

2024

KOGNITIVE STREET
CONSULTING
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GREEN AUDIT



[REPORT]
FY 2022-23

GREEN AUDIT REPORT FOR SHRI LAL BAHADUR SHASHTRI DEGREE COLLEGE, GONDA



Prepared By,
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(Environment Division)

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COVER LETTER

5th May 2024

To,
Shri Lal Bahadur Shastri Degree College
Gonda, Uttar Pradesh- 271003

SUBJECT: GREEN AUDIT REPORT FY 2022-23 (ASSESSMENT YEARS FY 2019-20, FY 2020-21, FY 2021-22, FY 2022-23)

Respected Sir/ Madam,

Kognitive Street Consulting Solutions Pvt. Ltd. is pleased to submit the report of Green Audit conducted at your college Campus FY 2022-23.

Kognitive Street Consulting Solutions Pvt. Ltd. is Delhi based consulting organization, offers a full range of Sustainability Consulting Solutions e.g. Energy Audit, Environment Audit, Electrical Audit etc. for Corporate clients and Universities and Institutes. We have the necessary resource, manpower, technologies, systems and processes in meeting the demand of **any Institutes / Universities** and meet the needs at the required standards and processes that the contract demands.

Our promises to you:

- Sustainability Consulting has never been this **flexible**. We are dedicated consultants and managers promising you customized solutions (not complex or time-consuming!) specifically tailored to your business.
- **Locally owned. Globally connected.** Our technology is supported by the largest collaboration of environment and sustainability consultants in the world. We are wherever you are going. You can depend on us.

On behalf of Kognitive Street Consulting Solutions Pvt. Ltd, thank you for giving us the opportunity to conduct the Green Audit and to present the Green Audit Report .

We believe our report meets all NAAC Green Audit requirements instructed by the NAAC and we remain at your disposal may you require further information.

Sincerely

Sachet Chitransh
Consultant – SAE
Kognitive Street Consulting Solutions Pvt. Ltd.
New Delhi

MESSAGE BY PRINCIPAL

SLBS Degree College has consistently strived to provide an education that is not just enriching but also environmentally responsible. We take pride in being a leader in implementing practical and sustainable programs across campus. As part of this commitment, I'm thrilled to announce the launch of our Green Audit initiative.

This initiative builds upon our existing efforts like the highly successful rooftop water harvesting units, the replacement of traditional lighting with energy-efficient LEDs, and the robust chemical waste management plant. We are further committed to expanding our rain water harvesting capabilities to conserve this precious resource.

These initiatives, along with our extensive tree plantation drives, reflect our dedication to minimizing our environmental impact. As mentioned in our college's mission statement, we aim to make education "practical and environmentally conscious." The Green Audit report, spearheaded by IQAC NAAC Green Audit Committee, will provide valuable insights into our current environmental footprint and guide us towards a more sustainable future.

(PROF. RAVINDRA KUMAR)
Principal
Shri Lal Bahadur Shastri Degree College`

CERTIFICATE – GREEN AUDIT

This is to certify that the SLBS Degree College has conducted detailed “Green Audit” for its campus during the academic year 2023-2024. The green audit was conducted in accordance with the applicable standards prescribed by Central Pollution Control Board, New Delhi and Ministry of Environment, Forest and Climate Change, New Delhi. The audit involves water, wastewater, energy, air, green inventory, solid waste etc. and gives an 'Environmental Management Plan', which college can follow to minimize impact on the institutional working framework. In an opinion and to the best of our information and according to the information given to us, said green audit gives a true and fair view in conformity with environmental auditing principles' accepted in India.

For ***KOGNITIVE STREET CONSULTING SOLUTIONS PVT LTD***



Authorized Signatory

Richa Srivastava
Director

EXECUTIVE SUMMARY

In recognition of the growing environmental challenges due to rapid development, **SLBS Degree College** is proud to announce the completion of a **Green Audit** for our campus. This initiative underscores our commitment to sustainability and reducing our environmental impact.

Green Audits are a comprehensive evaluation tool used to assess an institution's practices related to eco-friendliness and environmental sustainability. Our **Green Audit** employed questionnaires adhering to guidelines set forth by India's Ministry of Environment and Forests and the Central Pollution Control Board. The audit encompassed key areas like solid waste management, energy consumption, water usage, hazardous waste handling, and e-waste disposal.

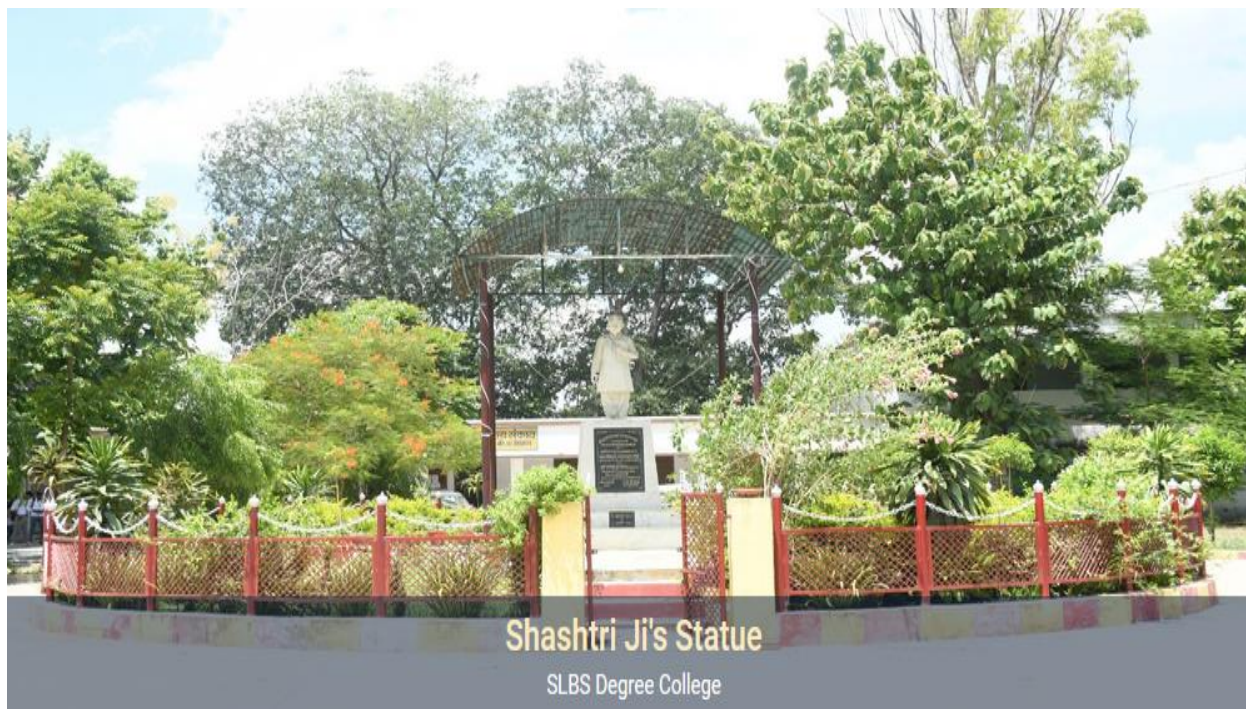
For a thorough analysis, the college campus was divided into specific blocks and departments. The audit itself delved into aspects like solid waste generation, electricity and overall energy consumption, water use and wastewater management, hazardous waste disposal practices, air quality, and existing green initiatives aimed at resource conservation. We also documented the college's existing efforts to sequester carbon and minimize our environmental footprint.

The **Green Audit** report will provide valuable insights and serve as a roadmap for continuous improvement. We are confident that this initiative will empower **SLBS Degree College** to become a leader in environmental responsibility within the educational landscape.

INTRODUCTION – ABOUT CAMPUS

ABOUT THE COLLEGE

Sri Lal Bahadur Shastri Degree College (SLBS Degree College), situated in the heart of Gonda district, Uttar Pradesh, stands as a testament to the vision of the late Prime Minister, Lal Bahadur Shastri. Established in his memory by the then district magistrate, Sri Rajendra Nath, the college has grown from its humble beginnings as an Arts college to a comprehensive institution offering postgraduate programs across various disciplines.



Spread strategically across three distinct campuses which includes **Arts, B.Ed. and Science**, **SLBS Degree College** caters to a diverse student body. At present, Arts and humanities, Science, Commerce and Management, Education, Engineering and Technology and Agriculture faculties are running in the college. The college is affiliated to Dr. Rammanohar Lohia Avadh University, Ayodhya for awarding degrees of B.A., M.A. B.Sc., M.Sc., B.Com, M.Com, B.B.A., B.C.A., BSc Agriculture and B.Ed.



Administrative Building



Science Campus



B.Ed. Campus

Campus Area :

SLBS Degree College boasts a sprawling campus exceeding 19 acres, meticulously designed with modern infrastructure to facilitate a well-rounded educational experience. Students have access to a range of amenities that enhance their learning journey, including:

- **Wi-Fi Connectivity:** Seamless internet access across campus ensures students can stay connected, conduct research, and access online learning resources.
- **Advanced Laboratories:** Separate, well-equipped laboratories for Chemistry, Botany, Zoology, Physics, Agriculture, BCA & BBA provide hands-on learning opportunities for students.
- **Playgrounds and Gymnasiums:** Dedicated spaces for physical activity promote student well-being and offer opportunities for recreation and stress relief.
- **Medical Care:** The college prioritizes student health by providing access to on-campus medical facilities.

Labs in Science Block:



The various departments in **science block** are Botany, Chemistry, Zoology and Physics.



The college performs well in terms of custodial chemical use and staying current with new products, monitoring their use, minimizing their impact, and keeping employees and others safe. Water-soluble and non-toxic products are used so that any that goes down drains will not be harmful. The college now is working with some more cutting edge, environmentally friendly products such as oxidation products, citric acid-based products, and even seaweed (which is safe enough to eat, and preliminarily is looking like an effective cleaner for graffiti). All of the packaging that the cleaners come in is recyclable and that is a consideration when purchasing chemicals. All of the paper products used for cleaning (paper towels, toilet paper, etc.) has a percentage of post-consumer waste in them. Custodial staff members are all trained by the vendor, Eco lab, and twice a year.

Library:

The heart of the campus features the college's administrative building, beautifully set amidst verdant green lawns. In addition, **SLBS Degree College Central Library** serves as a treasure trove of knowledge, housing a vast collection of educational resources.

The library system is meticulously organized, encompassing:

- **Main Library:** A central hub for a diverse range of academic books, journals, and periodicals.
- **Departmental Libraries:** Specialized libraries for the departments of Physics, Mathematics, and Teacher Education provide focused learning materials.



The library caters to diverse learning needs, offering not only contemporary academic resources but also rare books and manuscripts for students seeking in-depth exploration of various subjects.



Reading Room:

Apart from Library, the exclusive Reading Room is also available in the campus.



Features Amenities:

SLBS Degree College recognizes the importance of a holistic student experience. The campus further features amenities such as a well-stocked canteen, a seminar hall for conferences and discussions, and spacious outdoor play areas for students to relax and socialize.

Green Lawn Area

The College has very systematic and beautiful Green lawn area in front of Administrative Building, which is filled by variety of trees and plants. This is utilized by students and college staff during winters.



Green Ground Area

College has variety and huge number of trees on the campus in the green ground area.



Auditorium

A big centralized auditorium hall is available with ample sitting space.



Systematic auditorium hall is available for Seminar and local college events in the campus. This is fully ventilated wherein students and faculties can intake proper oxygen with better productivity and results.

Play Ground Area



The college is having well-structured playground area for student for outdoor activities.

Principal Office

The College is having well-structured Principal Office in the campus.

Class Room

Classrooms have a large writing surface where the instructor or students can share notes with other members of the class.



COMMITMENT TO SUSTAINABILITY

Commendably, **SLBS Degree College** has embraced the "Green Campus" initiative, demonstrating its dedication to environmental conservation and a sustainable future.

The college administration actively works on various facets of the "Green Campus" program, including:

- **Water Conservation:** Implementing practices to minimize water usage and promote responsible consumption.
- **Tree Plantation:** Organizing tree plantation drives and nurturing a green environment on campus.
- **Waste Management:** Establishing effective systems for waste segregation, recycling, and responsible disposal.
- **Paperless Work:** Embracing digital technologies to reduce reliance on paper and minimize environmental impact.

These initiatives demonstrate SLBS Degree College's commitment to fostering a sustainable learning environment for generations to come.

GREEN AUDIT – AT A GLANCE

Green Audit is a systematic process that identifies, quantifies, records, reports, and analyzes various environmental components within and surrounding the college campus. This comprehensive evaluation aims to assess the eco-friendliness of current practices and their impact on the environment.

Green Audit empowers colleges to understand their resource consumption patterns, including energy, water, and others. This knowledge allows them to identify areas for improvement and implement changes for greater efficiency and cost savings. Additionally, it helps analyze waste types and volumes, informing recycling initiatives and waste minimization strategies. Furthermore, Green Audit promotes environmental awareness, values, and ethics among students and staff, fostering a sense of shared responsibility for the campus environment. By providing a deeper understanding of green practices, it cultivates a healthier and more sustainable campus community.

Institutional self-evaluation is a crucial aspect of a quality educational institution, just as self-enquiry is integral to individual growth. Therefore, it is essential for colleges to assess their own contributions towards a sustainable future. As environmental sustainability gains increasing national importance, the role of higher education institutions in promoting this critical agenda becomes increasingly prominent.

