

GREEN AUDIT REPORT



(2022-2023)



**DIKHOWMUKH
COLLEGE, MOGLOW**
SIVASAGAR, ASSAM, 785664

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INTRODUCTION:- At present, it is important to each and every government and non-governmental institutions to conduct and enact the green audit or environmental audit for preserving and protecting the environmental degradations and bio-diversity in the campus. The aims and objective of the environmental audit is to build up greenery and a pollution free campus. The term Green Audit is called as Global Readiness in Ensuring Ecological Neutrality (GREEN). "GREEN AUDITING", an umbrella term, is known by another name Environmental Auditing and both the terms are being used interchangeably. Green Accounting can be defined as systematic identification, quantification, recording, reporting, and analysis, of components of ecological diversity and expressing the same in financial or social terms.

The green audit practically involves energy conservation, use of renewable sources, rain water harvesting and water conservation, efforts of carbon neutrality, plantation, hazardous waste management and E-waste management. The concept of green audit can be used as a management tool to evaluate the environmental standards; thereby can perform better and better for the sustainable development of an institution.

The green audit aims to analyze environmental practices within and outside the college campus, which will have an impact on the eco-friendly atmosphere. Green audit can be defined as systematic identification, quantification, recording, reporting and analysis of components of college environment. It was initiated with the motive of inspecting the effort within the institutions whose exercises can cause threat to the health of inhabitants and the environment. Through the green audit, a direction as how to improve the structure of environment and there are include several factors that have determined the growth of carried out the green audit.

Green audit forms part of a resource management process. Although they are individual events, the real value of green audits lies in the fact that it should be carried out at defined intervals and the results can illustrate improvement or change over time. Here, an effort has been made to prepare a comprehensive environmental audit of Dikhowmukh College campus. The target areas included in this green auditing are water, waste, green campus.

***NEED FOR GREEN AUDITING**

Green auditing is the process of identifying and determining whether institutions practices are eco-friendly and sustainable. Traditionally, we are good and efficient users of natural resources. But over the period of time excess use of resources like energy, water, are become habitual for

everyone especially, in common areas. Now, it is necessary to check whether our processes are consuming more than required resources? Whether we are handling resources carefully? Green audit regulates all such practices and gives an efficient way of natural resource utilization. In the era of climate change and resource depletion it is necessary to verify the processes and convert it in to green and clean one. Green audit provides an approach for it. It also increases overall consciousness among the people working in institution towards an environment.

❖ GOALS OF GREEN AUDIT

The specific goals for the conducting Green Audit of the college are as --

- I. Identification and documentation of green practices followed by College.
- II. Identify strength and weakness in green practices.
- III. Analyze and suggest solution for problems identified.
- IV. Assess facility of different types of waste management.
- V. Increase environmental awareness throughout campus.
- VI. Identify and assess environmental risk.
- VII. Motivates staff for optimized sustainable use of available resources.
- VIII. The long-term goal of the environmental audit program is to collect baseline data of environmental parameters and resolve environmental issue before they become problem.

❖ **OBJECTIVES OF GREEN AUDIT:-**

The Main objectives of the green Audit are as :-

- To examine the current practices, which can impact on environment such as of resource utilization, wastemanagement etc.
- To identify and analyze significant environmental issues.
- Setup goal, vision, and mission for Green practices in campus.
- Establish and implement Environment Management in various departments.
- Continuous assessment for betterment in performance in green.

❖ **BENEFITS OF GREEN AUDIT TO EDUCATIONAL INSTITUTIONS**

There are many advantages of green audit to an Educational Institute:

- I. It would help to protect the environment in and around the campus.
- II. Recognize the cost saving methods through waste minimization and energy conservation.
- III. Empower the organization to frame a better environmental performance.
- IV. It portrays good image of institution through its clean and green campus.

2. SCOPE OF GREEN AUDIT:-

The Scope of the Green Audit covers the systematic analysis of entire eco friendly environment of the college campus. These are-

- ✓ Environmental education through systematic environmental management approach.
- ✓ Improving environmental standards.

