GREEN AUDIT REPORT
2021-2022

Submitted To

The Principal

Cinnamara College

Pin: 785008

Submitted By

JKM Consultancy Service
Solution For Green Audit

CONTENTS

ACKNOWLEDGEMENT

At first, we would like to thank Cinnamara College,Jorhat management for their cooperation that was extended to us during the entire process.

Our special thanks goes to Dr. Anjan Saikia , Principal, Cinnamara College, Jorhat for giving us necessary inputs to carry out this vital exercise of Green Audit. We are also thankful to other staff members who were actively involved while collecting the data and conducting field measurements.

GREEN AUDIT ASSESMENT TEAM

(INTERNAL)

Dr. Anjan Saikia, Principal, Cinnamara College

Principal
Cinnamara College
Jorhat-08

(EXTERNAL)

Chairperson : Dr. Dulen Saikia, Principal, JKM, MSc, M.Phill, PhD 21/08/2022

Coordinators: Mrs. Pinaki Hazarika,HOD, Deparment of Botany,JKM 21/08/2022

Dimplly Borah, Assistant Professor, Department of Botany,JKM 21/08/2022

Members: Mrs. Ely Phukan, Academic Vice Principal, Science Stream 21/08/2022

Binod Hazarika, Assistant Professor, Department of Chemistry,JKM 21/08/2022

Dr. Dandeswar Dutta,RFRI

GREEN AUDIT CERTIFICATE

This is to certify that a Green Audit for Cinnamara College, Jorhat , Assam has been conducted from March -21 to February -22 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.

21/08/2022

Dr. Dulen Saikia
Chairperson, G-Audit
JKM Consultancy Service

Mrs. Pinaki Hazarika
Co-ordinator, G-Audit
JKM Consultancy Service

Dr. Dulen Saikia

Chairperson

Mrs. Pinaki Hazarika

Coordinator

GAudIT

JKM Consultancy Service

GAudIT

JKM Consultancy Service

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 this 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 Cinnamara region where college is situated.
- To document the ambient environmental condition of weather, air, and noise of the college
- To document the waste disposal system.

METHODOLOGY:

The purpose of the green audit of Cinnamara College, Jorhat is to ensure that the practices followed in the campus are in accordance with the Green Policy of the country. The methodology includes:

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

ABOUT THE COLLEGE:

Cinnamara College was established on 1st June 1991 under the dynamic and astute leadership of eminent educationist Prof Ananda Saikia and eminent advocate of Gauhati High Court Shri Durlov Chandra Mahanta and the able and active support of the people of South Jorhat. The college is located at the centre of three mouzas- Katoni, Garmur and Charaibahi of the Southern part of the Jorhat District. The college campus is located at the vicinity of ONGC Cinnamara Complex, FCI Godown and adjacent to Cinnamara Railway Station, under the jurisdiction of Jorhat Development Authority. The total area of the college campus is 6 bighas. The college is affiliated to Dibrugarh University. It has also attained the status of 2(f) and 12(b) from University Grants Commission. There are a total of 8 departments with honours courses, namely, Assamese, English, Economics, Education, Political Science, History, Geography and Sociology and a non honours department of Philosophy. A total of 588 number of students are studying in the college. Dibrugarh university has approved 14 add on courses to the college. The objective of introducing these courses is to provide some skill to the students for self employment. The college imparts distance education through two study centres of Krishna Kanta Handiqui State Open University and Dibrugarh University Open and Distance Learning.

VISION AND MISSION STATEMENT:

Our vision: The vision of the college is to work with a holistic approach towards making higher education feasible to the poor and underprivileged and to inculcate basic moral, social and cultural values through quality education to students with equity and justice in rural environment.

Our Mission: The mission of the College is to impart quality education to the students and inculcate moral and ethical values for harmonious and peaceful functioning of the society. The college also aims to help the students to adapt to the changing global scenario by imbibing courage, confidence and competitiveness in them.