Green Audit originated from the need to monitor organizational activities that potentially impact the health of individuals and the environment. This valuable tool provides clear direction for environmental improvement, driven by various factors that have fueled its growing implementation.

Green Audit is incorporated into Criterion 7 of the National Assessment and Accreditation Council (NAAC), a self-governing body in India that evaluates and grades educational institutions based on assigned scores during accreditation.

AUDIT COMMITTEE

In line with the College's Green Campus mission for the next five years, and as part of the IQAC initiative, the following dedicated team members form the Green Audit steering committee. They are actively driving Green Audit activities on campus.

S. No.	Name & Designation	Committee Position
1	Prof. Ravindra Kumar	Chairman
2	Prof. S. K. Srivastava, HOD, Dept. of Botany	Convener
3	Prof. Atul Kumar Singh, HOD, Dept. of Political Science	Member
4	Prof. Binod Pratap Singh, HOD, Dept. of Commerce	Member
5	Prof. R. B. S. Baghel, HOD, Dept. of D & S S	Member
6	Prof. Rajeev Kumar Agarwal, Convenor, Automation, Dept. of Commerce	Member
7	Prof. Jitendra Singh, HOD, Dept. of Physics	Member
8	Prof. Ram Samujh Singh, HOD, Dept. of Sociology, IQAC Co-ordinator	Member
9	Prof. V.Ch.N.K. Srinivasa Rao, HOD, Dept. of English	Member
10	Prof. Sandip Srivastava, Dept. of B. Ed.	Member
11	Dr. Neeraj Yadav, Asst. Professor, Dept. of B. Ed.	Member
12	Dr. Achyut Shukla, Asst. Professor, Dept. of Hindi	Member
13	Dr. Parvej Alam, Asst. Professor, Dept. of Geography	Member
14	Dr. Vivek Pratap Singh, Asst. Professor, Dept. of English	Member
15	Dr. Brijendra Bahadur Vishwakarma, Asst. Professor, Dept. of Chemistry	Member
16	Dr. Vivek Khare, Asst. Professor, Dept. of Mathematics	Member
17	Dr. Ashok Kumar Pandey, Asst. Professor, Dept. of Zoology	Member
18	Dr. Ankit Maurya, Asst. Professor, Dept. of Mathematics	Member
19	Dr. Ghanshyam Dwivedi, Asst. Professor, Dept. of Agriculture	Member
20	Dr. Amit Kumar Shukla, Asst. Professor, Dept. of D & S S	Member

PRE-AUDIT STAGE

A pre-audit meeting provided an opportunity to reinforce the scope and objectives of the audit and discussions were held on the practicalities associated with the audit. This meeting is an important prerequisite for the green audit because it is the first opportunity to meet the auditee and deal with any concerns. The meeting was an opportunity to gather information that the audit team can study before arriving on the site.

The audit protocol and audit plan was handed over at this meeting and discussed in advance of the audit itself. Pre-audit meeting was conducted successfully and necessary documents were collected directly from the college before the initiation of the audit processes. Actual planning of audit processes was discussed in the pre-audit meeting. Audit team was also selected in this meeting with the help of staff and the college management. The audit protocol and audit plan were handed over at this meeting and discussed in advance of the audit itself.

Management Commitment

The Management of the college has shown the commitment towards the green auditing during the pre-audit meeting. They were ready to encourage all green activities. It was decided to promote all activities that are environment friendly such as awareness programs on the environment, campus farming, planting more trees on the campus etc., after the green auditing. The management of the college was willing to formulate policies based on green auditing report.

Objectives

In recent time, the Green Audit of an institution has been becoming a paramount important for self-assessment of the institution which reflects the role of the institution in mitigating the present environmental problems. The college has been putting efforts to keep campus environment clean since its inception. 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.

A clean and healthy environment aids effective learning and provides a conducive learning environment. There are various efforts around the world to address environmental education issues.

Green Audit is the most efficient and ecological way to manage environmental problems. It is a kind of professional care which is the responsibility of each individual who are the part of economical, financial, social, environmental factor. It is necessary to conduct green audit in college campus because students become aware of the green audit, its advantages to save the planet and they become good citizen of our country. Thus Green audit becomes necessary at the college level.

The main objectives of carrying out Green Audit are:

- Elevate the college's profile and reputation.
- Cultivate environmental ethics and values in students and staff.
- Implement higher environmental standards and practices.
- Minimize resource consumption and promote reuse.
- Achieve financial savings through resource efficiency.
- Identify and address environmental issues proactively.
- Integrate environmental education into a comprehensive management system.
- Benchmark environmental performance against best practices.
- Optimize resource utilization for greater sustainability.
- Enrich the curriculum with experiential environmental learning.
- Foster a sense of ownership and shared responsibility for the college environment.
- Develop actionable recommendations for institutional improvement and strategic development.
- Ensure compliance with all applicable laws, regulations, standards, company policies, and Environmental Management System (EMS) requirements.
- Proactively anticipate environmental challenges and develop effective response plans.

Benefits

More efficient resource management is the key success and benefits during the process of Green Audit study.

Below are the few of the highlighted benefits as:-

- Create a sustainable and environmentally friendly campus.
- Implement effective waste management practices to reduce waste generation and promote recycling.
- Achieve a plastic-free campus, fostering a culture of environmental awareness and health consciousness among stakeholders.
- Identify and implement cost-saving methods through waste minimization and management.
- Proactively address potential environmental challenges and ensure compliance with all applicable laws and regulations.
- Empower the college to enhance its environmental performance and demonstrate its commitment to sustainability.
- Increase awareness and understanding of environmental guidelines and responsibilities.
- Provide a platform for environmental education and promote the development of sustainable practices.
- Establish benchmarks for environmental protection initiatives and strive for continuous improvement.
- Achieve significant financial savings through reduced resource consumption.
- Cultivate a sense of ownership and personal and social responsibility for the college and its environment among students, staff, and stakeholders.



- Enhance the college's profile and reputation as a leader in environmental sustainability.
- Foster an ethical and values-based approach to environmental concerns among young people.
- Position Green Auditing as a vital tool for managing and monitoring the college's environmental and sustainable development programs.

AUDIT STAGE

The purpose of the green audit of SLBS Degree College is to ensure that the practices followed in the campus are in accordance with the Green Policy adopted by the institution.

SLBS Degree College green auditing was done with the help of eco-associates involving different student groups, teaching and non-teaching staff. The green audit began with the teams walking through all the different facilities at the college, determining the different types of appliances and utilities (lights, taps, toilets, fridges, etc.) as well as measuring the usage per item (Watts indicated on the appliance or measuring water from a tap) and identifying the relevant consumption patterns (such as how often an appliance is used) and their impacts. The staff and learners were interviewed to get details of usage, frequency or general characteristics of certain appliances. Data collection was done in the sectors such as Energy, Waste, Greening, Carbon footprint and Water use. College records and documents were verified several times to clarify the data received through survey and discussions.

Methodology

The Management of the college has shown the commitment towards the green auditing during the pre-audit meeting. They were ready to encourage all green activities. It was decided to promote all activities that are environment friendly such as awareness programs on the environment, campus farming, planting more trees on the campus etc., after the green auditing. The management of the college was willing to formulate policies based on green auditing report.

The methodology include: physical inspection of the campus, observation and review of the documentation, interviewing key persons, measurements and recommendations.

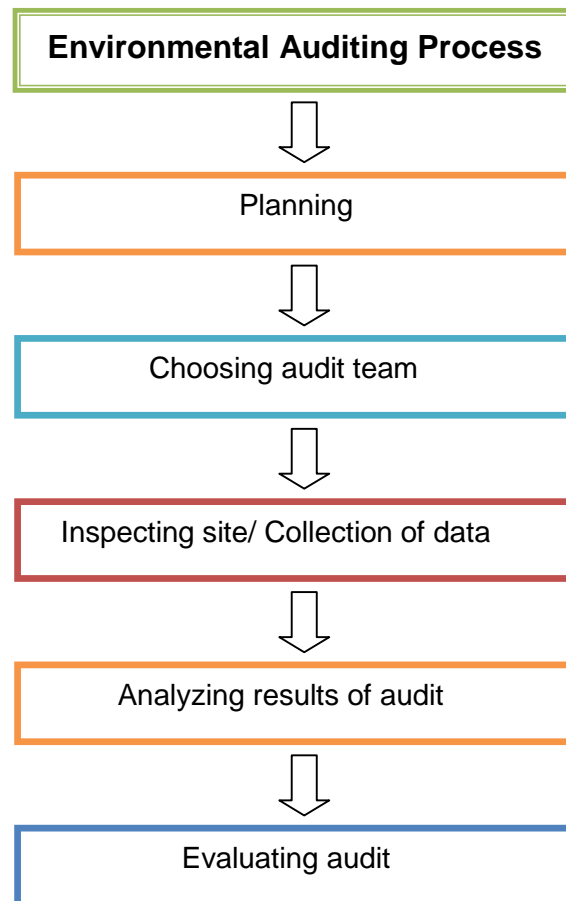
In order to perform green audit, the methodology included different tools such as preparation of questionnaire, physical inspection of the campus, observation and review of the documentation, interviewing key persons and data analysis, measurements and recommendations. The study covered the following areas to summarize the present status of environment management in the campus:

- Energy Management
- Water Management
- Waste Management
- Environment Management

Methodology – Step By Step

The audit process was carried out in three phases. At first, all the secondary data required for the study was collected from various sources, like concerned departments as engineering, garden etc. A broad reference work was carried out to clear the idea of green auditing. Different case studies and methodologies were studied and the following methodology was adopted for present audit.

The methodology of present study is based on onsite visits, the personal observations and questionnaires survey tool. Initially, based on data requirement, sets of questionnaires were prepared. The surveyors then visited all the departments of the college and the questionnaires were filled. The generated data is subsequently gathered and used for further analysis. From the outcome of the overall study, a final report is prepared.



Survey by Questionnaire:

Baseline data for green audit report preparation was collected by questionnaire survey method. Questionnaires prepared to conduct the green audit in the college campus is based on the guidelines, rules, acts and formats prepared by Ministry of Environment, Forest and Climate Change, New Delhi, Central Pollution Control Board and other statutory organizations. Most of the guidelines and formats are based on broad aspects and some of the issues or formats were not applicable for College campus. Therefore, using these guidelines and formats, combinations, modifications and restructuring was done and sets of questionnaires were prepared as solid waste, energy, water, hazardous waste, and e-waste.

All the questionnaires comprises of group of modules. The first module is related to the general information of the concerned department, which broadly includes name of the department, month and year, total number of students and employees, visitors of the department, average working days and office timings etc. The next module is related to the present consumption of resources like water, energy, or the handling of solid and hazardous waste. Maintaining records of the handling of solid and hazardous waste is much important in green audit.

There are possibilities of loss of resources like water, energy due to improper maintenances and assessment of this kind of probability is necessary in green audit. One separate module is based on the questions related to this aspect. Another module is related to maintaining records, like records of disposal of solid waste, records of solid waste recovery etc. For better convenience of the surveyor, some statistics like, basic energy consumption characteristics for electrical equipment etc. was provided with the questionnaires itself.

SLBS Degree College boasts a unique learning environment spread across **three distinct campuses** strategically designed to cater to different academic disciplines. For data compilation and reporting purposes, these campuses are designated as **Block A, Block B, and Block C**

Details of each block including the various departments

Sr. No.	Name of the Blocks
1.	Block A – Arts Faculty Geography, English, Economics, Commerce, Political Science, Hindi, English, Education, Sociology, Psychology
2.	Block B – Science Faculty Botany, Chemistry, Zoology, Physics, Mathematics, B.B.A, B.C.A and Agriculture
3.	Block C – B.Ed. Faculty

GREEN AUDIT – OBSERVATIONS & FINDINGS

I. ENERGY AUDIT

The Green Audit at SLBS Degree College places significant emphasis on energy consumption, sources, and monitoring practices. This focus is well-founded, as energy usage directly impacts both campus operations and the environment.

The audit will delve into the following key areas:

- **Energy Consumption:** Analyzing overall campus energy use to identify areas for potential reduction.
- **Energy Sources:** Evaluating the current energy mix, including reliance on renewable sources where applicable.
- **Energy Monitoring:** Assessing existing systems for tracking energy consumption and identifying opportunities for improvement.
- **Lighting and Appliances:** Investigating the efficiency of lighting systems and appliances across campus and exploring the potential for upgrades to more energy-saving alternatives.

By examining these aspects, the Green Audit will provide valuable insights to guide SLBS Degree College towards a more sustainable energy future.

Electricity audit:

Energy resources utilized by all the departments, support services and the administrative buildings of SLBS Degree College include electricity and liquid petroleum. Major use of the energy is at office, canteen, library and laboratories, for lighting, transportation, cooking and workshop instruments.

While SLBS Degree College relies on grid-connected power from the Uttar Pradesh Electricity Board, we're actively taking steps towards a greener future. Our commitment to sustainability shines through our **50 KW solar power plant**, significantly reducing our dependence on traditional energy sources.

This solar plant, coupled with our installation of **5 high-efficiency solar panels**, boasts ample capacity to meet the college's maximum electricity demand during peak hours. By harnessing the power of the sun, we're not only lowering our carbon footprint but also ensuring cost-effectiveness in the long run.

This initiative demonstrates SLBS Degree College's dedication to environmental responsibility and paves the way for a more sustainable future.

