GREEN AUDIT REPORT

NAKACHARI COLLEGE

Session:2023-24

Submitted To-

The Principal

Nakachari College, Jorhat, Assam

Pin- 785635

Submitted By-

JKM Consultancy Services

Solution for Green Audit

CONTENT

ACKNOWLEDGEMENT

At first, we would like to thank Nakachari College Management for their cooperation which was extended during the process.

Our special thanks goes to Mr. Uttam Baruah, Principal, Nakachari College, for giving us the necessary inputs to carry out this vital exercise of Green Audit. We are also thankful to other staff members who were actively involved in the process while collecting the data and conducting field measurements.

GREEN AUDIT ASSESSMENT TEAM-

(INTERNAL)-

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Principal, Nakachari College
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(EXTERNAL)-

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Dr. Dondeswar Dutta, Rtd. Scientist-D, Rain Forest Research Institute, Jorhat.

GREEN AUDIT CERTIFICATE

This is to certify that a Green Audit for Nakachari College, Jorhat, Assam has been conducted during the session 2023-24, to assess Environment cost and Environment Impact Assessment and Carbon Credit with a view to take sustainable steps to reduce the carbon footprint left by the college and to make environment friendly model of administration.

Dr. Dulen Saikia

Chairperson

JKM Consultancy Service

Dr. Dulen Saikia
Chairperson, G-Audit
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Mrs. Pinaki Hazarika

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Mrs. Pinaki Hazarika
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INTRODUCTION

Green audit is also widely known as Environmental Audit. Green Audit can be better understood as: Compliance of Environmental Laws, Audit of Environment Cost and Environment Impact Assessment, and Carbon Credit. We believe that saving 'Mother Earth' is an integral part of education and that the carbon footprint left by the college is to be reduced by sustainable steps and an environment friendly model of administration. Green audit is a valuable means for a college to determine how and where they are using the most energy or water or other resources; the college can then consider how to implement changes and make savings. It can create health consciousness and promote environmental awareness, values, and ethics. It provides staff and students better understanding of green impact on campus. Institutional self- enquiry is a natural and necessary outgrowth of a quality educational institution. As environmental sustainability is becoming an increasingly important issue for the nation, the role of higher educational institutions in relation to environmental sustainability is more prevalent.

In recent time, the Green Audit of an institution has been becoming important for self-assessment of the institution which reflects the role of the institution in mitigating the present environmental problems. Many institutions undertake lots of good measures to resolve these problems but are not documented due to lack of green documentation awareness. All these non-scholastic efforts of the administrations play an important role in ensuring the green quotient of the campus is intact. Therefore, the purpose of the present green audit is to identify, quantify, describe, and prioritize framework of Environment Sustainability in compliance with the applicable regulations, policies and standards.

OBJECTIVES

The main objectives of carrying out Green Audit are:

- To Map the Geographical Location of the college.
- To document the Floral and Faunal Diversity of the college
- To record the Meteorological Parameter of the college as well as the region where the college is situated.
- Other Green Initiatives taken by the college

METHODOLOGY

The purpose of the Green Audit of Nakachari College, Jorhat is to ensure that the
practices followed in the campus are in accordance with Green Policy of the country.
The methodology includes-

- Collection of data.
- Physical Inspection of the college campus.
- Observation and review of the documentation and data analysis.

ABOUT THE COLLEGE

Established with the effort of a few local educationists and the public support in 1988, Nakachari College provides facilities in Degree Courses in Arts Stream. Situated away from din and bustle, the college is bestowed with natural beauty and it has a tea planted area of about 32 Bighas of land. Apart from imparting facilities for general courses of studies, the College is waiting for to introduce diversified courses to aware the pupils for self-employment and at the same time help the college to stride towards self-sufficiency in the long run.

The flame within a wheel enlightening our living planet indicates the flourishing living with the Motto “Tomoso Ma Jyotirgamaya”. The wheel graves surrounding signifies the Science and technology, which befit our life to live on.

