

Green Audit Report
of
NABA BALLYGUNGE MAHAVIDYALAYA



2021-2022



INTERNAL QUALITY ASSURANCE CELL
(IQAC)

27E, Bosepukur Road, Kolkata – 700 042.

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EXECUTIVE SUMMARY

Rapid urbanization and economic development at local, regional and global level has led to several environmental and ecological crises. On this background it becomes essential to adopt the system of the green campus for the institute which will lead for sustainable development. Naba Ballygung Mahavidyalaya is deeply concerned and unconditionally believes that there is an urgent need to address these fundamental problems and reverse the trends. Being a premier institution of higher studies, the college has initiated 'The Green Campus' programme is conducted every year which activity promotes various project for environmental protection and sustainability.

Purpose of this audit is to ensure that the practices followed in the campus are in accordance with the green policy adopted by the institution, it works on several facets of Green Campus including water conservation, electricity conservation, tree plantation, waste management, paperless work, mapping of biodiversity etc. With this in mind, specific objectives of the audit is to evaluate adequacy of the management control framework of environment sustainability as well as the degree to which the departments are in compliance with the applicable regulations, policies and standards. It can make a tremendous impact on students' health and learning, college operational costs and the environment. The criteria methods and recommendations used in the audit were based on the identified risks.

Sonar Bharat Environment & Ecology Pvt. Ltd.

Parimal Sankar

Director

CHAPTER - 1

INTRODUCTION

1.1 Green Audit

Environmental or Green Audit is a systematic, documented, periodic and objective review by regulated entities of facility operations and practices adopted to meet the environmental requirements (EPA, 2003). In other words, it is a management tool, comprising of systematic, documented, periodic and objective evaluation of how well environmental organization, management and equipment are performing with the aim of helping to safeguard the environment by facilitating management control of practices and assessing compliance with Institutional policies, which would include regulatory requirements and standards applicable.

Environmental auditing is essentially an environmental management tool for re assuring the effects of certain activities on the environment against set criteria or standards. Depending on the types of standards and the focus of the audit, there are different types of environmental audit. Organizations of all kinds now recognize the importance of environmental matters and accept that their environmental performance will be scrutinized by a wide range of interested parties.

Considering the present environmental problems of pollution and excessive use of natural resources, Honourable Prime Minister, Shri. Narendra Modi has declared the Mission of Swachh Bharat Abhiyan. Also, College Grants Commission has mentioned the "Green Campus, Clean Campus" mission mandatory for all higher educational institutes. 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.

1.2 Why Green Audit

- To ensure that the performance of the institution with respect to environmental activities is in compliance with existing laws and regulations.
- To check the functionality and their operating success including water supply, energy related matters and other similar matters that are related to green operations in the campus
- To formulate or update the institution's environmental policy.
- To measure the environmental impact of operational process related to green activities in the campus.
- To measure the performance of each green related operations and actions in the campus.
- To generate a data base of green activities for continuous monitoring to assess the success of each of them.
- To identify future potential liabilities.
- To align the institution's developmental and day to day activities with the stated vision, mission, strategies.
- To identify possible ways to reduce expenditure and running costs on equipments, appliances, etc. or try to enhance revenue income.

1.3 Goals of Green Audit

College has conducted a green audit with specific goals as:

- Assess facility of different types of waste management.
- Increase environmental awareness through out campus.
- Identification and documentation of green practices followed by College.
- Identify strengths and weaknesses in green practices.
- Conduct a survey to know the ground reality about green practices.
- Analyze and suggest solutions for problems identified from the survey.
- Identify and assess environmental risk.

- The long-term goal of the environmental audit program is to collect baseline data of environmental parameters and resolve environmental issues.

- To motivate staff for optimized sustainable use of available resources.

1.4 Objective of Green Audit

The general objective of green audit is to prepare a baseline report on biodiversity and other resources, measures to mitigate resource wastage and improve resource quality and sustainable practices. The specific objectives are:

- To prepare a checklist of flora and fauna diversity in and around the college campus.
- To suggest measures to improve biodiversity with in the college campus.
- To monitor the energy consumption pattern of the college.
- To assess the quantity of water usage within the college campus.
- To suggest sustainable energy usage and water conservation practices.
- To find out various sources of organic and solid waste generation and mitigation possibilities.
- To inculcate values of sustainable development practices through green audit mechanism.

1.5 About Criteria VII of NAAC

National Assessment and Accreditation Council (NAAC) is a self-governing organization that rated the institutions according to the scores assigned at the time of accreditation of the institution. Green Audit has become a mandatory procedure for educational institutes under Criterion VII of NAAC. The intention of the green audits is to upgrade the environmental condition inside and around the institution. It is performed by considering environmental parameters like water and wastewater accounting, energy conservation, waste management, air, noise monitoring, etc. for making the institution eco-friendlier.

Students are the major strength of any academic institution. Practicing green action in any educational institution will inculcate the good habit of caring for natural resources in students. Many environmental activities like plantation and nurturing saplings and trees, Cleanliness drives, no vehicle day, Rainwater harvesting, etc. will make the students good citizens of the country. Through Green Audit, higher educational institutions can ensure that they contribute towards the reduction of global warming through Carbon Foot print reduction measures.

1.6 Benefit of Green Audit to an Educational Institute

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

- It would help to protect the environment in and around the campus.
- Recognize the cost-saving methods through waste minimization and energy conservation.
- Empower the organization to frame a better environmental performance.
- It portrays a good image of the institution through its clean and green campus.
- More efficient resource management.
- To create a green campus.

- To enable waste management through reduction of waste generation, solid and waste.
- To create plastic-free campus and evolve health consciousness among the Stake holder.
- Recognize the cost-saving methods through waste minimizing and managing.
- Authenticate conformity with the implemented laws.
- Empower the organizations to frame a better environmental performance.
- Enhance the alertness for environmental guidelines and duties.

- Impart environmental education through systematic environmental management approach and Improving environmental standards.
- Bench marking for environmental protection initiatives.
- Financial savings through a reduction in re source use.

- Development of ownership, personal and social responsibility for the College and its environment.

- Developing an environmental ethic and value systems in youngsters.

- Green auditing should become a valuable tool in the management and monitoring of environmental and sustainable development programs of the College.

- Finally, it will help to build a positive impression through green initiatives for the up coming NAAC visit.

1.7 Introduction of Auditing Firm

Name of Firm	M/s. Sonar Bharat Environment & Ecology (P) Ltd.
Address	35, C. R. Avenue, 3 rd floor, Kolkata - 700012.
Contact Details	033-40031179/033-22113034

Details of Team Member

Sr. No.	Name	Designation/ Technical	Technical Experience /Qualification
1	Shri Parimal Sarkar	Legal Expert	<ul style="list-style-type: none">➤ M.Sc. in Disaster Management➤ Post Graduate Diploma in Environmental Law from National Law School, Bangalore➤ Lead Auditor in ISO 14000 (Environmental Management)
2	Shri Subrata De Sarkar	General Manager	<ul style="list-style-type: none">➤ General Manager in Central Public Sector undertaking.➤ 12 years experience in Environmental Auditing➤ Lead Auditor in ISO 50001:2011

List of Experts

Sl. No.	Name	Designation/Qualification	Experience
1	Shri Suvra Majumdar	<ul style="list-style-type: none"> ➤ Post Graduate Diploma in Energy Management (MBA) ➤ B.Tech (Electrical Engineering) 	<ul style="list-style-type: none"> ➤ 15 years experience of Energy audit
2	Shri Gautam Ghosh	<ul style="list-style-type: none"> ➤ Diploma in Mechanical & Electrical Engineering from Calcutta Technical School 	<ul style="list-style-type: none"> ➤ 27 Years experience of working in electrical engineering department in different industries. ➤ 12 years experience in independent electrical auditing
3	Shri Suman Chattaraj	Environmental Specialist	<ul style="list-style-type: none"> ➤ M.Tech in Environmental Science ➤ 20 years experience in Environmental Impact Studies and Auditing
4	Amit Poddar	<ul style="list-style-type: none"> ➤ Diploma in Industrial Safety, M.Sc. Biotechnology from Berhampur College 	<ul style="list-style-type: none"> ➤ 27 years experience of working in Industrial Area.
5	P. K. Koley	<ul style="list-style-type: none"> ➤ M.Tech in "Safety and Occupational Health" from BESU (now IEST) 	<ul style="list-style-type: none"> ➤ 30 years experience of working in BPCL.

