quality

Composition of Committee on Air Quality

1. The Principal (Chairman)
2. Co-ordinator (Asst. Professor from the college)
3. Assistant Co-ordinator(Asst. Professor from the college)
4. Two Student volunteer from each Department

Terms of Reference

1. To check the entry of vehicles inside the campus.
2. To examine and document the evidence available on indoor and outdoor air pollution and its impact.

3. To identify different institutional and individual sources responsible for causing indoor and outdoor air pollution.
4. To suggest ways in which data can be gathered from various government sources which will facilitate studies of the causes and impact of air pollution.
5. To commission such studies as are necessary on the causes and impact of indoor and outdoor air pollution

Tenure: The Committee is constituted for a period of one year.

Meetings: The Committee will meet once a month.

Organic Garden and Vermicompost Committee

Composition of Committee Organic Garden and Vermicomposting

1. The Principal (Chairman)
2. Co-ordinator (Asst. Professor from the college)
3. Assistant Co-ordinator (Asst. Professor from the college)
4. Two Student volunteer from each Department.

The committee will be responsible to ensure the following;

1. The committee will monitor the funds related to
 - Expenditure and income on Organic Garden and Vermicomposting
 - Workshops and Seminars
 - Expenditure on meetings of the Governing body and committees
 - Extension activities
2. Co-ordinate with the care takers and students to maintain the vermicompost and Organic Garden.
3. Monthly inspection on Organic garden and Vermicomposting site.
4. To examine and document the evidence available

Tenure: The Committee is constituted for a period of one year.

Meetings: The Committee will meet once a month.

SCOPE OF THE POLICY

The Green Environment Policies will develop exciting new co-curricular and extracurricular practices that encourage students to take the lead in creating positive change. These initiatives

call for a thorough review of all infrastructural, administrative functions from the standpoints of energy efficiency, sustainability and the environment.

This Green Environment Policy is binding for all the components of the institution and applies to all its stakeholders and to the various activities undertaken by the institution. It will help us to embed efficiency and environmental awareness into our everyday activities, thus helping us to realize our responsibilities and commitment to conservation of natural resources and to limit its usage. Bosco Green Alliance, an official platform devoted to the cause of environmental awareness, to undertake green initiatives, and to conduct green literacy programmes to save energy and to protect the environment.

The focus areas of this policy are:

→ Clean Campus Initiatives

→ Landscaping Initiatives

→ Clean Air Initiatives

Smoking Free Campus

→ Infrastructure

Solar Power Plant

Water Conservation through Rainwater Harvesting System

→ Waste Management processes

Solid Waste Management

Liquid Waste Management

E-Waste Management

→ Awareness Initiatives

→ Environment-centric Student Societies and Department Activities

→ Green Audit

→ Energy Audit

→ Plastic-Free Campus

Clean Campus Initiatives

DBCK had pledged to actively coordinate cleanliness activities in the college and beyond the campus in accordance with the vision of Swachh Bharat Abhiyan.

It commits to continue with this Programme. The broad vision is as follows:

1. Generating mass awareness on cleanliness and hygiene amongst students and staff members by holding regular cleanliness drives. The idea is to motivate them to contribute in a proactive manner.
2. Activities under 'Swachh Bharat Abhiyan' will be a key component of all the community work being done by NSS, NCC and Bosco Green Alliance volunteers of the college.
3. Staff Members will be encouraged to participate in the cleanliness drive in the college campus
4. Events such as poster and slogan competitions, essay writing, spoken word poetry, speeches, and skits on 'Swachh Bharat' will be organised.
5. Rallies on themes connected with 'Swachh Bharat Abhiyan' in and around the college campus will be conducted to create mass awareness.
7. Remove all kinds of waste material like broken furniture, unusable equipment etc.
8. Conduct workshops on the 3Rs: Reduce, reusing and recycling of waste.
9. Administer of the pledge by students and staff members to maintain cleanliness of the college campus and its surrounding areas on an annual basis.
10. Commit to manage waste and maintain clean campus especially during college events.

Landscaping Initiatives

- The campus landscape, like its buildings, can be seen as the physical embodiment of a college's values. It is a vital part of the life of a campus, providing space for study, play, outdoor events, relaxation and aesthetic appreciation. Green campus landscapes also manage runoff, help recharge groundwater, and clean and cool the air on campus. The landscape serves as a visual representation of the campus community's commitment to sustainability. As campus landscapes are so visible and accessible, landscaping initiatives are a great way to build awareness around the environment. The landscape of trees and plants provide the 800+ students and staff with clean and cool air and is a soothing environment.
- The College commits to enriching this healthy habitat and maintaining the symbiotic relation of the institution with nature by organizing annual tree plantation drives.
- Encouraging student societies to hold tree planting events.

Clean Air Initiatives

- Students are restricted from bringing their private vehicle inside the campus.

- Students availing bus service are dropped outside the college gate.
- We encourage our students and staff to use public transportation.
- We encourage carpooling to college, an activity that will control air pollution and strengthen social interaction.
- The entry of automobiles inside the campus is restricted to discourage the use of private vehicles.

Smoking Free Campus

In compliance with the framework provided by the National Tobacco Control Programme (NTCP) 2007-2008, the college prohibits smoking and the use of other tobacco products.

Infrastructural Initiatives

1. Water Conservation through Rainwater Harvesting System

DBCK has committed itself to give an effort to replenish the groundwater table by practicing rainwater harvesting. This practice helps in the replenishment and recharge of the groundwater.

2. Waste Management Processes

DBCK strives to have a minimal impact on the environment and is dedicated to reduce and manage the waste generated by the college campus. The following specific procedures will be undertaken to ensure DBCK contribution in protecting the environment.

3. Solid Waste Management

With its aim to provide holistic education that also has a positive impact on the environment, the college will adopt practices that will mitigate the generation, and manage solid waste through the following methods:

- 3.1. Systematically engage with the 3Rs of environment friendliness (Reduce, Reuse and Recycle).
- 3.2. Collect paper waste produced on campus and collaborate with scrap dealers for recycling.
- 3.3. Reduce solid waste by developing a technology-centric teaching and administrative model.
- 3.4. Reduce use of paper by supporting digitization of attendance and internal assessment records.

3.5. Reduce requirement of printed books by updating the e-books and e-journals collection of the college library.

3.6. Awareness among the students on segregation of waste and practical application by providing different waste colored bins.

3.7. Encourage the students and teachers to use emails for assignment submissions.

3.8. Take initiatives to spread awareness amongst students about

- Food wastage and ways of minimizing it
- Minimizing the use of packaged food
- The habit of reusing and recycling non-biodegradable products
- Organizing workshops for students on solid waste management.

4. Liquid Waste Management

4.1. Maintain leak proof water fixtures.

4.2. Minimize the use of water by constructing more Indian style toilets instead of western style toilets.

4.3. Continued employment of a caretaker to take immediate steps to stop any water leakage through taps, pipes, tanks, and toilet flush etc.

4.4. Prevention of release and mixing of oil from the college canteen liquid waste in the municipal drainage system by use of Grease trap mechanism. This way the Biochemical Oxygen Demand is reduced in the effluent waste water produced by the DBCK canteen.

4.5. Reuse of wastewater generated by the Reverse Osmosis (RO) system in washrooms.

5. E-Waste Management

DBCK ensures that its usage of technology and generation of e-waste does not impact the environment. For this purpose, the college plans to strive towards:

- More provisions for the disposal of the institutional e-waste.
- Collaboration with e-waste recycling companies to get electronic waste recycled.
- Awareness amongst students about reduction of e-waste and environment friendly disposal practices for e-waste.
- Encouraging department and society level activities pertaining to e-waste management.
- Yearly collection of e-waste from their respective homes.

Awareness Initiatives

Outreach and education are of utmost importance so that all members of the campus community may value the objectives of the policy and aid in its implementation. This is why DBCK supports and encourages awareness campaigns, seminars, workshops, conferences and other interactive sessions to facilitate effective implementation of the Green Campus, Energy and Environment policies.

Environment-centric Student Societies and Department Activities

DBCK encourages all the departments and specific student societies like Bosco Green Alliance, NSS, NCC, departments and others to organize events, competitions and training sessions that will bring about positive environmental changes at the grass root level. The college supports departments and student societies in molding the students into active agents of environment protection and conservation.

Bosco Green Alliance

Institutional changes towards sustainability and eco-friendly practices have percolated down to the students which have led more and more students to join Bosco Green Alliance. Making the society a compulsory one will provide it a bigger platform to broadcast the institution's environmental values to raise awareness. Because compulsory societies expect the fulfillment of a specified number of hours of work and commitment, this will aid the green initiatives and practices that are a part of this policy to grow exponentially.

Conduct Green Audit

The college aims to regularly conduct a Green Audit of our college campus to assess our strengths and weaknesses to further our goals of long-term sustainability. A green audit is a useful tool to determine how and where most energy or water or resources are being used. The college can then consider how to implement changes and make savings. It can determine the type and volume of waste. Recycling projects or waste minimization plans can be adopted. It will create health consciousness and promote environmental values and ethics. It provides a better understanding of the impact of ecofriendly practices on campus. Green auditing will promote financial savings through reduction of resource use. It is imperative that the college evaluate its own contributions toward a sustainable future.

Conduct Energy Audit

Energy Audit to be conducted as and when required to further reduce its carbon footprint. The importance of reducing energy consumption cannot be overstated. The energy audit, with its specialized tools will identify wastage of energy. Such an inspection often reveals several different flaws which cause a loss of significant amounts of energy which the college will not be able to detect. These flaws often have easy and affordable solutions and provide significant savings.

Plastic-Free Campus

DBCK has been observing most of its duties in terms of solid waste management since its inception. In view of the Government of India's resolution to ban all single use plastics due to the hazardous impact of plastic use and pollution, the college administration are striving towards a 'Plastic Free Campus

DON BOSCO COLLEGE KOHIMA



Reports on Green and Environment Audit

2022-2023

Table of Contents

1	INTRODUCTION
2	OBJECTIVES
3	AUDIT COMMITTEE MEMBERS
4	WASTE MANAGEMENT SOLID WASTE LIQUID WASTE E-WASTE
5	WATER MANAGEMENT RAIN WATER HARVESTING
6	ENERGY CONSERVATION
7	POLLUTION CONTROL
8	BIODIVERSITY CONSERVATION
9	GREEN AND ENVIRONMENT INITIATIVES
10	POTENTIAL RISK POSED BY THE COLLEGE
11	DECLARATION BY THE COLLEGE
12	CONCLUSION
13	RECOMMENDATIONS

1. Introduction

In an era marked by escalating environmental challenges and growing awareness of the importance of sustainable practices, institutions worldwide are increasingly recognizing the need to integrate environmental stewardship into their operations. The concept of a green and environment audit has emerged as a vital tool for assessing, monitoring, and enhancing an institution's environmental performance. A green and environment audit involves a systematic evaluation of an institution's environmental policies, practices, and impacts. It aims to identify areas of improvement, assess compliance with environmental regulations, and develop strategies to minimize environmental footprint while maximizing resource efficiency. Such audits encompass a wide range of environmental aspects, including waste management, water conservation, energy efficiency, pollution control, and biodiversity conservation.

In recent years, the global community has increasingly recognized the imperative of adopting sustainable practices to mitigate environmental degradation their role in fostering a greener and more environmentally responsible campus. Institutions, as key stakeholders, play a pivotal role in this endeavor. This audit report presents a comprehensive analysis of the environmental management practices and green initiatives implemented by Don Bosco College Kohima aimed at promoting sustainability and environmental stewardship within its campus premises.

2. Objectives

1. To evaluate the effectiveness of Don Bosco College Kohima green initiatives and environmental management practice
2. Assess Environmental Compliance with adherence to waste management protocols, water usage guidelines, emission limits, and other regulatory requirements to ensure legal conformity.
3. Identify potential Environmental Risks and assess the impacts of its operations on the surrounding environment.

4. Evaluate resource utilization efficiency in energy consumption patterns, water usage, waste generation rates, and material inputs.
5. Promote the adoption of sustainable practices within the institution by identifying areas where environmentally friendly alternatives can be implemented.
6. Enhance environmental awareness and foster a culture of sustainability by engaging stakeholders such as students, faculty, and the wider community in promoting environmental education, and participation in green initiatives.

3. Audit Committee Members

Fr. Dr. P. Suresh, Principal, DBCK	: Chairman
Mrs. Zavelu Kezo, Dean of Students Affairs	: Vice Chairman
Mr. Sanihe Ariijii George, Bosco Green Allaince	: Coordinator
Ms. Tsutshowe-ii Sekhamo, Bosco Green Allaince	: Member
Mrs. Jarani Mao, IQAC Cordinator	: Member
Mrs. Kezeinuo, Asst. Professor	: Member
President, Student Forum	: Member
Mr. Keduolhoukho Chadi, Director (EFG) Chiephobozou)	: External Member

4. Waste Management

Don Bosco College Kohima demonstrates a comprehensive approach to waste management, encompassing solid waste, liquid waste, and e-waste. Through the implementation of innovative solutions, such as waste segregation, organic waste management, and responsible e-waste disposal, the institution upholds its commitment to environmental sustainability and serves as a model for effective waste management practices. Through a systematic approach to waste segregation and innovative initiatives, the institution demonstrates a proactive stance towards sustainable waste management. Here's a detailed overview of the waste management practices:

4.1 Solid Waste Management:

The institution has implemented a robust system for managing solid waste generated within the campus premises. This includes various measures aimed at reducing, segregating, and disposing of solid waste in an environmentally responsible manner. Solid waste disposal is managed through a partnership with KMC (Kohima Municipal Corporation) and KVC (Kohima Village Council), ensuring responsible handling and disposal practices.

Diverse colored bins strategically placed across the campus facilitate the segregation of different types of solid waste, such as biodegradable, recyclable, and non-recyclable materials. This segregation system not only streamlines the waste disposal process but also promotes recycling and resource recovery efforts. The college has a total of 12 dustbins of 240L and 9 dustbins of 120L outside and 8 dustbins of 60L inside the campus. There is also an incinerator of length 17.6 ft., breadth 11ft. and volume 1548.8 cubic feet for waste disposal.

Don Bosco College Kohima offers courses on vermicomposting and mushroom cultivation, providing students and staff with the knowledge and skills to engage in organic waste management practices. Vermicomposting involves the use of earthworms to decompose organic waste materials, producing nutrient-rich compost that can be used to enrich soil quality and support plant growth. Similarly, mushroom cultivation utilizes organic waste substrates as a growing medium, thereby converting waste into a valuable resource.



4.2 Liquid Waste Management:

In addition to solid waste, Don Bosco College Kohima has established effective measures for managing liquid waste generated within the campus. This includes wastewater from various sources such as kitchens, laboratories, and sanitation facilities. The institution ensures proper treatment and disposal of liquid waste to prevent contamination of water bodies and groundwater resources.

Through the implementation of appropriate wastewater treatment systems, Don Bosco College Kohima minimizes the environmental impact of liquid waste discharge and maintains compliance with regulatory standards. This may involve the use of sewage treatment plants, biofiltration systems, or other advanced treatment technologies to remove contaminants and pollutants from wastewater before it is released into the environment.

Liquid waste from the old building of the college is channelized through a properly constructed drain which runs down to the new building and later to the main community drainage. The liquid waste goes through locally constructed tanks wherein during dry seasons, the roughly filtered water can be used for building construction purposes.



4.3 E-Waste Management:

Recognizing the growing significance of electronic waste (e-waste) management, Don Bosco College Kohima has incorporated specific measures to address this issue. E-waste comprises discarded electronic devices such as computers, smartphones, and other electronic gadgets, which contain hazardous materials that require specialized handling and disposal.

To manage e-waste effectively, the institution implements collection, recycling, and disposal programs to ensure the proper handling of electronic devices at the end of their lifecycle. This may involve partnering with certified e-waste recycling facilities or engaging in responsible e-waste disposal practices to prevent environmental contamination and promote resource conservation.

DBCK segregate the E-waste like non- working computers, CPU, USB, monitors, printers and batteries. Previously, e-wastes were given to local scrap dealers who in turn sell the waste items in Dimapur. The institution has signed Memorandums of Understanding (MoUs) with various agencies to ensure proper and systematic waste segregation. For e-waste disposal, it collaborates with Hulladek pvt. Ltd Kolkata, a certified e-waste management company, ensuring responsible handling and disposal practices, the waste items are picked and transported through its channel partner e-Circle in Dimapur.



5. Water Management

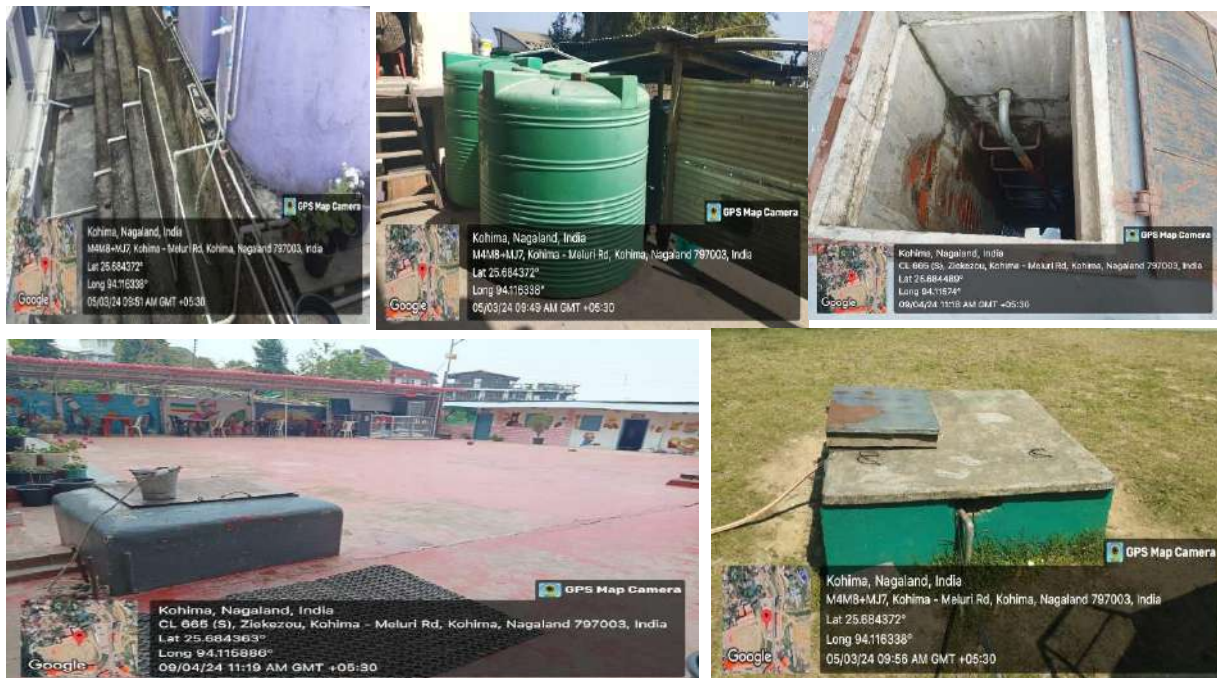
Efficient water management practices are integral to sustainable campus operations. Don Bosco College Kohima has adopted various measures to conserve water resources including the implementation of water harvesting, water-saving fixtures and regular maintenance of water infrastructure. Furthermore, initiatives such as rainwater harvesting and the utilization of recycled water for non-potable purposes contribute to minimizing water consumption and promoting water sustainability.