Besides the facilities of enhancement of academic side, the college gives the students an opportunity to express their literary and academic creativity through the college magazine ANUBHUTI & wall magazine “GATEE” as well as through various departmental news-letters, journals etc. They can also get to express themselves through Dramatic, Debating, Dance and Music Societies.

VISION OF THE COLLEGE

Initially, the vision of Nakachari College was prepared in accordance with the needs of the rural area in academic fields. It was stressed on pouring higher education in greater Nakachari area. Keeping it in mind, the founder of the institution laid emphasis on quality education. Accordingly, the vision was set to make all round development of human resources through quality education. In order to arrive at a congenial atmosphere cohesive to the vision, need of appropriate techniques are required. It needs to motivate and inspire students for pursuing further education. The higher the level of education, the stronger the personality grew up. Imparting quality education brings to the fore the principles of morality as well as rationality which helps in empowering knowledge in the mindset of the students.

MISSION OF THE COLLEGE

The institution endeavours –

1. To introduce the students with modern ideas and empirical knowledge and to mould value- based attitudes about social responsibility through imparting quality education based on morality and rational thinking.
2. To empower the students with qualities of ideal citizenship for contributing greater services
3. in national development.
4. To sensitize the students about own history, culture and literature.

OBSERVATION

The Nakachari College, located in Jorhat district in Assam, is a prestigious educational institution that has gained recognition for its commitment to academic excellence and holistic development of students. The college is bestowed with natural beauty and covered an area of 38.5 bighas.

The college campus is adorned with lush greenery, well maintained garden areas, plantation areas, a variety of tree species and vibrant flowers. The botanical diversity on campus not only enhances its aesthetic appeal but also fosters a sense of tranquility and connection with nature. The campus possesses many plantation areas which have a great diversity of plant species performing a variety of functions. The tree species are planted in different period of time through various plantation programmes organized by the college authority and have become an integral part of the college. The trees of the college are prominent features that are planted to maintain not only greenery but also store carbon and stabilize the soil. Many species of birds are dependent on these trees mainly for food and shelter.

The departments of the college have taken the initiative to build bird houses in the college corridors to provide shelter for the birds and also provisions for feeding water to birds in earthen pots are undertaken by the institute. The college has worked on the wildlife and its conservation processes and time to time environment awareness programmes are carried out by the institute. Situated close to the Gibbon Wildlife Sanctuary, the college demonstrates a strong commitment to wildlife protection. Active involvement of students and faculty in conservation efforts reflects the institution's dedication for preserving the natural habitat and its inhabitants.

BANNER DISPLAYED ON WILDLIFE CONSERVATION

BIRD HOUSE BUILT IN THE COLLEGE CORRIDORS

PLANTATION AREAS OF NAKACHARI COLLEGE

1. Tea Cultivation

Total area under Tea Cultivation – **32 Bighas**

The college has engaged in tea cultivation in a large area, which not only generates revenue but also helps protect the environment and this initiative leverages local strengths effectively.

TEA PLANTATION PLOTS OF NAKACHARI COLLEGE

2. VEGETABLE GARDEN

A vegetable garden is maintained in the college campus in a planned manner covering a large area where different vegetables are grown in plots. It was developed by IQAC Cell of the college. It not only provides the fresh produce and clean air but also create a peaceful, calming and learning environment for students.

The vegetables that are grown in the garden area are-

SL.NO.	NAME OF THE VEGETABLES	NUMBER OF PLANTS
1.	Capsicum	110
2.	Brinjal	40
3.	Bhut Jolokia (Ghost pepper)	50
4.	Chillie	90
5.	Colocasia	50
6.	Pumpkin	05
7.	Lemon	10
8.	Tomato	20

VEGETABLES GROWING IN THE VEGETABLE GARDEN AREA

3.TEAK WOOD (SEGUN) PLANTATION

A well- maintained Teak Wood (Segun) Plantation Area is present in the college campus with nearly 30 numbers of trees. These are large deciduous trees of the family Lamiaceae and are one of the most durable and valuable hardwoods.