1.8 List of Instruments Energy Audit

Following are the instrument used at the time of the Energy Audit.

Sr.	Instrument	Make/Sr.No.
1	Digital LUX Meter	HTC/2222600
2	Digital Micro OHM Meter	Innova/l-259
3	Digital Multi Meter	KusamMeco/162180630
4	Digital Clampmeter	Waco/1910149152
5	Meger	Waco/307421
6	Load analyser	Waco/2954563

1.9 List of Laboratory Instruments for Environmental Monitoring

SL. NO.	NAME OF EQUIPMENT	MAKE	MODEL
1	GAS CHROMATOGRAPH WITH FID, TSD.	VARIAN	CP3800
2	GAS CHROMATOGRAPH MASS SPECTROMETER WITH ECD	VARIAN	CP 3800 SATURN 2200
3	GAS CHROMA TOGRAPH WITH FID for Air	DANI	Master GC
4	ION CHROMATOGRAPH	Thermo Fisher Scientific	DIONEXICS 1100
5	H.P.L.C.	VARIAN	SERIES 200
6	FTIR	Thermo Fisher Scientific	Nicolet IS10
7	ATOMIC ABSORPTION SPECTRROPHOTOMETER	VARIAN	AA 2406TA 120
8	MERCURY ANALYSER	EC	MAS 5840
9	FLAME PHOTOMETER	LOWERENCE & MAYO	381
10	SPECTRO PHOTOMETER	VARIAN	CARY 50
11	BOD INCUBATOR	MULTISPAN	DIGITAL
12	ELECTRONIC MICRO BALANCE	Citizen	CMSF

1.10 List of Field Equipment in Environment Department

Sl. No.	Name of Equipment	Make	Model
1	Field Dust Sampler	Envirotech/LataEnvirotech	APM – 550, PM 2.5 & 10
2	Respirable Dust Sampler	Envirotech/LataEnvirotech	APM-460BL
3	Stack Kit Sampler	Envirotech/LataEnvirotech	APM-620, PM-602
4	Sound Level Meter (AUTOMEDTIC)	Envirotech	SLM-101
5	Sound Level Meter	Lutron	SLM-4001
6	Local Air Quality Sampler	Vayubodhan	APM-414
7	Auto Metric Weather Monitor	Spectrum Technology	WM-272
8	Depth Sampler	NA	NA

1.11 General steps involved in Green Audit

- a) Systematic and exhaustive data collection.
- b) Evidence based documentation of activities.
- c) Regular monitoring.
- d) Provide standards and methods for improvement by establishing cost effective green action plan.

CHAPTER – 2

NABA BALLYGUNGE MAHAVIDYALAYA

2.1 History of the College

Naba Ballygunge Mahavidyalaya, Kolkata formerly known as Charuchandra Evening College, was established in 1985 and the institution has been renamed as Naba Ballygunge Mahavidyalaya (New Ballygunge College) with effect from 2005. College is a co-educational with Commerce and Arts streams. Efforts are being made to introduce Vocational Stream. Honours courses in several subjects of both Arts and Commerce are taught in this three year degree college. With growing popularity, Naba Ballygunge Mahavidyalaya began to win laurels after laurels in the field of cultural activities, games and sports and for academic performance.

2.2 Vision & Mission of the College:

Vision :

The college has been established with the vision of providing best possible education and infusing a sense of discipline, self reliance and social responsibility among the young generation, irrespective of their socio-economic status. The chief mission of the college is to make a generation of young, enthusiastic, conscious and responsible future citizens who in turn will bring in enlightenment, development, integrity and non violence through their services to the society and the nation. The mission statement of the college is to reflect the institution's distinctness in terms of taking into consideration the need the locality where the college is situated. The students whom the college seeks to serve are mostly coming from the socio-economically weaker sections of the society. The college's tradition of imparting quality education uniformly to all students is also one of the prominent characteristics reflected in the mission statement.

Mission :

The mission statement of the college is clearly stated in the college Prospectus which is available to all the students, teachers, staff and other stakeholders of the college. The Principal addresses the college freshers for a general orientation where the vision and mission of the college is conveyed. The college teachers in their class rooms also communicate to the students the vision and mission of the college. The various stakeholders of the college are the Governing Body, the University of Calcutta, the University Grants Commission, the Government of West Bengal and other external institutions who have a close relation with the college. They are regularly informed and consulted about the goals and objectives of the college through Prospectus, Governing Body Meeting, and various reports to the concerned bodies (such as Annual Report, Audited Financial Accounts, Academic Council Report, Teachers' Council Report, Utilisation Report of UGC sanctioned funds, and so on).

The college has its own website(www.nbmahavidyalaya.in) which is periodically updated. All the necessary informations relating to seminars, workshops, cultural programmes etc. are posted on the website to keep the students, staff, faculty and other stakeholders regularly updated.

The parents/guardians are one of the valuable stakeholders of the college. To develop a sense of belonging towards the college, parent-teacher meets are held regularly at the college premises.

2.3 Goals & Objective :

The college has been established to fulfil specific mission and goals. Some of our missions, goals and motto are stated below:

- To provide the students with the best possible education and quality teaching.
- To develop social awareness conducive to responsible citizen.
- To help poor students and the students of backward classes in different ways.
- To extend opportunities in the areas of job-oriented programmes.
- To motivate the students in extra-curricular activities.

- To infuse into the students a sense of discipline and co-operation in life.
- To build up an all-round personality.
- To ensure a healthy teacher-student relationship within the institution.
- To create a wider platform of acquiring knowledge beyond the syllabus.

- To promote an invigorating and congenial atmosphere in the institution for mental and physical health of the students.

- To create employment opportunities for the outgoing students through recruitment cell of the institution.

- To create job opportunities by interaction with expert of industries, trade and commerce.

2.4 Campus Infrastructure:

Naba Ballygung Mahavidyalaya is ragging free Green Campus with free internet facility. It has a very good and systematic building infrastructure. All the classrooms are spacious, well ventilated and comfortable. Total area of college over 886.26 sq.Meter. The college following facilities are available:

College Seminar & Workshop :

- The college seminars on various issues and arranges workshops on emerging issues with the financial assistance of UGC or otherwise as when necessary. The teachers and students also participate in seminar and workshops organised by other institution

Common Room :

- Separate common rooms have been provided for girls and boys students and there are provision for indoor games and other co-curricular activities.