The world today is undergoing several challenges in concern to access and availability of pure and fresh water. As a town, Kohima records an average annual rainfall of 2899 mm during monsoon season i.e. May- October, but despite such high annual rainfall, the town faces alarming water shortage due to excessive run off during summer and drought like situation in winter.

Understanding the aforesaid challenges, Don Bosco College, Kohima has set up rain water harvesting to provide self-sufficiency in all domestic water requirements for the canteen, toilets, cleaning, drinking water etc. As a step towards eco-conscious and eco-friendly environment, the college stresses on the importance of sustainable rain water harvesting systems in the campus.

The rain water harvesting system set up in the campus has a catchment area, storage system of length 50.6, breadth 38.7 and height 10.2 and delivery system via a network of pipes linked through chambers capable of storing 5, 65,600 litres of water sufficient to meet the water requirements for the whole year round. The rainwater is stored in an underground tank situated near the college canteen and is plastered to ensure the safety of the students. Along with the rain water harvesting system, the college also has 2 bore wells and 19 water tanks capable of storing up to 39,000 litres to supplement the water requirement for the college campus.

This comprehensive water management infrastructure underscores the institution's commitment to sustainability and resource conservation. By harnessing rainwater through an extensive harvesting system and utilizing borewells for supplemental supply, Don Bosco College Kohima ensures a reliable and sustainable water source for various campus activities. Moreover, the implementation of such initiatives not only reduces the institution's environmental impact but also promotes water resilience and contributes to overall water conservation efforts in the region.



6. Energy Conservation Management

Energy conservation is a cornerstone of sustainable campus operations. Don Bosco College, Kohima understands the concerns of conserving energy and is committed to make contributions in all possible ways for sustainable energy conservation. The College has installed 8 Solar Panels connected to two inverter batteries (12 volts each), to compensate for the necessity of electrical energy within the campus. It also gives its effort to conserve energy through the use of LED bulbs and tubes. The green campus policy emphasizes the importance of energy conservation and encourages environmentally friendly practices among students, faculty, and staff by following measures in the campus such as switching off all electrical appliances when not in use, turning off appliances and switches while logging out from the classroom/office room etc.

The college has implemented various energy-saving measures, including the installation of solar panels to harness renewable energy and the widespread use of LED bulbs for lighting. These initiatives not only reduce the institution's carbon footprint but also contribute to long-term cost savings and environmental sustainability.

- Total no. of LED tube is 625 (50 watt each)
- Total no. of LED bulb is 230 (30 watt each)



7. Pollution Management

Don Bosco College Kohima has adopted a comprehensive approach to noise pollution management, prioritizing the well-being and comfort of its campus community. Several proactive measures have been implemented to minimize noise levels and promote a peaceful environment within the campus premises.

One of the primary initiatives is the restriction of four-wheelers for students, effectively reducing vehicular noise emissions. Instead, students are encouraged to utilize alternative transportation options such as carpooling and availing the institution-provided transportation service. By promoting shared transportation and reducing the number of vehicles on campus, the college effectively lowers overall noise levels and mitigates traffic-related noise pollution.

Furthermore, the campus is meticulously landscaped with trees and plants, serving as natural sound barriers and absorbing ambient noise. This green infrastructure not only enhances the aesthetic appeal of the campus but also contributes to noise reduction efforts by creating tranquil outdoor spaces.

To further reinforce a noise-free environment, posters and images are strategically displayed across the campus to promote silence and discourage noise in designated areas and at specific times. These visual reminders serve as gentle cues for students, faculty, and staff to maintain a respectful noise level, especially in academic and residential areas.

Additionally, strict guidelines are enforced to prohibit honking inside the campus premises. This policy helps maintain a peaceful atmosphere and minimizes unnecessary noise disturbances for individuals studying, working, or residing on campus.

Hence, the College demonstrates a proactive stance towards noise pollution management through a combination of policy measures, landscaping strategies, and awareness campaigns. By fostering a culture of respect for noise-free environments and implementing practical solutions, the institution ensures a conducive learning and living environment for its campus community.



8. Bio Diversity Conservation

Biodiversity conservation is a key focus area for Don Bosco College Kohima, which recognizes the importance of preserving and enhancing the natural environment within its campus. Through various initiatives, the institution aims to promote biodiversity, protect native flora and fauna, and create sustainable ecosystems.

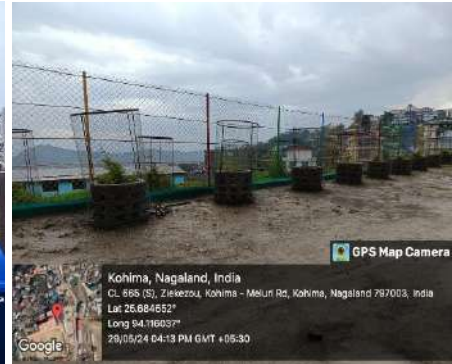
One of the primary strategies employed by the institution is extensive landscaping with a diverse range of trees and plants. By incorporating native species into the campus landscape, the college not only enhances aesthetic appeal but also provides habitats and food sources for local wildlife. Additionally, the diverse vegetation helps improve air quality, regulate temperature, and reduce soil erosion, contributing to overall ecosystem health.

Furthermore, Don Bosco College Kohima boasts a botanical garden that serves as a living laboratory for education, research, and conservation. The garden features a wide array of plant species, including rare and endangered varieties, allowing students and researchers to study biodiversity up close and engage in hands-on learning experiences.

In addition to the botanical garden, Don Bosco College Kohima actively promotes tree plantation initiatives across the campus. Through tree planting events and campaigns, students, faculty, and staff are encouraged to participate in greening efforts and contribute to expanding the campus's green cover. These tree plantation drives not only enhance biodiversity but also foster a sense of environmental responsibility and community engagement.

Moreover, campus beautification projects are undertaken with biodiversity conservation in mind. Green spaces, walking trails, and recreational areas are carefully designed to integrate seamlessly with the natural surroundings while providing opportunities for relaxation and outdoor recreation.

Overall, Don Bosco College Kohima demonstrates a strong commitment to biodiversity conservation through landscaping, botanical garden establishment, tree plantation initiatives, and campus beautification projects. By prioritizing the preservation and enhancement of natural ecosystems, the institution creates a sustainable environment that supports biodiversity and enriches the campus experience for all.



9. Green Campus initiatives

Don Bosco College Kohima is committed to fostering a green campus environment through a range of initiatives aimed at promoting sustainability, environmental awareness, and community engagement. These initiatives are coordinated and supported by the Bosco Green Alliance Committee, comprising dedicated faculty members serving as coordinators for various green initiatives. The college has done water quality and ground water testing and soil testing of the campus.

Central to the college's commitment to sustainability is the establishment of a comprehensive Green Campus Policy. This policy outlines the institution's commitment to environmental conservation, sustainable practices, and continuous improvement in environmental performance. It serves as a guiding framework for all green initiatives and activities undertaken on campus.

As part of its commitment to environmental stewardship, Don Bosco College Kohima conducts regular Green and Environment Audits to assess its environmental performance, identify areas for improvement, and ensure compliance with environmental regulations. Additionally, the institution undergoes energy audits conducted by authorized agencies to assess energy consumption patterns, identify energy-saving opportunities, and achieve energy efficiency goals.

A variety of activities and programs are organized throughout the year to promote environmental sustainability and engage the campus community. These include the Save Dzziivirii Project, which focuses on biodiversity conservation and habitat restoration efforts. Tree plantation drives are also organized to enhance green cover and mitigate carbon emissions. Furthermore, cleanliness drives, waste collection campaigns, and trash segregation initiatives are conducted to promote waste management and recycling practices. The college also maintains an organic garden to promote sustainable agriculture and provide hands-on learning opportunities for students.

To address the issue of plastic pollution, the college has designated specific areas on campus as plastic-free zones, encouraging the use of eco-friendly alternatives and promoting responsible waste management practices.

Overall, Don Bosco College Kohima 's green campus initiatives reflect a holistic approach to environmental sustainability, encompassing policy development, audits, community engagement, and hands-on activities. Through these efforts, the institution aims to instill a culture of environmental responsibility and contribute to a greener and more sustainable future.



10. Potential risk posed by the College

The newness of the institution, coupled with limited infrastructure and resources, poses several potential risks. Firstly, inadequate facilities may impact the quality of education and student experience. Secondly, limited resources could hinder the institution's ability to attract and retain qualified faculty and staff. Additionally, being located in the heart of a village with a small population may present challenges in terms of access to amenities, transportation, and community engagement opportunities. Furthermore, the institution may face competition from established educational institutions in nearby urban centers, impacting enrollment and financial sustainability.

11. Declaration by the College

Our institution commits to upholding environmental legislation and laws in India, ensuring compliance and proactive measures for sustainability. We recognize the importance of legal frameworks in preserving and safeguarding our environment and pledge to maintain strict

compliance and to integrate them into our operations for a greener future. Through proactive measures and continuous awareness, we aim to contribute positively to environmental sustainability. This declaration signifies our dedication to responsible stewardship, ensuring a harmonious balance between our activities and the preservation of India's natural heritage.

12. Conclusion

In conclusion, Don Bosco College Kohima has made significant strides in fostering a green and sustainable campus environment. From waste management and water conservation to noise and air pollution control, the institution has demonstrated a holistic approach to environmental stewardship. However, there remain opportunities for improvement, particularly in enhancing renewable energy utilization and strengthening environmental education initiatives. By building upon existing initiatives and embracing innovative solutions, Don Bosco College Kohima can further advance its commitment to environmental sustainability and serve as a model for other institutions to emulate.

13. Recommendations

- Expand renewable energy infrastructure, such as solar panels, to further reduce carbon emissions and enhance energy resilience.
- Eco friendly parameters should be included in the purchase of articles and goods for the campus.
- Increase awareness and activities on four R(s) refuse, reduce, reuse and recycle in the campus.
- Motion and daylight sensors can be installed to promote energy saving mode in the campus.
- Strengthen environmental education programs to foster sustainability awareness and promote behavioral change among students, faculty, and staff.
- Forge partnerships with external stakeholders to support sustainable initiatives and enhance community engagement.
- Continuously monitor and evaluate environmental performance to identify areas for improvement and ensure ongoing compliance with regulations and standards.



GOVERNMENT OF NAGALAND
DISTRICT WATER QUALITY TESTING LABORATORY
PHED, KOHIMA: NAGALAND

ANALYSIS REPORT OF GROUNDWATER QUALITY

Report No.

Dated 25th April 22

1. Source Details

Sl.No	Details	
1.	Place/Source of Sampling	<u>Don Bosco College</u>
2.	Name of Village/Habitation	<u>Kohima</u>
3.	Name of RD Block	<u>Kohima</u>
4.	Name of District	<u>Kohima</u>
5.	Type of Source/Structure (underline whichever is applicable)	<u>Tube well/Bore well/ Dug well/ Ring well/ Spring/Surface water etc.</u>
6.	Date & Time of Sampling	<u>25th April 22</u>
7.	Date of Analysis	<u>25th April 22</u>

2. Water Quality Test Report (Physical & Chemical Analysis)

Sl.No	Parameters	Potable		Remarks	
		Desirable limit	Permissible limit	Pass	Fail
1.	Color	5Hz	25 Hz	✓	
2.	Odour	Agreeable	Non Agreeable	Agreeable	
3.	Turbidity	5NTU	10NTU		40.6
4.	pH	6.5-8.5	No relaxation		8.8
5.	Total Hardness(as CaCO ₃)mg/l	300mg/l	300-600	140	
6.	Iron(as Fe) mg/l	1 mg/l	No relaxation	0.5	
7.	Chlorides(as Cl) mg/l	250mg/l	250-1000	10.4	
8.	Total Dissolved solids mg/l	500 mg/l	500-2000	300	
9.	Calcium(as Ca) mg/l	75 mg/l	75-200	69	
10.	Magnesium(as Mg) mg/l	30mg/l	30-100	17.2	
11.	Total Alkalinity mg/l	200mg/l	200-600	180	
12.	Nitrate(as NO ₃) mg/l	45mg/l	45-100	0.9	
13.	Free Residual Chlorine	0.2mg/l	1	0	
14.	Bacteriological Test	1.0mg/l	1.0-1.5		Positive

(Source: Indian Drinking Water Standards as per BIS Guideline-IS: 10500:2012)

- Note: 1). This Report should not be used for any legal/advertisement purpose.
2). This Report is Valid for only 6 Month.

Remarks: This Water confirmed Pass/Fail for the tested Parameter.


(Signature of the Chemist)

PHED, Kohima



**GOVERNMENT OF NAGALAND
DISTRICT WATER QUALITY TESTING LABORATORY
PHED, KOHIMA: NAGALAND**

Report No. 4

ANALYSIS REPORT OF GROUNDWATER QUALITY

Dated. 25th April 22

1. Source Details

Sl.No	Details
1.	Place/Source of Sampling
2.	Name of Village/Habitation <u>Don Bosco College</u>
3.	Name of RD Block <u>Kohima</u>
4.	Name of District <u>Kohima</u>
5.	Type of Source/Structure (underline whichever is applicable) <u>Kohima</u> Tube well/Bore well/ Dug well/ Ring well/ Spring/Surface water etc.
6.	Date & Time of Sampling <u>25th April 22</u>
7.	Date of Analysis <u>25th April 22</u>

2. Water Quality Test Report (Physical & Chemical Analysis)

Sl.No	Parameters	Potable		Remarks	
		Desirable limit	Permissible limit	Pass	Fail
1.	Color	5Hz	25 Hz	✓	
2.	Odour	Agreeable	Non Agreeable	Agreeable	
3.	Turbidity	5NTU	10NTU	0.9	
4.	pH	6.5-8.5	No relaxation	6.8	
5.	Total Hardness(as CaCO ₃)mg/l	300mg/l	300-600	75	
6.	Iron(as Fe) mg/l	1 mg/l	No relaxation	0.1	
7.	Chlorides(as Cl) mg/l	250mg/l	250-1000	11.9	
8.	Total Dissolved solids mg/l	500 mg/l	500-2000	250	
9.	Calcium(as Ca) mg/l	75 mg/l	75-200	14	
10.	Magnesium(as Mg) mg/l	30mg/l	30-100	14.8	
11.	Total Alkalinity mg/l	200mg/l	200-600	120	
12.	Nitrate(as NO ₃) mg/l	45mg/l	45-100	0.02	
13.	Free Residual Chlorine	0.2mg/l	1	0	
14.	Bacteriological Test	1.0mg/l	1.0-1.5	0	Negative

(Source: Indian Drinking Water Standards as per BIS Guideline-IS: 10500:2012)

- Note: 1). This Report should not be used for any legal/advertisement purpose.
2). This Report is Valid for only 6 Month.

Remarks: This Water confirmed Pass/Fail for the tested Parameter.

(Signature of the Chemist)

Chemist
PHED, Kohima District



GOVERNMENT OF NAGALAND
DISTRICT WATER QUALITY TESTING LABORATORY
PHED, KOHIMA: NAGALAND

Report No. 3...

ANALYSIS REPORT OF GROUNDWATER QUALITY

Dated 25th April 22

1. Source Details

Sl.No	Details
1.	Place/Source of Sampling
2.	Name of Village/Habitation
3.	Name of RD Block
4.	Name of District
5.	Type of Source/Structure (underline whichever is applicable)
6.	Date & Time of Sampling
7.	Date of Analysis

Rainwater Harvesting, Don Bosco Coll.
Kohima
Kohima
Kohima
Tube well/Bore well/ Dug well/ Ring well/
Spring/Surface water etc. R.W.H
25th April 22
25th April 22

2. Water Quality Test Report (Physical & Chemical Analysis)

Sl.No	Parameters	Potable		Remarks	
		Desirable limit	Permissible limit	Pass	Fail
1.	Color	5Hz	25 Hz	✓	
2.	Odour	Agreeable	Non Agreeable	Agreeable	
3.	Turbidity	5NTU	10NTU	0.9	
4.	pH	6.5-8.5	No relaxation	8	
5.	Total Hardness(as CaCO ₃)mg/l	300mg/l	300-600	95	
6.	Iron(as Fe) mg/l	1 mg/l	No relaxation	0.01	
7.	Chlorides(as Cl) mg/l	250mg/l	250-1000	11.3	
8.	Total Dissolved solids mg/l	500 mg/l	500-2000	115	
9.	Calcium(as Ca) mg/l	75 mg/l	75-200	47	
10.	Magnesium(as Mg) mg/l	30mg/l	30-100	11.7	
11.	Total Alkalinity mg/l	200mg/l	200-600	65	
12.	Nitrate(as NO ₃) mg/l	45mg/l	45-100	0	
13.	Free Residual Chlorine	0.2mg/l	1	0	
14.	Bacteriological Test	1.0mg/l	1.0-1.5	0	Negative

(Source: Indian Drinking Water Standards as per BIS Guideline-IS: 10500:2012)

Note: 1). This Report should not be used for any legal/advertisement purpose.