OBSERVATIONS:

TREE DIVERSITY OF CINNAMARA COLLEGE, JORHAT:

Cinnamara College, Jorhat is located at Jorhat about 12 kms away from Jorhat district Head –Quarter . It is the only higher educational institution in Jorhat a place having its own historical importance from Ahom rule onwards.

The college campus is surrounded by lush green paddy fields. The transportation system leading to the college is very good . It is worth-mentioning that the college is fully equipped with well-furnished buildings and a big playground with necessary civic amenities. The college possesses a plantation area which has a great diversity of tree species performing a variety of functions. Most of these tree species are planted in different periods 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 the greenery and aesthetic values, store carbon and stabilize the soil. Many species of birds are dependent on these trees mainly for food and shelter. Nectar of flowers and plants is a favourite of birds and many insects. Leaf – covered branches keep many animals, such as birds and squirrels, out of reach of predators. Different species display a seemingly endless variety of shapes, forms, texture and vibrant colours.Even individual trees vary their appearance throughout the course of the year as the seasons change. They also remind us the glorious history of our institution in particular. We often make an emotional connection with these trees and sometime become personally attached to the ones that we see every day. A thick belt of large shady trees in the periphery of the college have found to be bringing down noise and cut down dust and storms. Thus, the college has been playing a significant role in maintaining the environment of the entire surrounding areas. The following are the tree species with whom we are being attached--

List of the Plants

Sl No	Local Name	Scientific Name	Total No
1	Aam	*Magnifera indica L.*	01
2	Radhachura	*Cassia javanica*	01
3	Kodom	*Neolamarckia cadamba*	01
4	Jamu	*Syzygium cumini*	02
5	Chationa	*Alstonia schlorais*	03
6	Kordoi	*Averrhoa carambola*	01
7	Himolu	*Bombax ceiba*	03
8	Ajar	*Lagerostroemia speciosa*	01
9	Nayantara	*Catharanthus roseus*	01
10	Bougainvillea	*Bougainvillea*	02
11	Neem	*Azadirachta Indica*	08
12	Joba	*Hibiscus rosa-sinensis*	05
13	Bokul	*Mimusops elengi*	01
14	Tea	*Cammelia sinensis*	03
15	Tokou tree	*Livistona jenkinsiana*	04
16	Sewali Phul	*Nyctanthes Arbortristis L.*	01
17	Silikha	*Terminalia Chebula*	05
18	Kolgos	*Musa sp.*	54
19	Bogori	*Zizyphus jujube*	02
20	Sasi	*Aquilaria melaccensis*	01
21	Nahor	*Mesua ferrea*	06
22	Kothal(Jackfruit)	*Artocarpus heterophyllus*	01
23	Guava	*Psidium guajava*	06
24	Gooseberry	*Phyllanthus emblica*	05
25	Thuja	*Thuja occidentalis*	08
26	Krishna Chura	*Delonix regia*	16
27	Coconut	*Cocos mucifera*	13
28	Rangol(Ashok ful)	*Saraca ashoka*	40
29	Devdaru	*Polyanthia longifolia*	32
30	Mamoi Tamul	*Chrysalidocarpus lutescens*	01
31	Ahot	*Ficus religiosa*	01
32	Litchi	*Litchi chinensis*	05
33	Pine	*Pinus sp.*	07
34	Pomegranate	*Punica granatum*	01
35	Lemon	*Citrus sp.*	01
36	Robab Tenga	*Citrus maxima*	02
37	Segun	*Tectona grandis*	09

Sl No.	Local name	Scientific name	Total No
38	Rose	*Rosa indica*	09
39	Poniol	*Flacourtia jangomas*	01
40	Xunaru	*Cassia fistula*	04
41	Urium	*Bischofia javanica*	01
42	Tagar	*Gardenia jasminoides*	02
43	Patabahar	*Codiaeum variegatum*	10
44	Kamini-kanchan	*Murraya paniculata*	04
45	Akhoiphul	*Jasminum multifolium*	01
46	Betel nut	*Areca catechu*	55
47	Machunda	*Mussaenda sp.*	04
48	Long patabahar	*Codiaeum variegatum*	09

PHOTO GALLERY

Livistona jenkinsiana

Musa sp.