- ✓ Benchmarking for environmental protection initiatives
- ✓ Sustainable use of natural resource in the campus.
- ✓ Financial savings through a reduction in resource use.
- ✓ Curriculum enrichment through practical experience.
- ✓ Development of ownership, personal and social responsibility for the College campus and its environment.
- ✓ Enhancement of College profile
- ✓ Developing an environmental ethic and value systems in young people

3. EXECUTIVE SUMMARY

An environmental audit is a snapshot in time, in which one assesses campus performance in complying with applicable environmental laws and regulations. Though a helpful benchmark, the audit almost immediately becomes outdated unless there is some mechanism in place to continue the effort of monitoring environmental compliance.

This audit report contains observations and recommendations for improvement of environmental consciousness.

About the College:-

Dikhowmukh College was established in 1982 by covering the inhabitants of Jakaichuk and Konwerpur Mouzas of Sivasagar district. Basically, the college is situated in an agriculture dominated rural area. It has a glorious history. A significant reminder of the great Ahom Kngdom, situated about 19 km South West from Sivasagar district headquarter and

almost 5 km away from NH 37 adjoining Bor Ali Towards Dikhowmukh. The college is situated on the bank of historic Moglow Tank. The Moglow Tank was dug by King Swargadeo Rajeswar Singha (1751-1769) in honour of his Queen Kuranganayani, a Manipuri Princess. It covers an area of 2.53 Acres, i.e.- 7 Bighas, 3 Kathas and 7.7 lachas. The Moglow tank is the scenic beauty of the college. The college has a beautiful and a Greenery Campus.

4. Auditing for green campus:-

The plants in the campus and nearby areas of the college play an important ecological role within the campus and also the adjoining areas. These are also food plants and roosting sites of a number of bird species. Moreover these have also contributed in the aesthetic beauty to the area. The biodiversity status within the campus area has been worked out particularly in respect of floristic diversity and avian diversity.

1. Total open area :- 7125.261 sq.m.
2. Total built up area;- 9,342.6 sq.m.
3. Total Moglow Tank covers the areas of :- 2.53 acres, i.e., 7 Bighas, 3 kathas and 7.7 lechas.
4. Total numbers of plant species identified:- 46.
5. Trees cover of the campus :- 100m

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6. Garden (flowers and fruits) area inside the college:- 10 % of the total area (approx.)

To generate interest on the nature conservation and also to inculcate social responsibility towards a green environment, the college undertakes several eco-friendly initiatives within and outside the campus. Some of these activities are-

1. Plantation and caring of plants in the campus and outside the campus.
2. Timely disposal of wastes from the campus.
3. Celebration of important days like World environment day, Biodiversity day, college established day with great important to generate awareness among the students.
4. Plastic free (single use) campus.
5. Paperless office.
6. Distribution of plants sapling for welcoming guest.
7. Grow potted indoor plants in every department wherever it is possible.

Plantation Program:-

The college has organized various plantation programs in and outside the campus and adopted villages, parks and near institutions through the Nature Club and NSS unit. This activity is done during the month of May and June i.e. onset of the monsoon season. This program helps to

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maintain eco-friendly environment within and outside the campus as well.

Routine Green Practices:-

The college celebrates the importance days like World Environment day, Biodiversity day, the College establishment day with great importance to generate awareness among the students, faculties as well as staff members. Popular talks on environmental problems are organized on the banner of Nature Club by inviting the expert of the subject. Besides, distribution of sapling, poster competition etc. are some of the activities carried out to celebrate the day. Beside these, the college has organized the awareness day of bird's like- The international vulture day, world sparrow day, the birds seeing day under the banner of Nature Club and NSS unit.

Eco friendly construction:-

The college canteen with a built up of about 143sq. mt. has been constructed using Bamboo as a major construction material thereby reducing the use of RCC and promoting the use of eco friendly material.

DETAILS OF TREES AND PLANTS IN OUR COLLEGE CAMPUS

Sl. No.	Assamese Name	English Name	Botanical Name	Number of Trees
1	অমৰা গছ	Hog Plum Tree	Spondias Mombin	1