2). This Report is Valid for only 6 Month.

Remarks: This Water confirmed Pass/Fail for the tested Parameter.

(Signature of the Chemist)

PHED, Kohima Dist.

1 Sulphur (S) S @ 20-40 kg/ha (Gypsum 140-280 kg/ha) OR 0.25 % borax
 2 Boron (B) Borax (5-10 kg/ha)

General Recommendations

1 Lime / Gypsum

Soil Test Results

District Soil Conservation Office

Soil Type: Clay Loam

Sr.No.	Parameter	Test Value	Unit	Rating	Normal Level
1	pH	6.88		Slightly acidic	7. Neutral
2	EC	0.16 dS/m		Normal	0 - 1.5 dS/m
3	Organic Carbon (OC)	1.03%		Very High	0.51 - 0.75%
4	Available Nitrogen (N)	238.28 kg/ha		Low	280 - 560 kg/ha
5	Available Phosphorus (P)	27.22 kg/ha		Medium	23 - 57 kg/ha
6	Available Potassium (K)	794.86 kg/ha		Very High	145 - 337 kg/ha
7	Available Sulphur (S)	1.98 ppm		Deficient	> 10 ppm
8	Available Zinc (Zn)	9.45 ppm		Sufficient	> 0.6 ppm
9	Available Boron (B)	0.25 ppm		Deficient	> 0.5 ppm
10	Available Iron (Fe)	27.81 ppm		Sufficient	> 4.5 ppm
11	Available Manganese (Mn)	4.68 ppm		Sufficient	> 2.0 ppm
12	Available Copper (Cu)	1.24 ppm		Sufficient	> 0.2 ppm



Ministry of Agriculture and Farmers Welfare
 Government of India
 SOIL & WATER CONSERVATION DEPARTMENT



Soil Health Card

Soil Health Card Number - NL/2022-23/146979352/1

Validity - From: To:

Farmer's Details

Farmer Name DBC two
 Father's/Husband Name
 Address Kohima Village (Ct), Kohima Sadar, Kohima, Kohima, Nagaland
 Mobile No.
 Gender Male
 Category ST

Soil Sample Details

Date of Sample Collection 02-05-2022
 Survey No., Khasra No / Dag No. 1.-
 Farm Size 1.00 Hectares Rainfed
 Geo Position (GPS) Latitude 25.943611°N Longitude 94.296300°E

Excess use of Fertilizer is injurious to soil health and plant growth. Use fertilizer judiciously.
 Reclaim Sodic Soil with Gypsum Treat
 Treat acidic soil with Lime
 Organic Manures improve Soil Health
 Use Saline water after mixing with canal water
 Use Sodic water after treating with gypsum
 Adopt Integrated Nutrient Management for healthy soil & enhancing farm income

Secondary & Micro Nutrients Recommendations

Parameter	Through Soil	Through Spray
Sulphur (S)	S @ 20-40 kg/ha (Gypsum 140-280 kg/ha)	OR

General Recommendations

me / Gypsum

Soil Test Results

District Soil Conservation Office

Soil: Clay Loam

Parameter	Test Value	Unit	Rating	Normal Level
pH	6.11		Moderately acidic	7, Neutral
EC	0.12	dS/m	Normal	0 - 1.5 dS/m
Organic Carbon (OC)	1.90	%	Very High	0.51 - 0.75%
Available Nitrogen (N)	313.50	kg/ha	Medium	280 - 560 kg/ha
Available Phosphorus (P)	31.98	kg/ha	Medium	23 - 57 kg/ha
Available Potassium (K)	585.76	kg/ha	High	145 - 337 kg/ha
Available Sulphur (S)	2.13	ppm	Deficient	> 10 ppm
Available Zinc (Zn)	11.52	ppm	Sufficient	> 0.6 ppm
Available Boron (B)	0.55	ppm	Sufficient	> 0.5 ppm
Available Iron (Fe)	74.05	ppm	Sufficient	> 4.5 ppm
Available Manganese (Mn)	4.66	ppm	Sufficient	> 2.0 ppm
Available Copper (Cu)	2.57	ppm	Sufficient	> 0.2 ppm



Department of Agriculture and Farmers Welfare
Ministry of Agriculture and Farmers Welfare
Government of India
SOIL & WATER CONSERVATION DEPARTMENT



Soil Health Card

Soil Health Card Number - NL/2022-23/146974860/1

Validity - From: To:

Farmer's Details

Farmer Name	DBC one
Father's/Husband Name	
Address	Kohima Village (Ct), Kohima Sadar, Kohima, Kohima, Nagaland
Mobile No.	
Gender	Male
Category	ST

Soil Sample Details

Date of Sample Collection	02-05-2022
Survey No., Khasra No./ Dag No.	1,-
Farm Size	1.00 Hectares Rainfed
Geo Position (GPS)	Latitude 25.700555°N Longitude 94.296300°E

Excess use of Fertilizer is injurious to soil health and plant growth. Use fertilizer judiciously.
Reclaim Sodic Soil with Gypsum Treat
Treat acidic soil with Lime
Organic Manures improve Soil Health
Use Saline water after mixing with canal water
Use Sodic water after treating with gypsum
Adopt Integrated Nutrient Management for healthy soil & enhancing farm income



DON BOSCO COLLEGE KOHIMA

Reports on Energy Audit

**Sub-Divisional Officer
Electrical Sub-Division No. 1
Kohima : nagaland**

**Sub-Divisional Officer
Electrical Sub-Division No. 1
Kohima : nagaland**

Table of Contents

1. EXECUTIVE SUMMARY
2. INTRODUCTION
 - 2.1 Objectives of Energy Audit
3. ENERGY AUDIT COMMITTEE MEMBERS
4. POSSIBLE POWER CONSUMPTION BY VARIOUS APPLIANCES IN THE COLLEGE CAMPUS
(IN AVERAGE)
5. ANNUAL POWER CONSUMPTION
 - 5.1 Monthly Power Consumption
6. ENERGY CONSERVATION MANAGEMENT
 - 6.1 Use of LED
7. SUGGESTION
8. CONCLUSION


S.D.O. (E) No 1
KOTIMANE

1. EXECUTIVE SUMMARY

Energy today has become a key factor in deciding the product cost at micro level as well as in dictating the inflation and the debt burden at the macro level. Energy cost is significant factor in economic activity at par with factors of production like capital, land and labor. The imperatives of an energy shortage situation calls for energy conservation measure, which essentially mean using less energy for the same level of activity. Energy Audit attempts to balance the total energy inputs with its use and serves to identify all the energy streams in the systems and quantifies energy usages according to its discrete function. Energy Audit helps in energy cost optimization, pollution control, safety aspects and suggests the methods to improve the operating and maintenance practices of the system. It is instrumental in coping with the situation o variation in energy cost availability, reliability of energy supply, decision on appropriate energy mix, decision on using improved energy conservation equipment's instrumentation and technology.

The Energy Audit would give a positive orientation to the energy cost reduction, preventive maintenance and quality control programmes which are vital for production and utility activities. Such as audit programme will help to keep focus on variations which occur in the energy costs, availability and reliability of supply of energy mix, identify energy conservation technologies, retrofit for energy conservation equipment etc.

2. INTRODUCTION

In broad sense, Energy efficiency means economizing on the use of energy without adversely affecting economic growth and development. It includes improving the efficiency of energy extraction.

The Bureau of Efficiency is an agency of the Government of India, under the Ministry of Power created in March 2002 under the provisions of the nation's 2001 Energy Conservation Act. The agency's function is to develop programs which will increase the conservation and efficient use of energy in India.

An energy audit is an inspection, survey and analysis of energy flows for energy conservation in a building, institution, processor system to reduce the amount of energy input into the system without negatively affecting the output. It shows where the power consumption is more in the given system. It can also be called as controlling of the power usage to avoid losses and maximize efficiency. Energy management (audit) approach understands energy costs, bench marking, energy


S.D.O. (E) No. 1
Kottayam

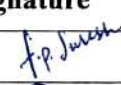
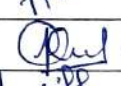
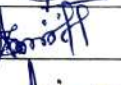


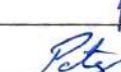

marking, energy performance, matching energy use to requirement, maximizing system efficiencies, optimizing the input energy requirements, and fuel and energy substitution. Energy cannot be seen, but we know it is there because we can sense its effects in the forms of heat, light and power. This indicator addresses energy consumption, energy sources, energy monitoring, lighting, appliances, and vehicles. Energy use is clearly an important aspect of campus sustainability and thus requires no explanation for its inclusion in the assessment. An old incandescent bulb uses approximately 60W to 100W while an energy efficient light emitting diode (LED) uses only less than 10 W. Energy auditing deals with the conservation and methods to reduce its consumption related to environmental degradation.

2.1 OBJECTIVES OF ENERGY AUDIT

The objectives of Energy Audit are to:

- Identify the quality and cost of various energy inputs
- Assess present pattern of energy consumption in different cost centres of operations
- Balance energy inputs and production output
- Highlight the wastages in major areas
- Implement energy conservation measures and realise savings.

3. ENERGY AUDIT COMMITTEE MEMBERS

Sl. no	Name of the Members	Designation	Signature
1	Fr. Dr. P. Suresh	Principal	
2	Dr. Janani Mao	IQAC - Coordinator	
3	Mrs. Zavelu Kezo	Dean of Students Affairs	
4	Mr. Sanjiv Arjun George	Bosco Green Alliance	
5	Dr. Tsutshowe-vi Sekhano	Bosco Green Alliance	
6	Kr. Nyanbemo Odyno	S.D.O (Electrical) No. 1, KOTIMA	
7	En. PETENEZO NAGU	SE (E) No. 1	


S.D.O. (E) No. 1
KOTIMA

4. POSSIBLE POWER CONSUMPTION BY VARIOUS APPLIANCES IN THE COLLEGE CAMPUS (IN AVERAGE)

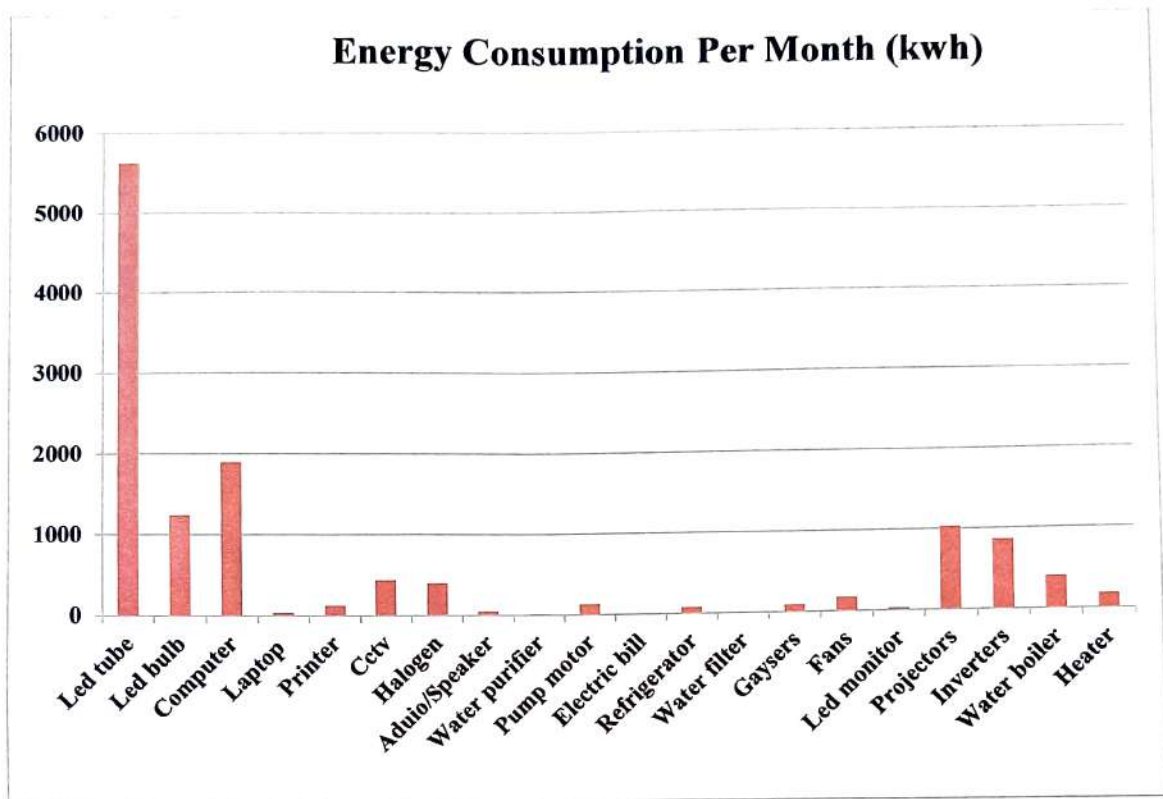
Technology has evolved as time passed on. Don Bosco College, Kohima understands the global concerns of conserving energy and is committed to make contributions in all possible ways for sustainable energy conservation. In this connection, as far as possible, the college utilizes equipments and appliances which are energy efficient. Fused CFL tubes and bulbs are being replaced with LED tubes and bulbs in the campus. Outdated and spoiled appliances are being repaired or replaced with the modern and up to date appliances or least power consumption appliances. The following table shows about the appliances: quantities, possible and average power consumption in DBCK campus.

Table 1. Electrical Appliances in DBCK Campus

Sl. No	Name of the Equipment	Quantity	Watts Specification	Total power consumption on Watts	Total Power Consumption on KWH	Hours of usage per day	Energy consumption per day	Energy consumption per month KWH
1	LED Tube	625	50	31,250	31.25	6	187.5	5625
2	LED Bulbs	230	30	6,900	6.9	6	41.4	1242
3	Computer	57	740	42,180	42.18	1.5	63.27	1898
4	Laptop	14	50	700	0.7	2	1.4	42
5	Printer	17	250	4,250	4.25	1	4.25	127.5
6	CCTV	80	6	480	0.48	24	11.52	345.6
7	Halogen	5	50	250	0.25	0.5	0.13	3.9
8	Audio/Speaker	29	40	1,160	1.16	1.5	1.74	52.2
9	Water Purifier	2	60	120	0.12	4	0.48	14.4
10	Pump Motor	4	740	2,960	2.96	1.5	4.44	133.2
11	Electric Bell	5	2	10	0.01	0.5	0.01	0.3
12	Refrigerator	1	400	400	0.4	6	2.4	72
13	Water Filter	4	25	100	0.1	4	0.4	12
14	Geysers	3	2,000	6,000	6	0.5	3	90
15	Fans	23	125	2,875	2.88	2	5.76	172.8
16	LED Monitor	3	40	120	0.12	7	0.84	25.2
17	Projectors	19	300	5,700	5.7	6	34.2	1,026
18	Inverters	24	600	14,400	14.4	2	28.8	864
19	Water Boiler	9	1,500	13,500	13.5	1	13.5	405
20	Heater	10	1,200	12,000	12	0.5	6	180
	Total						411.04 KWh	12,330 KWh

Chart 1. Possible Power Consumption by Various Appliances in the College Campus (in average)

[Handwritten Signature]
S.D.O. (E) No 1
Kohima



From the table and chart given above, we could see the power consumption of the different appliances in the college campus. There are 20 types of electrical appliances that are used in the campus. Approximately total power consumption for one month is 12,330 kWh unit. This calculation is based on the average possible power consumption in one month. It is found out that the high energy or power consumption appliances are Computers, projectors, invertors, water boilers, etc and these are necessary appliances. DBCK realised that few of them cannot be reduced but in order to achieve power consumption saving it has to embrace and shift to other alternatives like Solar Power.

5. ANNUAL POWER CONSUMPTION

DBCK maintains records on its power consumption through billing from the Power Department of Govt. of Nagaland. The data that are shown in the table below are from Electricity billing bills from the department. There are two types of bills being generated, one is meter billing (MB) and the other is average billing (AB). The following data or bills are of the academic year 2022 – 2023.