Delonix regia

Litchi chinensis

Pinus sp.

Cocos nucifera

Polyanthia longifolia

Alstonia schlorais

Magnifera indica L

Saraca ashoka

Averrhoa carambola

Thuja occidentalis

FAUNAL DIVERSITY IN CINNAMARA COLLEGE, JORHAT:

The Cinnamara College, Jorhat is in the south part of the Jorhat District of Assam. The wet season in this area is hot, oppressive, and mostly cloudy, while the dry season is warm and clear. Throughout the year, the temperature typically ranges from 51°F to 89°F, with temperatures rarely falling below 47°F or rising above 95°F. The climatic conditions in the Jorhat district as a whole, and particularly in, Cinnamara College are ideal for a diverse range of flora and fauna to thrive and contribute to the rich biodiversity of the district.

The following faunal diversity has been studied and documented on the Cinnamara College, Jorhat campus:

Table: Common and Scientific names of birds and animals

S.No	Common Name	Scientific Name
1.	Common Myna	*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*

NOISE LEVEL IN THE SURROUNDING OF CINNAMARA COLLEGE, JORHAT:

Noise measurement, also known as sound level monitoring, is a process that determines the magnitude of noise in a specific area, such as an industrial or residential area. As noise pollution has increased exponentially in recent years, this process is part of environmental monitoring and testing. Sound or noise has two important properties:

- **Loudness** : The intensity of a person's perception of sound is defined as loudness. Decibels are used to quantify it. A whisper is about 20 dB, a library is about 30 dB, normal conversation is about 35-60 dB, heavy street traffic is about 60-0 dB, boiler factories are about 120 dB, jet planes during take-off are about 150 dB, and rocket engines are about 180 dB. The loudest sound a person can tolerate without feeling ill is around 80 decibels (dB). Sounds above 80 decibels (dB) can be considered Pollutants because they harm the hearing system. The WHO has established 45 decibels as the safe noise level for cities. Noise levels of up to 65 dB are considered tolerable by international standards. Sones are another way to express loudness. One sone is equal to 40 decibels of sound pressure at 1000 hertz. The number of vibrations per second is defined as frequency. Hertz is the abbreviation for it (Hz).
- **Frequency :** The frequency of sound is defined as the number of pressure variations per second that occur when sound travels through air and is measured in Hertz (Hz). The higher the frequency, the higher pitched the sound is perceived to be.

MATERIALS, STUDY AREA & METHODS

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

Figure: Noise Measurement by sound meter app

DESCRIPTION OF THE COLLEGE SITE:

The Cinnamara college is located at the vicinity of ONGC Cinnamara Complex, FCI Godown and adjacent to Cinnamara Railway Station, under the jurisdiction of Jorhat Development Authority.

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 (9 a.m.-3 p.m.) and are recorded. Screen shots of noise measurements were taken on the app immediately at the 60th second of each measurement..

RESULTS

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

Table 1: Measurements of Noise in and around Cinnamara College, Jorhat

PLACE	*MEASUREMENT (Duration in Sec.)*	*MINIMUM (dBA)*	*Maximum (dBA)*	*AVERAGE (dBA)*
College front gate	60	55	85	60
IQAC room	60	48	73	56
Ground floor(site 1)	60	58	66	63
Ground floor(site 2)	60	47	77	60
1st floor (site3)	60	35	77	57
Meuseum room	60	55	73	59
Administrative building	60	44	59	50
Auditorium	60	55	73	59
Computer laboratory	60	36	72	58
Library	60	45	56	51

Source: The measurements were taken with the help of sound meter app.