Photocopier :

- For the benefit of the students, there is a photocopier or xerox machine inside the college campus where reading materials can be photocopied at low price.

Canteen :

- The college canteen provides refreshment at cheap rates for the students and staff.

Library :

- The college provides Book Bank facilities to those students who are economically poor. Usually one set of three books are issued which the student may keep till the completion of the examination. To avail book bank facilities student should apply to the principal giving details of family income etc, immediately after he issuance of Notice in the regard. All book must be return with in 3 days from the last University examination.

Wi-Fi :

- We have created free Wi-Fi zone at our college campus. Students can avail this facility for academic purpose.

Anti Ragging Cell :

- Ragging is strictly prohibited in the College campus. Any students found involved in ragging will be punished severely by the Administration. Also we have RTI Cell following Government directives.

Purified Drinking Water :

- Aqua Guards and Cooler have been installed in every floor for purifying drinking water supply with proper sanitation.

Cycle Stand & Car Parking :

Students and employees of the college from far-off suburbs and rural localities can keep their bicycle free of cost at the Cycle stand. There is also space for car-parking.

CHAPTER - 3

GREEN AUDIT METHODOLOGY

3.1 Utility of Green Auditing

Green audit is used to improve existing anthropogenic activities, with the object to reduce the adverse effects of these activities upon environment. An environmental auditor will study an organization's efforts to conserve the environment in a systematic and documented manner and will produce an environmental audit report.

3.2 Objectives of the Study

The basic objective of green audit is to promote environment management and conservation in the college campus. Purpose of the audit is to identify, quantify, describe and prioritize the framework of environmental sustainability in compliance with the applicable regulations, policies and standards. Major objectives of carrying out green audit are:

- To introduce an awareness among the students regarding real concerns of environment and its sustainability.
- To secure the environment and cut down the threats posed to human health by analyzing the pattern and extent of resource use on the campus.
- To establish a baseline data to assess future sustainability by avoiding the interruptions in environment that are more difficult to handle and their corrections requires high cost.
- To bring out a present status report on environmental compliance.

3.3 Methodology

In order to perform green audit, methodology included different techniques such as physical inspection of the campuses, observation and review of the documentation, interviewing key persons and data analysis, measurement of the present status of environment management in the campuses:

- Water quality assessment, consumption and management
- Air quality assessment and management
- Electricity consumption and management
- Sound pollution monitoring
- Waste management
- Bio diversity status of the campus
- Land use and land coverage
- Rain water Harvesting
- Use of alternate energy sources.

CHAPTER - 4


LAND USE ANALYSIS, NABA BALLYGUNJ MAHAVIDYALAYA, KOLKATA.

4.1 General overview of the concept of land use:

Land use refers to man's activities and the various uses which are carried on and derived from land. Viewing the earth from space, it is now very crucial in man's activities on natural resource. In situations of rapid changes in land use, observations of the Earth from space give the information of human activities and utilization of the landscapes.

4.2 Methodology adopted for land use mapping

Three types of data that are GPS points, field survey data and Google earth data for Geo-referencing have been used in this study. Land use map of the study area have been prepared using field survey

Land Use System The Naba Ballygunj Mahavidyalaya, located behind Kasba Police Station, District - Kolkata, West Bengal, geographically lies between  22.5199°N and 88.3830°E. The College has a total of 886.26 Sq.Mtr. of land which was transferred from Department of Land, Government of West Bengal for the purpose of creating infrastructure required for the development of various Offices/ Departments of the College. The total buildup area of the College is 833.65 Sq.Mtr. which includes Academic/ Administrative building, computer lab, toilets, classroom, common room, canteen and parking area. The remaining 52.61 Sq. Mtr. includes the park/garden, plantation area and forest green cover etc.

CLASSIFICATION SCHEME FOR LAND USE ANALYSIS OF BUILT UP AREA

Level-I	Level-II
1. Built- up land area	1.1 Dense 1.2 Moderate 1.3 Sparse

Therefore, attempt has been made in this study to map land use for Naba Ballygung Mahavidyalaya with a view to detect the land consumption in the built-up land area.

LAND USE DATA OF COLLEGE OF NABA BALLYGUNG MAHAVIDYALAYA, KOLKATA

CATEGORIES OF LAND USE	AREA IN SQ METRES
OPEN SPACE AND PLANTATION	52.61
GROUND COVERAGE	833.65
TOTAL LAND AREA	886.26

Ground coverage of 94.06% (i.e 833.65 sq.mtr.) consists of the buildings.

FINDINGS:

Naba Ballygung Mahavidyalaya, which was established in the year 1985, has an eco-friendly environment. It has a long legacy of healthy environmental practices including periodic plantation, their preservation and maintenance. Its land use is such that about 5.94% of the total area is occupied by open land and plantation that generates a better and sustainable campus environment.

CHAPTER – 5

WATER QUALITY ASSESSMENT CONSUMPTION & MANAGEMENT

5.1 Water Quality Analysis Test Report



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NABL ACCREDITED, WBPCB & ISO 9001:2015 CERTIFIED LABORATORY

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 9830093976

DOC NO : QLS/SAMP/08-0/00

TEST REPORT

Name & Address Of the Customer :	Report No. : QLS/MR/W/22-23/C/318 Date : 22.06.2022 Sample No. : QLS/MR/W/22-23/318 Sample Description : Drinking Water Sample Location : Aquaguard Sample Drawn On : 07.06.2022 Date of Performance : 08.06.2022 - 15.06.2022
---	--

Analysis Result

(A) Microbiological Analysis

Sl. No.	Characteristic	Limit as per Drinking Water Standard : IS:10500, 2012 RA: 2018 Amd. 2	Test Method	Result
1.	Total Coliform Bacteria/100ml	Not Detectable	IS 15185-2016	Not Detected
2.	E.coli /100ml	Not Detectable	IS 15185: 2016	Not Detected

(B) Chemical Analysis

Sl. No.	Test Parameter	Test Method	As per Drinking Water Standard : IS:10500, 2012 RA: 2018 Amd. 1 & 2		Result
			Acceptable Limit	Permissible Limit	
1.	pH Value at 25°C	IS 3025 (Part 1): 1984 (RA: 2019)	6.5-8.5	No Relaxation	7.30
2.	Turbidity in NTU	IS 3025 (Part 10): 1984 (RA: 2017)	1	5	<1.0
3.	Total Dissolved Solids (TDS) in mg/l	IS 3025 (Part 16): 1984 (RA: 2017)	500	2000	350
4.	Calcium (as Ca) in mg/l	IS 3025 (Part 40): 1991 (RA: 2019)	75	200	24.9
5.	Chloride (as Cl) in mg/l	IS 3025 (Part 37): 1988 (RA: 2019)	250	1000	19.1
6.	Iron (as Fe) in mg/l	IS 3025 (Part 13): 1988 (RA: 2019)	1.0	No Relaxation	0.12
7.	Magnesium (as Mg) in mg/l	APHA, 24th Edition, 2013, 9500 Mg	30	100	11.1
8.	Nitrate (as NO ₃) in mg/l	IS 3025 (Part 34): 1988 (RA: 2019)	45	No Relaxation	<0.5
9.	Free Residual Chlorine in mg/l	IS 3025 (Part 20): 1986 (RA: 2017)	0.2	1.0	<0.1
10.	Sulphate (as SO ₄) in mg/l	IS 3025 (Part 24): 1986 (RA: 2017)	200	400	16.1
11.	Alkalinity (as CaCO ₃) in mg/l	IS 3025 (Part 23): 1986 (RA: 2019)	200	600	118.4
12.	Total Arsenic (as As) in mg/l	IS 3025 (Part 37): 1988 (RA: 2019)	0.01	No Relaxation	<0.01
13.	Total Hardness (as CaCO ₃) in mg/l	IS 3025 (Part 21): 2019	200	600	109.5

Report Prepared By:  for Qualissure Laboratory Services
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 Samy Chakraborty, Microbiologist
 (Authorized Signatory)

for Qualissure Laboratory Services
 Reviewed & Authorized By: 
 Purnapriya Banerjee, Chemist
 (Authorized Signatory)

— End of Report —

- The results relate only to the item(s) tested.
- This Test Report shall not be reproduced without the permission of Qualissure Laboratory Services.
- The reserved part of sample(s), except perishable sample(s), shall be retained for 30 days from the date of issue of the Test Report.