TEAK WOOD (SEGUN) PLANTATION IN COLLEGE CAMPUS

TREE DIVERSITY OF NAKACHARI COLLEGE

Nakachari College is located in a rural area of Nakachari, Jorhat district in the south eastern corner of district headquarters with a distance of about 30 kms. Situated in a hilly boarder area between Assam and Nagaland, the institution is close to the vicinity to Hoollongapar Gibbon Sanctuary at approx. 2kms away from the college.

The area has a great diversity of tree species that are planted in different period of time through various plantation programmes organised by the college authority. The trees of the college maintain the greenery and aesthetic values, store carbon and stabilize the soil and have increased the quality of life of not only the college fraternity but also the people of the area around the college by providing oxygen, improving air quality, climate amelioration, preserving soil, and supporting wildlife, controlling climate by moderating the effects of the sun, rain and wind. It encompasses different species, genera and families of trees coexisting in an ecosystem. High tree diversity indicates a healthy ecosystem with a range of ecological niches. Many species of birds are dependent on these trees mainly for food and shelter.

Thus, the college has been playing a significant role in maintaining the environment of the entire area.

Following are the tree species with whom we are being attached-

LIST OF PLANTS IN COLLEGE CAMPUS

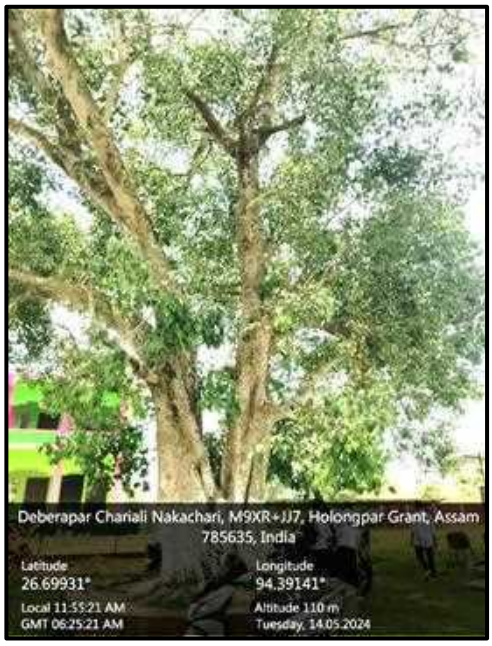
Sl.No.	Common Name	Scientific Name	Family
1.	Segun	*Tectona grandis*	Lamiaceae
2.	Coconut	*Cocos nucifera*	Arecaceae
3.	Xonaru	*Cassia fistula*	Fabaceae
4.	Devodaru	*Polyalthia longifolia*	Annonaceae
5.	Arjun	*Terminalia arjuna*	Combretaceae
6.	Bokul	*Mimusops elengi*	Sapotaceae
7.	Bogori	*Zizyphus jujube*	Rhamnaceae
8.	Krishnasura	*Delonix regia*	Fabaceae
9.	Pine (Ornamental)	*Araucaria heterophylla*	Araucariaceae
10.	Mango	*Mangifera indica*	Anacardiaceae
11.	Aamlokhi	*Phyllanthus emblica*	Phyllanthaceae
12.	Powder puff.	*Calliandra surinamensis*	Fabaceae
13.	Neem	*Azadirachta indica*	Meliaceae
14.	Korobi	*Nerium oleander*	Apocynaceae
15.	Gulab	*Rosa Species*	Rosaceae
16.	Kola Tulsi	*Ocimum tenuiflorum*	Lamiaceae
17.	Syzygium	Syzygium Species	Myrtaceae
18.	Akhoi Phul	Jasmine Species	Oleaceae
19.	Thuja (Ornamental)	*Thuja species*	Cupressaceae
20.	Areca Palm	*Dypsis lutescens*	Arecaceae
21.	Gul Nemu	*Citrus limon*	Rutaceae
22.	Vekuri tita	*Solanum nigrum*	Solanaceae
23.	Mati kaduri	*Alternanthera sessilis*	Amaranthaceae
24.	Xoru Tengesi	*Oxalis stricta*	Oxiladaceae
25.	Bor Tengesi	*Oxalis corniculata*	Oxiladaceae
26.	Manimuni	*Centella asiatica*	Apiaceae