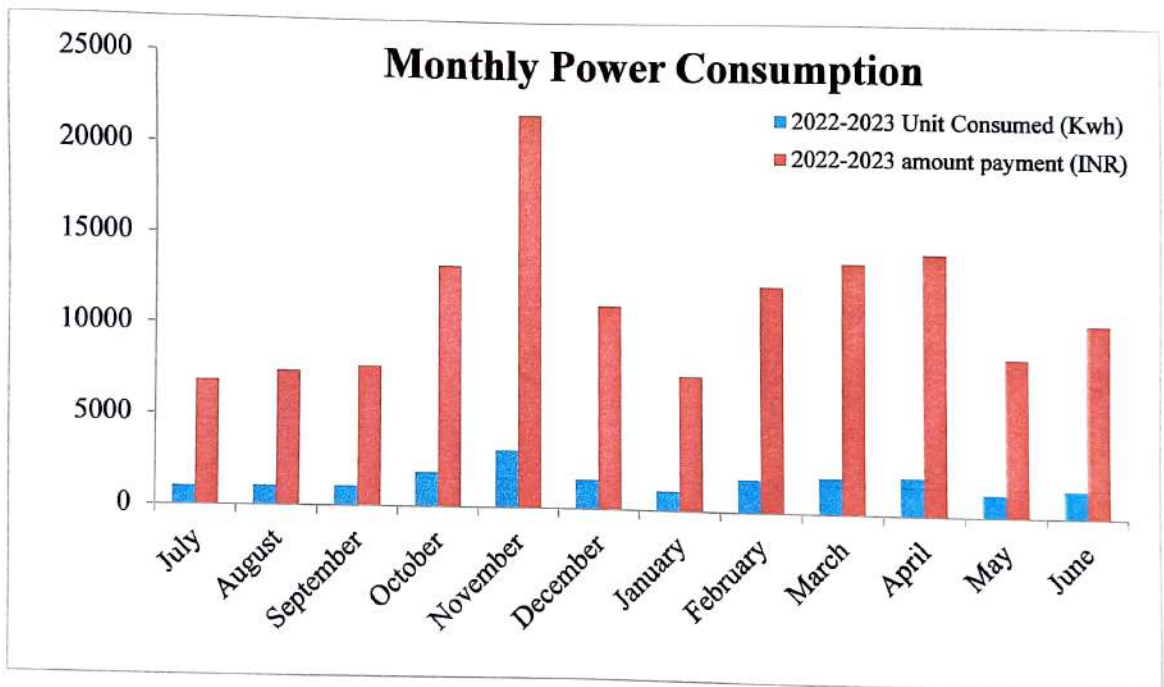

 S.D.O. (E) No 1
 Kohima

Table 2. Monthly Power Consumption in the Academic Year 2022 – 2023

2022 - 2023			
Month	Units consumed KWh		Amount of payment
July	Meter Billing (MB)	1031	6,839
	Average Billing (AB)	464	2,096
August	MB	1085	7,380
	AB	464	2,096
September	MB	1090	7,669
	AB	464	2,096
October	MB	1880	13,275
	AB	464	2,096
November	MB	3135	21,730
	AB	464	2,096
December	MB	1630	11,195
	AB	464	2,096
January	MB	1086	7,386
	AB	464	2,096
February	MB	1800	12,384.65
	AB	464	2,096
March	MB	1995	13,749.65
	AB	464	2,096


S.D.O. (E) No 1
Kolhapur

April	MB	2101	14,340.38
	AB	464	2,096
May	MB	1241	8,637.98
	AB	464	2,096
June	MB	1509	10,540.38
	AB	464	2,096
Total		25,151 kWh	Rs. 1,60,279.04
Average Consumption		2,095.92 kWh	Rs. 13,356.59



From the table and chart given above, we could see that the total annual power consumption in the college campus is 25,151 kWh, with an average of 2095.92 kWh per month. Total expenditure is Rs. 1,60,279.04 and monthly average Rs. 13,356.59. It is to be noted that 12,330 kWh unit average possible power consumption in the campus is higher than 2,095.92 kWh average power consumption from Govt. electricity bills.


 S.D.O. (E) No 1
 Kottayam

6. ENERGY CONSERVATION MANAGEMENT

Don Bosco College, Kohima understands the concerns of conserving energy and is committed to make contributions in all possible ways for sustainable energy conservation. The College has installed Solar Panels to compensate for the necessity of electrical energy within the campus. It also gives its effort to conserve energy through the use of LED bulbs and tubes. At the same time, all DBCK staffs and students practices energy saving measures in the campus such as- switching off all electrical appliances when not in use, turning off appliances and switches while logging out from the classroom/office room etc.

6.1 Use of LED

With the emergence of LED in the market, the college understands the efficiency of LED and thus fused CFL tubes and bulbs are being replaced with LED tubes and bulbs in the campus. Outdated and spoiled appliances are being repaired or replaced with the modern and up to date appliances or least power consumption appliances.

- Total no. of LED tube is 625 (50 watt each)
- Total no. of LED bulb is 230 (30 watt each)

Table 3. Percentage of Power Saving through LED Lights (Monthly)

Total Power Consumption	Power Consumption through LED Bulbs and Tubes	Percentage Lighting Through LED Bulbs/Tubes	Power Consumption of Other Appliances	Percentage Consumption of Other Appliances
12,330 kWh	6,867 kWh	55.69 %	5,463 kWh	44.31 %

From the table we could derive that percentage of power consumption by LED is 55.69 % and the percentage of power consumption by other appliances is 44.31 %. Therefore it is understood that DBCK is slowly managing to save energy through the help of LED Bulbs and Tubes.

7. SUGGESTION

After analysing the performance and the consumption of electrical and non-electrical appliances in the campus, there is a need to improve in conserving energy either through electricity or solar energy. Some of the suggestions are given below:

- There is a need to install Solar Panels.
- Unnecessary consumption of lights and fans should be checked and use efficiently.
- Putting timer for computers, monitors and others after 10 to 20 minutes when it is idle.
- Regular campaigns should be done to switch off the lights and other electrical appliances after use.

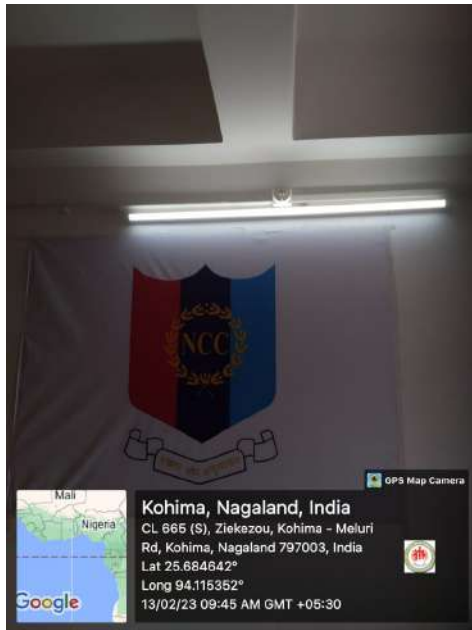
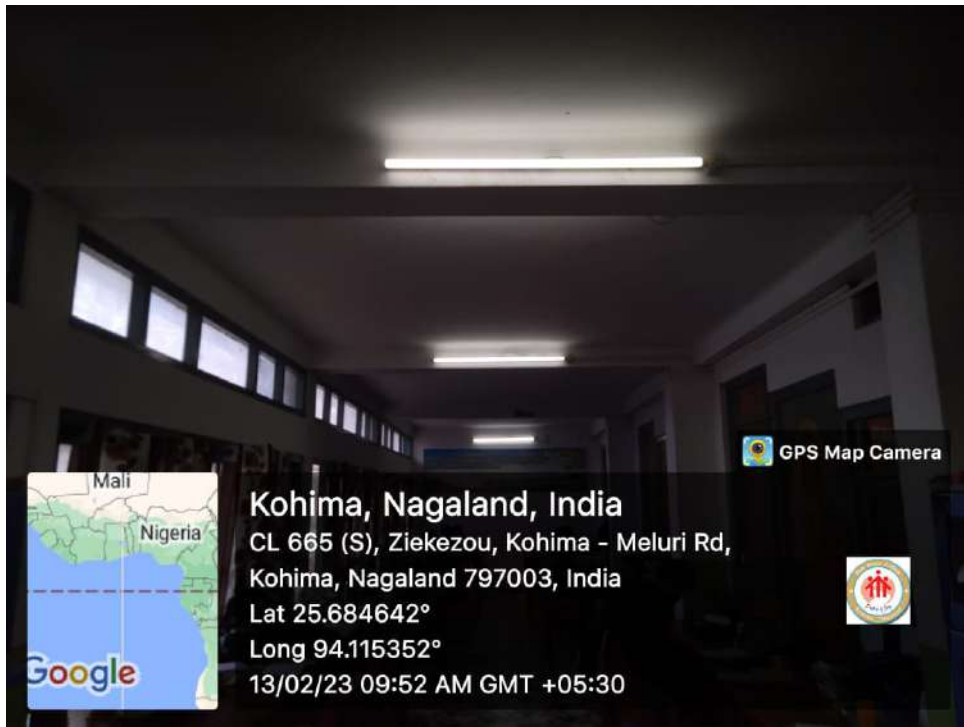

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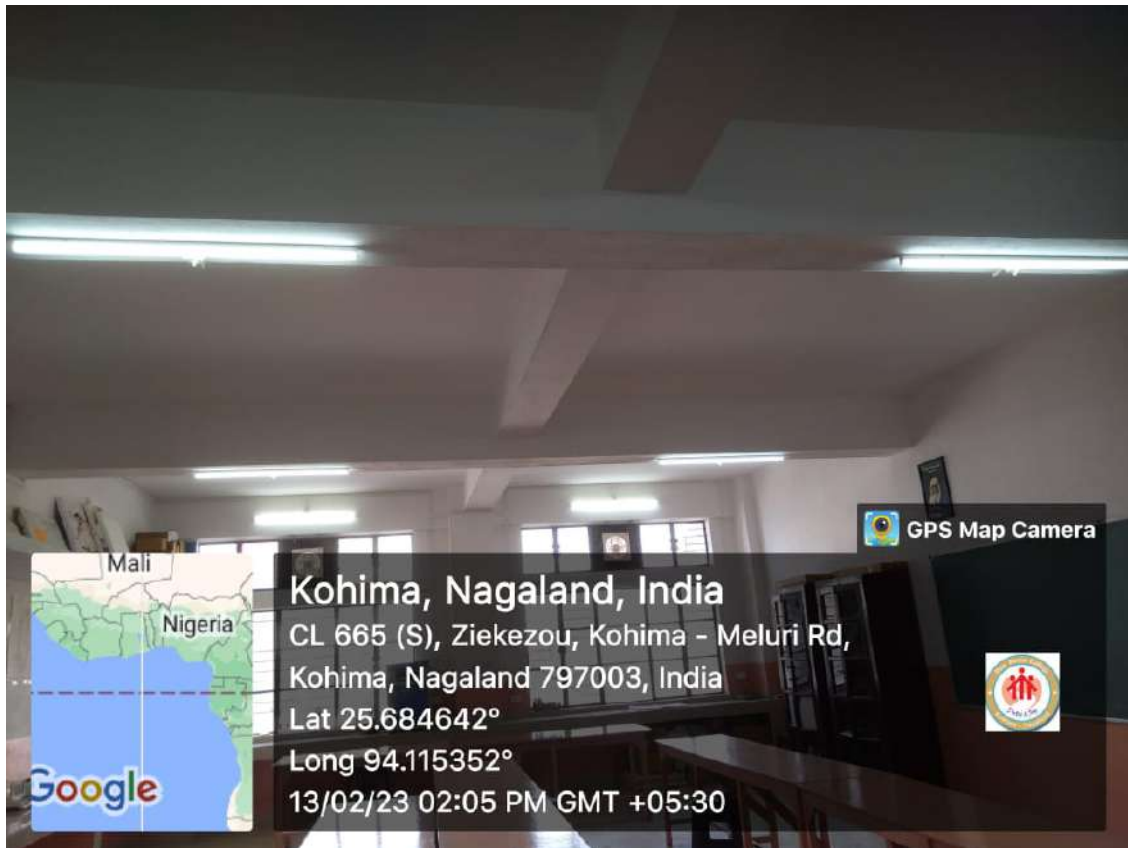
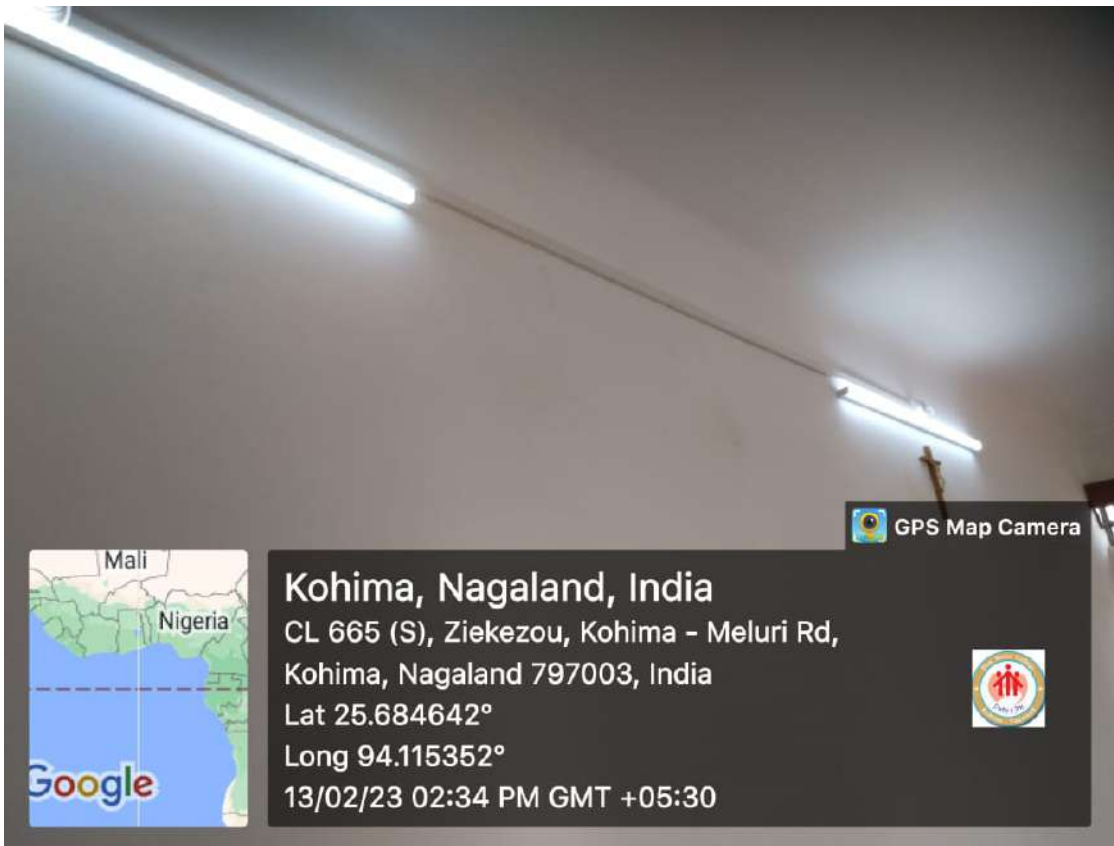
- Continuous monitoring and analysis of energy consumption by dedicated team may be planned within the campus.