SOURCES OF WATER

- From Municipality

Total water storage capacity in the Institute.

Sl. No.	Name of Building	Storage Resources	Number of Tank	Qty. (Liters)	Total Storage capacity in (Liter)
1	Main College Building	Municipality Water Supply	4	1000	4000
Total Storage capacity					4000


Total requirement of water is drawn from the Municipal Corporation in the campus.

The total water consumption in the Campus is 4000 litres per day. The per capita utilization of the College is 2.60 Litres per day. The utilizations of such a huge resource of water include usage for drinking, cleaning, laboratory use, garden use.



Fig. 1 : Drinking water storage tank

WASTE WATER TEST REPORT



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9830093976


DOC NO : QLS/SAMP/08-D/00


TEST REPORT

Name & Address Of the Customer : Naba Ballygunj Mahavidyalaya 27E, Bosepukur Road, Kolkata-700107.	Report No. : QLS/MR/W/22-23/C/319 Date : 22.06.2022 Sample No. : QLS/MR/W/22-23/319 Sample Description : Waste Water Sample Location : Drain Water Sample Drawn On : 07.06.2022 Date of Performance : 08.06.2022 - 15.06.2022
--	---


Analysis Result

Sl. No.	Parameter	TEST METHOD	Result	Limit as per CPCB for discharge of effluents	
				Inland Surface Water	Public Sewers
1.	pH at 25°C	APHA 24 th Edition-2023, 4500 H+	7.85	5.5 to 9.0	5.5 to 9.0
2.	Total Suspended Solid in mg/l	APHA 24 th Edition-2023, 2540 D	22	100	600
3.	Chemical Oxygen Demand (as COD) mg/l	APHA 24 th Edition-2023, 5220B	117	250	---
4.	Biochemical Oxygen Demand (as BOD) mg/l	IS 3025 (Part 44)-1993, RA:2019	29	30	350
5.	Oil & Grease in mg/l	APHA 24 th Edition-2023, 5520B	3.9	10	20

Report Prepared By: 



for Qualissure Laboratory Services
Reviewed & Authorized By



Bishnupriya Banerjee, Chemist
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Rain Water Harvesting System :

Rain Water Harvesting System is not available college campus area, it is planned to do it in future.

CHAPTER – 6

AMBIENT AIR QUALITY ASSESSMENT AND MANAGEMENT

6.1 Air Quality Test Report



Qualissure Laboratory Services

NABL ACCREDITED, WBPCB & ISO 9001:2015 CERTIFIED LABORATORY

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Kolkata - 700107
Email : qualissure@gmail.com
Mob. No. : 9831287086
9830093976

DOC NO : QLS/SAMP/08-A/00

TEST REPORT


Name & Address Of the Customer: Naba Ballygung Mahavidyalaya 27E, Bosepukur Road, Kolkata-700107.	Report No. : QLS/MR/A/22-23/C/382 Date : 22.06.2022 Sample No. : QLS/MR/A/22-23/382 Sample Description : Ambient Air Sample Mark : Near Main Gate
---	--


Analysis Result


Location : Near Main Gate	Date of sampling : 07-08.06.2022
Sampling Done by : P. Biswas	Sampling done as per : CPCB Guidelines (Volume-1)
Environmental Condition : Clear & Sunny	Average Temperature : 34°C
Barometric Pressure : 754 mm of Hg	Average Humidity : 62%

Sl. No.	Pollutants	Result	Limit as per CPCB	Method of Test Reference
1	Particulate matter (<10µm) in µg/m ³	76	100	IS: 5182 (Part-23), RA-2017
2	Particulate matter (<2.5µm) in µg/m ³	37	60	USEPA CFR-40, Part-50, Appendix-L
3	Sulphur dioxide (SO ₂) in µg/m ³	7.1	80	IS: 5182 (Part-2)-2001, RA-2017
4	Nitrogen dioxide (NO ₂) in µg/m ³	30.4	80	IS: 5182 (Part- 6)-2006, RA-2017
5	Carbon Monoxide (CO) in µg/m ³	752	2000	IS: 5182 (Part-10):1999, RA-2014

NOTE: Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality.

Report Prepared By: 



Reviewed & Authorized By

Bhishupriya Baslerjee, Chemist
(Authorized Signatory)

-----End of Report-----

- The results relate only to the item(s) tested.
- This Test Report shall not be reproduced without the permission of Qualissure Laboratory Services.
- The reserved part of sample(s), except perishable sample(s), shall be retained for 30 days from the date of issue of the Test Report.

FINDINGS

Central Pollution Control Board, New Delhi has set guidelines to monitor and analyze the air pollution quality parameters. The trees covers on the campus are the leading sources to absorb CO₂ and release enough fresh O₂ across the Campus. The result shows that NBM Campus's air quality status is very good as compared to other locations. It is identified that KWC campus is a green campus with observed minimum air pollution as compared to other Ambient Air Pollution Centers located in different parts of the city.

Sources of air pollution: It was observed and revealed from data that the only possible sources of pollution in the College campus are as use of diesel / petrol vehicles, air-conditioners, power generator, kitchen waste and other biodegradable waste from canteen, use of electronic appliances and other. 20 student & employees use two wheeler and rest 1515 people use public transport for commuting to the college. There is no industry around the college, the college surrounded by greenery. So the possibility of air pollution is very low.


CHAPTER – 7

NOISE MONITORING

7.1 Ambient Noise Monitoring Status:

Ambient noise monitoring was carried out in Naba Ballygunj Mahavidyalaya campus. The sampling was carried out using calibrated Sound Level Meter by logarithmic scale in decibels (dB). The noise readings were collected at day and night time.

TEST REPORT



Qualissure Laboratory Services
NABL ACCREDITED, WPCB & ISO 9001:2015 CERTIFIED LABORATORY

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9830093976

DOC NO : QLS/SAMP/08-C/00

TEST REPORT

Name & Address Of the Customer: Naba Ballygunj Mahavidyalaya 27E, Bosepukur Road, Kolkata-700107	Report No. : QLS/MR/A/22-23/C/397 Date : 22.06.2022 Sample No. : QLS/MR/A/22-23/397 Sample Description : Ambient Noise
--	---

Monitoring Result of Noise


Sampling Done By : P. Biswas


Sampling Guideline : As per IS: 9876: 1981 (RA-2001)


Sample No.	Date of Monitoring	Location	Leq dB (A) Day Time	Leq dB (A) Night Time
397	07.06.2022	Near Main Gate	56.3	44.7

Code/ Category	Leq dB(A)Day Time	Leq dB(A) Night Time
A/Industrial	75	70
B/Commercial	65	55
C/Residential	55	45
D/Ecological Sensitive	50	40

NOTE:
Day Time : 06.00 Hr. – 22.00 Hr.
Night Time : 22.00 Hr. – 06.00 Hr.

