



SUMAN EDUCATION SOCIETY'S
LN COLLEGE (Night)
(Affiliated to the University of Mumbai)

H. D. Gaonkar Vidya Sankul, Suman Education Society Campus, Plot No. 89, Near General Kariappa Bridge,
Rajendra Nagar, Borivali (East), Mumbai - 400 066, Maharashtra (India)

Green Audit

Energy Audit

Environment Audit

Clean and Green Campus Recognition Award

2021-22

For

L. N. College, Borivali

Prepared

By



Rashmi A. Ashme
T/C Principal
LN College
Plot No. 89, Near General Kariappa Bridge,
Rajendra Nagar, Borivali (East), Mumbai - 400 066

AUDIT CONDUCTED BY

Vrindavan Landscape & Ecological Solutions, MUMBAI

EMAIL: vrindavan.shraddha@gmail.com



Quality audits on environment and energy are regularly undertaken by the institution.

Sr. No.	Quality audits on environment and energy	
1	Green Audit	Vrindavan Landscape and Ecological solutions , Mumbai
2	Energy Audit	Vrindavan Landscape and Ecological solutions , Mumbai
3	Environment Audit	Vrindavan Landscape and Ecological solutions , Mumbai
4	Clean and Green Campus Recognition Award	Basil Environmental Services, Mumbai
5	Environmental Promotional Activities	06 Activities

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Index of Criteria

Environmental Consciousness and Sustainability

Sr. No.	Efforts for the conduct of Quality Audits on Environment	Relevant Exhibits
1	Green Audit	Certificates and Report
2	Energy Audit	Certificates and Report
3	Environment Audit	Certificates and Report
4	Clean and Green Campus Recognition Award	Certificate
5	List of Environmental Promotional Activities	List of the Activities
6	Environmental Promotional Activities	PPT

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Green Audit

Energy Audit

Environment Audit



Date :15/01/2-023

Certificate

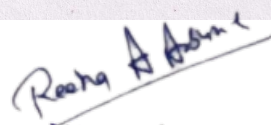
This is to certify that the Green Audit was carried out by us at L. N. College,
Borivali , during the month of Dec 2022

The scope, coverage, findings, and recommendations are submitted vide our
report to VLAES -PR- dated JAN 15, 2023

For

Vrindavan Landscape Consultant And Ecological Solutions


Deepak Mhapse
(Project coordinator)


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Report

On

Green; Energy & Environment Audit

For

L. N. College, Borivali

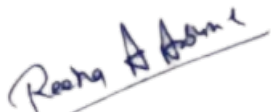
Prepared

By

Vrindavan Landscape Consultant And Ecological Solutions

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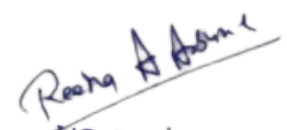
Introduction

Green, Energy & Environment Audit at L. N. College, Borivali was conducted in accordance with risk based audit methodology in the month of February 2022.

The purpose of the audit was to make sure that the practices followed in the campus are healthy and environmentally friendly. With this in mind, the specific objectives of the audit were to evaluate the degree to which the departments are in compliance with the applicable regulations, policies and standards and to ensure that the development of the college aims at sustainable development and green campus. The audit was based on an examination of the policies laid down, on data analysis & collected, findings from interviews with staff.

The team members of the audit study.

1. Dr.Reena Arbune Principal, L.N.College,Borivali
2. Mrs.Rinku R Pal I.Q.I.C Head L.N.College,Borivali
3. Mr. Deepak Mhatre


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Executive Summary

The premises were evaluated against various criterion by the National Assessment and Accreditation Council

(NAAC). The major observations are.

❖ Renewable Energy

- The college has a plan to install solar panels in future.
- The quantity of plate waste {organic waste with higher starch contents} is negligible, consequently, there is no potential for biogas generation.
- The plan has been proposed for Installing Compost pit.

❖ Green Campus Initiative

- The movement of vehicles inside the campus is with vehicles of staff, faculties, students and guests are not allowed to enter the campus.
- There is restriction on the usage of plastic, which may be extended to completely ban plastic usage inside the campus.
- The campus is surrounded by a lot of greenery, trees, and proper landscaping.

❖ Environment & Energy Initiative

- The Institute has limited campus for green landscaping.
- Small plants are planted in the compound.
- In the periphery of the campus, along the rear and wings, a thick belt of large trees is planted to bring down noise and cut down dust storms.
- Indoor plants can be potted along the corridors and entrance of the building.



❖ Air Quality & Ventilation

- The class rooms and other area are well ventilated to ensure proper air quality.
- The fans are appropriately installed to ensure proper air circulation
- The indoor as well as outdoor plants have also been provided to improve the environment.