27.	Masundari	*Houttuynia cordata*	Saururaceae
28.	Dupor tenga	*Bryophyllum pinnatum*	Crassulaceae
29.	Aloe Vera	*Aloe Vera*	Asphodeloideae
30.	Papaya	*Carica papaya*	Caricaceae
31.	Curry leaves	*Murraya koenigii*	Rutaceae
32.	Banana	*Musa balbisiana*	Musaceae
33.	Azar	*Lagerstroemia speciosa*	Lythraceae
34.	Jamun	*Syzygium cumini*	Myrtaceae
35.	Bottle brush	*Callistemon citrinus*	Myrtaceae
36.	Tokou	*Livistona jenkinsiana*	Arecaceae
37.	Marigold	*Tagetes erecta Linn.*	Asteraceae
38.	Xewali	*Nyctanthes arbor tristis*	Oliaceae
39.	Sasi Tree	*Aquilaria agallocha*	Thymelaeceae
40.	Kaji Nemu	*Citrus limon*	Rutaceae
41.	Kendu	*Diospyros melanoxylon*	Ebinaceae
42.	Araucaria	*Araucaria araucana*	Araucariaceae
43.	Ghora neem	*Melia azedarach L.*	Meliaceae
44.	Kutkura	*Meyna laxifloria*	Rubiaceae
45.	Lakhmitaru	*Simarouba glauca*	Simaroubaceae
46.	Tamul	*Areca catechu Linn.*	Arecaceae
47.	Capsicum	*Capsicum annuum*	Solanaceae
48.	Chillie	*Capsicum frutescens*	Solanaceae
49.	Pumpkin	*Cucurbita pepo*	Cucurbitaceae
50.	Brinjal	*Solanum melongena*	Solanaceae
51.	Thereju	*Prunus jenkinsii*	Rosaceae

52.	Borgos	*Ficus benghalensis*	Moraceae
53.	Ahot Tree	*Ficus religiosa*	Moraceae
54.	Papaya	*Carica papaya*	Caricaceae

PHOTO GALLERY

Arjun (*Terminalia arjuna*)



Borgos(*Ficus benghalensis)*

Sewali (*Nyctanthes arbor tristis)*

Lakhmitaru *(Simarouba glauca)*

PHOTO GALLERY

Araucaria (*Araucaria araucana)*

Krishnasura (*Delonix regia)*

Ghora neem (*Melia azedarach L.)*

Thereju (*Prunus jenkinsii)*

PHOTO GALLERY

Jamu (*Syzygium cumini)*

Bogori (*Zizyphus jujube)*

Department students' initiative for plantation

Papaya (*Carica papaya)*

FAUNAL DIVERSITY OF THE COLLEGE

Nakachari College is in Jorhat District of Assam. The wet season in Jorhat is hot, oppressive and mostly cloudy, while the dry season is warm and clear. The yearly temperature is 25.6°C (78.21°F) and it is -0.3% lower than India's averages. Jorhat typically receives of about 96.46 millimeters (3.6 inches) of precipitation and has 66.44 rainy days (18.2% of the time) annually.

The climatic conditions in the Jorhat district as a whole, and particularly in Nakachari College, are ideal for a diverse range of flora and fauna to thrive and contribute to the district's rich biodiversity.