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2	অর্জুন গছ	Arjun Tree	Terminalia arjuna	1
3	অশোক গছ	Asoka Tree	Saraca asoca	2
4	আম গছ	Mango Tree	Mangifera indica	6
5	আমলখি গছ	Embric myrobalan	Phyllanthus emblica	5
6	আহঁত গছ	Peepal Tree	Ficus religiosa	2
7	এজাব গছ	Queen's Crape-myrtle	Lagerstroemia reginae Roxb	nill
8	ওঁটেঙা গছ	Elephant apple	Dillenia indica	nill
9	ক'লাজামু গছ	Jambul, Jamun	Syzygium cumini	2
10	কঁঠাল গছ	Jackfruit Tree	Artocarpus heterophyllus	2
11	কদম গছ	Kaim	Mitragyna parviflora	3
12	কৃষ্ণচূড়া গছ	Peacock flower tree	Caesalpinia pulcherrima	17
13	খকন গছ	Duabanga	nill	nill
14	খৰিকাজাই গছ	Indian Jasmine	nill	nill
15	ঘোঁৰা নিম গছ	Bead Tree	Moila azedarach	2
16	চতিয়না গছ	Indian Devil Tree	Alsotonia scholaris	2
17	চন্দন গছ	Sandalwood	Santalum album	3
18	চাম গছ	Monkey Jack Tree	Artocarpus lacucha	1
19	চালকুঁৱৰী গছ	Curcau aloe, Indian aloe	Aloe barbadensis	nill
20	চেগুন গছ	Teak Tree	Tectona grandis	40
21	চোম গছ	nill	Persea bombycina king	nill

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22	তিতাচঁপা গছ	Golden Champaca	Michelia champaca	1
23	দেবদাৰু গছ	Indian fir Tree	Polyalthia longifolia	20
24	নাৰিকল গছ	Coconut Tree	Cocos nucifera	5
25	নাহৰ গছ	Ceylon ironwood, Cobra's saffron	Mesua Ferrea	3
26	নিম গছ	Nim	Azadirachta Indica	2
27	বকুল গছ	Agati	Mimusops Elengi	3
28	বৰ গছ	Banyan Tree	Ficus benghalensis	4
29	বগীজামু গছ	Rose Apple Jambas	Syzygium Jambas	3
30	বৰ জামু গছ	Jambal Tree	Syzygium Cumini	3
31	বৰ্হমথুৰি গছ	Lipstick Champa	Talauma Hodgsoni	5
32	ভোমোৰা গছ	Bastard Myrobabor	Terminalia Bellirica	1
33	মজ গছ	Tea Coma	Albizia Procera	4
34	মদাৰ গছ	Coral Tree	Erythrica Variogata	4
35	মধুৰিআম গছ	Guava	Psidium Guajava	5
36	ৰঙা চন্দন গছ	Red Sandalwood	Santalum Rebrum	3
37	শলখ গছ	East Indian Almond	Terminalia myriocarpa	2
38	শালগছ	Shala Tree	Shorea Robusta	2
39	শিৰীষ গছ	Rain Tree	Samanea Saman	10
40	শিলিখা গছ	Chebulic Myrobalan	Termindia Chebula	4
41	হোলোং গছ	Black Curent Tree	Dipterocarpus Pilosusroxb	3

42	জৰি গছ	Ficus Tree	Ficus benjamina	2
43	বগীতৰা গছ	Rose apple Jambosnia	Alpinia nigra	1
44	সোনাৰু গছ	Golden Shower tree	Cassia Fistula	2
45	পোৰা আমলখি গছ	Star gooseberry tree	Phyllanthus acidus	1
46	তামোল গছ	Betelnut Plant	Areca Cathecu	2
47	চেনীচম্পা	Champaca	Michelia Champaca	2
48	লিচু	Litchi, Lychee tree	Litchi Chinensis	1
49	বঘু গছ	Raghu Tree	Pithecellobium	1
50	ৰাধাচুড়া	Radha Chura	Caesalpinia Pulcherrma	1
51	বগৰী গছ	Jujube Tree, Chinec Apple	Ziziphus mauritiana	1
52	সাচি গছ	Sachi Tree	Aguilaria malaccensis	3

❖ **Turtle Conservation Centre**

There is a Turtle Conservation Centre in our College Campus. This is an initiative taken by the college family and local public in 2019.

5. WATER MANAGEMENT

Water conservation is a key activity as water availability affects on the development of the campus as well as on all area of development such as farming, industries, etc. Keeping this view water conservation activity is

carried out.

SOURCES OF WATER

- Open Well water
- Tank water
- Rain Water Harvesting

AUDITING WATER CONSUMPTION:- Water auditing is conducted for the evaluation of facilities for water treatment and reuse. The present investigation tries to find out a way that can be adopted and implemented to balance the demand and supply of water. It is therefore essential that any environmentally responsible institution examine its water use practices.