The measurements of noise have been recorded in and outside of college area:

Inside the campus: 35-77

Outside the campus: 55-85

WATER ANALYSIS REPORT OF CINNAMARA COLLEGE:

Water is the most essential element of our life. The importance of ensuring that the quality of water is sound becomes very essential as drinking or using contaminated water can result in severe illness or death.Water quality testing can provide valuable data on the condition of a particular body of water, and whether it may need special treatment before use. It is also important to conserve, protect and manage the availability and usage of water resources to ensure sustainable uses of it. Our college also examines the quality and usage of water in the college campus.

TLabs
TEA RESEARCH ASSOCIATION
TOCKLAI TEA RESEARCH INSTITUTE
JORHAT-785 008, ASSAM, INDIA
Email: analytical.services@tocklai.net
Web: www.tocklai.org

TEST REPORT

1. Report No.:3502/ASD/09/023/2040	Date: 24.02.2022
2. Name and address of customer	The Principal Cinnamara College P.O. Cinnamara Jorhat – 785 008 Assam
3. Ref. of customer's letter	No. CC/TTRI/JORHAT/WATER 2022/45, dated 17.02.2022
4. Sample description	Water sample
5. Date of sample receipt/payment	17.02.2022
6. Specification, if any	To analyze specified parameters
7. Date of performance of test	From 18.02.2022 to 24.02.2022

8. **Results:**

Sample Identification Mark	Test parameter	Result	Unit	Specifications* mg/l, Max
	Arsenic (as As)	0.045	mg/l	0.01* 0.05**
	Iron (as Fe)	<0.25	mg/l	0.3* No relaxation**
	Fluoride (as F)	0.27	mg/l	1.0* 1.5**
	pH value	6.73	--	6.5-8.5* No relaxation**

*Indian Standard IS 10500:2012 : Drinking water specifications (Second Revision) Amendment No.1, June, 2015
* Requirement (Acceptable limit)
** Permissible limit in the absence of alternate source

Remarks: The test results comply with the requirements of Indian Standard IS 10500:2012 (Amendment No.1, June, 2015) for the above mentioned parameters following our decision rule.

Notes:
- Sample(s) not drawn by us.
- Results relate to the sample(s) tested only.
- This report will not be used for any litigation purposes.
- This test report should not be reproduced except in full without the written approval of the Director, TRA.

END OF TEST REPORT

(P. K. Dutta)
Senior Technical Officer
Authorised Signatory

Sd/-
(Dr. R. Pal)
Principal Scientist
Authorised Signatory

For testing related enquiries please contact:
Dr. Raktim Pal, Principal Scientist
In-Charge, Analytical Services Department

WEATHER DATA MONTH WISE JORHAT (Source: Google)

Location: 26.42'31"° N, 94.14'29"° E

The climate in Jorhat is warm and temperate. Jorhat is in the northern hemisphere Here, the average temperature is about 23.7 °C (74.7 °F) and about 2699 mm i.e 106.3 inch of precipitation falls annually. The month with the highest relative humidity is July (85.22 %). The month with the lowest relative humidity is March (69.03 %).