Report Prepared By: 



for Qualissure Laboratory Services
Reviewed & Authorized By

Mahmudiyya Banerjee, Chemist
(Authorized Signatory)

—End of Report—

- The results relate only to the item(s) tested.
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- The reserved part of sample(s), except perishable sample(s), shall be retained for 30 days from the date of issue of the Test Report.

Sources of noise pollution: It was observed that there is no industrial as well as the sound generating activities near the College campus and it was revealed from that due to limited number of vehicles the chances of noise pollution seems to be quite below of standard limit. Moreover the one generators of the College are also sound proof. There is no other source of noise pollution in the campus.

Carbon Neutrality

Students and staff members are made aware of pollution caused by use of vehicles and bicycles. Most of the students in the college use bicycle for commuting and most of the staff members reside nearby. They either avail public transport, bicycle. Besides, residences of some of the staff are in the vicinity of the college and they commute by walking. In the college campus almost 1.5% of students are using bicycles, 98.5% of student using local transport. The carbon consumption awareness programme improves carbon emission at individual as well as social level. It also helps the college authorities to avoid air and noise pollution in the campus due to vehicles or any activity in it.

CHAPTER – 8
ENERGY AUDIT

Source of Energy

NBM withdraws Energy from followings:

- Electricity from CESC

The following are the Major consumers of Electricity in the facility

- Lighting
- Air Conditioner
- Fans
- Computers
- Other lab Equipment

DIESEL GENERATOR DETAILS

The Mangalore Institute of Technology has installed 2 nos. of Diesel Generator. The following table provides the Diesel generator capacity in the college campus.

Sl. No.	Equipment Name	Make	Capacity (KVA)
1	Diesel Generator	Kirloskar	45

ELECTRICITY CONSUMPTION (IN UNIT) AND MANAGEMENT

Common electricity meter is provided for the entire campus. Electricity is provided by CESC Ltd.. Electricity bills of July 2022 to June 2023 were available for review (average consumption 2911 units/ month). The areas of major consumption of electricity are:

- Tube Lights • LEDs • Fans (ceiling, wall & exhaust) • Air Conditioners • Computers (desktops & laptops) • Projectors • Audio-Visual System • RO system • Water Coolers • Water Pump • Photocopier • Printers • LCD projectors.

8.1 General Details:

Sl.No.	PARTICULARS	DETAILS	
1	Name & Address of College	Naba Ballygung Mahavidyalaya 27E, Bosepukur Road, Kolkata – 700 042.	
	Web Site	https://www.nbmahavidyalaya.in	
2	Name of Contact Officer	Dr. Sukamal Dutta	
	Designation	Principal	
	Name of Alternative Officer	Dr. Tamal Taru Roy	
	Designation	IQAC Co-Ordinator, Associate Professor and HOD, Department of Commerce	
3	Telephone No.	033-2441-1710	
	Mobile No.	9477051278	
	Fax No.		
	e-mail ID	nbmv2005@yahoo.co.in	
	No. of shift	09.00 a.m. to 17.00 p.m. (for Gym) 10.00 a.m. to 20.00 p.m. (for academic work)	
	No. of Employees (Permanent & Casual) Approx	41	
4	Electricity Consumption/year	Imported (Purchased) 24902	
5	Specific Energy Consumption	Fuel	Electricity
		5400.22	Rs. 1,39,975/- (Per year)
6	LPD	2.8 W/sf.	
7	EPI	2.48	

8.2 Electrical Details

a) Transformers

	No. 1
Voltage Ratio	N/A
KVA	N/A
% Impedance	N/A

b) Electricity Consumption

	Particulars	Demand
A	Contract demand KVA	6.0
B	Maximum demand	6.0
C	Total Energy units consumed / month	2075
D	Avg. Power Factor (P.F.)	0.99
E	Avg. Energy bills (Rs/month)	Rs.11,664/-

c) Detailed list of Electric Motors operating in the college

S.NO.	NAME OF THE PLANT	RATING OF MOTOR (KW)	NO. OF MOTORS
1	Naba Ballygung Mahavidyalaya Bosepukur Road, Kolkata.	15.65	4 nos.

d) **Connected Load**

	EQUIPMENT	TOTAL NUMBERS	LOAD IN KW (TOTAL)
A	Motors : Greater than 10kW	NIL	NIL
	: Less than 10 kW	4Nos.	15.65 KW
B	AC & Ventilation with TR capacity		
a)	Others (Package ACs/ Split ACs / Windows ACs), with TR	Room AC of Split/Window type – 109.02 KW	
C	Total Process Load (in kW)	124.67 KW	
D	Total Lighting Load (in kW) & Luminaries details	No's of lighting luminaries (LED+T/L+ (including fan) Tube Light, Led Light etc. = 15.26 KW Electric Fan - 8.25 KW	
	Total Load (in KW)	148.18 KW	

A. Lux Measurements :

Sl. No.	Room	LUX level	Remarks
1.	Main Building		
	Ground Floor	301,304,299,305	
	1 st floor	299,303,297,303	
	2 nd floor	296,298,302,301	
	3 rd floor	300,299,303,302	
	4 th floor	295,298,303,297	

Illumination Level Comparison

Area	Average Lighting Level (LUX)	NBC Recommended
MAIN BUILDING	300	300-500

Remarks: Lights needs cleaning at an interval of one month and old light to be replaced by new to get desired LUX value

8.3 Use of Alternate Energy

Solar system is not available in college campus area.

CHAPTER - 9

WASTE MANAGEMENT

The present Honourable Prime Minister of India Sri Narendra Modi launched 'Swachh Bharat Abhiyan' (Clean India Mission) on 2nd October, 2014. In this mission, the proper use of dust/waste bins is one of the major priorities. To implement this mission, collective mass effort is necessary. For proper segregation and management proper use of waste bins is the only solution for waste management purpose in the college campuses.

9.1 Solid Waste

Naba Ballygunj Mahavidyalaya has set up separate bins to ensure proper segregation and collection of the biodegradable, non-biodegradable and hazardous waste products generated in the campus. The responsibility of recyclable waste is however still not taken up due to devoid of recycling device to carry on the procedure. However, several solid wastes such as glass, cans, used white and brown papers, batteries, print cartridges, cardboard, furniture, damaged pen, carbon papers etc are either sold to vendors for recycling or despatched via municipality disposal van on regular basis. The biodegradable waste such as humus, rest portion of vegetables etc. which are used in college canteen.



Fig. 2: Solid Waste

9.2 Liquid Waste

The source of wastewater is Domestic Waste Water i.e., Sewage water. The Sewage water mainly comes from laboratory of different departments, toilets of college, kitchen and canteen.

9.3 E-Waste

Substantial quantity of e-waste is generated due to extensive use of computer.

All members particularly students have been advised not to throw used pendrive etc. any where, but to keep in designated bins. Waste thus collected is stored in secured place.

E-Waste is accumulated in a separate room, stock of such waste as on date is quite substantial.