Electricity consumption in the Building Block A:

Building Block A is having Arts Faculty building. The calculations are based on the data collected from all these buildings and actual observations taken at the site. The collected data shows the connected load in the Building Block. The collected data shows that all Building Block A have maximum number of major electricity consuming equipments with connected load of 50 KW.

Utilities details by quantities in the Building Block A

SI No.	Equipment	Qty
1	Cooler	1
2	Water Cooler	2
3	AC	18
4	Fridge	2
5	Speaker	3
6	Lift	0
7	ATM	2
8	Amplifier	3
9	Computer	37
10	Printer	19
11	Laptop	7
12	Scanner	1
13	CCTV camera	73
14	Biometric Machine	1
15	Xerox machine	2
16	Router	1
17	LED TV	8
18	Interactive Panel	4
19	Lighting System	0
20	Tube	0
21	LED TV	0
22	Ceiling Fans	235
23	Exhaust Fans	11
24	Projector	3
25	LED Tube	160
26	LED Bulb	66
27	Table Fan	9
28	Lamp	0
29	Street Light	0
30	Bulb	0
31	Wall Fan	5
		672

Consumption Analysis – Building Block A

Sanction Load in Block A – 90 KW

Actual Connected Load based on the utilities details – 50 KW

Based on the electricity bills FY 2022, FY 2023 and FY 2024, we have observed the average electricity consumption – approx.52,545 KWh/month

Electricity consumption in the Building Block B:

Building Block B is Science Faculty. The calculations are based on the data collected from all these buildings and actual observations taken at the site. The collected data shows the connected load in the Building Block. The collected data shows that all Building Block B have connected load of 3.5 KW.

Utilities details by quantities in the Building Block B

SI No.	Equipment	Qty
1	Cooler	1
2	Water Cooler	1
3	AC	0
4	Fridge	4
5	Speaker	1
6	Lift	0
7	ATM	0
8	Amplifier	0
9	Computer	67
10	Printer	6
11	Laptop	0
12	Scanner	1
13	CCTV camera	38
14	Biometric Machine	1
15	Xerox machine	0
16	Router	1
17	LED TV	2
18	Interactive Panel	4
19	Lighting System	0
20	Tube	0
21	LED TV	0
22	Ceiling Fans	220
23	Exhaust Fans	6
24	Projector	5
25	LED Tube	178
26	LED Bulb	35
27	Table Fan	2
28	Lamp	0
29	Street Light	0
30	Bulb	5

31	Wall Fan	0
		577

Consumption Analysis – Building Block B

Sanction Load in Block B – 5 KW

Actual Connected Load based on the utilities details – 3.5 KW

Based on the electricity bills FY 2022, FY 2023 and FY 2024, we have observed the average electricity consumption – approx.3,294 KWh/month

Electricity consumption in the Building Block C:

Building Block C is B.Ed Faculty. The calculations are based on the data collected from all these buildings and actual observations taken at the site. The collected data shows the connected load in the Building Block. The collected data shows that all Building Block C have connected load of 1.8 KW.

Utilities details by quantities in the Building Block C

SI No.	Equipment	Qty
1	Cooler	0
2	Water Cooler	1
3	AC	0
4	Fridge	0
5	Speaker	1
6	Lift	0
7	ATM	0
8	Amplifier	0
9	Computer	2
10	Printer	2
11	Laptop	0
12	Scanner	0
13	CCTV camera	16
14	Biometric Machine	1
15	Xerox machine	0
16	Router	1
17	LED TV	0
18	Interchange Panel	0
19	Lighting System	0
20	Tube	4
21	LED TV	0
22	Ceiling Fans	60
23	Exhaust Fans	0
24	Projector	0
25	LED Tube	58
26	LED Bulb	28
27	Table Fan	0

28	Lamp	0
29	Street Light	0
30	Bulb	0
31	Wall Fan	0
		174

Consumption Analysis – Building Block C

Sanction Load in Block B – 2 KW

Actual Connected Load based on the utilities details – 1.8 KW

Based on the electricity bills FY 2022, FY 2023 and FY 2024, we have observed the average electricity consumption – approx.1,682 KWh/month

OBSERVATIONS

Energy source utilized by all the departments and common facility center is electricity only. The average power consumption is determined by analyzing the electricity bills. The total average power consumption for all blocks is approx. 58,000 KWh/month.

Lighting systems are mostly linear fluorescent, with compact florescent used in corridors and foyers. Automatic lighting control systems such as movement sensors, voltage reduction units and time of day control of corridor, external and security lighting have been used extensively throughout the site. All the departments and common facility centers are equipped with LED lamps. All inventory data along with their load is stated in the above mentioned data.

Also, campus administration runs switch–off drill on regular basis. In science department like Physics, Chemistry, Mathematics, Botany and Zoology electricity is generally shut downed after occupancy time is one of green practices for energy conservation.

A billing analysis has been used to create an energy usage profile of the college to document each building of the campus. Block A is major electricity users because of maximum no. of lights, computers & fans.

Furthermore the equipments in the Psychology, Physics, Botany, Chemistry & Zoology has total connected load pattern of 25,000 watt.

All of the machines have an energy saver facility which sets the machine to energy save mode after a programmable time period of inactivity. The time period is currently set at the maximum of hours and is centrally programmed for those machines connected to the network.

SLBS Degree College currently has a policy of enabling the Energy star facility on all computers where appropriate and phasing in lower energy consuming liquid crystal monitors as leases expire. Most of the time runs on standby modes.

RECOMMENDATIONS

1. Expand Solar Power Generation:

- **Benefit:** Invest in additional solar panels to generate more clean energy and reduce reliance on the grid. This can contribute to cost savings and enhance the college's sustainability efforts.

2. Implement Sensor-Based Lighting:

- **Benefit:** Install sensor-based lighting in areas where continuous illumination isn't necessary. This will automatically turn off lights when not in use, significantly reducing energy consumption.

3. Upgrade Technology:

- **Benefit:** Consider replacing outdated computers and instruments in labs with energy-efficient models. Older technology often consumes more power, and newer models can offer significant energy savings.

4. Promote Energy Awareness:

- **Benefit:** Organize workshops and training sessions for students, faculty, and staff to educate them about energy conservation practices. This will encourage responsible behavior and further reduce energy consumption.

5. Power Down Unused Equipment:

- **Benefit:** Unplug electronic devices like projectors, computers, and smart boards when not in use. This simple step can prevent phantom energy consumption and contribute to long-term savings.

Additional Recommendations:

- **Monitor energy consumption:** Implement energy monitoring systems to track and analyze energy usage patterns. This data can be used to identify areas for improvement and optimize energy management strategies.
- **Install LED lighting:** Replacing traditional incandescent bulbs with LED alternatives can dramatically increase energy efficiency and reduce long-term lighting costs.
- **Conduct regular maintenance:** Regularly maintain equipment and appliances to ensure optimal performance and prevent energy waste.

II. WATER AND WASTE WATER AUDIT

Water which is precious natural national resource available with fixed quantum. The availability of water is decreasing due to increasing population of nation, as per capita availability of utilized water is going down. Due to ever rising standard of living of people, industrialization, urbanization, demand of fresh water is increasing day by day. The unabated discharge of industrial effluent in the available water bodies is reducing the quality of these ample sources of water continuously. Hence, the national mission on water conservation was declared by the Hon. Prime Minister Narendra Modi as 'Jal Shakti Abhiyan' and appealed to all citizens to collectively address the problem of water shortage, by conserving every drop of water and suggested for conducting water audit for all sectors of water use.

Water audit can be defined as a qualitative and quantitative analysis of water consumption to identify means of reducing, reusing and recycling of water. Water Audit is nothing but an effective measure for minimizing losses, optimizing various uses and thus enabling considerable conservation of water in irrigation sector, domestic, power and industrial sector. A water audit is a technique or method which makes possible to identify ways of conserving water by determining any inefficiencies in the system of water distribution. The measurement of water losses due to different uses in the system or any utility is essential to implement water conservation measures in such an establishment.

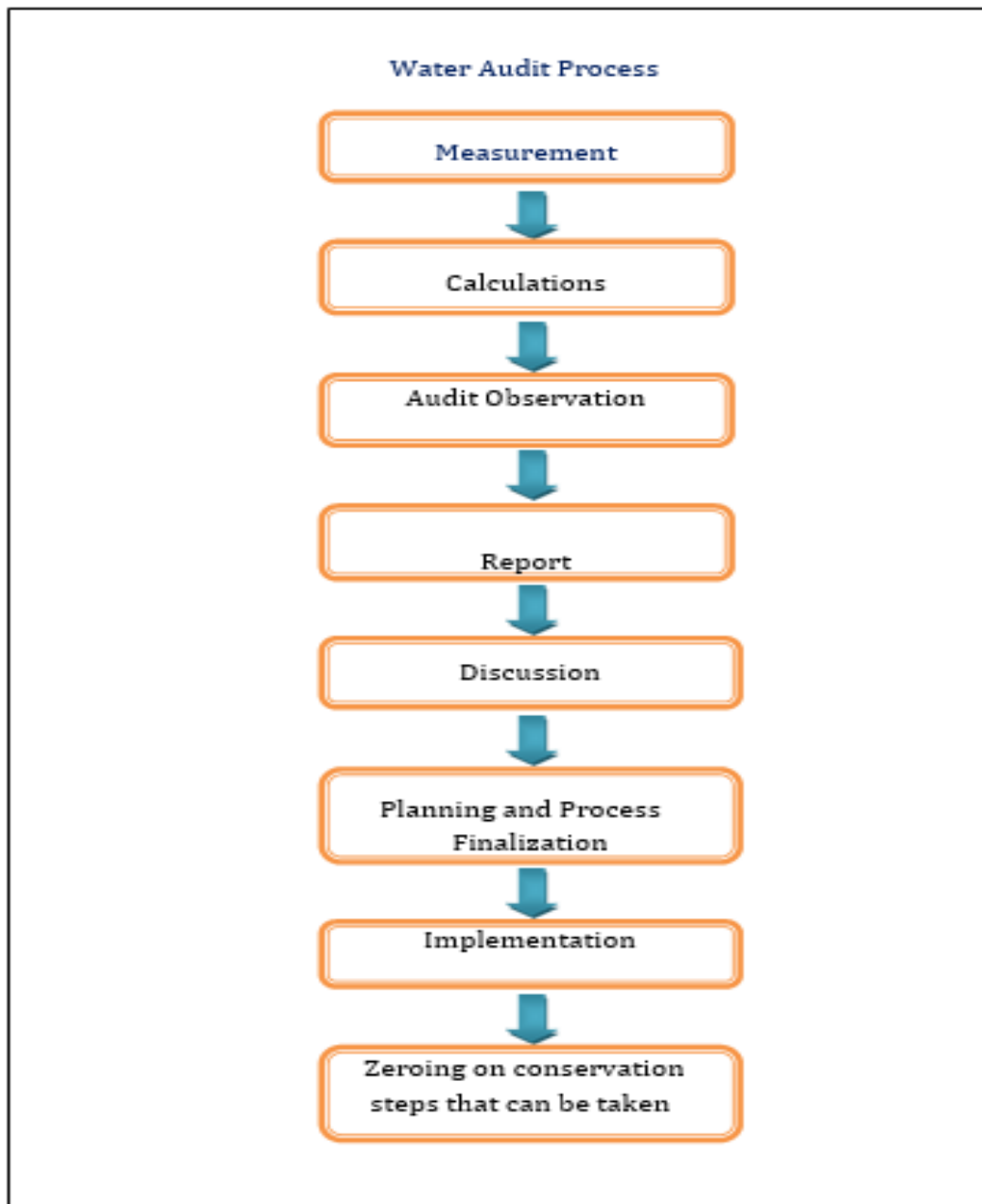
Importance of Water Audit:

- Systematic process
- May yield some surprising results
- Easier to work on solutions when the problems are identified.
- A tracking mechanism can be put into place.

It is observed that a number of factors like climate, culture, food habits, work and working conditions, level and type of development, and physiology to determine the requirement of water. The community which has a population between 20,000 to 1,00,000 requires 100 to 150 liters per person (capita) per day. The communities with a population over 1,00,000 requires 150 to 200 liters per person (capita) per day. As per the standards provided by WHO Regional office for South East Asia Schools require 2 liters water per student for drinking purpose; 10-15 liters per student if water-flushed toilets, Administration requires (Staff accommodation not included) 50 liters per person per day, Staff accommodation requires 30 liters per person per day and for sanitation purposes it depends on technology.

Water Audit:

Water usage can be defined as water used for all activities which are carried out on campus from different water sources. This includes usage in all residential halls, academic buildings, on campus and on grounds. Wastewater is referred as the water which is transported off the campus. The wastewater includes sewerage, residence, hall water used in cooking, showering, clothes washing as well as wastewater from chemical and biological laboratories which ultimately going down in sink or drainage system.



College water resources

The major resource for the Water in the college is self-reliant bore well system and submersible systems installed in the campus in mass scale. There are Ground Water Pumps installed in the campus with 2X3 HP, 1X3 HP, 1X3 HP in the Block A, Block B and Block C respectively which operate to fill the overhead tanks with capacity of 2X2000 Litres, 5X1000 Litres installed over the buildings.

Additionally, there are 3 no's of RO plants installed in the campus with 3 no's tanks with capacity of 1000 Litres each.

Out of total tank capacity of 12,000 Litres, the average total consumption of the College is 11,060 Litres per day.