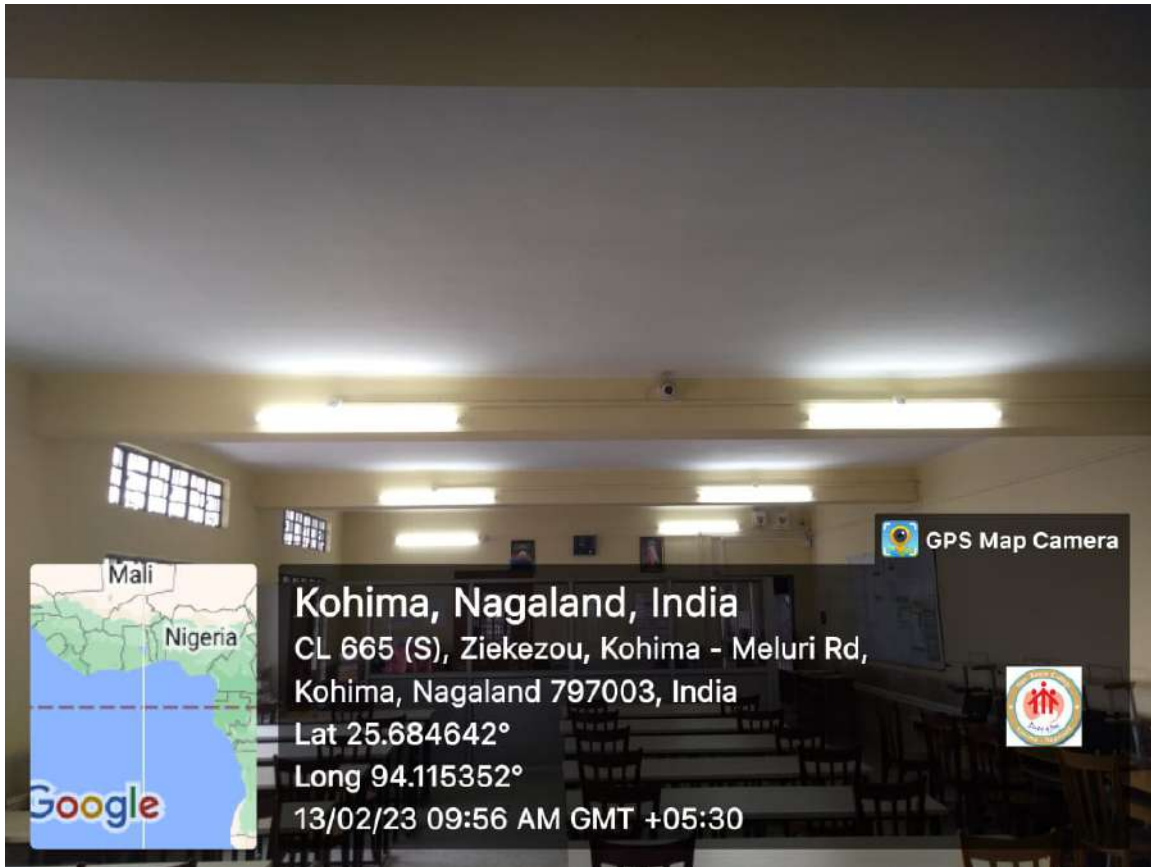
8. CONCLUSION

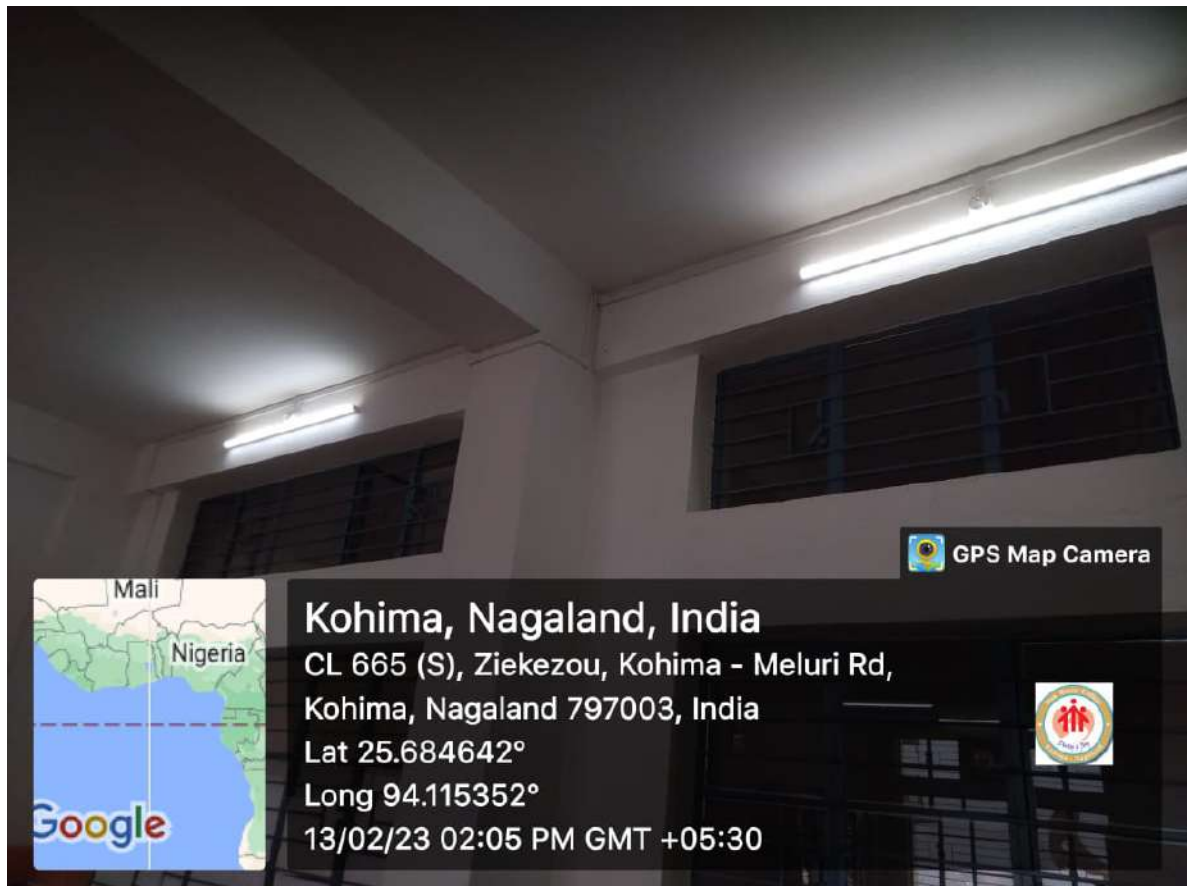
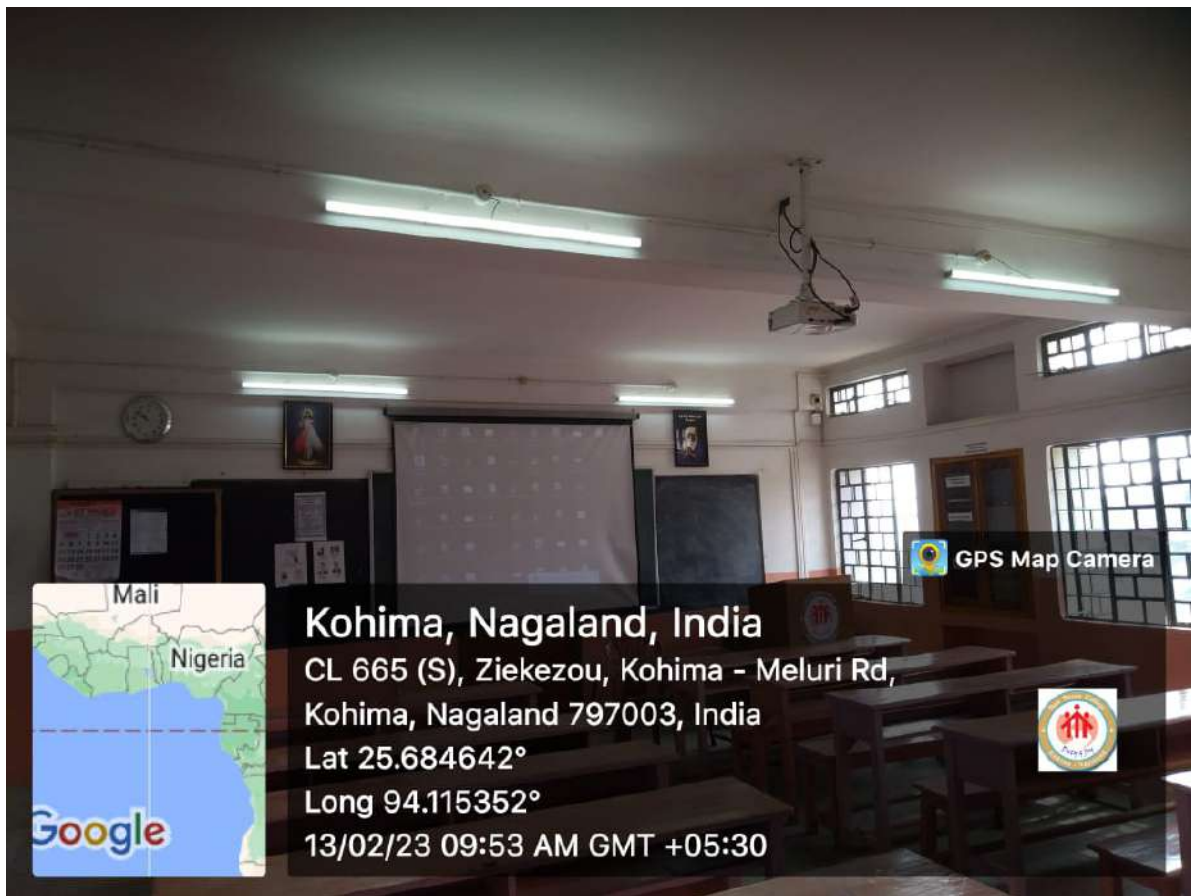
The Energy Audit Committee of Don Bosco College, Kohima has successfully completed in examining the energy consumption in the campus. This audit is believed to have an influence on the college administration specially regarding the suggestions that has been scripted above. Few recommendations, in addition, can further improve the energy savings of the organization. This may lead to the prosperous future in the context of Energy efficiency campus and thus sustainable environment and community development to the stakeholders in coming years.

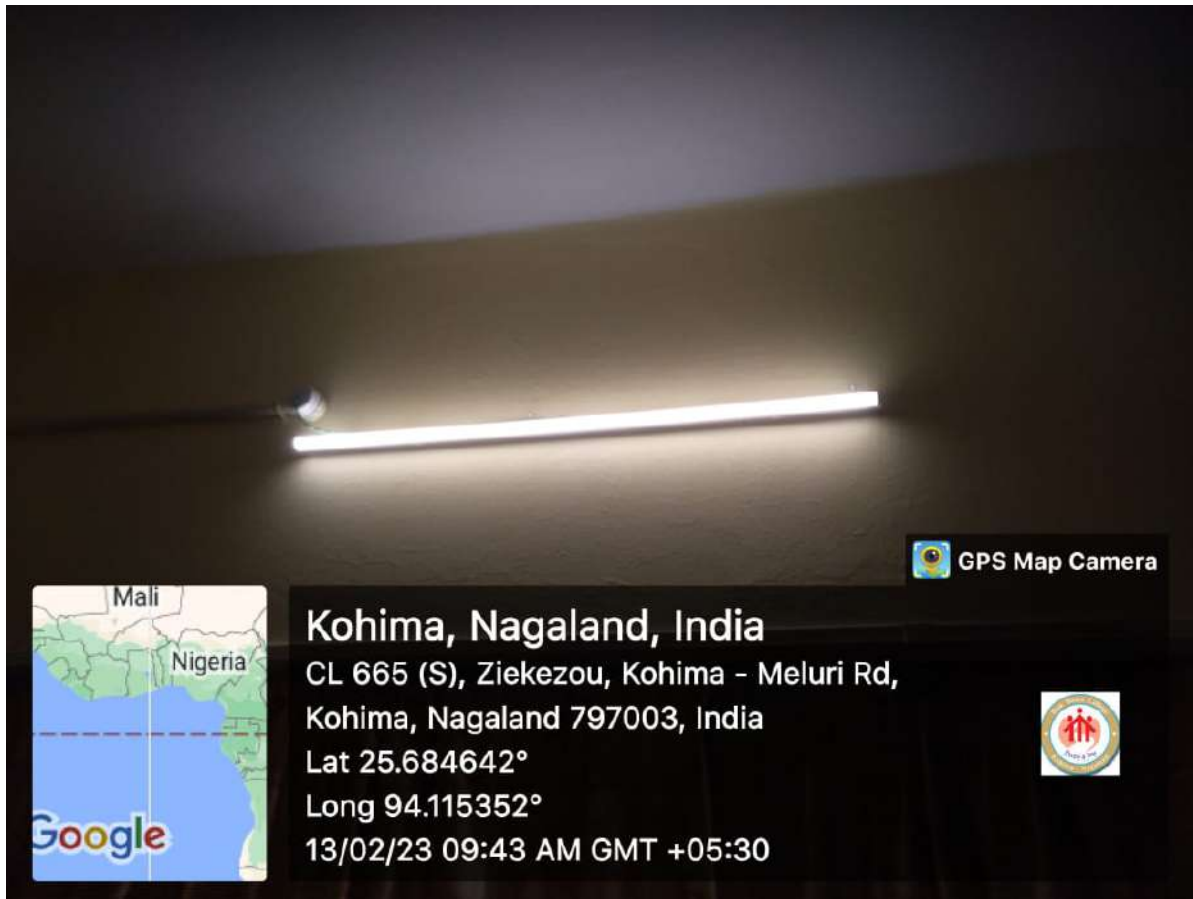
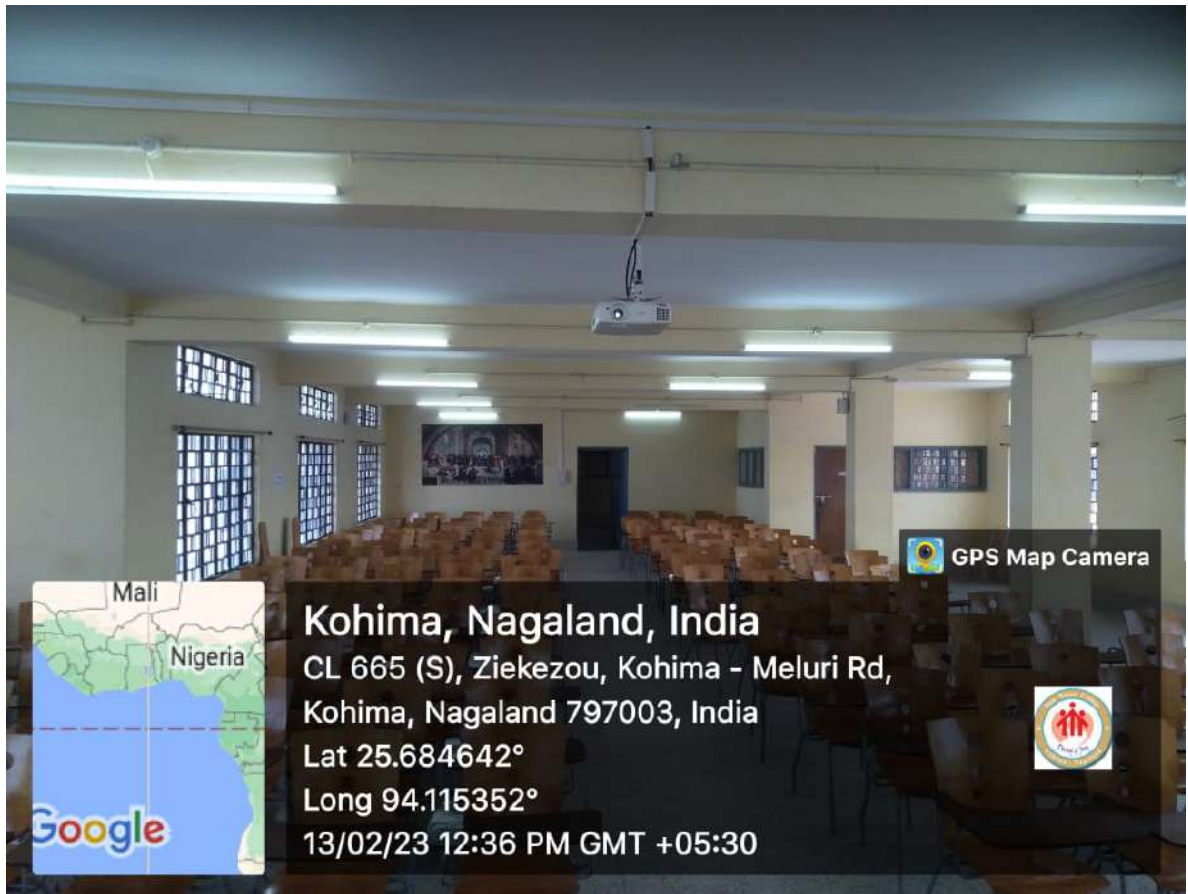

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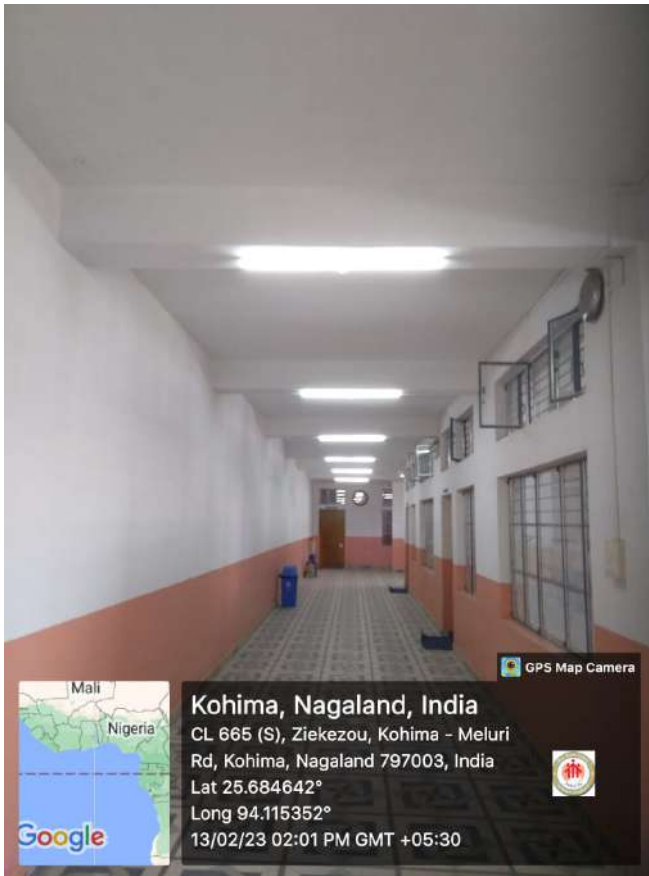
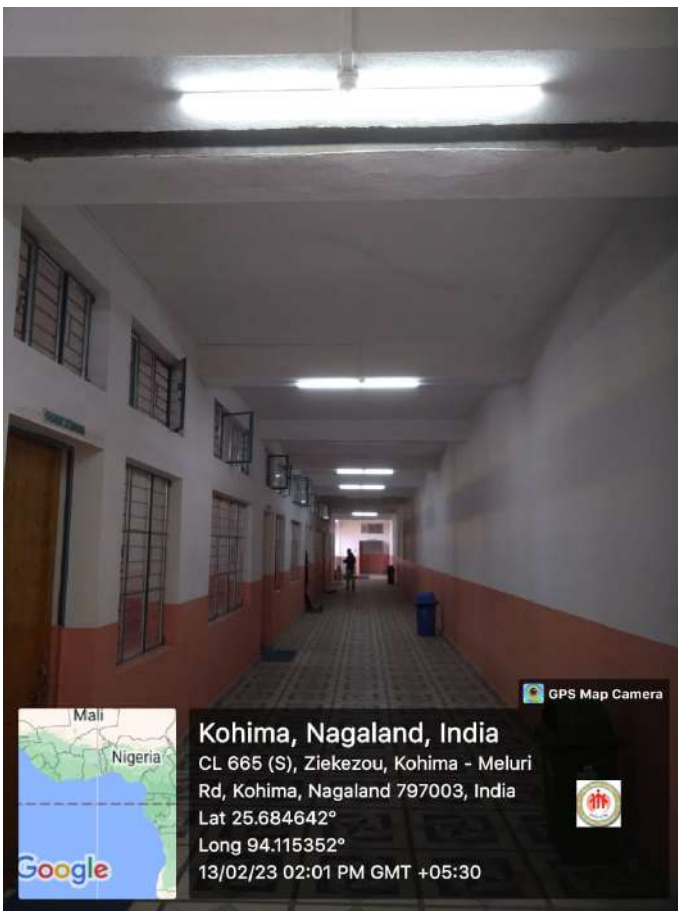