The main water uses in the college (campus and hostel) are: - Garden, Cleaning, Canteen, Drinking, Toilets, Bathrooms, Hostel, Washing, Construction Works and office uses.

The overall water consumption in a day in the college are :- 15 k Ltr.

Following are the areas of water consumption in the college and hostel campus:-

Sl. no	Purpose of water consumption
1	Toilets & Urinals
2	Hostel (bathroom & toilets, kitchen, cleaning, washing, and drinking)
3	Canteen
4	Gardening
5	Construction work
6	Leakage

The water installations available in the college are:-

1. Water cooler with drinking water filtration facility.
2. Urinals and toilets
3. Bathrooms
4. Water taps in common place, canteen etc.

Water consumption:-

1. Quantity of water pumped :- 9 k. liter / day
2. Quantity of water used from historic Moglow tank : 7 k. liter./ day.
3. Water charge paid for pumping :-
4. Rain water harvesting:-
5. Number of water tanks for water storage (college & hostel campus)- 12 nos.
6. Amount of water stored: 19000l.

Water audit observation:-

The reasons of water wastage are:-

1. Leaving the water taps open after use.
2. Leakage from taps.
3. Over use of water.

Recommendations:-

1. All leaking tapes to be repaired.
2. Establishment of rain water harvesting system.
3. Involve students by giving them real time project on water conservation and reward good ideas after implementing them.

4. Use of tap water can be controlled by regulating discharge per hour. Provide push button taps limiting the time for 30 secs.
5. Canteen can reduce the use of a trays to a certain extent.
6. Installation of water treatment system.

6. WASTE MANAGEMENT

The waste generated inside the campus is thrown to the dustbin and fire it weekly.

AUDITING SOLID WASTE GENERATION:-

Pollution from solid waste is aesthetically unpleasing and result in large amounts of litter in our communities which can cause health problems. Plastic bags and discarded ropes and strings can be very dangerous to birds and other animals. This indicator addresses waste production and disposal plastic waste, paper waste, food waste and recycling. Solid waste can be divided into two categories: general waste and hazardous waste. General waste includes what is usually thrown away in homes and college such as garbage, paper, tins and plastic items, pens, plastic/ glass bottles etc .Hazardous is waste that is likely to be a threat to health or the environment like cleaning chemicals and petrol. Unscientific landfills may contain harmful contaminants that leach into soil and water supplies, and produced greenhouse gases contributing to global climate change. Furthermore, solid waste often includes wasted material resources that could otherwise be channeled into better service through recycling, repair, and reused. Thus the

minimization of solid waste is essential to a sustainable college. Here efforts have been made to diagnoses the prevailing waste disposable policies and suggests the best way to combat the problems. It is therefore essential that any environmentally responsible institution examine its waste processing practices.

The college has almost over 1200 stake holders that includes, teaching and non-teaching members that led to the generation of a sizeable amount of solid waste per day. The sources of solid waste in the college are; classroom, laboratories, staff rooms, office, library, canteen, toilets, grounds and the hostel, solid waste generation in the college & hostel campus primarily of biodegradable, non-biodegradable, hazardous and E-waste besides there are liquid waste.

Characteristics and disposal practices:-

The types of solid waste generated have been characterized and the quantity assessed as follows:-

Sl. No	Source	Type of waste generated	Quantity of waste generated/ a day.
1	Classroom	Paper, plastic wrapper, plastic bottles, pens, tetra packs, cardboard, tharmocole.	39 kgs (approx) including 12 kgs (aerpprox)of vegetable peels, rotten vegetables and leftover food that is biodegradable.
2	Laboratories	paper, plastic bottles,	

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		broken glass, pins, growth media.	
3	Staffroom	Paper, plastic wrappers, plastic bottles, pens, aluminums foil, leftover food.	
4	office	Paper, plastic wrappers, plastic bottles, pens, metal clips, pins, rubber band, old printer cartridges.	
5	Computer centre	Paper, metal clips, pins, old printer cartridges, old cds.	
6	Canteen	Disposable plates, cups, paper box, plastic wrappers, aluminums foil, vegetable peels, rotten vegetables, leftover food, plastic bottles.	
7	Library	Paper, plastic	
8	Toilets	Paper, plastic, sanitary napkins.	
9	Grounds	Grass cutting, dry leaves, twigs.	
10	Hostel	Paper, plastic wrapper,	

	(including living quarters, toilets, and the kitchen)	plastic bottles, broke glass, tetra packs, aluminium foil, vegetable peels, rotten vegetables, leftover food, sanitary napkins etc.	
11	Both campus	Construction debris, broken furniture, unserviceable equipment, batteries.	Not generated on daily basis
12	Boys common room	Paper, plastic bottles, plastic wrapper, tetra packs,	
13	Boys common room	Paper, plastic bottles, snacks packs, plastic wrapper, etc.	