Total consumption of the campus is approx. 11,060 Litres per day by operating discharge pumps with total discharge capacity of approx. 1400 Litres for 8 hours per day.

3.1.1 Water Consumption in the College:

From the data collected for water audit of SLBS Degree College, the water distribution and water consumption pattern is noticed as follows for all 4 Blocks.

Table: Yearly Average Water Consumption at Block A

Sr. No.	Sector	Total Daily Use (liter)	Total Monthly use (kl)	Total yearly use (kl)	Percentage %
1	Bathroom	200.00	6,000.00	72,000.00	2.50%
2	Toilet	500.00	15,000.00	1,80,000.00	6.25%
3	Kitchen	100.00	3,000.00	36,000.00	1.25%
4	Urinals	500.00	15,000.00	1,80,000.00	6.25%
5	Drinking	4,000.00	1,20,000.00	14,40,000.00	50.00%
6	Wash Basin	500.00	15,000.00	1,80,000.00	6.25%
7	Gardening	2,000.00	60,000.00	7,20,000.00	25.00%
8	Laboratory	100.00	3,000.00	36,000.00	1.25%
9	Water loss during filling	50.00	1,500.00	18,000.00	0.63%
10	Water loss at discharge	50.00	1,500.00	18,000.00	0.63%
Total		8,000.00	2,40,000.00	28,80,000.00	100%

Graph: Yearly Average Water Consumption at Block A

WATER CONSUMPTION PATTERN

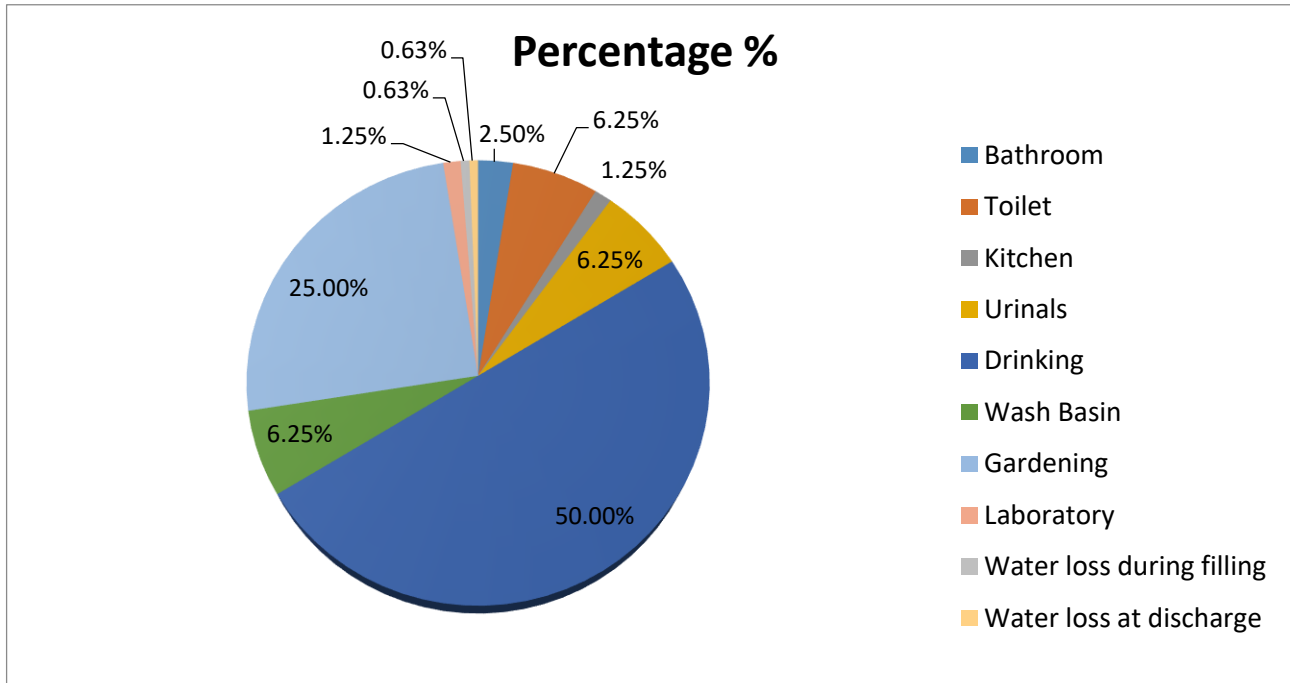


Table: Yearly Average Water Consumption at Block B

Sr. No.	Sector	Total Daily Use (liter)	Total Monthly use (kl)	Total yearly use (kl)	Percentage %
1	Bathroom	-	-	-	0.00%
2	Toilet	500.00	15,000.00	1,80,000.00	19.49%
3	Kitchen	-	-	-	0.00%
4	Urinals	400.00	12,000.00	1,44,000.00	15.59%
5	Drinking	1,000.00	30,000.00	3,60,000.00	38.99%
6	Wash Basin	150.00	4,500.00	54,000.00	5.85%
7	Gardening	500.00	15,000.00	1,80,000.00	19.49%
8	Laboratory	-	-	-	0.00%
9	Water loss during filling	10.00	300.00	3,600.00	0.39%
10	Water loss at discharge	5.00	150.00	1,800.00	0.19%
Total		2,565.00	76,950.00	9,23,400.00	100%

Graph: Yearly Average Water Consumption at Block B

WATER CONSUMPTION PATTERN

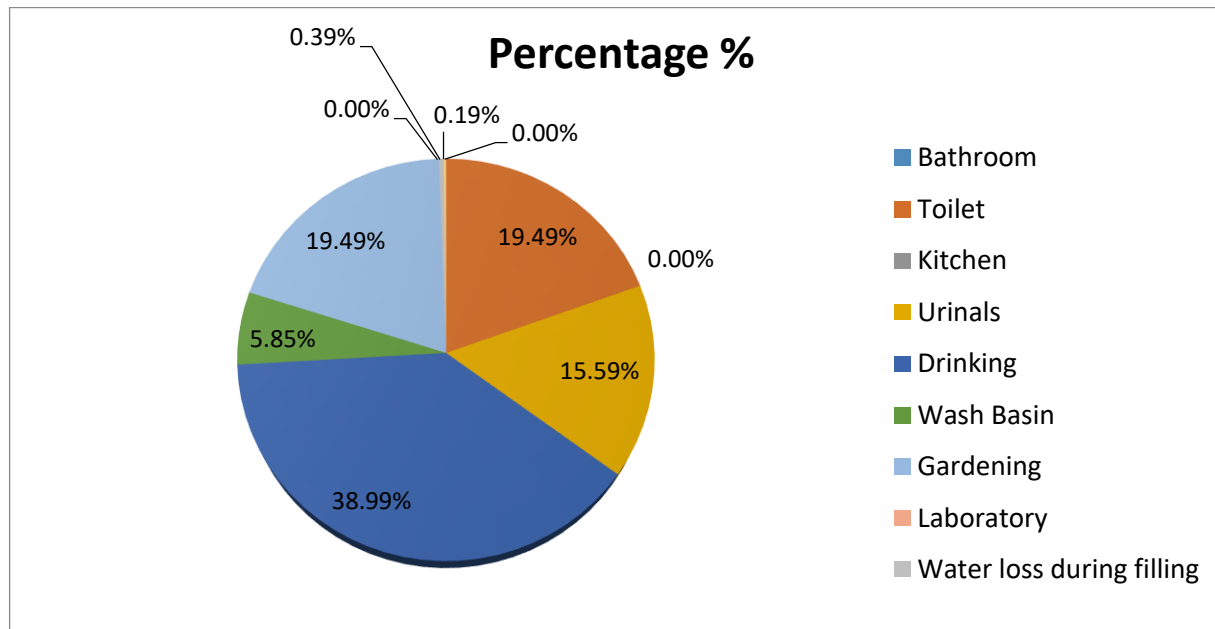
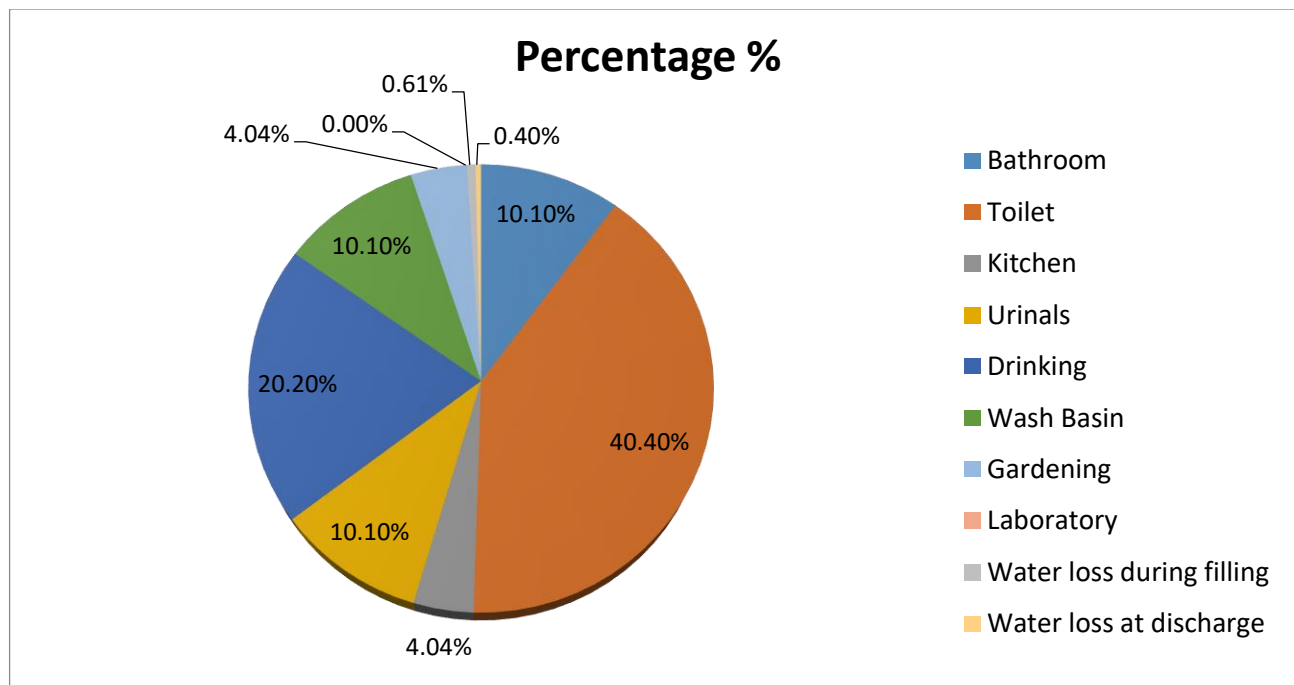


Table: Yearly Average Water Consumption at Block C

Sr. No.	Sector	Total Daily Use (liter)	Total Monthly use (kl)	Total yearly use (kl)	Percentage %
1	Bathroom	50.00	1,500.00	18,000.00	10.10%
2	Toilet	200.00	6,000.00	72,000.00	40.40%
3	Kitchen	20.00	600.00	7,200.00	4.04%
4	Urinals	50.00	1,500.00	18,000.00	10.10%
5	Drinking	100.00	3,000.00	36,000.00	20.20%
6	Wash Basin	50.00	1,500.00	18,000.00	10.10%
7	Gardening	20.00	600.00	7,200.00	4.04%
8	Laboratory	-	-	-	0.00%
9	Water loss during filling	3.00	90.00	1,080.00	0.61%
10	Water loss at discharge	2.00	60.00	720.00	0.40%
Total		495.00	14,850.00	1,78,200.00	100%

Graph: Yearly Average Water Consumption at Block C

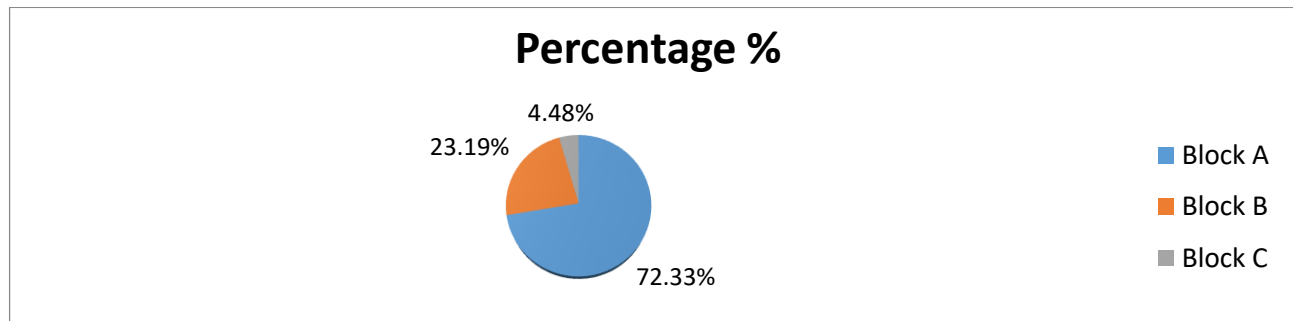
WATER CONSUMPTION PATTERN



AVERAGE YEARLY WATER CONSUMPTION PATTERN

Sr. No.	Sector	Total Daily Use (liter)	Total Monthly use (kl)	Total yearly use (kl)	Percentage %
1	Block A	8,000.00	2,40,000.00	28,80,000.00	72.33%
2	Block B	2,565.00	76,950.00	9,23,400.00	23.19%
3	Block C	495.00	14,850.00	1,78,200.00	4.48%
Total		11,060.00	3,31,800.00	39,81,600.00	100%

WATER CONSUMPTION PATTERN – GRAPHICAL REPRESENTATION



The Green Audit at SLBS Degree College analyzed water consumption data across all three campuses (Block A, Block B, and Block C). The data, presented visually in graphs, revealed valuable insights into water usage patterns.