CHAPTER – 10

ENVIRONMENT AUDIT

BIODIVERSITY STATUS OF THE COLLEGE CAMPUS

10.1 Introduction

Naba Ballygung Mahavidyalaya campus is very rich in the term of biodiversity. To conserve this biodiversity, our first need is to learn about the existing diversity of the place. Unless we know whom to conserve, we will not be able to plan proper conservation initiatives. Also, it is important to have an understanding of the biodiversity of an area so that the local people can be aware of the richness of biodiversity of the place they are living in and their responsibility to maintain that richness.

10.2 Objective

The main objective of this study is to get a baseline data of bio-diversity of the area which will include:

1. Documentation of the floral diversity of the area: its trees, herbs, shrubs, climbers and aquatic vegetations.
2. Documentation of the major faunal groups like mammals, reptiles, amphibians, birds and among the insects, butterflies and dragonflies.
3. Documentation of the specific interdependence of floral and faunal life.

Transportation of the College

Being very close to Ballygunge Railway Station, a junction station of Sealdah South Section , the College is close to the gateway of the rural district of South 24-Parganas. Ballygunge Railway Station near about 1 km from the college. Nearest metro station is Kalighat more about 3km from the college.

Nearest Air Port is Netaji Subhas Chandra Bose International Airport, it is situated at a road distance of about 21.1 km from the College.

Location Map

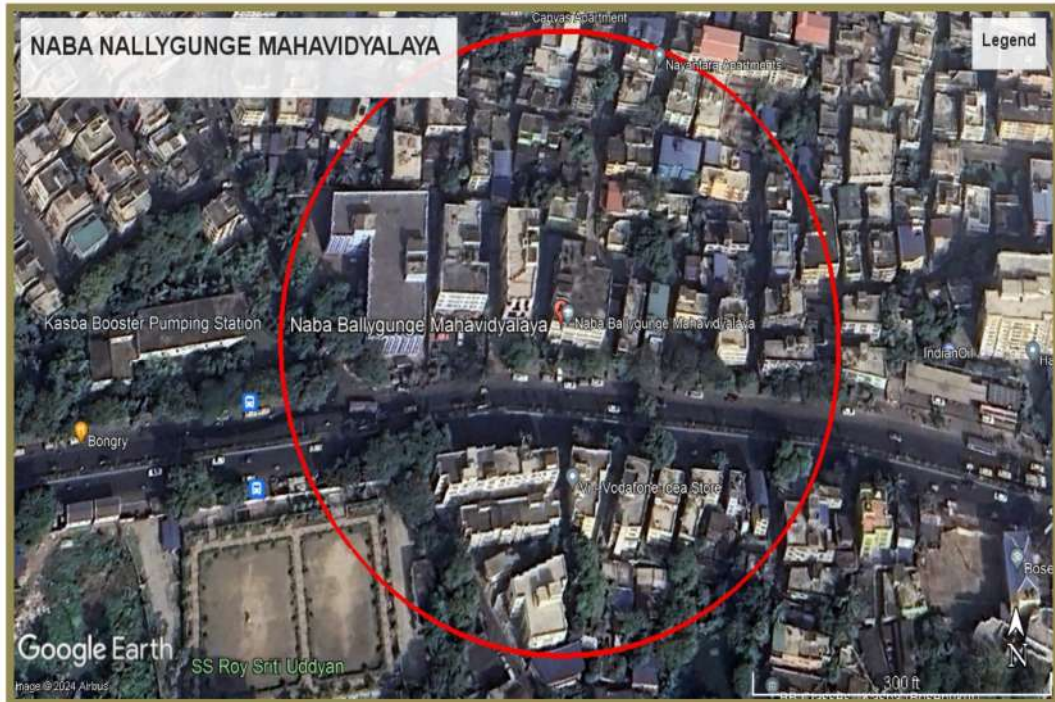


Fig. 3 : Location Map

10.3 Method of Study

Brief methodology for the floral and faunal survey is given below:

- a) Sampling was done mostly in random manner.
- b) Surveys were conducted for the maximum possible hours in day time.
- c) Tree species were documented through physical verification on foot and photographed each species as much as possible.
- d) The total area was surveyed by walking at day time.
- e) For faunal species we emphasized mainly on the direct sighting. Also call of various birds and amphibians and nesting of some faunal species were considered as direct evidences.
- f) Observing mammals depend critically on the size of the species and its natural history. Diurnal species are common and highly visible. Nocturnal species, however, are rare and difficult to detect. Small mammals like the field rats were found near their burrows, particularly during their entry or exit times in or out from their burrows respectively. In some cases, deposits and footprints were also observed that served as a potential clue for the presence and absence of the concerned species. These secondary evidences were all noted with time and space co-ordinates.
- g) Birds are often brightly coloured, highly vocal at certain times of the year and relatively easy to see. Sampling was done on the basis of direct sighting, call determination and from the nests of some bird species
- h) Reptiles were found mostly by looking in potential shelter sites like crevices of building, logs, tree hollows and leaf litter and also among and underneath the hedges. Sometimes some species, particularly the garden lizards were also observed in open spaces (on twigs and branches and even on brick constructions) while they were basking under direct and bright sunlight.
- i) Amphibians act as potential ecological indicators. However, most of them are highly secretive in their habits and may spend the greater part of their lives underground or otherwise inaccessible to biologists. These animals do venture out but typically only at night. They were searched near pond, road beside wetland and in other possible areas. Diurnal search operations are also successful.
- j) Active invertebrates like the insects require more active search. For larger winged insects like butterflies, dragonflies and damselflies, random samplings were carried and point sampling was also done.
- k) The easiest way to observe many of the invertebrates is simply looking for them in the suitable habitat or microhabitat. Searching was carried out under stones, logs, bark, in crevices in the walls and rocks and also in leaf litter, dung etc. slogs and snails are more conspicuous during wet weather.

10.4 Plant diversity in the College Campus

Naba Ballygung Mahavidyalaya premises having about 52.61 Sq.Mtr. of land have unique plant diversities. These include some large trees, shrubs and herbs.

These plants are listed and depicted as following:

List of the Plants of College Campus

Sl. No.	Local Name	Scientific Name	Family
1	Bakul	<i>Mimusops elengi</i>	Caesalpiniaceae
2	Red oleander, Karabi	<i>Nerium indicum</i>	Apocynaceae
3	Tagar plant	<i>Tabernaemontana divaricata</i>	Apocynaceae
4	Parijat, Shiuli	<i>Nyctanthes arbor-tristis</i>	Oleaceae
5	Aparajita	<i>Clitoria ternatea</i>	Fabaceae
6	Palash	<i>Butea monosperma</i>	Legumes
7	Siuli	<i>Nyctanthes Arbor-Tristis</i>	Oleaceae
8	Aam	<i>Mangifera indica</i>	Anacardiaceae
9	Gandharaj	<i>Gardenia Jasminoides</i>	Rubiaceae
10	Kadam	<i>Anthocephalus chinensis</i>	Rubiaceae
11	Kanak Champa	<i>Pterospermum acerifolium</i>	Malvaceae
12	Kanthal	<i>Artocarpus heterophyllus</i>	Moraceae
13	Krishnachura	<i>Delonix regia</i>	Caesealpiniaceae



Fig. 4 : Major plants in the campus area

10.5 Medicinal Plants in the College Campus:

Medicinal plants have been planted in the college premises.