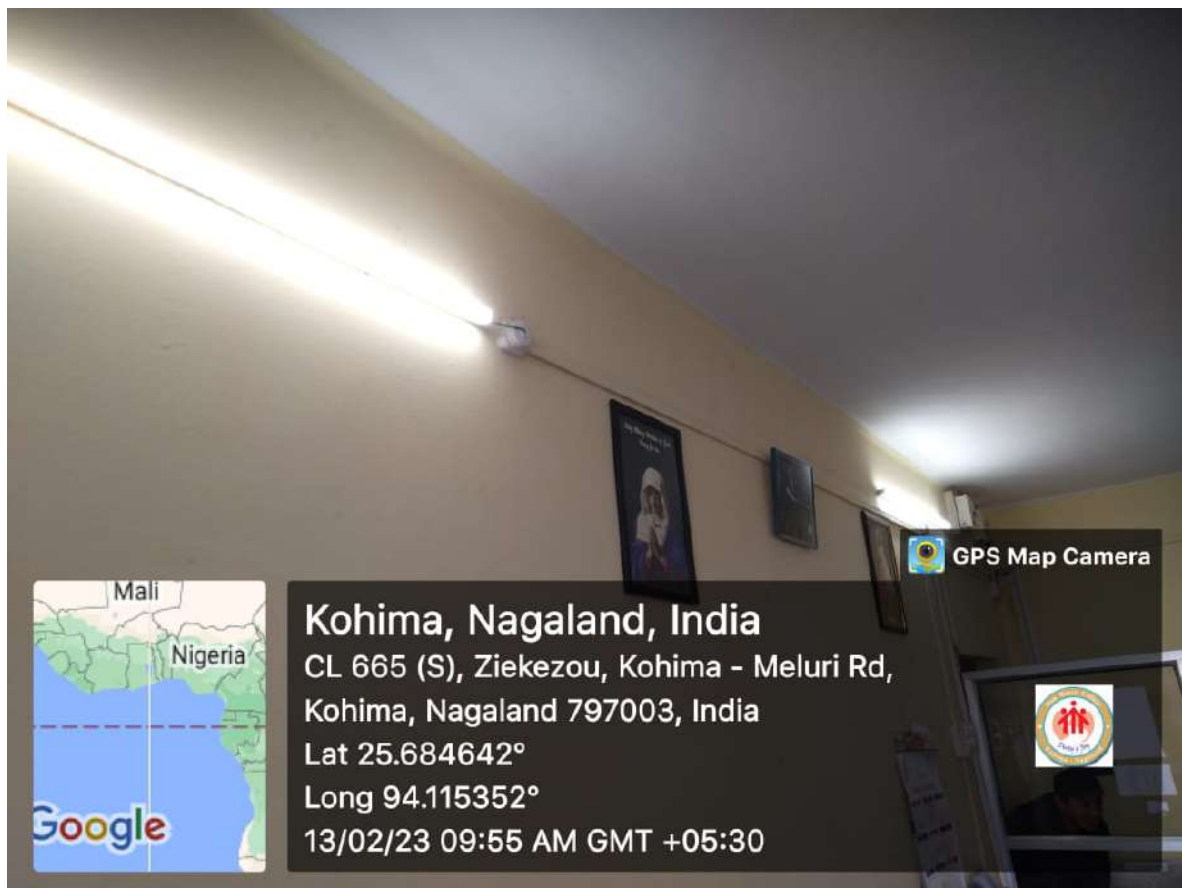


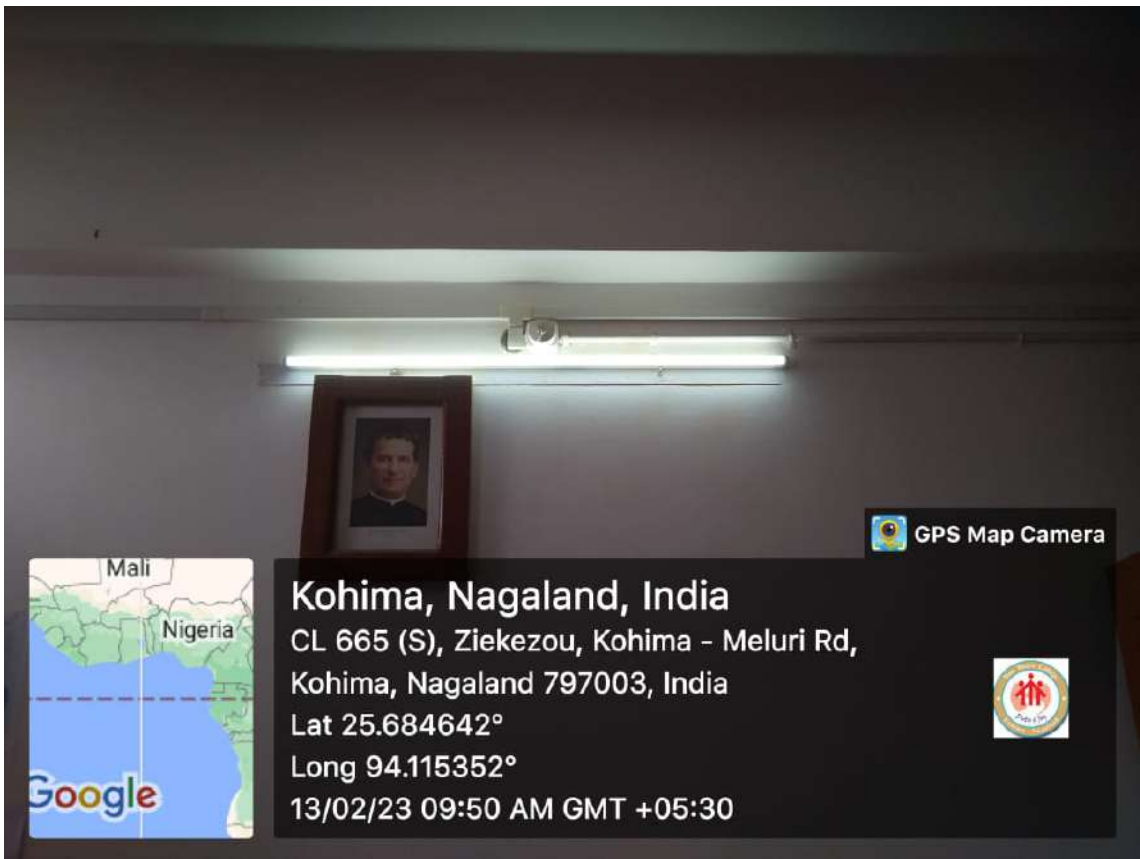












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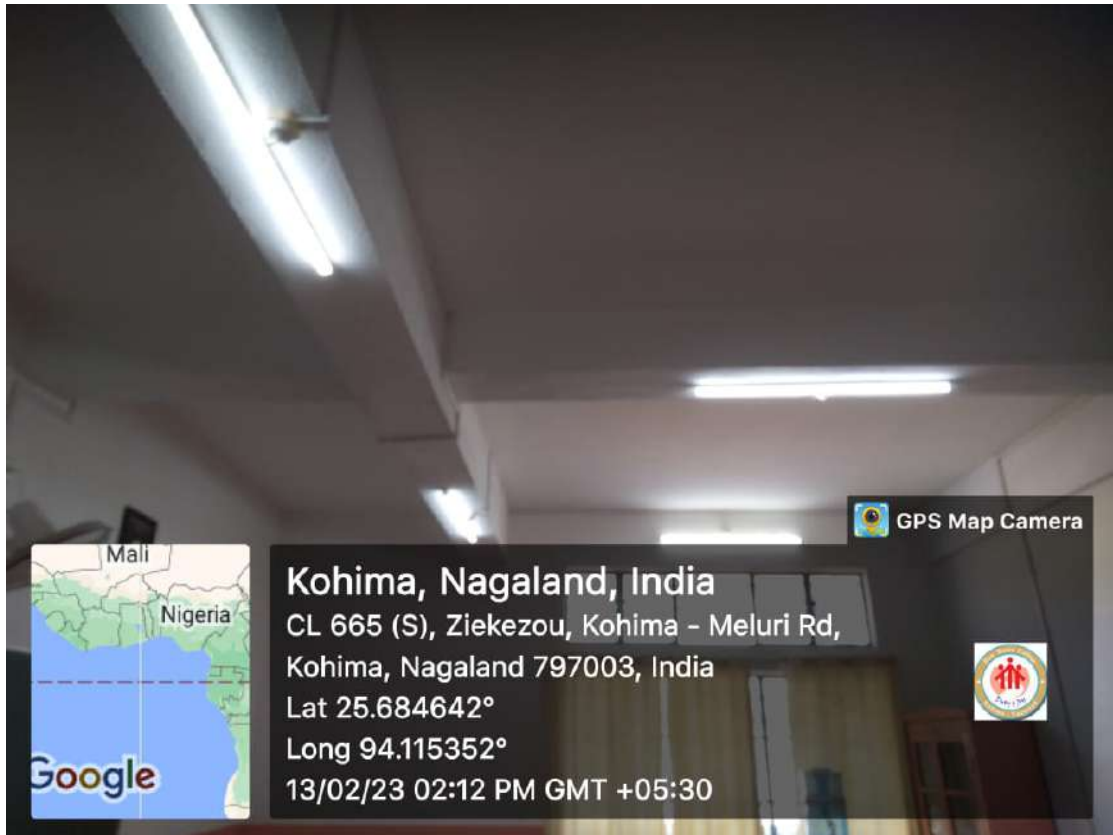
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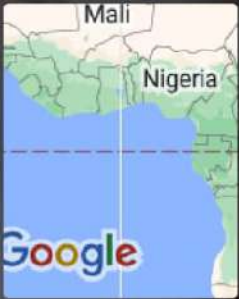
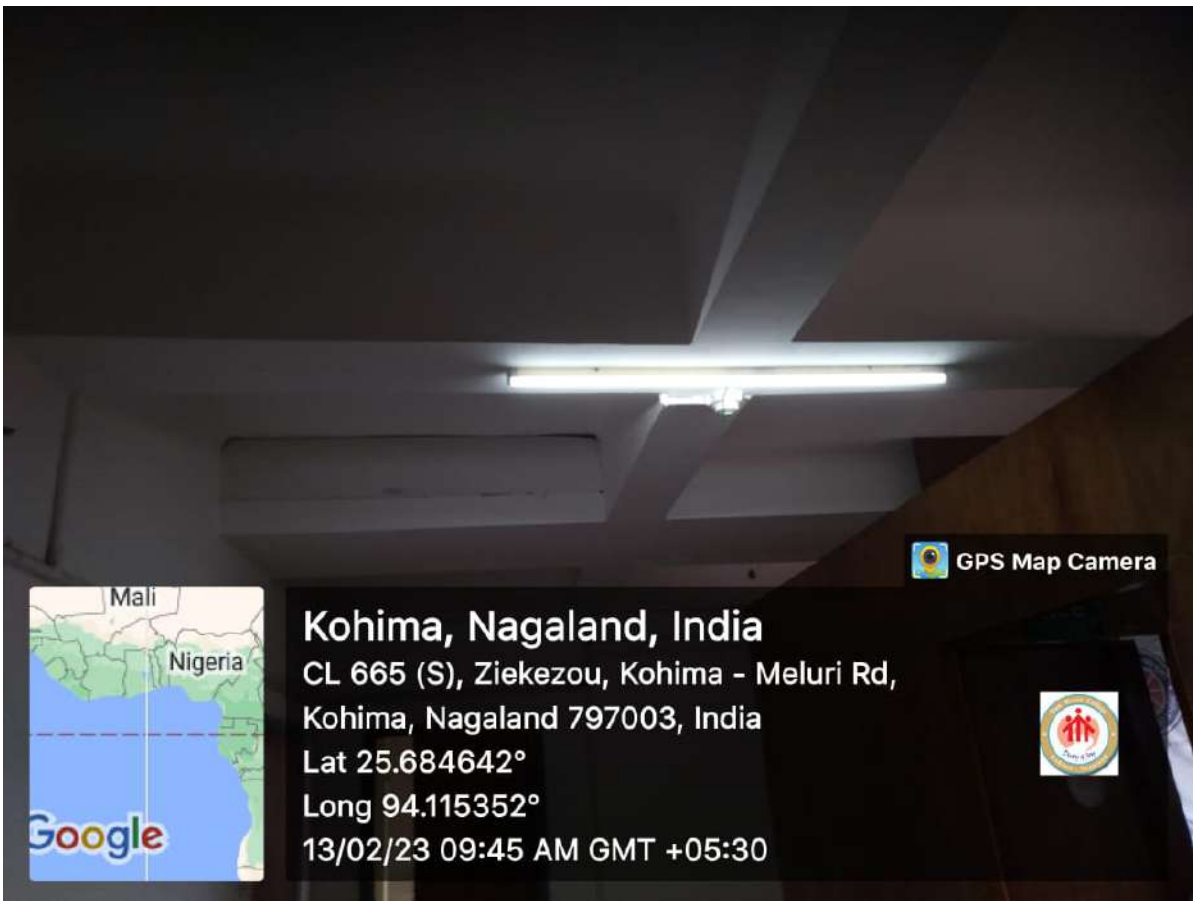
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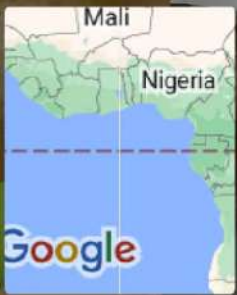
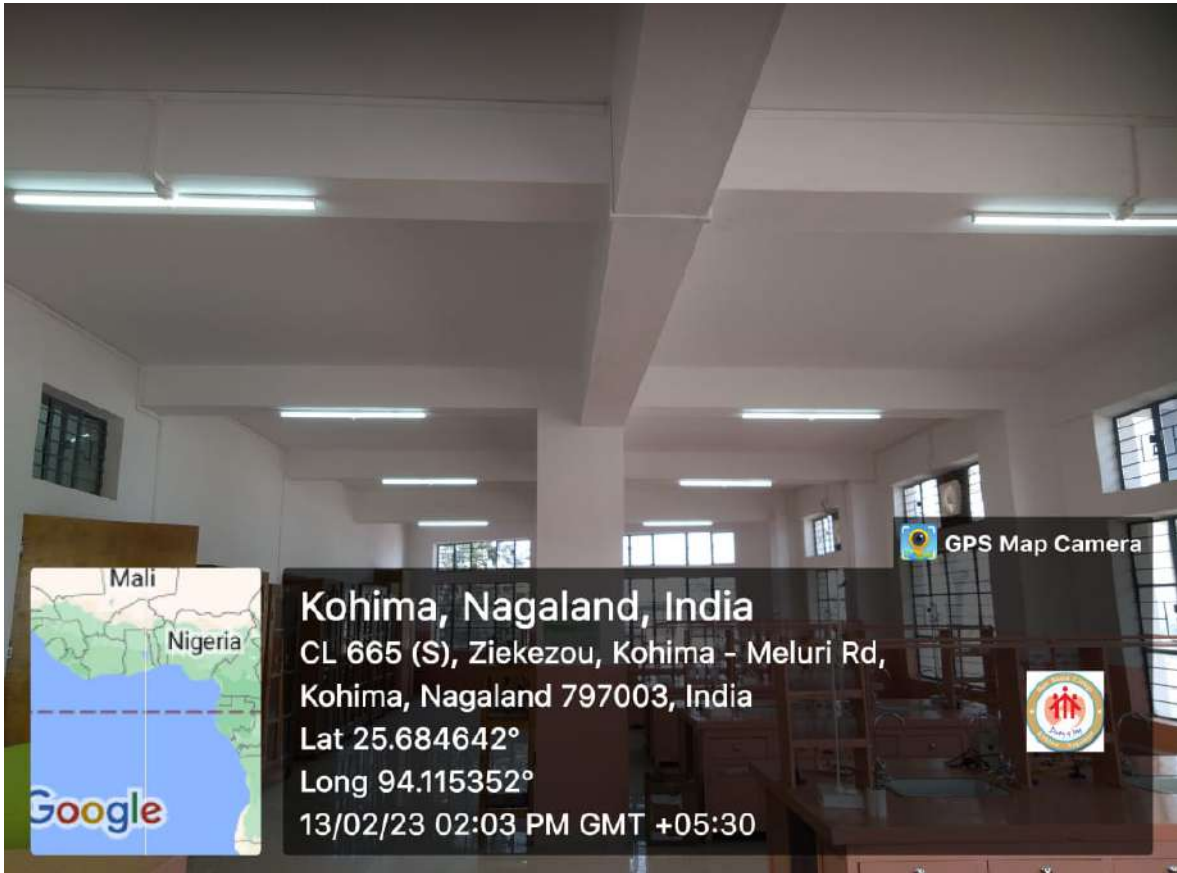
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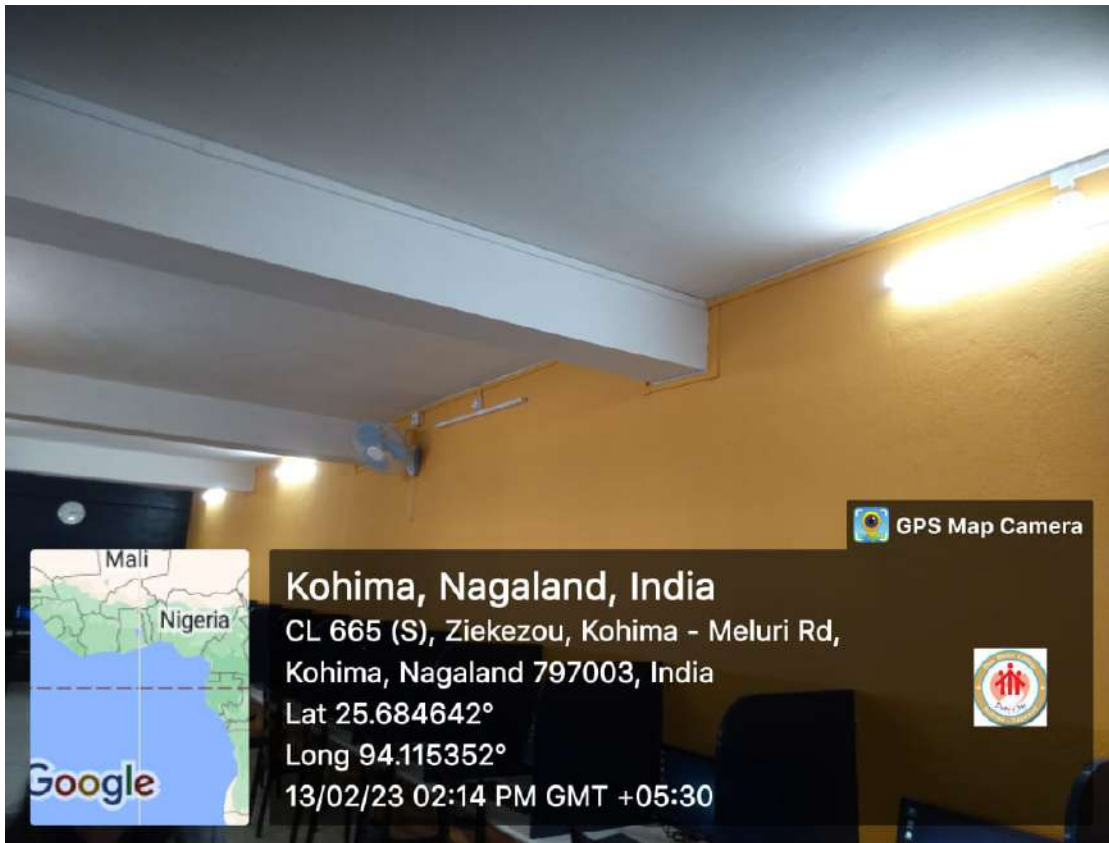