Key Findings:

- **Consumption Breakdown by Block:**
 - **Block A:** Drinking water and gardening emerged as the primary drivers of water consumption. Bathroom usage was the least significant.
 - **Block B:** Similar to Block A, drinking water and garden maintenance were the leading factors in water utilization. Toilet usage was minimal compared to other areas.
 - **Block C:** This campus demonstrated the highest water use in toilets and for drinking purposes. Gardening and kitchen activities were the least significant factors in water consumption here.
- **Water Loss:** The analysis also identified a minimal average water loss of 0.5% during filling and 0.4% during discharge processes.

3.1.2 Sustainable Water Practices (SWP):

Watershed Management Practices at SLBS Degree College campus.

SLBS Degree College has taken many initiatives in water conservation and management of water available on the campus. Now, college is self-reliant through decentralized water conservation and management practices.

3.1.4 Rain Water Harvesting Units:

Groundwater levels are rapidly depleting due to the lack of rainwater harvesting during monsoon seasons. Rainwater harvesting is a simple and cost-effective way to collect and store rainwater for domestic and agricultural purposes. This ancient practice is the best solution for water conservation and raising awareness about its importance. Rainwater harvesting helps conserve precious water resources by collecting it from rooftops and preventing it from flowing into drains and being wasted. Large cities are increasingly adopting this practice, which involves storing and recharging water through technical processes.

The college is committed for its rainwater harvesting initiatives by installing several units, including rooftop installations on various buildings in the near future.

Water Audit Recommendations:

Water Conservation:

1. Leak Detection and Repair:

- **Benefit:** Implement a systematic program for leak detection and repair in pipes, overhead tanks, and plumbing systems. This can identify and address leaks promptly, minimizing water waste.

2. Water Tank Overflow Monitoring:

- **Benefit:** Assign non-teaching staff or students' specific responsibility for monitoring water tank levels and preventing overflows. This ensures efficient water utilization and avoids unnecessary waste.

3. Laboratory Water Recycling Systems:

- **Benefit:** Design and implement small-scale water recycling systems in science laboratories. This allows for the reuse of water in specific experiments, reducing freshwater consumption.

4. Rainwater Harvesting Expansion:

- **Benefit:** Plan and install multiple rainwater harvesting units across campus. This collected rainwater can be used for irrigation, cleaning, and other non-potable needs, reducing dependence on freshwater sources.

5. Educational Outreach Programs:

- **Benefit:** Develop educational programs and workshops to raise awareness among students, faculty, and staff about the importance of water conservation. Encourage behavioral changes and best practices for minimizing water waste.

6. Water Metering and Monitoring:

- **Benefit:** Implement water metering systems to track water usage across campus buildings and facilities. Regular monitoring and analysis of water consumption data can identify areas of high usage and opportunities for further conservation measures.

7. Shared Distillation Plant:

- **Benefit:** Establish a centralized distillation plant for science departments, significantly reducing water consumption compared to individual lab setups. This can save over 32 liters of water per liter of distilled water produced.

8. Green Chemistry Principles:

- **Benefit:** Integrate green chemistry principles in the chemistry curriculum and laboratory practices. This promotes the use of less hazardous chemicals and reduces chemical waste generation.

Wastewater Management/ Recommendations:

1. Greywater Recycling:

- **Benefit:** Implement a greywater recycling system to collect and treat wastewater from showers, sinks, and washing machines. This treated water can be used for toilet flushing and irrigation, further reducing freshwater usage.

2. Food Waste Composting:

- **Benefit:** Implement a food waste composting program to divert food scraps from landfills. This compost can then be used as a natural fertilizer for landscaping, promoting sustainability.

4. Wastewater Treatment Plant Upgrade:

- **Benefit:** Invest in upgrading the existing wastewater treatment plant to improve its efficiency and ensure compliance with environmental regulations. This can result in cleaner water discharge and a more sustainable waste management system.

By implementing these recommendations, the college can significantly improve its water and waste water management practices, conserve precious resources, and promote a more sustainable campus environment.

III. SOLID WASTE AUDIT

Solid waste generation and management pose a significant challenge in the modern world. The rapid increase in waste generation outpaces our existing technological capacity for responsible disposal. Unsound waste management practices pose serious threats to public health and environmental safety. Therefore, implementing effective solid waste management strategies is crucial to alleviate the burden on our waste disposal systems.

Solid waste encompasses unwanted or unusable solid materials generated from residential, industrial, and commercial activities. Effective solid waste management minimizes or eliminates the adverse impacts of waste on the environment and public health. It involves a series of processes aimed at managing waste efficiently within an organization. Implementing a well-designed solid waste management system reduces the strain on existing waste management infrastructure.

This audit aims to assess the quantity, volume, type, and current management practices of solid waste generated on the SLBS Degree College campus. The findings of this report will inform future solid waste management strategies and contribute to the college's ongoing efforts towards green campus development.

Generation of solid waste in SLBS Degree College:

SLBS Degree College campus solid waste data is collected from all the Building areas. There are different types of waste are recorded such as paper waste, plastic waste, biodegradable waste and glass waste etc.

On the basis of the data received from the College Campus, we have identified the total average waste generated is approx. 40 Kg/month.

Below are the details wherein we have showed the details of the Solid Waste generated at different blocks.

Table: Solid Waste Generation at Block A

Category of waste	Paper waste	Plastic waste	Biodegradable waste	Construction waste	Glass waste	Other waste	Total waste kg/month	Total waste KG/Year
Quantity	3	0	0	0	0	2	5	60
Percentage	60%	0%	0%	0%	0%	40%	100	100

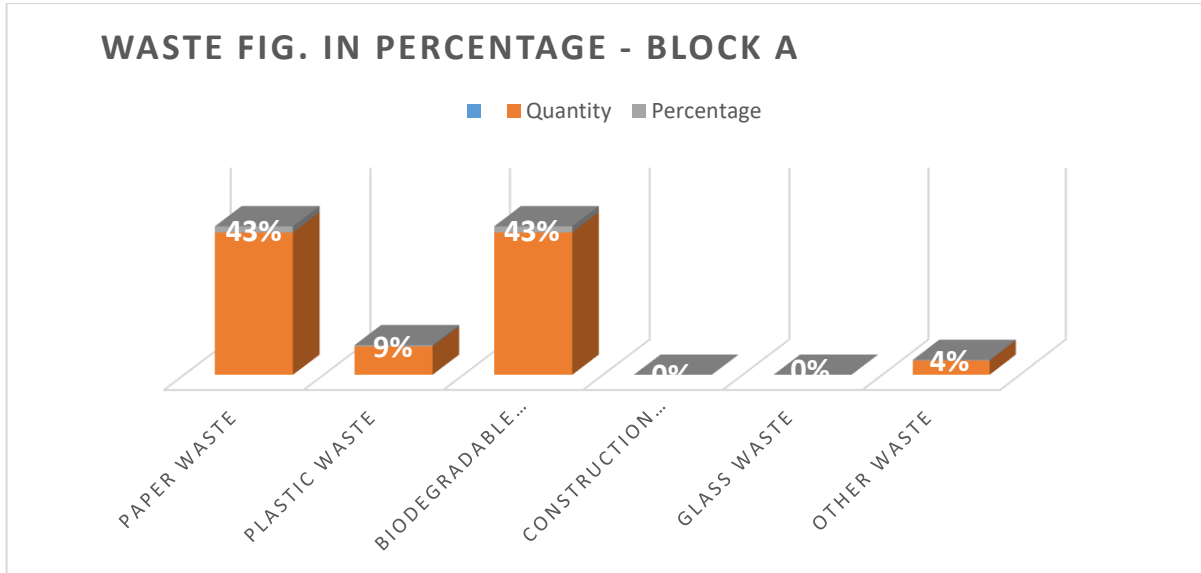


Table: Solid Waste Generation at Block B

Category of waste	Pape r waste	Plasti c waste	Biodegradabl e waste	Constructio n waste	Glass waste	Othe r waste	Total waste kg/mont h	Total waste KG/Yea r
Quantity	8.00	1.00	3.00	0.00	5.00	1.00	18.00	216.00
Percentag e	44%	6%	17%	0%	28%	6%	100	100

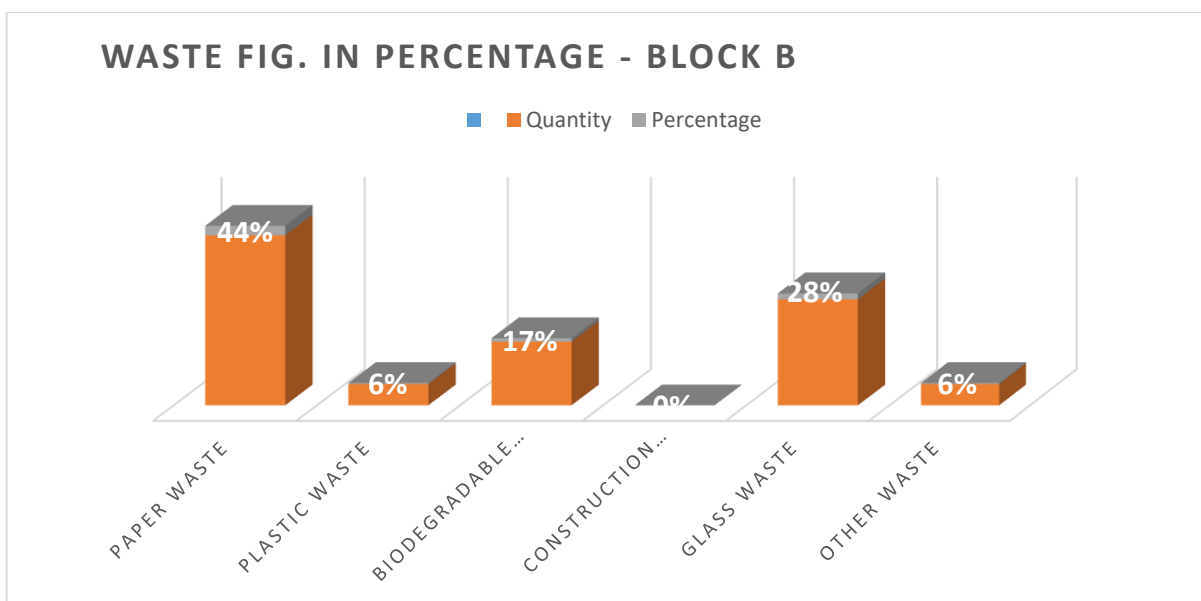


Table: Solid Waste Generation at Block C

Category of waste	Paper waste	Plastic waste	Biodegradable waste	Construction waste	Glass waste	Other waste	Total waste kg/month	Total waste KG/Year
Quantity	10.00	2.00	3.00	0.00	0.00	1.00	16.00	192.00
Percentage	63%	13%	19%	0%	0%	6%	100	100

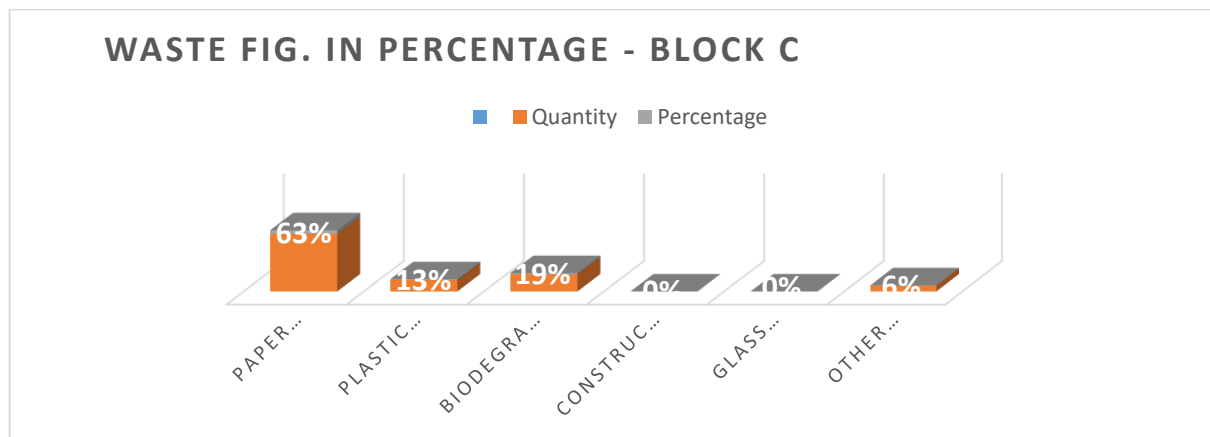


Table: Departments generating highest and lowest quantity of solid waste.

Waste	Quantity	Quantity kg/month	Quantity kg/year
Paper waste	Max.	10	120.0
	Min	3	36.0
Plastic waste	Max.	2	24.0
	Min	1	12.0
Biodegradable waste	Max.	3	36.0
	Min	2	24.0
Construction waste	Max.	0	0.0
	Min	0	0.0
Glass waste	Max.	5	60.0
	Min	1	12.0

During the study we have observed that among the total solid waste, the highest quantity of solid waste is Plastic waste and Paper waste.