SI No.	Common Name	Scientific Name	Uses
1	Aloevera	<i>Aloevera</i>	Skin, Hair, Blood Sugar
2	Haldi	<i>Turmeric</i>	Skin, Wounds
3	Tulsi	<i>Ocimum sanctum</i>	Leaf
4	Kulephara	<i>Hygrophilaschulli</i>	Whole plant
5	Thankuni	<i>Cantellaasiatica</i>	Leaf
6	Neem	<i>Azadirachtaindica</i>	Bark, Leaf, Young Stem, Unripened fruit, Seed Oil
7	Basak	<i>Adhatodavasika</i>	Leaf, Flower, Bark, Root



Fig. 5 : Medicinal plants in the campus area

10.7 Checklist of Reptiles:

Sl. No.	Local Name	Common Name	Scientific Name
1.	Anjani	Skink	<i>Lampropholis sp.</i>
2.	Girgiti	Chamaeleon	<i>Calotes versicolor</i>
3.	Tiktiki	Common House Gecko/Gekko, Lizard	<i>Hemidactylus frenatus</i>



Fig. 6 : Reptiles

10.8 Checklist of Birds:

A total of 8 types of bird species were found in the campus, which is quite a good number, in spite of the industrialized surrounding around it.

Total bird species encountered in the college campus.

Sl. No.	Common name	Scientific Name	Local Name	Family
1.	Common Pigeon	<i>Columba livia</i>	Paira	Columbidae
2.	Alexandrine Parakeet	<i>Psittacula eupatria</i>	Chandana	Psittacidae
3.	Rose-ringed Parakeet	<i>Psittacula krameri</i>	Tia	Psittacidae
4.	Asian Koel	<i>Eudynamys scolopacea</i>	Kokil	Cuculidae
5.	Fulvous-Breasted Woodpecker	<i>Dendrocopos macei</i>	Jarad Kaththokra	Picidae
6.	Eastern Jungle Crow	<i>Corvus leuillantii</i>	Danr kak	Corvidae
7.	House Crow	<i>Corvus splendens</i>	Pati kak	Corvidae
8.	Common Myna	<i>Acridotheres tristis</i>	Shalik	Sturnidae



Fig. 7 : Local Birds

10.9 Checklist of Mammals:

Sl. No.	Common Name	Scientific Name	Bengali Name
1	Indian palm squirrel	<i>Funambulus sp.</i>	Kathberali
3	Mole	<i>Heterocephalus glader</i>	Chuncho
4	House mouse	<i>Mus musculus</i>	Indur
5	Rat	<i>Rattus norvegicus</i>	Dhere indur
6	Cat	<i>Felis catus</i>	Biral
7	Dog	<i>Herpestes edwardsi</i>	Neul



Fig. 8 : Mammals

10.10 Checklist of Ferns and Seasonal Flowers

Sl. No.	Local Name	Common Name	Scientific Name
1.	Fern	Fern	<i>Pteris spp.</i>
2.	Gulab	Rose	<i>Rosa sp.</i>
3.	9 o' clock plant	9 o' clock plant	<i>Portulaca grandiflora</i>
4.	Joba	Hibiscus	<i>Hibiscus rosa-sinensis</i>
5.	Marigold, Ganda	Marigold	<i>Tagetes erecta</i>
6.	Aparajita	Aparajita	<i>Clitoria ternatea</i>
7.	Maiden Pink, China pink	Maiden Pink	<i>Dianthus chinensis</i>
8.	Sandhyamani	Four o clock flower,	<i>Mirabilis jalapa</i>
9.	Nayantara	Periwinkle	<i>Catharanthes roseus</i>
10.	Shiuli	Parijat	<i>Nyctanthes arbor-tristis</i>
11.	Sthalapadma	Confederate rose	<i>Hibiscus mutabilis</i>
12.	Tagar	Tagar	<i>Tabernaemontana divaricata</i>
13.	Madhabilata	Burma creeper	<i>Quisqualis indica</i>



Fig. 9 : Flowering plants of the college premises

10.10 Checklist of Amphibians

Sl. No.	Common name	Scientific Name	Bengali Name
1.	Indian Toad	<i>Duttaphrynus melanostictus</i>	Kuno Byand
2.	Skittering Frog	<i>Euphlyctis cyanophlyctis</i>	Karkati Byang
3.	Asian Bullfrog	<i>Hoplobatrachus tigerinus</i>	Sona Byang



Fig. 10 : Amphibians

CHAPTER - 11

GREEN INITIATIVES

Naba Ballygung Mahavidyalaya aims to protect and conserve its biodiversity, fresh and clean ambiance through the following green initiatives to protect and conserve nature.

11.1 Plantation Programme

Plantation programme of Naba Ballygung Mahavidyalaya promotes environment management and conservation in the college campus with the following objectives:

- i) To motivate the students to keep their surroundings green and clean by undertaking plantation of trees.
- ii) Promote ethos of conservation of water by minimizing the use of water.
- iii) Motivate students to imbibe habits and life style for minimum waste generation, source separation of waste and disposing the waste to the nearest storage points.
- iv) To create awareness amongst public and sanitary workers, so as to stop the indiscriminate burning of waste which causes respiratory diseases.
- v) To minimize the use of plastic bags, not to throw them in public places as they choke drains and sewers, cause water logging and provide breeding ground for mosquitoes.
- vi) Organize tree plantation programmes, awareness programmes regarding various environmental issues like global warming and educate children about utility of plants.
- vii) Organize Nature Trail in Botanic Garden/Parks/Forest so as to know about the Bio-diversity.



Fig. 11 : Plantation programme

Activities of NSS Unit from 1st July 2021 - 30th June 2022

Covid 19 pandemic was going on during this period , so maximum programmes and meetings were organized on online platform and physical programmes were maintained by COVID 19 guideline strictly . Masks and Sanitizers were distributed to the volunteers and local people.

• INTERNATIONAL COMMEMORATIVE DAYS

World AIDs Day :

- World AIDS Day was celebrated on 1st December 2021. Online seminar about "Create awareness for prevention and eradication of AIDS" attended by medical professionals.

Bhasa Dibas :

- Mother language Day, 21st February 2023 ,(BhashaDibas) was celebrated. It was celebrated to spread awareness of linguistics and culture diversity.

World Environment Day :

- 5th June 2022 , World Environment Day celebrated by our NSS volunteers. They arranged tree plantation inside as well as outside of our College campus.

International Yoga Day :

- International Yoga Day was celebrated on 21st June 2022 . Online lectures and sessions were arranged to raise awareness about the benefits of practicing Yoga.

NATIONAL DAYS

Independence Day :

- Independence Day was celebrated on 15th August, 2021. Online lectures delivered by our Principal Dr.Sukamal Dutta.

NSS Day :

- 24th September 2021, NSS Day was celebrated. Online lectures given by our Principal Dr.Sukamal Dutta and NSS Programme Officer Dr.SumitkumarDebnath.

Youth Day :

- Youth Day held on 12 th January 2022 . Online lectures delivered by Programme Officer Dr.SumitkumarDebnath.

Netaji Birth Day :

- On 23rd January 2022 , a programme was organised by the volunteers to observe Netaji's Birthday.

Republic Day :

- On 26th January, 2022 , Republic Day was celebrated in our College by flag hoisting ceremony by our Principal Dr.Sukamal Dutta, singing patriotic songs by the volunteers .