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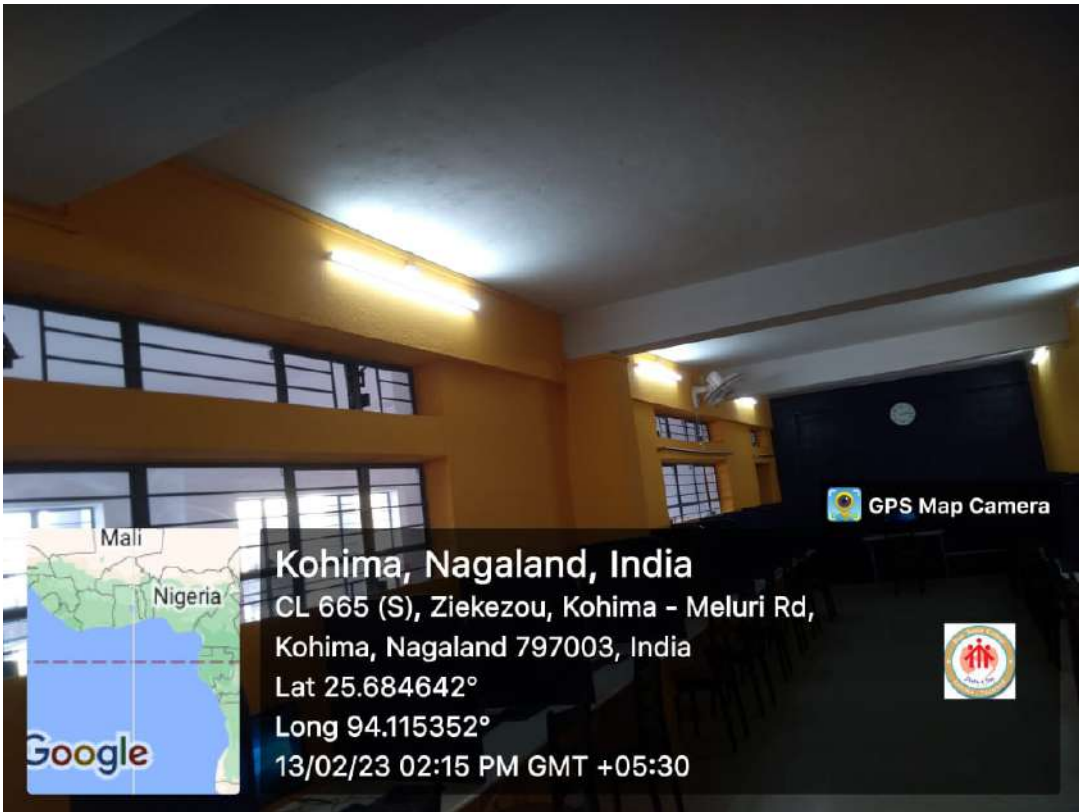
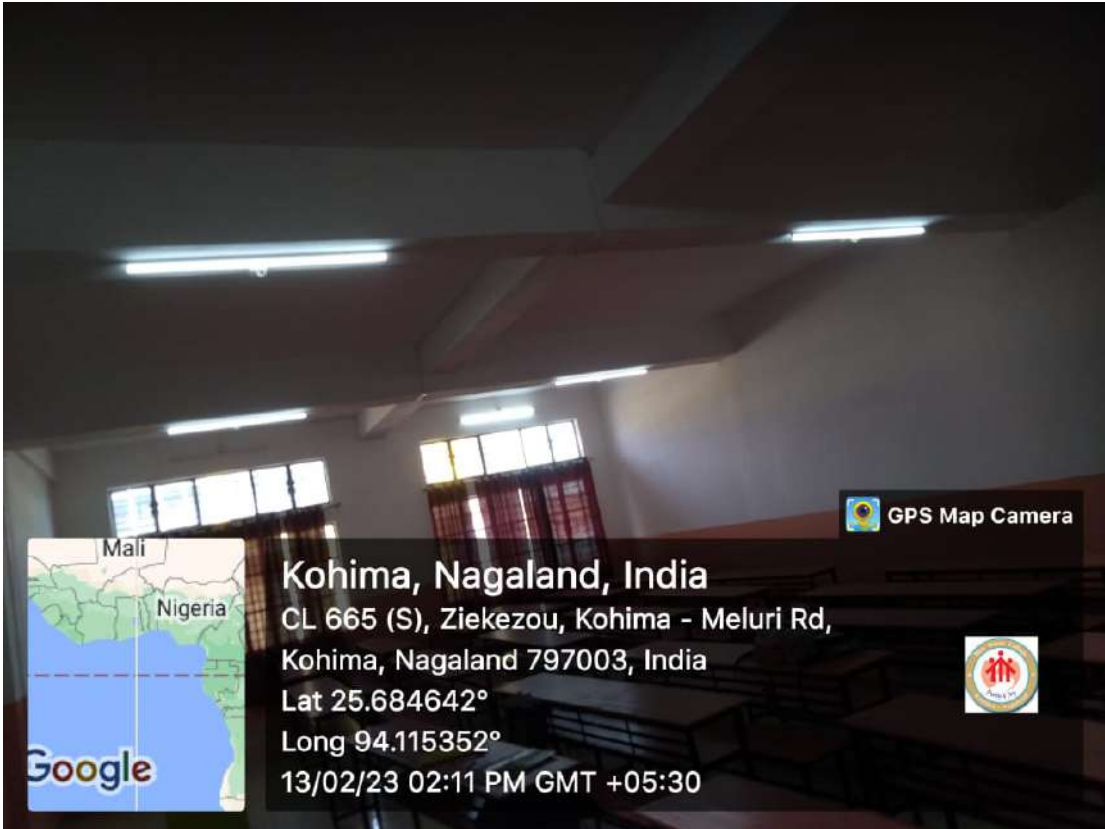
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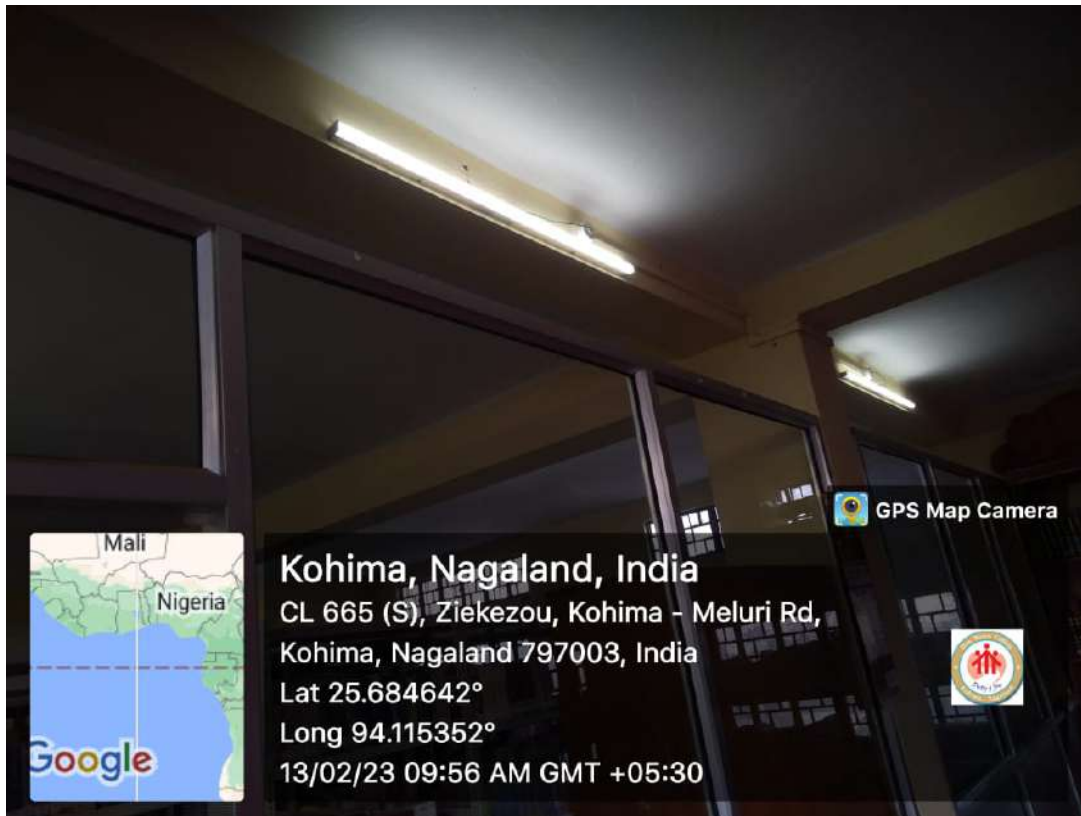
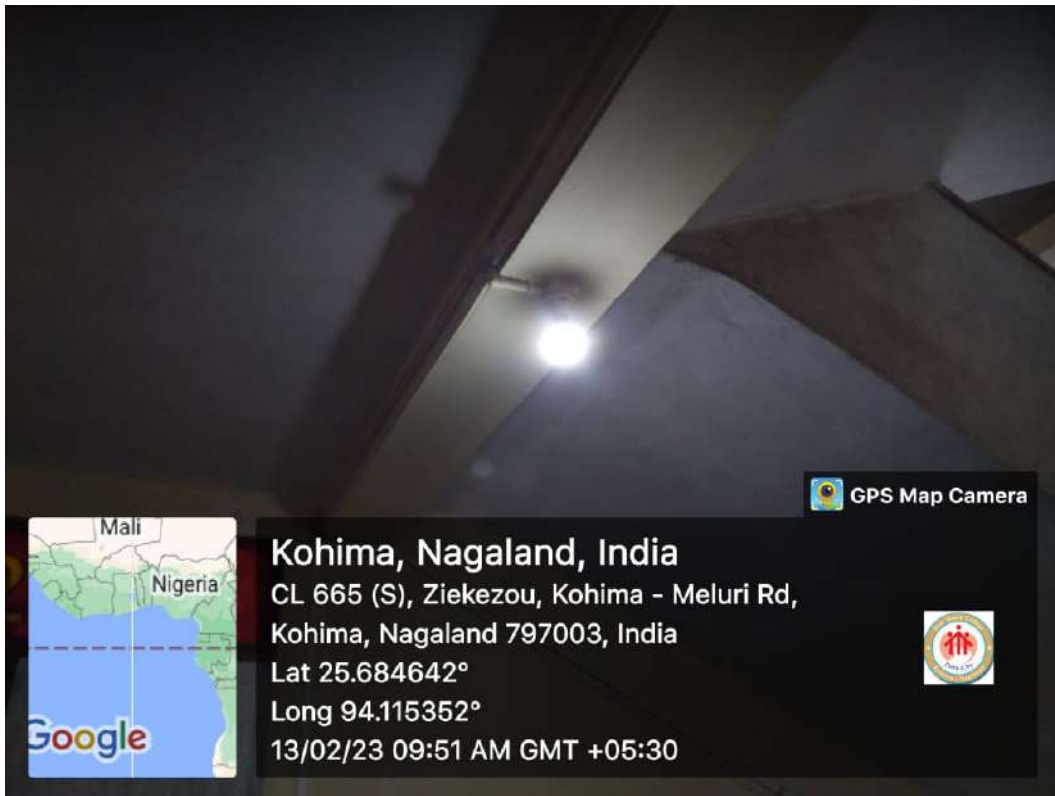
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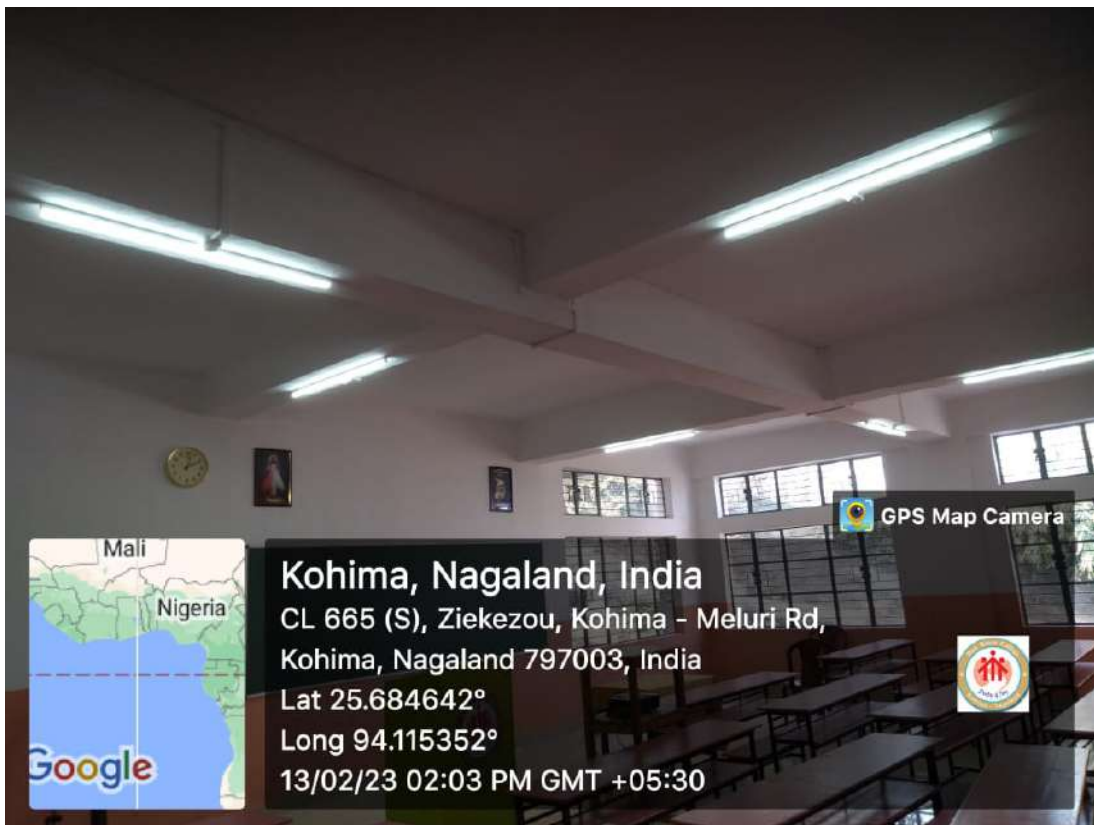
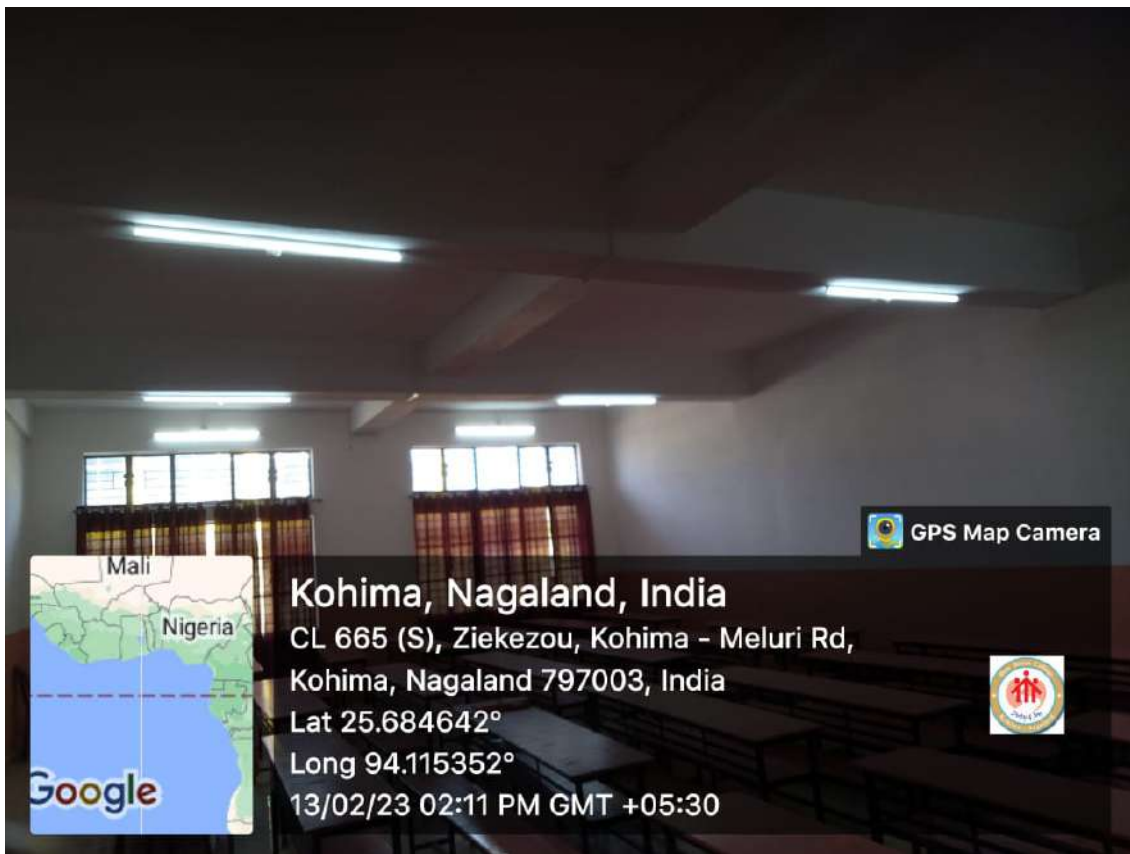
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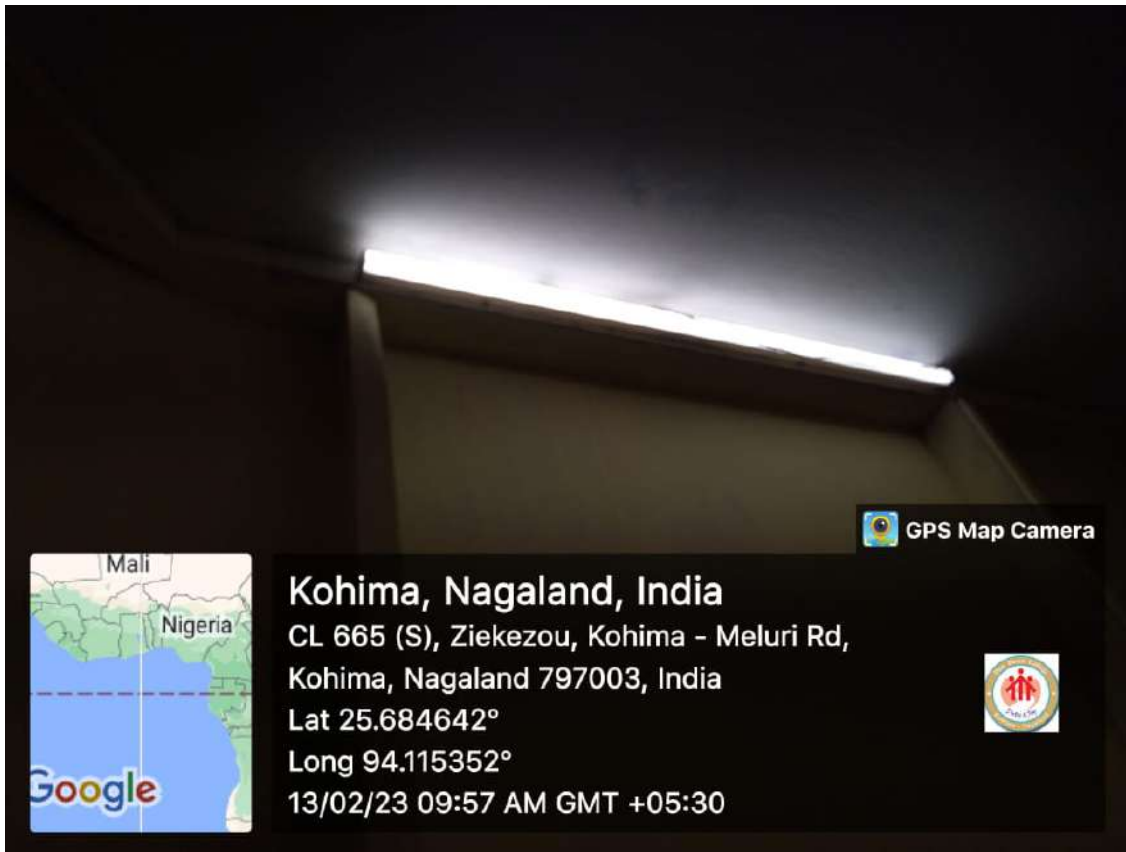