The college takes special initiative for the shelter and feeding of the birds by constructing bird houses and by providing water in earthen pots in various locations of the college campus. Awareness programmes for wildlife conservation and environment protection are organised by the college and hoardings for wild life protection and conservation are placed in the campus.

The following faunal diversity has been studied and documented in Jorhat Kendriya Mahavidyalaya-

Table: Common and Scientific names of birds and animals

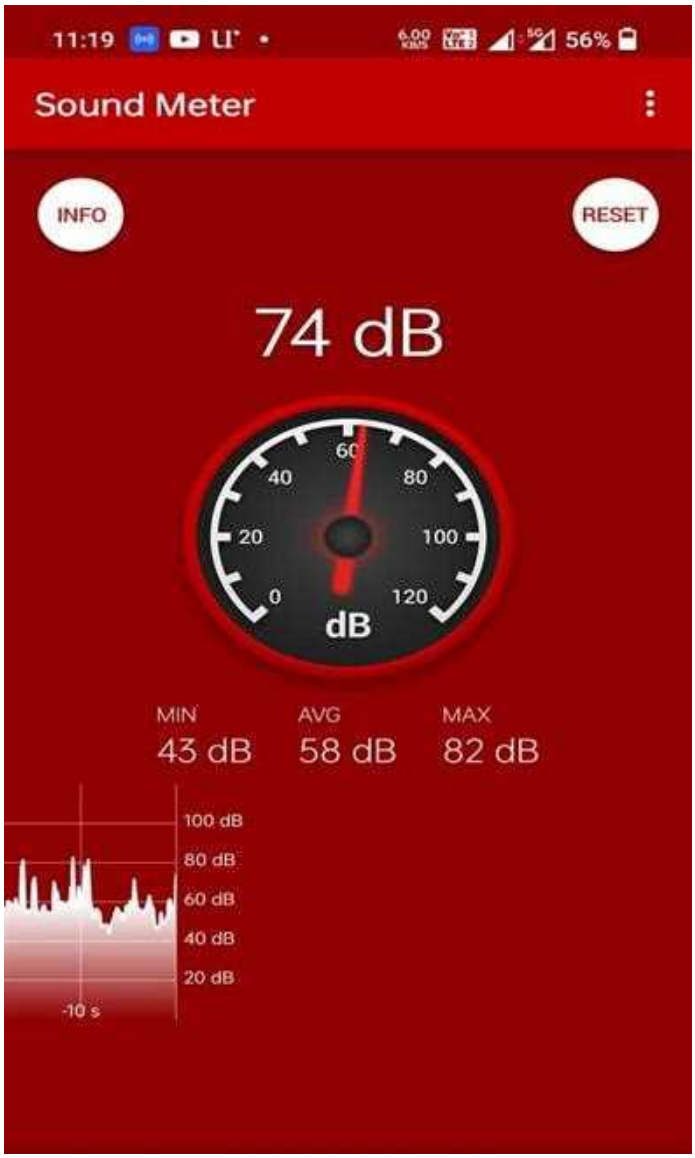
S.No	Common Name	Scientific Name
1.	Common Mynah	*Acridotheres tristis*
2.	White breasted waterhen	*Amaurornis phoenicurus*
3.	House Sparrow	*Passer domesticus*
4.	Crow	*Corvus sp.*
5.	Cuckoo	*Cuculidae*
6.	Snake	*Naja naja*
7.	Cattle egret	*Bubulcus ibis*
8.	Butter Fly	Danaus Genutia
9.	Common pigeon	*Columba livia*
10.	Garden tiger moth	*Arctia caja*

11	Bat	*Chiroptera*
12	Indian owl	*Bubo benghalensis*
13	Leech	*Hirudinea*
14	Earthworm	*Eisenia fetida*
15	Goat	*Capra aegagrus hircus*
16	Ceylon hawk cuckoo	*Hierococcyx varius.*
17	Cow	*Bos Taurus*
18	Hytha (Yellow footed Green Pigeon	*Treron Phoenicopterus*

HOARDING SHOWCASING WILDLIFE CONSERVATION

MATERIALS, STUDY AREA AND METHODS

Noise level meter or noise measuring app (Sound meter), was used to measure the noise level. Noise test, music or sound in your surroundings. It will tell you maximum, minimum and average decibels.