Community out reach programme :

NSS volunteers conduct awareness programme focusing different issues like online seminars on Nutrition and Organic food on 7th July 2021

- Online seminar on Socio-Cultural Taboo and Myths of Menstruation on 10th September 2021 .
- Arranged vaccination programme with KMC , which held on 8th October 2021 (**TALBAGAN HEALTH CENTER , KHEYA**)
- Organized seminar on "SaheedDiwas" .
- NSS Programme Officer and volunteers also organised an Online seminar on "Covid 19 "on 4th December, 2021.
- Online competition organised on 20th December 2021 by NSS volunteers with the children from slum. There were various competitions viz Essay Writing , Quiz , Dance & Recitation on online platform.
- A Health checkup was held for the slum dwellers in the period of special camp (25.02.2022 - 03.03.2022.
- In our College, the NSS organised the Special 7Days camp from 25.2.2022 to 03.03.2022 . The volunteers enriched others and themselves by exchange of work culture of this programme. With the help of slum dwellers , they conducted it successfully.

11.2 Green computing practice:

Being an academic institution, papers are used for various purposes like exam answer sheets, circulars, notices, office work, document printing, and Xeroxing. Since the trees are cut for paper manufacturing, the sequestration of carbon is reduced increasing carbon footprint. To cut down the carbon footprint, the College administration and various departments follow paperless methods of communication by using emails, online forms submission, etc. The paperless work was helpful in reducing tons of CO₂. Tons of biomass are saved by this green computing practice

CHAPTER – 12

CONSOLIDATION OF AUDIT FINDINGS

Green Audit will create a greater appreciation and understanding of the impact of college activities on the environment. Naba Ballygung Mahavidyalaya has successfully been able to identify the impacts on the environment through the various auditing exercises. The green auditing exercise has brainstormed and provided insights on practical ways to reduce negative impact on the environment. Participating in this green auditing procedure has increased knowledge about the need of maintaining sustainability of the college campus. It will create awareness around the use of the Earth's resources in your home, college, local community and beyond. Naba Ballygung Mahavidyalaya should adopt an Environmentally Responsible Purchasing Policy and work towards creating and implementing a strategy to reduce the environmental impact through its purchasing decisions.

12.1 Preparation of Action Plan

Management's policies referring to College and approach towards the use of resources need to be considered in purview of green audit report. An environmental policy should be formulated by the management of the college. The college should have a policy on green awareness raising or training programmes for students and staff, seminars on Environment Awareness are often organized by different departments of the institution, green awareness policy right from kitchen staff to procurement policy by the management. Based on the policies, college should have an action plan. The green auditing report will be a base line for the action plan to be evolved.

12.2 Follow up Action and Plans

Green Audit is an exercise which generates considerable quantities of valuable environment and resource management information. The time and effort and cost involved in this exercise is often considerable and in order to be able to justify this expenditure, it is important to ensure that the findings and recommendations of the audit are considered at the correct level within the organization and action plans and implementation programmes will be conducted on the basis of the audit findings.

12.3 Environmental Education

The following environmental education programmes may be implemented in the college before the next green auditing:-

Training programmes in solid waste management, liquid waste management setting up of biodiversity garden, tree management, medicinal plant nursery, vegetable cultivation, water management, energy management, landscape management, pollution mitigation methods, and water filtration methods.

- Give priority to environmental clubs and its programmes
- Conduct exhibition on throw away plastic danger, recyclable products etc.
- Display various slogans and pictures to protect environment.
- Implement chemical treatment system for waste water from the laboratories and incinerators.

Highlight of the measures for maintaining better environment :

- Safe drinking water supply has been ensured by installation of sufficient number of water purifier.
- Electrical installation and internal wiring are well maintained.
- Standard of housekeeping is of very high order. General cleaners through out the college building is very very good.

CHAPTER - 13

ConCl usion and Recommendations

Green Audit is the most efficient way to identify the strength and weakness of environmental sustainable practices and to find a way to solve problem. Green Audit is one kind of professional approach towards a responsible way in utilizing economic, financial, social and environmental resources. Green audits can “add value” to the management approaches being taken by the college and is a way of identifying, evaluating and managing environmental risks (known and unknown). There is scope for further improvement, particularly in relation to waste, energy and water management. The college in recent years consider the environmental impacts of most of its actions and makes a concerted effort to act in an environmentally responsible manner. Even though the college does perform fairly well, the recommendations in this report highlight many ways in which the college can work to improve its activities and become a more sustainable institution.

13.1 Suggestions

- a) Reduce wastage of water on campus.
- b) New construction or development work has to be done without cutting down any tree
- c) Electronic waste should be recycled where possible.
- d) Paperless work should be encouraged as much as possible so as to avoid misuse of wastage of paper.

13.2 Recommendations:

- Use of bicycle within the campus to be encouraged
- The trees planted needs to be managed regularly. Burning should be totally avoided.
- Vehicular exhausts shall be examined regularly in the college as per the Central Motor Vehicle Act 1988.
- The monthly inventory of e-waste and hazardous waste is required to be maintained in formats on regular basis.
- Storage of chemicals like; paints, gums resins, oils, lubricants, acids etc. in designated place and safety/warning signs should be displayed.
- Single sides papers to be used for writing and photocopy
- Switch off Light, fans, P.Cs. and other electrical appliances whenever they are not in use.
- Cleaning of tube lights/bulbs should be done on a regular basis to remove dust.
- Overhead tank, pipe should be regularly checked by the engineer.

Sonar Bharat Environment & Ecology Pvt. Ltd.

Parimal SARKAR

Director

ACKNOWLEDGEMENT

Sonar Bharat Environment & Ecology Pvt. Ltd. (SBEEPL) Green Audit Team thanks the management of Naba Ballygung Mahavidyalaya for assigning this important work of Green Audit. We appreciate the co-operation to our team for completion of study.

Our special thanks are extended to:

1. Dr. Sukamal Dutta – Principal
2. Dr. Tamal Taru Roy – IQAC Co-ordinator

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Sonar Bharat Environment & Ecology Pvt. Ltd.

Sukamal SARKAR

Director



Certificate of Compliance
INTEGRATED QUALITY CERTIFICATION PRIVATE LIMITED
hereby certifies that the Quality Management Systems of

Sonar Bharat Environment & Ecology Pvt. Ltd.

35, Chittaranjan Avenue, 3rd Floor,
Kolkata - 700 012.

has been assessed and conforms to the
Quality Management Systems
ISO 9001:2015



Scope: Consultancy Services on Safety Related Study, Audit Services for Energy, Green, Electrical & Safety and Providing Services Related to Obtaining Statutory Approvals

Division	: 70	Current issue date	: 14.10.2022
Class	: 70.22	Current expiry date	: 13.10.2025
Process(es) not applicable	: 8.3	1st Surveillance due	: 13.10.2023
Certificate number	: IND/QMS/NAB-C3313/3200	2nd Surveillance due	: 13.10.2024
Attachment(s)	: None		


H. Narasimhaiah
Director

Certificate of compliance has an expiry period of 3 years from the current certification cycle start date but shall be considered as expired if the surveillance audit programme indicated in this certificate of compliance is not implemented to maintain confidence that the certified management system continues to fulfil requirements unless otherwise supported by a letter of continued compliance issued by the registered office of Integrated Quality Certification Pvt. Ltd. Certificate of compliance shall be updated in website/registry as suspended and/or withdrawn if the surveillance programme prior to the due date indicated above is not coordinated and implemented. Written information on any significant organizational changes with impact on the certificate of compliance shall be communicated to Integrated Quality Certification Pvt. Ltd prior to the planned audit schedule.

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THE END