❖ Lighting System

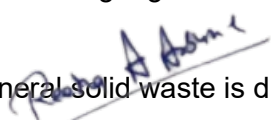
- The usage of natural light is optimized through well designed structure and windows
- All the lamps are replaced with LED.
- The switching of the lamps is done manually.

❖ Water Quality & Conservation

- The water is supplied by the Corporation, which is a common practice in and around Mumbai.
- Water purifiers & coolers are provided at convenient locations and on each floor.
- The distribution network and piping are more or less satisfactory and adequate.

❖ Waste Management

- The water is discharged into the common municipal drain, which is a common practice in and around Mumbai.
- The organic waste is segregated and disposed of through municipal waste.
- The electronic gadgets / waste is either donated if useful or handed over to waste collectors.
- The general solid waste is disposed of through municipal corporation.


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❖ Air Conditioning System

- The Air Conditioners are operated as required with manual control. The operation is minimal , consequently automation may not be economical.
- The room temperature is maintained at 24 to 25 °C, which is well within the recommended values.
- The Air Conditioners are serviced regularly and properly maintained.
- Most of the Air conditioners units are energy efficient with star ratings of 3 and above.

❖ Infrastructure usage

- Ramps are provided on the ground floor to address the needs of differently able people.
- The on-campus movement is distributed with multiple staircases.
- There are adequate fire extinguishers located at key areas. The college has initiated appropriate measures to meet the safety requirement.
- The draining system for washrooms is efficient and effective.
- No seepage was observed in the building premises.

❖ Green IT culture

- Energy efficient computers and laptops have been procured.
- Electronic communication is encouraged to minimize usage of papers.
- Most of the papers are reused for doubled sided printing to further minimize usage of paper

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❖ Energy efficiency:

Electricity:

A single electricity meter is provided for the entire complex. The monthly average electricity consumption from December , 2021 to February , 2022 is 2700 Units

Further, we presume that the institute has holiday in May/ June each year and Dec January & February are the winter season, in which energy consumption is less.

The areas of major consumption of electricity are:

Details Of Light Units

Sr.No	Gadgets	Total No	watt
1	Led Tube Light	108	20
2	Ceiling Fans	87	75 Avg
3	Air Conditioners /Split Ac	07	500 Avg
4	Desktops	101	70
5	Laptops	3	50
6	Printers	5	30
7	CCTV Cameras	72	10
8	Water dispenser	02	0

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Details of AC			
Location	Type	Capacity	No
Staff Room	Split Ac	2 Ton	01
Principle Cabin	Split Ac	2 Ton	01
Management Office	Split Ac	2 Ton	01
Rccm No. 501	Split Ac	2 Ton	02
Computer Lab	Split Ac	2 Tar; 2 Ton	02

Consumer Name: K.M.S Educational Institute		Account No 151696361.				
Type of Supply : Three Phage		Adani Electricity				
Meter No.; 7840961		Contract Demand: 0 KVA				
Description	Unit	Oct-22	Sep-22	Aug-22	Jul-22	Average 1363
Energy Consumption	KWH	1491	1166	1273	1523	
	Amount	13825	10918	11875	14111	<u>12682</u>

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❖ Environmental System

- Good Daylight Design and Ventilation
- All the corridors receive good daylight due to the large windows.
- Corridors are wide with good ceiling height.
- Some indoor plants have been installed to improve air quality.
- Classrooms also have a high ceiling with wide doors and large windows. Windows are kept open to receive sunlight.
- Curtains are provided on some of the windows to avoid glare.
- Washrooms are provided with exhaust fans to disperse heat, fumes and odours.



Indoor plants

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❖ Carbon Sequestration :

Carbon sequestration is the removal of carbon dioxide from the air by plants. Carbon storage is the amount of carbon already bound up in the parts of woody vegetation.

- Thirteen big trees and some small plants are planted to mitigate CO₂ emissions and have the potential to enhance carbon sequestration capacity on the campus.

CARBON SEQUESTRATION							
Tree Name	Botanical Name	Wood Density (gm/cm ³)	Height (cm)	Girth (cm)	Canop y	Total Biomass (gms)	Total carbon sequestration kg/y
					(cm)		
Bottle palm	<i>Roystonea regia</i> (H.B.K.) Cooke	0.6	1000	85	400	384144	192
Rain tree	<i>Samanea saman</i> (Jacq.) Merrill	0.45	10	1.65	9	569422	284
Asupalav (D)	<i>Polyalthia longifolia</i> var. <i>pendula</i> (Sonn.) Thw.	0.59	6	0.89	3	281296	140
Pimpal	<i>Ficus religiosa</i> Linn.	0.44	8	1.45	9	556827	278
Amba	<i>Mangifera indica</i> Linn.	0.52	8	1.3	6	806313	403
Vilayati chinch	<i>Pithecellobium dulce</i> (Roxb.) Benth.	0.58	5	0.86	6	215167	107
Deshi badam	<i>Terminalia catappa</i> Linn.	0.52	8	0.89	6	330563	165