DESCRIPTION OF THE COLLEGE SITE

Nakachari College is located in a rural area of Nakachari, Jorhat district in the south-eastern corner of district headquarter with a distance of about 30kms.Situated in a hilly border area between Assam and Nagaland, the institution is close to the vicinity to Holloongapar Gibbon Sanctuary at approx. 2 km away from the college.

MEASUREMENT PROCEDURE-

The noise level was measured at various important locations of the college area. The measurements were taken for 60 seconds at each location during the day (9am -3 am) and are recorded. Screen shots of noise measurements were taken on the app immediately at the 60th second of each measurement.

RESULT-

The results of the experiments at different places have been tabulated in the following Table-

TABLE: Measurements of Noise in and around the Nakachari College Campus

PLACE	*MEASUREMENT (Duration in Sec.)*	*MINIMUM (dBA)*	*MAXIMUM (dBA)*	*AVERAGE (dBA)*
Classroom	60	36	82	57
Principal Office	60	54	81	61
College field	60	36	82	57
College gate	60	43	82	58
College canteen	60	43	82	59

Source: The measurements were taken with the help of Sound Meter App.

The measurements of noise have been recorded in and outside the campus:

In campus – Minimum:36 dBA; Maximum:82 dBA

Out Campus- Minimum:43 dBA; Maximum:82 dBA

WEATHER REPORT OF THE COLLEGE

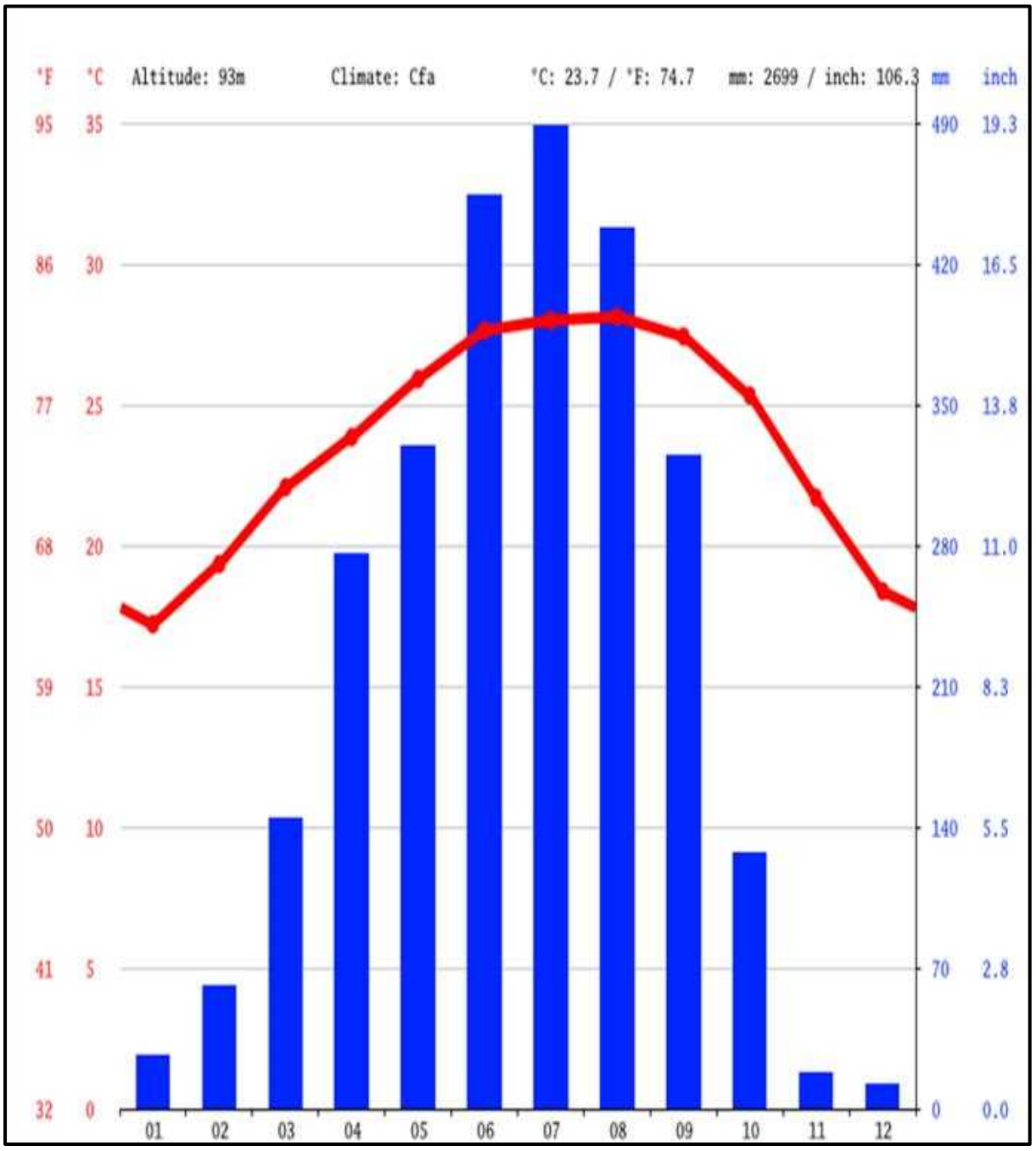
Located at an elevation of 94.12 meters (308.79 feet) above sea level, Jorhat has a subtropical, dry winter climate (Classification: Kwa). The district's yearly temperature is 25.67°C (78.21°F) and it is -0.3 % lower than India's averages. Jorhat typically receives about 96.46 millimetres (3.8 inches) of precipitation and has 66.44 rainy days (18.2% of the time) annually.