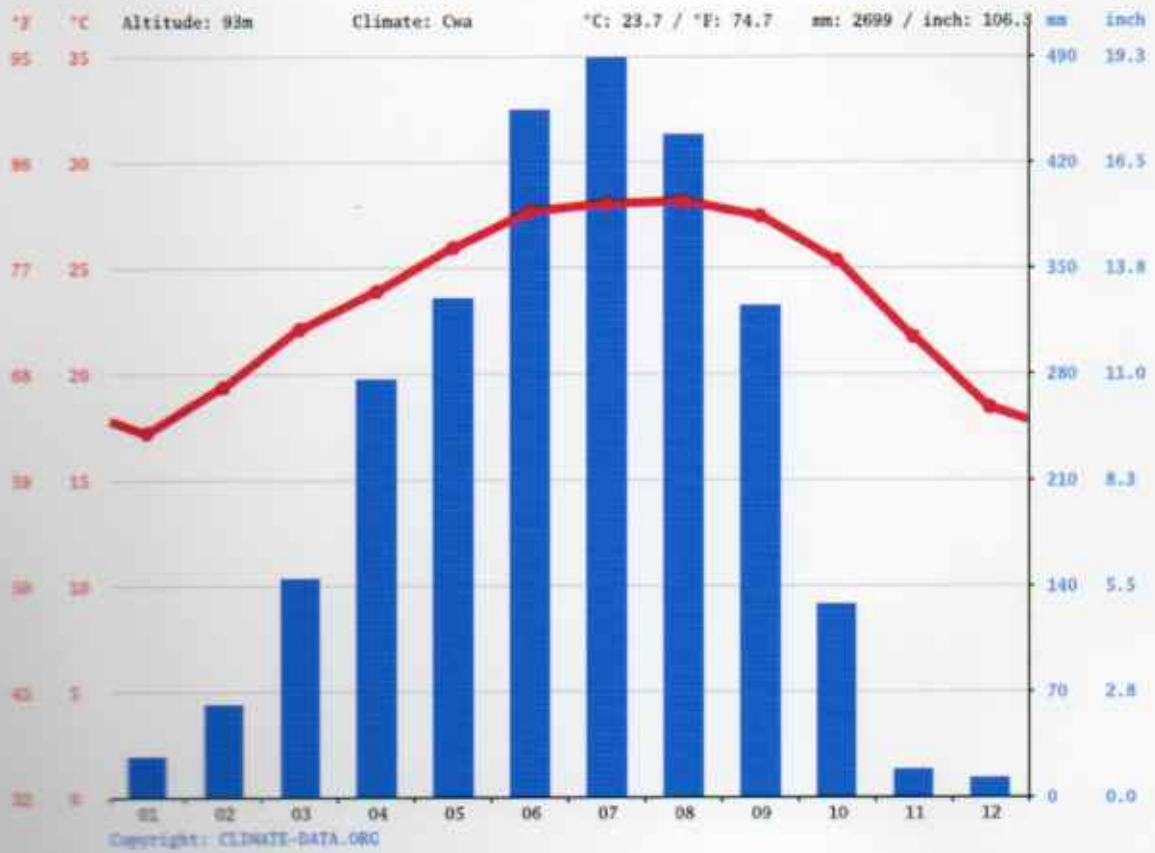
The month of July has the highest number of rainy days i.e 28.20 days.. The month with the lowest number of rainy days is December (2.17 days).

Summer starts here at the end of June and ends in September. There are the months of summer: June, July, August, September. The driest month is December, with 12 mm of rain and most of the precipitation falls in July, with 489 mm of rain.

Parameters	Jan	Feb	Mar	April	May	June	July	Aug	Sep	Oct	Nov	De c
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 (2.4)	144 (5.7)	276 (10.9)	329 (13)	454 (17.9)	489 (19.3)	438 (17.2)	32 5 (12.8)	127 (5)	18 (0.7)	12 (0.5)
Humidity (%)	75%	71%	69.03%	78%	82%	85%	85.22%	85%	85 %	82%	78%	78%
Rainy days (d)	4	6	10	14	17	20	21	21	18	9	2	2.17
Avg. Sun 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

Table: Weather report of Jorhat District for the period of 2021-22

CLIMATE GRAPH MONTH WISE



WASTE DISPOSAL IN THE COLLEGE CAMPUS:

Generation of wastes from tree droppings and lawn management is a major solid waste generated in the campus.They are segregated at source by providing separate cabins for Disposable and Non Disposable Waste.

Reuse of single sided used papers for writing and printing in all the departments has been carried out to reduce paper wastes.. Both side printing is also practied as per requirement. Metal waste and wooden waste is stored and given to authorized scrap agents for further processing. The solid waste is collected by the municipal cooperation and disposed by their method.