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Calculation of Carbon Sequestration:

Volume of Tree = $3.14 * r * H$ (r : radius of girth, H : Total height)

AGB= Above ground level biomass (Volume x wood density of tree)

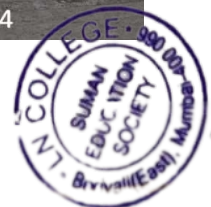
BGB= Below ground level biomass (50 % of AGB)

Total dry biomass = AGB+BGB

Carbon Sequestration = Biomass x 50%



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❖ Water Management

- Bruhan Mumbai Municipal Corporation (BMC) supplies water to the institute. BMC has installed water meters to monitor water consumption & for water charges. The charges are as per water consumption in the premises.
- Mops are used for floor cleaning.
- No leaking faucets were seen anywhere in washrooms
- If water leakage is observed, plumber is called immediately to attend to the complaints.
- Water conservation faucets in washrooms were not seen. Installation of such faucets can save water and will help in minimizing the water footprint of the institute.
- No signage emphasizing water conservation were found in the institute.
- Water conservation education lessons & programs are conducted for students and need to be done regularly.
- After college program, administrators and community groups need to be encouraged to conserve water in line with the college practices.



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❖ Waste water Management

- Sanitary wastewater generated from washrooms is connected to sewerage system provided by BMC.
- Chemical wastewater generated in chemical labs in the institute is also connected to sewerage system.

❖ Infrastructure & Safety

Movement on-campus (Distributed / non-distributed leading to crowds)

- The premises are provided with multiple staircases with necessary entrances to ensure quick and effective movement in normal as well as emergency situations.
- The movement of vehicles inside the campus is with vehicles of staff faculties, students and guests are not allowed to enter the campus.
- There is restriction on the usage of plastic, which may be extended to completely ban plastic usage inside the campus.


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❖ **Firefighting & fire escape system:**

- There are efficient fire extinguishers in premises, which are checked / refitted as per supulàted frequency.
- The premise is provided with multiple staircases with requisite entrances to ensure and effective movement in emergency conditions.



the
the

quick

❖ **Draining system:**

- The drains from the washrooms and other areas are property collected and disposed

❖ **Seepage in the building:**

- The premise was visually inspected for seepage . No seepage was observed in any of the places.

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❖ Green Culture

- The LED / LCD monitors laptops have been procured which are efficient
- These monitors are not only energy efficient but also generate minimal heat and cut down on air conditioning load,
- Electronic communication is encouraged to minimize usage of papers.
- Most of the papers are reused for doubled-sided printing to further minimize usage of paper.
- The following steps may be initiated to further enhance the efficiency of the systems.

1. An efficient power management system may be incorporated to

- ✓ Switch off the display if not in use.
- ✓ Put the computer in sleep / switch off the machines, if not used for prolonged periods.
- Optimize the brightness of the screen.
- Discourage use of screen savers, which has similar power consumption.
- Paper-less communication:
- The major internal as well as external communication is through electronic media.
- Re-using one sided paper for printing:
- It was observed that two sides printed on the back side of used paper in more than 80 % of the cases.
- Cellphone usage banned inside the campus.



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Clean and Green Campus Recognition Award



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BASIL ENVIRONMENTAL SERVICES

Save Tree Save Earth

CERTIFICAT OF RECOGNITION

GREEN CAMPOUS AWARD

This Certificate was awarded to Principle
L.N.College,Borivali.
For Exemplary and Continuous efforts for Maintaining
the Environment Friendly Practices in the Campus.

Date: 06/05/2022

Place Mumbai



Authorized Signature

Reeta A. Amon

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List of Environmental Promotional Activities



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Academic Year 2021-2022

List of Environmental Promotion Activities

Sr.No	Date	Title of event	Department
1	02/09/2021	Plastic Awareness Event	DLLE
2	26/08/2021	Tree Plantation at college campus	NSS
3	26/09/2021	Plastic Recycle	NSS
4	26/07/2021	Swatch Bharat Abhiyan	NSS
5	19/01/2022	Clean and Green	NSS
6	15/02/2022	Awareness on sound pollution	NSS

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Photo Plate



Plastic Awareness Event 02/09/2021



Plastic Recycle

26/09/2021

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Clean and Green

19/01/2022



Plastic Bottle Recycle

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Good Sunlight and Ventilation



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Awareness on sound pollution

15/02/2022

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Sunlight in Corridor