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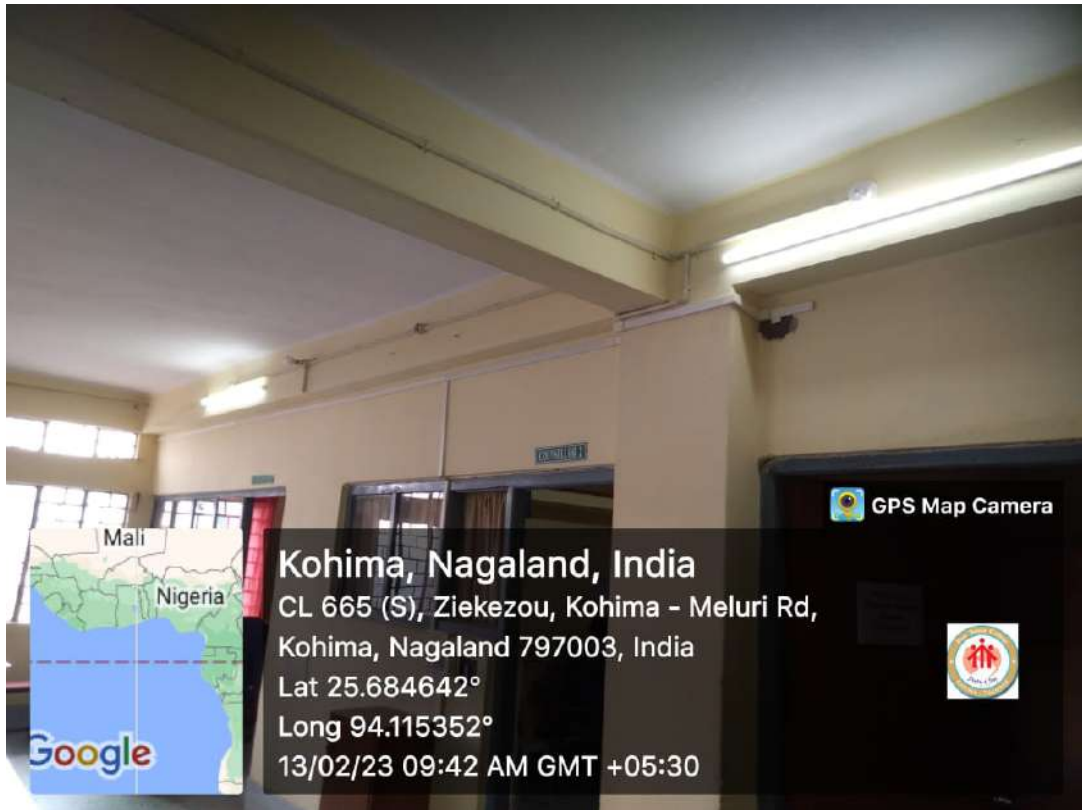
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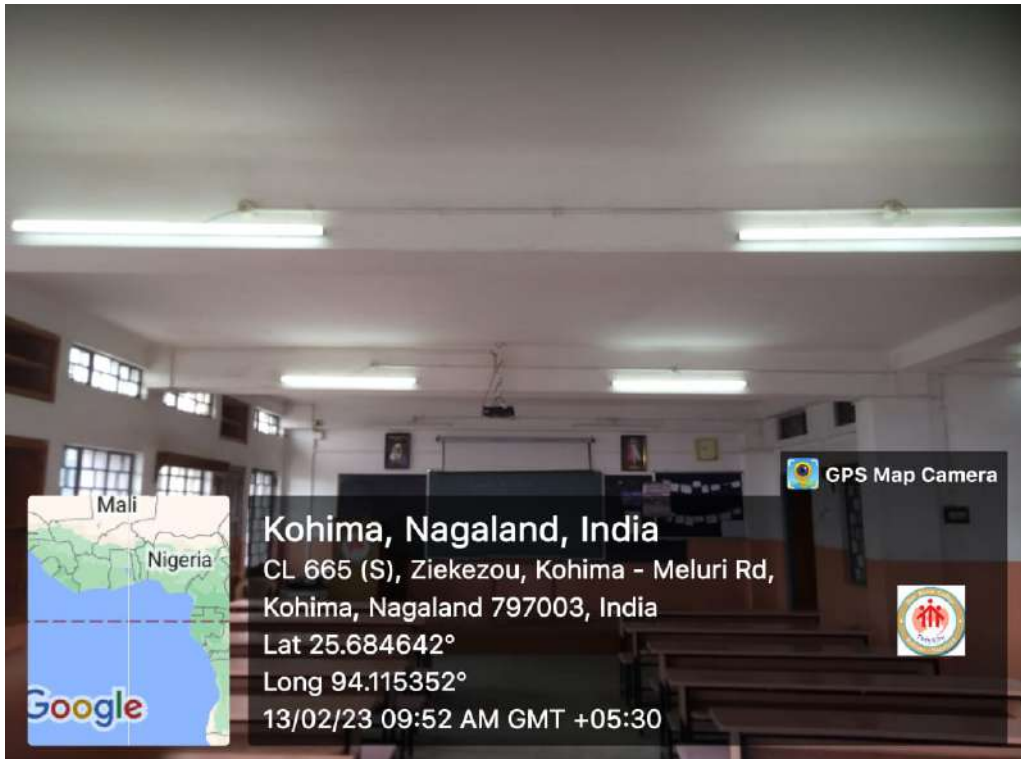
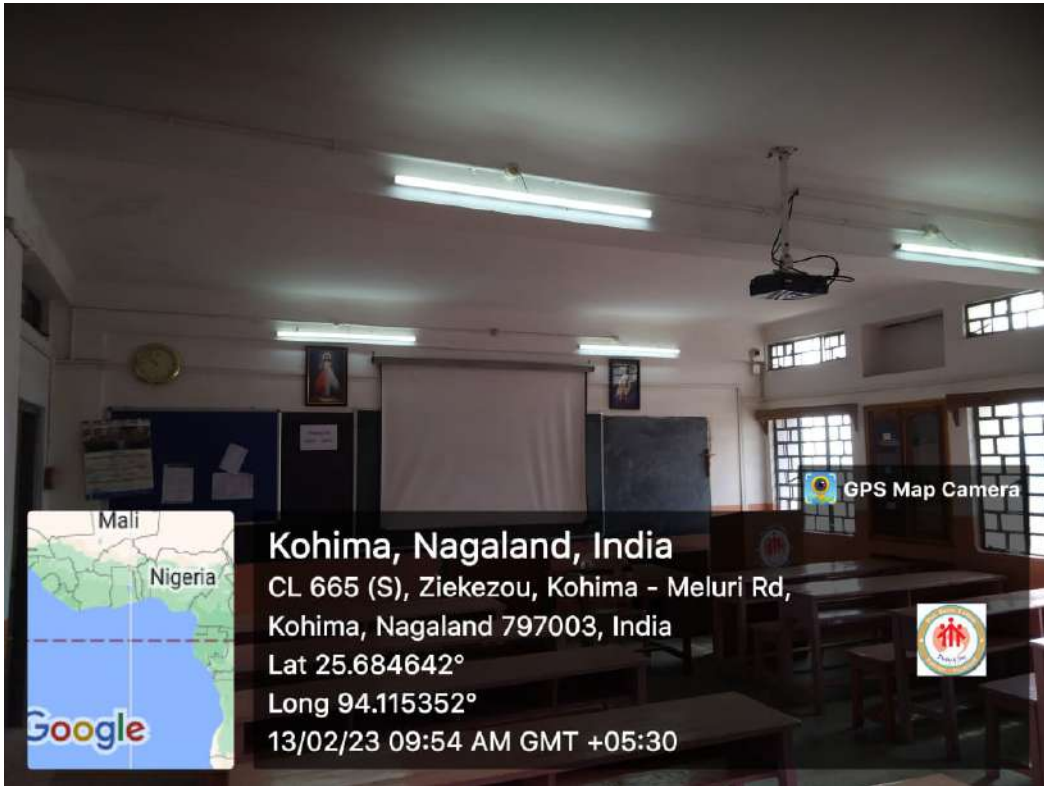
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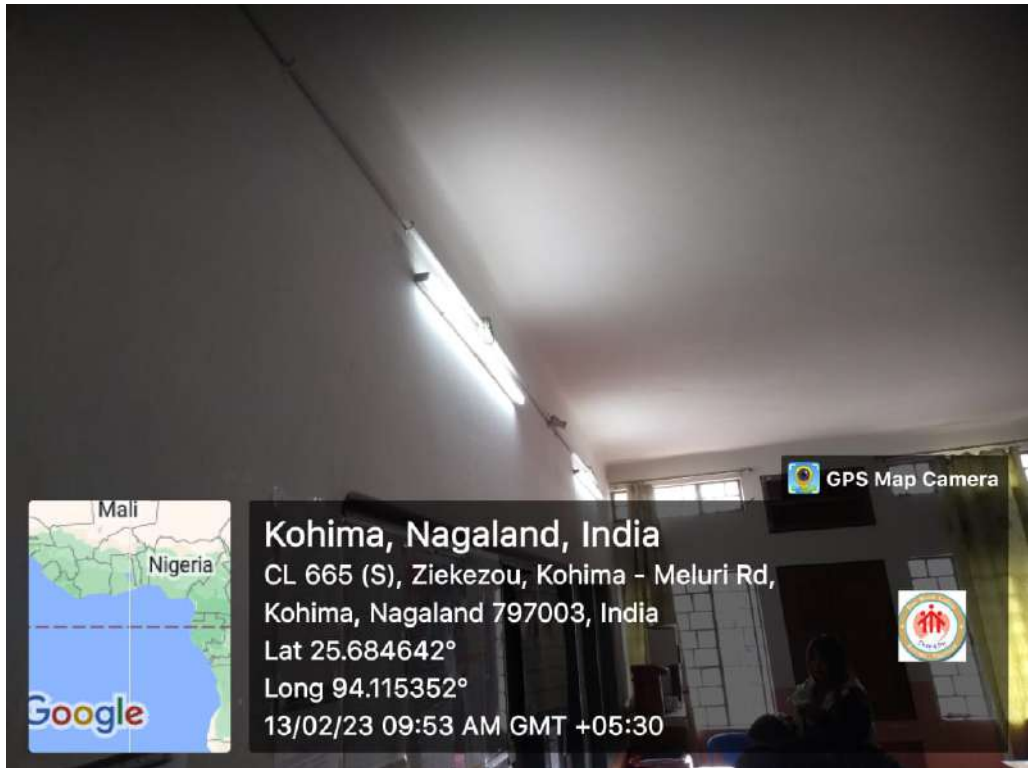
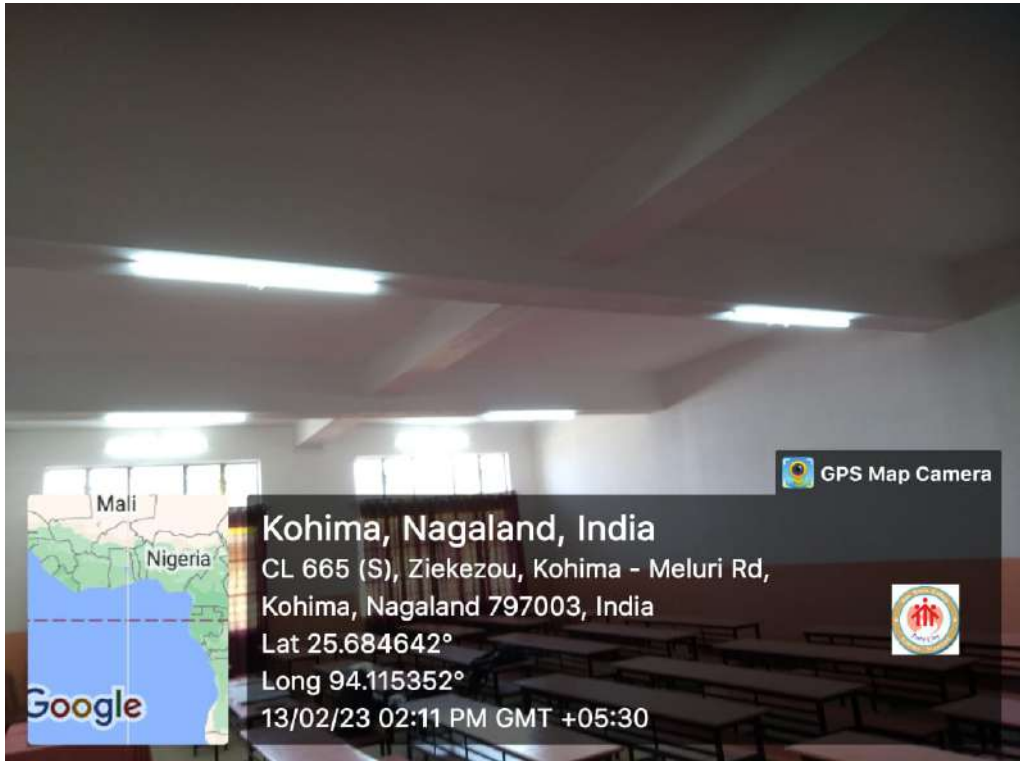
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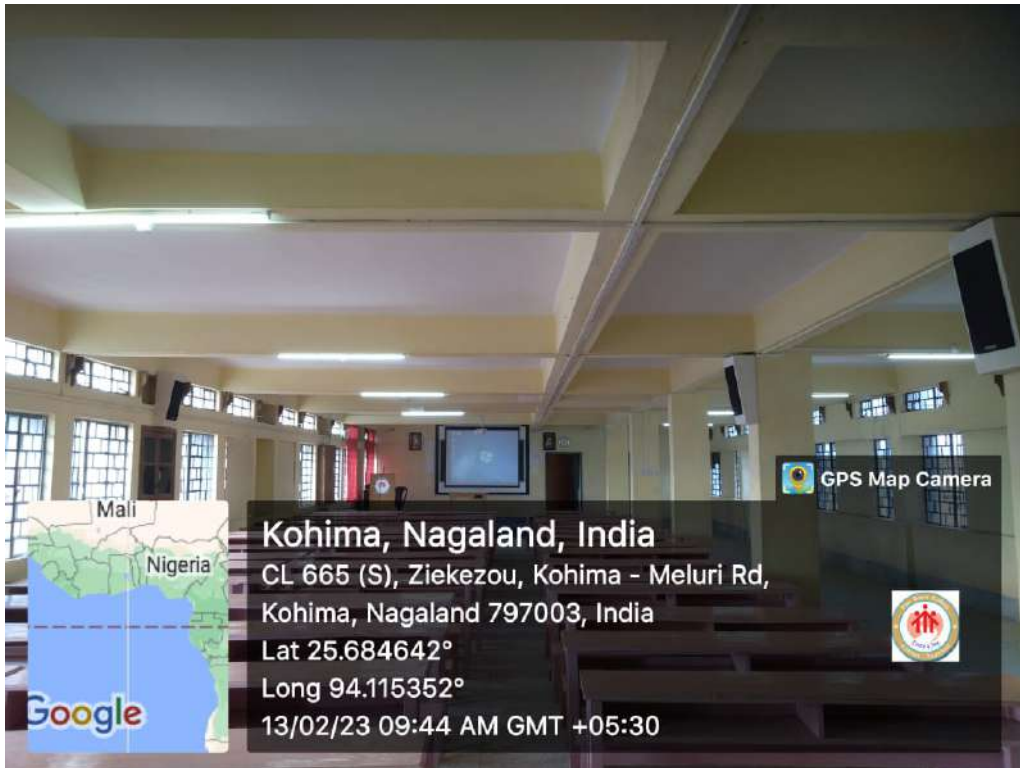
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