Further approx.2. Kg/month as Hazardous waste is generated from the Chemistry Lab.

Waste Management through Decompose Unit

Our college is committed to minimizing its environmental impact and promoting a sustainable future. As a key part of this effort, we've implemented a **decompose unit**, also known as a compost pit unit, for effective waste management. This innovative system allows us to process organic waste generated on campus and transform it into a valuable resource.

Here's how our waste management scheme works:

- **Waste Segregation:** We encourage students and staff to actively participate in waste segregation. This is a two-pronged approach:
 - **Macro Segregation:** Total waste is separated into Dry Waste and Wet Waste.
 - **Micro Segregation:** Dry Waste undergoes further meticulous sorting into 25-30 categories. Recovered dry materials are then sent to recyclers for responsible processing.
- **Decomposing Process:** The segregated wet waste, consisting of organic materials like food scraps, yard trimmings, and paper towels, is directed to the decompose unit. This unit utilizes composting or vermicomposting (using worms) to break down the organic matter naturally.
- **End Product:** Through decomposition, organic waste is transformed into nutrient-rich compost within 15-20 days during summer and 25-30 days in winter.

Initiatives taken by the College for Waste Management:

Glass Waste:

- Glass waste, primarily generated from laboratory bottles, is often reused for storing other chemicals, promoting resource efficiency and reducing waste generation.

Hazardous Waste:

- The college prioritizes the safe and responsible disposal of hazardous waste generated during laboratory experiments. This includes both solid and liquid waste, ensuring proper handling and minimizing potential environmental risks.

Electronic Waste (E-waste):

- Recognizing the significant e-waste generation from computer labs, MCA, and other courses, the college demonstrates a commitment to responsible disposal by sending all e-waste for recycling and reuse, minimizing its environmental impact.

Waste Management Recommendations:

Paper Reduction:

- Expand the "less paper convocation application" to include other administrative processes, further reducing paper consumption and associated environmental impacts.
- Encourage double-sided printing and photocopying to optimize paper use.
- Implement digital document management systems to reduce reliance on physical documents.

Reduce Plastic Use:

- Implement a campus-wide plastic ban, eliminating its use for administrative purposes, events, and daily operations.
- Promote reusable alternatives such as metal water bottles, cloth bags, and reusable containers to minimize reliance on disposable plastics.

Recycling and Composting:

- Increase the number and visibility of recycling bins across campus, making them readily accessible to everyone.
- Partner with recycling organizations to ensure efficient collection and processing of recyclable materials.
- Establish an on-site composting program to convert organic waste into valuable fertilizer for campus landscaping.

Waste Minimization:

- Conduct workshops and training programs for staff and students on waste reduction strategies and best practices.
- Promote responsible consumption habits within the college community to reduce waste generation at its source.
- Analyze waste streams to identify opportunities for waste reduction and implement targeted interventions.

E-Waste Management:

- Designate dedicated collection points for e-waste and hazardous materials.
- Partner with authorized e-waste recycling organizations for safe and responsible disposal.
- Develop policies and procedures for the proper handling and disposal of e-waste.

Additional Recommendations:

- Organize waste collection drives and clean-up events to promote campus-wide environmental responsibility.
- Conduct research and explore innovative technologies for waste management and resource recovery.
- Implement a "Waste Champions" program to educate and engage students and staff in waste reduction and recycling initiatives.
- Partner with local businesses and organizations to share best practices and collaborate on waste reduction initiatives.
- Integrate sustainable waste management practices into the college curriculum, fostering environmental awareness and responsible behavior among future generations.

By implementing these recommendations and exploring innovative solutions, SLBS Degree College can significantly reduce its solid waste generation, promote resource conservation, and contribute to a more sustainable future.

IV. ENVIRONMENT QUALITY AUDIT

This greening strategy encompasses the planning, development, and maintenance of campus vegetation to ensure the environment meets essential sustainability standards. This ongoing effort fosters a healthy and vibrant campus ecosystem while contributing to the implementation, enforcement, and regular review of the College's environmental policy through various awareness programs.

To ensure the longevity of campus greenery, the College maintains its gardens through dedicated staff supervised by the College's leadership. This ongoing commitment ensures the preservation of this valuable environmental resource and its positive impact on the campus community.

ENVIRONMENT ACTIVITIES



SLBS Degree College actively promotes biodiversity and environmental conservation through the following initiatives:

1. Plant Diversity and Propagation:

- Planting a diverse range of native and non-native species enhances the campus ecosystem and provides habitat for various wildlife.
- Engaging in vegetative propagation techniques like cuttings and layering helps propagate existing plants and expand the green cover.

2. Medicinal Plant Utilization:

- Integrating medicinal plants into campus landscaping provides a valuable resource for educational purposes and potential therapeutic applications.
- Identifying and studying these plants fosters a deeper appreciation for the natural world and promotes sustainable use of resources.

3. Waste Management and Disposal:

- Implementing a robust waste management plan ensures responsible disposal of waste generated on campus, minimizing environmental impact.
- Providing adequate waste disposal facilities encourages proper waste segregation and recycling, promoting sustainable waste management practices.

4. Carbon Awareness and Reduction:

- Raising awareness about carbon consumption and its environmental consequences empowers students and staff to make informed choices that reduce their individual carbon footprint.
- Implementing carbon reduction programs encourages resource conservation and promotes sustainable practices across campus.

Through these diverse initiatives, SLBS Degree College demonstrates its commitment to environmental stewardship and fosters a culture of sustainability within the college community.

To create- green cover, Eco-friendly atmosphere, pure oxygen at the College campus, plantation program is organized every year with involving all students, principal, and all departments faculty members. A committee has been formed to keep the greeneries in the College which regularly maintains the gardens. Moreover, every year campus try to plant new trees.

SLBS Degree College actively engages in various departmental activities aimed at enhancing and maintaining the campus environment. These activities include:

1. Plantations and Landscaping:

- Extensive tree plantation drives have been conducted throughout the campus, with over diverse species planted over the past 2-3 decades. These drives coincide with national and international events, fostering environmental awareness and promoting a sustainable campus environment.
- The planted species include native ornamentals, medicinal plants, and indigenous wild species. Botany faculty actively educate students about the scientific names and medicinal uses of these plants, fostering a deeper understanding of the natural world.

2. Garden and Landscape Maintenance:

- Beyond planting initiatives, the Horticulture Section continuously strives to beautify the campus through the development of flower gardens, lawns, hedges, and ornamental avenues.
- Additionally, orchids have been strategically planted on existing trees, further enhancing the aesthetic appeal of the landscape.

3. Ongoing Garden and Landscape Care:

- Besides new plantation drives and landscaping projects, dedicated maintenance efforts are regularly undertaken by the Environment Department. This includes routine care of lawns, hedges, existing plants, shrubs, and seasonal flower beds, ensuring the continued beauty and health of the campus grounds.

These multifaceted departmental activities demonstrate SLBS Degree College's unwavering commitment to environmental stewardship and creating a vibrant, sustainable campus environment.

MAINTENANCE OF PLANTATIONS



Apart from the maintenance of gardens, all previously planted trees (like road side and other plantations) in different locations of the College campus are regularly nurtured by cleaning, fertilization, and watering etc.

BIODIVERSITY

The campus is full of varieties of the Tree which are more than 600 in quantities which includes Large, Medium and Small Trees.

Studies have shown that trees:-

- Boost our mood, productivity, concentration and creativity
- Help clean indoor air by absorbing toxins, increasing humidity & producing oxygen
- Add life to a sterile space, give privacy and reduce noise levels
- Are therapeutic to care for (it's true when we say Plants Make People Happy)

Below is the list of the tree species which are most common in the Campus.

Biodiversity at Main Campus (Arts Campus)

SHRI LAL BAHADUR SHASTRI DEGREE COLLEGE, GONDA

**CRITERIA -7
NUMBER OF PLANTS PLANTED IN MAIN CAMPUS**

S. No.	Botanical Name	Common Name	Total number of Plant
1	<i>Abelmoschus esculentus</i>	Ladies finger	40
2	<i>Acalypha wilkesiana Muell.</i>	Garden Acalypha	1
3	<i>Acasia auriculiformis</i>	Auri	12
4	<i>Aegle marmelos L.</i>	Bael	2
5	<i>Albizia lebbeck</i>	Indian siris	2
6	<i>Allamanda blanchetii L.</i>	Purple Allamanda	2
7	<i>Aloe vera</i>	Indian aloe	27
8	<i>Anthocephalus cadamba Roxb.</i>	Kadamba	8
9	<i>Araucaria columnaris Forst.</i>	Christmas -Tree	6
10	<i>Azadirachta indica L.</i>	Neem	3
11	<i>Bauhinia variegata L.</i>	Kachnar	9
12	<i>Bougainvillea sp.</i>	Bougainvillea	4
13	<i>Bryophyllum pinnatum Lam.</i>	Patharchatta	20
14	<i>Caladium sp.</i>	Elephant ears	2
15	<i>Callistemon citrinus Curtis</i>	Bottle-brush	5
16	<i>Capsicum annum</i>	Lal mirch	20
17	<i>Carissa carandas L.</i>	Karonda	3
18	<i>Cassia siamia Lam.</i>	Kassod tree	13

19	<i>Catharanthus roseus G.</i>	Sadabahar	7
20	<i>Chrysanthemum indicum</i>	Guldaudi	170
21	<i>Citrus aurantifolia Christm.</i>	Lemon	3
22	<i>Codiaeum variegatum Blume.</i>	Croton	13
23	<i>Coleus blumei Benth.</i>	Coleus	2
24	<i>Coriandrum sativum</i>	Dhania	52
25	<i>Cosmos sulphurius</i>	Yellow Cosmos	4
26	<i>Crinum latifolium L.</i>	Loudspeaker lily Pink variegated	8
27	<i>Crinum asiaticum</i>	Spider lily	1
28	<i>Dahlia rosea Cav.</i>	Dahlia	125
29	<i>Delonix regia</i>	Gulmohar	14
30	<i>Dianthus chinensis</i>	China pink	8
31	<i>Dieffenbachia sequina</i>	Dumb cane	2
32	<i>Dracaena marginata L.</i>	Madagascar Dragon Tree	19
33	<i>Dracaena sp.</i>	Good luck Plant	61
34	<i>Dracaena trifasciata</i>	Snake plant	12
35	<i>Duranta erecta</i>	Golden Dewdrop	366
36	<i>Dyopsis lutescens</i>	Areca Palm	22
37	<i>Eucalyptus globulus sp.</i>	Eucalyptus	2
38	<i>Euphorbia grantii</i>	African Milk bush	7
39	<i>Euphorbia cythophora</i>	Dwarf poinsettia	16
40	<i>Ficus benjamina L.</i>	Ficus Tree	53
41	<i>Ficus religiosa L.</i>	Peepal	2
42	<i>Ficus rumphii</i>	Pakad	2
43	<i>Gaillardia pulchella</i>	Indian blanket flower	82
44	<i>Geranium nepalense Sweet</i>	Bhanda	1

45	<i>Glebionis coronaria</i>	Crown daisy	127
46	<i>Heptapleurum arboricola</i>	Dwarf Umbrella Plant	1
47	<i>Hibiscus rosa-sinensis L.</i>	Gurhal	11
48	<i>Holoptelea integrifolia</i>	Chilbil	3
49	<i>Impatiens balsamina</i>	Gulmehndhi	4
50	<i>Ixora coccinea L.</i>	Lal Rukmani	4
51	<i>Jasminum sambac L.</i>	Bela	12
52	<i>Juniperus communis L.</i>	Juniper	7
53	<i>Laginaria vulgaris</i>	Lauki	10
54	<i>Livistona chinensis R.</i>	Chinese palm	7
55	<i>Luffa aegyptiaca</i>	Taroi	15
56	<i>Luffa cylindrica</i>	Ghia taroi	18
57	<i>Mangifera indica L.</i>	Aam	16
58	<i>Melia azadirach</i>	Bakain	5
59	<i>Mimusops elengi L.</i>	Maulshree	38
60	<i>Moringa oleifera Lam.</i>	Sahjan	1
61	<i>Murraya koenigii</i>	Meethi neem	2
62	<i>Musa paradisiaca L.</i>	Kela	1
63	<i>Mussaenda frondosa L.</i>	Bedina	6
64	<i>Nerium indicum Mill.</i>	Lal Kaner	11
65	<i>Petunia hybrida</i>	Petunia	92
66	<i>Phlox drummondi</i>	Annual phlox	22
67	<i>Phyllanthus emblica</i>	Amla	5
68	<i>Piper betle Linn.</i>	Paan	2
69	<i>Plumeria alba L.</i>	Gulachin	32
70	<i>Plumeria pudica</i>	Nag champa	1

71	<i>Polyalthia longifolia</i>	Ashok (Pendula)	30
72	<i>Psidium guajava L.</i>	Amrood	6
73	<i>Rhoeo spathacea Swartz.</i>	Boat Lily	32
74	<i>Rosa indica Hook.</i>	Gulab	125
75	<i>Roystonea regia O.F. Cook</i>	Royal Palm	9
76	<i>Salvia splendens</i>	Scarlet sage	7
77	<i>Santalum album L.</i>	Safed Chandan	1
78	<i>Selaginella sp.</i>	Sanjeevani	6
79	<i>Senna polyphylla</i>	Desert cassia	1
80	<i>Syngonium podophyllum Schott.</i>	Arrow head plant	2
81	<i>Syzygium cumini L.</i>	Jamun	1
82	<i>Tabernae montana divaricata L.</i>	Chandni	4
83	<i>Tagetes erecta L.</i>	Marigold	40
84	<i>Tecoma stans L.</i>	Yellow-bells	1
85	<i>Tecomaria capensis</i>	Honeysuckle	1
86	<i>Tectona grandis L.</i>	Sagwan	43
87	<i>Thuja orientalis L.</i>	Morepankhi	23
88	<i>Tradescantia pallida</i>	Purple queen	21
89	<i>Tropaeolum majus</i>	Garden nasturtium	75
90	<i>Yucca filamentosa L.</i>	Adams needle	2