WEATHER DATA MONTH WISE IN JORHAT DISTRICT -Source: Google

	January	February	March	April	May	June	July	August	September	October	November	December
Avg. Temperature °C (°F)	17.2 °C (63) °F	19.3 °C (66.8) °F	22.1 °C (71.7) °F	23.8 °C (74.9) °F	25.9 °C (78.6) °F	27.6 °C (81.7) °F	28 °C (82.4) °F	28.1 °C (82.6) °F	27.4 °C (81.3) °F	25.3 °C (77.6) °F	21.7 °C (71.1) °F	18.4 °C (65.1) °F
Min. Temperature °C (°F)	12.3 °C (54.1) °F	14.4 °C (57.9) °F	17.5 °C (63.5) °F	20.2 °C (68.4) °F	22.8 °C (73) °F	25.1 °C (77.2) °F	25.6 °C (78.1) °F	25.6 °C (78) °F	24.7 °C (76.5) °F	21.9 °C (71.5) °F	17.5 °C (63.4) °F	13.7 °C (56.7) °F
Max. Temperature °C (°F)	22.3 °C (72.1) °F	24.3 °C (75.7) °F	26.7 °C (80.1) °F	27.7 °C (81.9) °F	29.4 °C (84.9) °F	30.8 °C (87.4) °F	30.9 °C (87.6) °F	31.1 °C (88) °F	30.6 °C (87.1) °F	28.9 °C (84) °F	26.1 °C (79) °F	23.3 °C (73.9) °F
Precipitation / Rainfall mm (in)	26 (1)	61 (2)	144 (5)	276 (10)	329 (12)	454 (17)	489 (19)	438 (17)	325 (12)	127 (5)	18 (0)	12 (0)
Humidity(%)	75%	71%	69%	78%	82%	85%	85%	85%	85%	82%	78%	78%
Rainy days (d)	4	6	10	14	17	20	21	21	18	9	2	2
avg. Sun hours (hours)	7.6	8.4	9.0	8.1	8.8	9.3	9.4	9.0	8.9	8.6	8.1	7.4