-

Disposal practices adopted:-

1. Segregation of the waste into wet and dry waste and disposal in separate coloured bins.
2. The dry waste has been placed into the fire cane for burn. There are total 6 nos of fire canes in the college campus.
3. Used solid microbial growth media is sealed in auto clavable bags and disposed after decontamination by autoclaving.

4. Construction debris generated in the college is disposed in authorized landfill site.
5. For unserviceable equipment and batteries, the college has negotiated buy back or removal from site agreement during replacement.

Recommendations:-

1. Reduce use of plastic. Make an effort to make the college plastic free campus.
2. Save beverages in refillable glass containers instead of cans or throwaway bottles.
3. Minimize the use of paper.
4. Never use open fires to dispose of waste.
5. Recyclables should be segregated at source and stored.
6. Compostable solid waste (kitchen and garden) may be converted into compost and be used in the garden.

AUDITING FOR E-WASTE MANAGEMENT:-

The college has large numbers of computers, printers and a couple of Xerox machines. The E-waste and defective items from computer lab are being stored properly. The college has decided to contract approved E-waste management and disposal facility in order to dispose E-waste in scientific manner.

Recommendations :-

1. Put out Charts or graphics in every corner of the college to make students aware “what is E-waste?” and put pictures of items which are e-waste. This will help students to recognize them.
2. Never throw e-waste in the trash.
3. Organized what you have and give away or donate it to someone who can and will use it (E-bay and oxl and other online marketing agencies can be used).
4. Some shops have a buy-back programmed. Take them to these shops.
5. Start using cloud technology to minimize the use of hard drives ad pen drives.
6. Learn the disposal method of any item brought. Many electronic items have toxic materials in them as a result, it is important to know about the right away of disposal.
7. If possible, unnecessary buying of electronic gadgets should be minimized.

7. RAINWATER HARVESTING

The rainwater harvesting strengthens the water supply to the campus lakes as well as enhance water level of wells in the campus through ground water recharging process. A Main source of water is Ground water is extracted

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to full the requirement. At present there are 5 wells out of which with 1 has open well structure whereas remaining 04 are boeing wells. The college stores the water in overhead tank.

The source of wastewater is Domestic Waste Water i.e., Sewage water. The Sewage water mainly comes from Toilets of college, hostel, kitchen and canteen. 3 nos of Sewage Treatment Plant was installed in the campus of each 100 KLD. Total sewage treatment plant capacity is 300KLD.

LIBRARY

The college library has a collection of over 27,100 books.



AUDITORIUM

The auditorium can accommodate 300 students, aimed at conducting events like department functions, club activities and meeting of various student support organization.



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GYMNASIUM

Gymnasium is provided inside the campus facility to encourage physical activity among the students.



VIEWS OF GREENERY



SIGN BOARDS IN CAMPUS OF MITE

CONCLUSION

At the conclusions the following recommendations are given for better improvement of the college campus.

1. All departments generate paper waste. Especially, academic building is using more one paper for printing and writing is good practices.
2. Food waste generated in campus is mostly from is collected from dining areas. The food waste is diverted to nearby farm.
3. E-waste are segregated, handled and disposed properly in an eco-friendly manner.
4. Reducing the use of one-time use plastic bottles, cups, folders, pens, bouquets, decorative items will be useful to solve the problem of plastic pollution to some extent.
5. Wear Mask Signages are provided in the facility.
6. Rainwater is collected from rooftop to recharge the ground water level table.
7. An environmental policy document has to be prepared with all the recommendations and practice carried by MITE.
8. A frequent visit should be conducted to ensure that the generated waste is measured, monitored and recorded regularly and information should be made available to administration.
9. The solid waste should be reused or recycled at maximum possible places.

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10. Install a water meter to record water usage in the college MITE premises.

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