Biodiversity at Science Campus

SHRI LAL BAHADUR SHASTRI DEGREE COLLEGE, GONDA

**CRITERIA -7
NUMBER OF PLANTS PLANTED IN SCIENCE CAMPUS**

S. No.	Botanical Name	Common Name	Total number of Plant
1	<i>Abelmoschus esculentus</i>	Okra (Bhindi)	1000
2	<i>Acalypha wilkesiana Muell.</i>	Garden Acalypha	2
3	<i>Adenium obessum</i>	Desert Rose	12
4	<i>Adhatoda vasica Nees</i>	Arusa	1
5	<i>Aegle marmelos L.</i>	Bael	1
6	<i>Akebia quinata</i>	Chocolate vine	1
7	<i>Allamanda blanchetii L.</i>	Purple Allamanda	1
8	<i>Allium cepa</i>	Onion (Pyaj)	600
9	<i>Aloe cheranganiensis</i>	Kenya Aloe	2
10	<i>Aloevera</i>	Indian aloe	12
11	<i>Amaranthus hypochondriacus</i>	Ramdana	800
12	<i>Anthocephalus cadamba Roxb.</i>	Kadamba	3
13	<i>Aporocactus flagelliformis</i>	Round stem cactus	2
14	<i>Araucaria columnaris Forst.</i>	Christmas -Tree	2
15	<i>Asparagus densiflorus</i>	Satavar	5
16	<i>Asparagus racemosus Willd</i>	Satavar	5

17	<i>Azadirachta indica L.</i>	Neem	2
18	<i>Bauhinia acuminata L.</i>	Safed Kachnar	3
19	<i>Beaucarnea recurvata</i>	Ponytail palm	2
20	<i>Belamcanda chinensis L.</i>	Leopard flower	11
21	<i>Beta vulgaris</i>	Chukandar	1000
22	<i>Bougainvillea sp.</i>	Bougainvillea	36
23	<i>Brassica oleracea var. Botrytis</i>	Cauliflower (Gobhi)	200
24	<i>Brassica oleracea var. Capitata</i>	Cabbage (Patta gobhi)	200
25	<i>Brassica oleracea var. Colorapa</i>	Ganth gobhi	200
26	<i>Bryophyllum pinnatum Lam.</i>	Patharchatta	16
27	<i>Butea monosperma</i>	Palas	1
28	<i>Callistemon citrinus Curtis</i>	Bottle-brush	11
29	<i>Calotropis procera Ait.</i>	Madar	2
30	<i>Canna indica L.</i>	Red canna Lily	137
31	<i>Capsicum annuum</i>	Chilly	200
32	<i>Capsicum frutescence</i>	Shimla Mirch	200
33	<i>Carissa carandas L.</i>	Karonda	2
34	<i>Caryota mitis Lour.</i>	Fish palm	1
35	<i>Cassia fistula L.</i>	Amaltas	2
36	<i>Casuarina equisetifolia Linn.</i>	Coastal-sheoak	1
37	<i>Catharanthus roseus G.</i>	Sadabahar	13
38	<i>Centaurea cyanus L.</i>	Corn flower	45

39	<i>Centella asiatica L.</i>	Brahmi	25
40	<i>Citrus aurantifolia Christm.</i>	Lemon	4
41	<i>Cicer arietinum</i>	Gram (Chana)	900
42	<i>Clematis virginiana</i>	Travellers joy	2
43	<i>Codiaeum variegatum Blume.</i>	Croton	21
44	<i>Coleus blumei Benth.</i>	Coleus	8
45	<i>Coriandrum sativum</i>	Dhaniya	2000
46	<i>Crinum latifolium L.</i>	Loudspeaker lily Pink variegated	2
47	<i>Chrysanthemum indicum</i>	Guldaudi	390
48	<i>Cryptbergia rubra</i>	Red Brust	3
49	<i>Curculiogo capitulata Kuntze</i>	Palm Grass	35
50	<i>Cycas circinalis L.</i>	Queen sago	2
51	<i>Cycas revoluta Thunb.</i>	Sago Palm	1
52	<i>Cymbopogon citratus Stapf.</i>	Lemon grass	2
53	<i>Cyperus flabelliformis Rottb.</i>	Umbrella palm	3
54	<i>Dahlia rosea Cav.</i>	Dahlia	152
55	<i>Dacus carota</i>	Carrot (Gajar)	1000
56	<i>Dendrocalamus strictus Roxb.</i>	Bans	6
57	<i>Dianthus chinensis</i>	China pink	22
58	<i>Dombeya tiliacea</i>	Wildpear	1
59	<i>Dracaena marginata L.</i>	Madagascar Dragon Tree	11
60	<i>Dracaena sp.</i>	Good luck Plant	103

61	<i>Dracaena trifasciata</i>	Snake plant	36
62	<i>Duranta erecta</i>	Golden Dewdrop	180
63	<i>Elettaria cardamum Maton</i>	Elaichi	79
64	<i>Epipremum aureum Linden & Andre</i>	Money plant	4
65	<i>Euphorbia antisiphilitica</i>	Candelilla	2
66	<i>Euphorbia milli Ch.</i>	Crown of thorns	6
67	<i>Euphorbia trigona (Cathedral cactus)</i>	Cathedral cactus	3
68	<i>Ficus benjamina L.</i>	Ficus Tree	05
69	<i>Ficus religiosa L.</i>	Peepal	1
70	<i>Foeniculum vulgare</i>	Saunf	200
71	<i>Geranium nepalense Sweet</i>	Bhanda	1
72	<i>Glebionis coronaria</i>	Crown daisy	65
73	<i>Gmelina asiatica L.</i>	Jugani -Chukur	2
74	<i>Helianthus annuus L.</i>	Sun flower	30
75	<i>Heliconia rostrata</i>	Lobster-claw	88
76	<i>Heptapleurum arboricola</i>	Dwarf Umbrella Plant	4
77	<i>Hibiscus mutabilis L.</i>	Kapas gulab	5
78	<i>Hibiscus rosa-sinensis L.</i>	Gurhal	27
79	<i>Hippeastrum puniceum Herb</i>	Loudspeaker lily Red	10
80	<i>Hydrocotyle asiatica L.</i>	Brahmi	80
81	<i>Impatiens walleriana</i>	Balsam	4
82	<i>Ixora coccinea L.</i>	Lal Rukmani	3

83	<i>Jasminum sambac L.</i>	Bela	3
84	<i>Jasminum auriculatum</i>	Juhi	3
85	<i>Juniperus communis L.</i>	Juniper	1
86	<i>Lawsonia inermis L.</i>	Mehndi	1
87	<i>Lens esculenta</i>	Lentil (Masoor)	1800
88	<i>Linum usitatissimum</i>	Linseed (Alsi)	2000
89	<i>Livistona chinensis R.</i>	(Chinese palm)	6
90	<i>Lycopersicon esculentum</i>	Tomato (Tamater)	200
91	<i>Mangifera indica L.</i>	Aam	8
92	<i>Mimusops elengi L.</i>	Maulshree	1
93	<i>Monstera deliciosa Liebm.</i>	Amarphal	2
94	<i>Moringa oleifera Lam.</i>	Sahjan	5
95	<i>Morus alba L.</i>	Sahtoot	1
96	<i>Murraya paniculata L.</i>	Kamini	2
97	<i>Musa paradisiaca L.</i>	Kela	12
98	<i>Mussaenda frondosa L.</i>	Bedina	1
99	<i>Nephrolepis cordifolia Presl.</i>	Sword Fern	5
100	<i>Nerium indicum Mill.</i>	Lal Kaner	8
101	<i>Nyctanthes arbor-tristis L.</i>	Harsingar or Parijat	2
102	<i>Nymphaea lutea L.</i>	Yellow water lily	1
103	<i>Nymphaea rubra Roxb.</i>	Indian Red water lily	1
104	<i>Nymphaea stellata willd.</i>	Indian blue water lily	1

105	<i>Papaver rhoeas L.</i>	Field Poppy	155
106	<i>Passiflora edulis Sims</i>	Kaurav Pandav	1
107	<i>Phoenix pusilla</i>	Small wild date palm	2
108	<i>Phaseolus vulgaris</i>	Red kidney been (Rajma)	200
109	<i>Pinus roxburghii</i>	Chir	1
110	<i>Piper betle Linn.</i>	Paan	10
111	<i>Pisum sativum</i>	Pea (Matar)	900
112	<i>Plumeria alba L.</i>	Gulachin	4
113	<i>Plumeria rubra L.</i>	Gulachin	6
114	<i>Portulaca grandiflora Hook.</i>	Rose-moss	4
115	<i>Psidium guajava L.</i>	Amrood	4
116	<i>Punica granatum L.</i>	Anar	2
117	<i>Pyrostegia venusta (ker-Gawl)</i>	Flame Vine	2
118	<i>Pyrus malus L.</i>	Seb	1
119	<i>Raphanus sativa</i>	Raddish (Mooli)	1000
120	<i>Ranunculus asiaticus</i>	(Persian butter cup)	10
121	<i>Rauvolfia serpentina L.</i>	(Sarap Gandha)	1
122	<i>Rauvolfia tetraphylla L.</i>	Sarpgandha	4
123	<i>Rauvolfia tetraphylla L.</i>	Barachandrika	4
124	<i>Ravenala madagascariensis Sonn.</i>	Traveller's Tree	2
125	<i>Rhoeo spathacea Swartz.</i>	Boat Lily	6
126	<i>Rosa indica Hook.</i>	Gulab	346

127	<i>Roystonea regia O.F.Cook</i>	Royal Palm	21
128	<i>Santalum album L.</i>	Safed Chandan	2
129	<i>Saraca asoca Roxb.</i>	Asok	33
130	<i>Scadoxus multiflorus</i>	Football Lily	2
131	<i>Selenicereus undatus</i>	Draggon fruit	2
132	<i>Smilex china L.</i>	Smilex	1
133	<i>Solanum melongena L.</i>	Brinjal	202
134	<i>Solanum tuberosum</i>	Potato (Aalu)	600
135	<i>Spinacea oleracea L.</i>	Palak	2000
136	<i>Streblus asper Lour.</i>	Sihor	1
137	<i>Strelitzia sp.</i>	Bird of paradise	1
138	<i>Syngonium Pink Plant</i>	Red Arrow head plant	2
139	<i>Syngonium podophyllum Schott.</i>	Arrow head plant	5
140	<i>Syzygium cumini L.</i>	Jamun	3
141	<i>Tabernae montana divaricata L.</i>	Chandni	24
142	<i>Tagetus erecta L.</i>	Marigold	45
143	<i>Tecoma stans L.</i>	Yellow-bells	2
144	<i>Tectona grandis L.</i>	Sagwan	7
145	<i>Thevitia peruviana Pers.</i>	Pili Kaner	3
146	<i>Thuja orientalis L.</i>	Morepankhi	4
147	<i>Thunbergia erecta</i>	Bush clock vine	1
148	<i>Trigonella foenum-graecum</i>	Methi	2000

149	<i>Tylophora asthmatica wight & Arn</i>	Anant mool	1
150	<i>Vitis vinifera Linn.</i>	Grape	1
151	<i>Vicia faba</i>	Bakla	900
152	<i>Withania somnifera L.</i>	Aswagandha	2
153	<i>Yucca filamentosa L.</i>	Adams needle	10
154	<i>Zinnia elegans Jacq.</i>	Zinnia	100

Biodiversity at B.Ed. Campus

<u>SHRI LAL BAHADUR SHASTRI DEGREE COLLEGE,</u> <u>GONDA -271003</u>			
CRITERIA -7			
NUMBER OF PLANTS PLANTED IN B.ED. CAMPUS			
S. No.	Botanical Name	Common Name	Total number of Plants
1.	<i>Aloevera</i>	Indian aloe	2
2.	<i>Anthocephalus cadamba Roxb.</i>	Kadamba	1
3.	<i>Araucaria columnaris Forst.</i>	Christmas -Tree	2
4.	<i>Azadirachta indica L.</i>	Neem	2
5.	<i>Callistemon citrinus Curtis</i>	Bottle-brush	1
6.	<i>Calotropis gigantia</i>	Safed Madar	1
7.	<i>Catharanthus roseus G.</i>	Sadabahar	11
8.	<i>Cestrumnocturnum</i>	Raatrani	1
9.	<i>Citrus aurantifolia Christm.</i>	Lemon	2
10.	<i>Codiaeum variegatum Blume.</i>	Croton	7
11.	<i>Crinum latifolium L.</i>	Loudspeaker lily Pink variegated	4
12.	<i>Dracaena sp.</i>	Good luck Plant	8
13.	<i>Dracaena fragrans</i>	Good luck Plant	1
14.	<i>Dracaena trifasciata</i>	Snake plant	4
15.	<i>Duranta erecta</i>	Golden Dewdrop	25