Data: 1991 - 2021 Min. Temperature °C (°F), Max. Temperature °C (°F), Precipitation / Rainfall mm (in), Humidity, Rainy days. Data: 1999 - 2019: avg. Sun hours

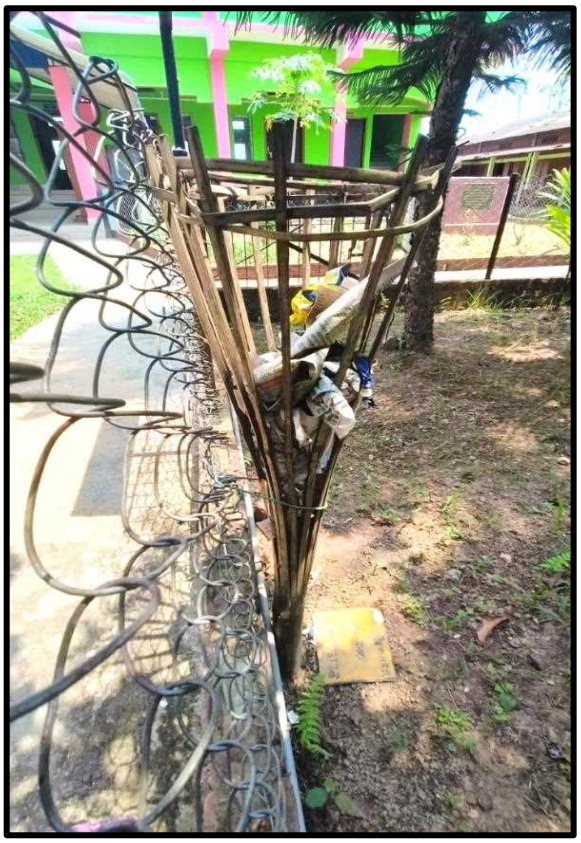
CLIMATE GRAPH MONTH WISE



WASTE DISPOSAL SYSTEM OF THE COLLEGE

Waste disposal is concerned with the removing and destroying or storing damaged, used or unwanted domestic, agricultural or industrial products and substances. It includes burning, burial at landfill sites or at sea and recycling.

The institution has a dumping site to dispose the degradable waste of the college and the decompose is used in the garden areas. The institution has installed bamboo dustbins at various locations to collect the solid waste which is later on disposed of.



BAMBOO DUSTBIN

COMPOST PIT

OTHER IMPORTANT FEATURES OF THE COLLEGE

A. RAIN WATER HARVESTING

Rainwater harvesting is the simple process or technology used to conserve rainwater for future use. The main purpose of the rainwater harvesting is to meet the water requirement throughout the year and in the water crisis period.

Roof Top Rainwater Harvesting Structures-

The college has taken an initiative to create Roof Top Rainwater harvesting structures for collection and storage of rainwater.

ROOFTOP RAIN WATER HARVESTING SYSTEM

B. AWARENESS FOR ENVIRONMENT AND HEALTH PROTECTION

Various environment and health protection placards are hanged in the college campus for awareness about the environment. Through the placards, it has been demonstrated that how important the role of the plants is for the environment. The department students have undertaken an initiative to plant tubs and strategically place them in college corridors. This project aims to enhance the aesthetic appeal of the college and promote a greener environment. Earthen pots are hanged in various places to feed water to birds. The best practice of the college itself is the environmental awareness.

PLACARD ON ENVIRONMENT AWARENESS

EARTHEN POTS TO FEED WATER TO BIRDS

HEALTH RELATED PLACARDS

STUDENTS INITIATIVE TO PLANT TUBS