16.	<i>Euphorbia tithymaloides</i>	Milkbush	6
17.	<i>Ficus benamina L.</i>	Ficus Tree	1
18.	<i>Ficus elastica</i>	Rubber Plant	1
19.	<i>Graptophyllum pictum</i>	White adulsa	1
20.	<i>Hibiscus rosa-sinensis L.</i>	Gurhal	4
21.	<i>Hippeastrum puniceum</i> Herb	Loudspeaker lily Red	4
22.	<i>Lawsonia inermis L.</i>	Mehndi	1
23.	<i>Livistona chinensis R.</i>	Chinese palm	1
24.	<i>Mangifera indica L.</i>	Aam	2
25.	<i>Mimusops elengi L.</i>	Maulshree	2
26.	<i>Moringa oleifera Lam.</i>	Sahjan	1
27.	<i>Murraya coeingsiiL.</i>	Meethi neem	3
28.	<i>Musa paradisiaca L.</i>	Kela	2
29.	<i>Ocimum sanctum</i>	Tulsi	2
30.	<i>Pavetta lanceolata</i>	Christmas bush	1
31.	<i>Pedilanthus tithymaloides</i>	Red bird zigzag cactus	1
32.	<i>Phoenix pussila</i>	Wild date	1
33.	<i>Polyalthia longifolia</i>	Ashok (Pendula)	28
34.	<i>Psidium guajava L.</i>	Amrood	7
35.	<i>Punica granatum L.</i>	Anar	4
36.	<i>Rosa indica Hook.</i>	Gulab	43
37.	<i>Roystonea regia O.F.Cook</i>	Royal Palm	3

38.	<i>Tagetes erecta L.</i>	Marigold	6
39.	<i>Thuja orientalis L.</i>	Morepankhi	1
40.	<i>Ziziphus mauritiana</i>	Ber	1

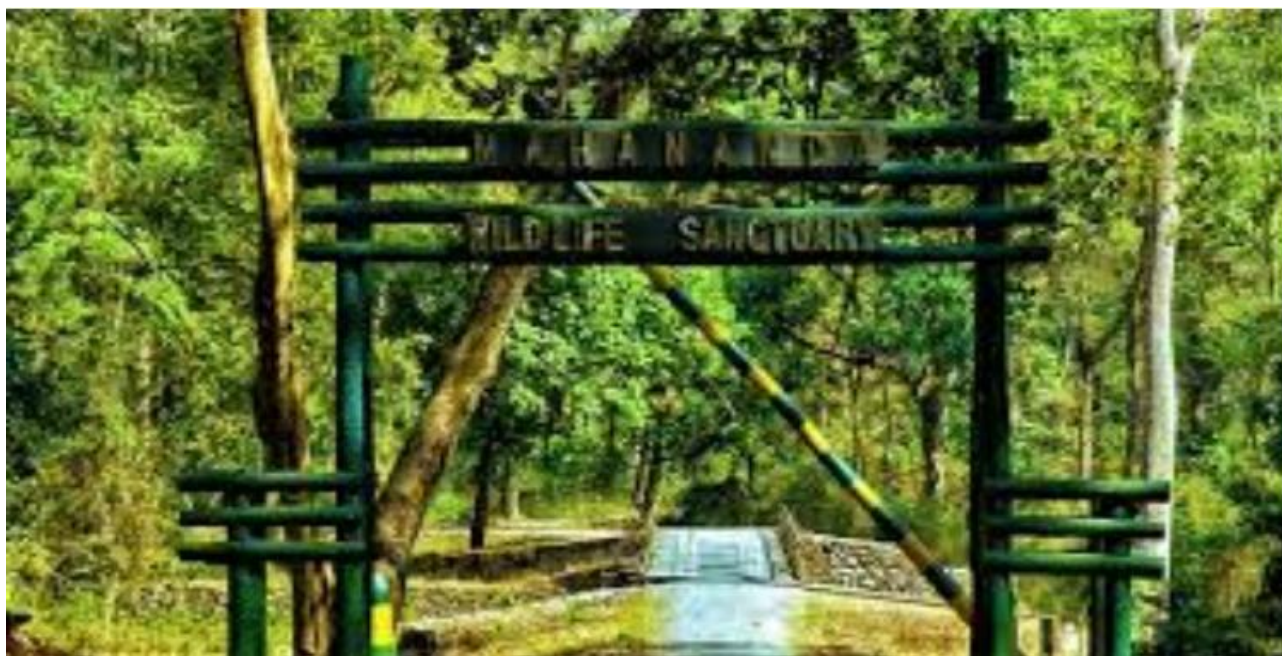
Campus Involvement

For sustainable use of resources and for the mission of “GO-GREEN” it is necessary that the students, faculty and administration welcome it.

SLBS Degree College is an environment that invites opportunities to better its community through campus organizations. The green initiative started in the campus many years ago. The College students are actively participating and solely concerned with environment. These students under the guidance of faculties strive to create an environmentally friendly campus. Their purpose is to create awareness and eventually act on that awareness. College is also actively conducting environmental awareness programs in campus regularly.

Environmental Conservation Programme

The College also took their students to different National Park in order to educate the students about in situ Conservation of Wildlife.



4.1.National Ambient Air Quality Program (NAAQM)

SLBS Degree College actively participates in the National Air Quality Monitoring Program (NAMP) initiated by the Central Pollution Control Board (CPCB) in 1984. This program aims to track spatial and temporal variations in ambient air quality for key pollutants, informing strategic air quality management plans.

Under NAMP, three critical pollutants - sulfur dioxide (SO₂), nitrogen dioxide (NO₂), and respirable suspended particulate matter (RSPM/PM₁₀) - are monitored at three designated locations within the college campus. This monitoring follows a 24-hour protocol, involving 4-hourly sampling for gaseous pollutants and 8-hourly sampling for particulate matter, adhering to CPCB guidelines.

A dedicated Respirable Dust Sampler (RDS) machine is installed at the main gate of the college, continuously monitoring changes in ambient air quality throughout the day. This data provides valuable insights into the air quality surrounding the campus, allowing for informed decision-making and potential mitigation strategies.

Through its participation in NAMP, SLBS Degree College demonstrates its commitment to environmental responsibility and creating a healthier campus environment for students, staff, and the surrounding community.

Ambient air quality in the SLBS Degree College is given in the below Table: -

S.No	Parameters	Unit	Result	Requirement permissible limits as per	Test Method
1	Particulate Matter, PM ₁₀	µg/m ³	75	100	IS:5182 (P-23) : 2006
2	Particulate Matter, PM 2.5	µg/m ³	47	60	SOP1/Ambient Air/01/010416
3	Sulphur Dioxide (as SO ₂)	µg/m ³	8	80	IS:5182 (P-2) : 2006
4	Carbon Monoxide (as CO)	mg/m ³	01	04	IS:5182 (P-10) : 1999
5	Oxide of Nitrogen (as NO ₂)	µg/m ³	38	80	IS:5182 (P-6) : 2006

Central Pollution Control Board, New Delhi has set guidelines to monitor and analyze the air pollution quality parameters. The trees cover in campus are the leading sources to absorb CO₂ and releasing enough fresh O₂ across the College Campus. Result shows that SLBS Degree College Campus air quality status is good as compared to other locations.

It is identified that SLBS Degree College's campus is a green campus. College campus observed minimum air pollution as compared to other Ambient Air Pollution Centers located in different part of the city.

Precautionary measures:

Optimize the use of diesel generators.

Ambient noise monitoring status:

SLBS Degree College is located in the center of the city. At the main gate of the Campus, the human communication and transportation are producing some sound level.

Ambient noise monitoring was carried out in different areas of SLBS Degree College campus like at College campus entry, administration building and horticulture section, The sampling was carried out using calibrated Sound Level Meter (AZ 8921) by logarithmic scale in Decibels (dB). The noise readings were collected in the College campus and calculated. The details of noise status in College campus are given in below table.

Ambient Noise levels in SLBS Degree College

SI No.	Dept. Name / Other Name	Leq (dB) Day time
1	Department of Geography	30db
2	Department of Education	30db
3	Main Building	65db
4	Main Canteen	30db
5	Main Gate	68db

Note: -

1. All parameters expressed in dB (A) Leq. and observed under permissible limits.
2. Monitoring is carried during day time.

Recommendations

1. Resource Conservation and Efficiency:

- Implement energy-efficient technologies and practices across campus, such as LED lighting, renewable energy sources, and smart building systems.
- Reduce water consumption through rainwater harvesting, low-flow fixtures, and water-efficient landscaping practices.
- Encourage responsible waste management through waste minimization, recycling initiatives, and composting programs.

2. Biodiversity and Ecosystem Enhancement:

- Develop and maintain natural habitats on campus, such as gardens, green roofs, and native plant landscaping.
- Implement sustainable landscaping practices that minimize chemical use and promote biodiversity.

- Encourage bird-watching, wildlife observation, and other nature-based activities to foster a connection with the natural world.

3. Environmental Awareness and Education:

- Implement mandatory environmental awareness programs for students and staff, incorporating interactive workshops, seminars, and educational campaigns.
- Develop and display informative posters and signage across campus promoting sustainable practices and environmental protection.
- Integrate environmental education into relevant academic subjects, fostering a deeper understanding of environmental issues and responsible behavior.

4. Regulatory Compliance and Enforcement:

- Conduct regular audits to ensure compliance with all applicable environmental laws and regulations relevant to campus operations.
- Establish a dedicated environmental compliance officer or committee to oversee environmental management practices and address potential violations.
- Promote open communication and reporting of environmental concerns to encourage responsible action and timely resolution of issues.

5. Environmental Research and Innovation:

- Support faculty and student research initiatives focused on environmental sustainability and green technologies.
- Partner with external organizations and research institutions to explore innovative solutions for environmental challenges.
- Organize conferences, workshops, and guest lectures to share best practices and promote environmental knowledge exchange.

6. Continuous Improvement:

- Regularly conduct environmental audits and assessments to identify areas for improvement in environmental performance.
- Set ambitious environmental goals and track progress towards achieving them.
- Implement a performance management system to monitor and evaluate the effectiveness of environmental initiatives.

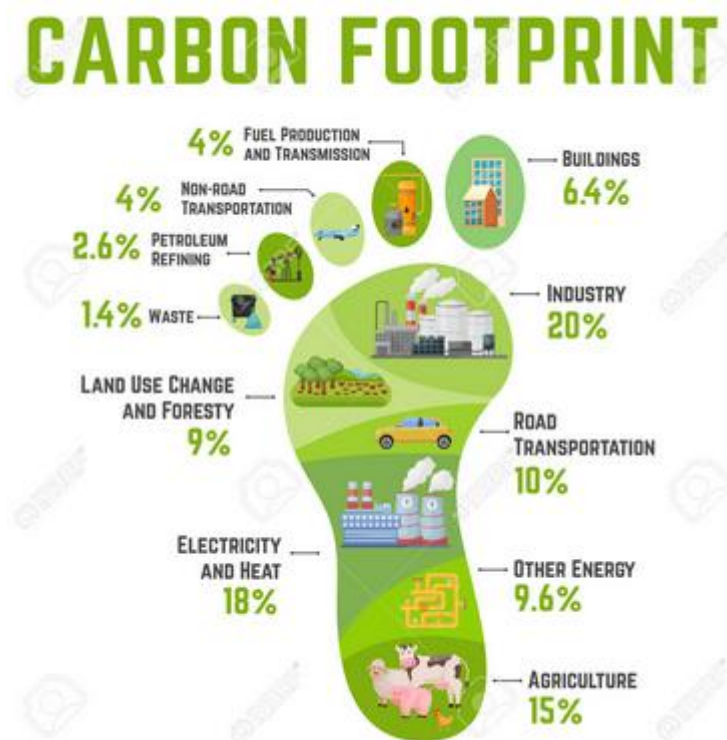
By implementing these recommendations, SLBS Degree College can significantly enhance its environmental quality, minimize its environmental footprint, and contribute to a more sustainable future.

V. CARBON FOOTPRINTS

Carbon is the basis of life on mother Earth. It is incorporated into the plants through photosynthesis, consumed by animal species through the food, present in the form of carbon dioxide (CO₂) the atmosphere, locked into the rocks as limestone and compressed into the different fossil fuels such as coal and oil. As CO₂ level in the atmosphere continue to increase, most climate designs or project that the oceans of the world and trees will keep soaking up more than half CO₂. The plants on land and in the sea, taken up carbon by over many years increased the percentage discharged during decay, and this increased carbon became locked away as fossil fuels beneath the surface of the planet.

The starting of the 21st century, we brought growing concern about global warming, climate change, food security, poverty and population growth. In the 21st century more carbon has been released into the atmosphere than that has been absorbed. CO₂ is a principle component causing global warming. Atmospheric carbon dioxide levels have increased to 40 % from preindustrial levels to more than 390 parts per million CO₂. On this background it is a need of time to cover the research areas interrelated with climate change.

7.1 Carbon footprints



In today's world one of the biggest issues faced by all of us is global warming. Global warming refers to an increase in average global temperature of mother Earth. The main cause of global warming is increase in the concentration of greenhouse gases (GHGs) in the atmosphere due to anthropogenic activities and their level is determined with the help of global warming potential (GWP) and expressed as Carbon Footprint (CF). Carbon Footprint is another phenomenon used for GHGs or carbon dioxide emission in terms of CO₂ equivalents. There are various definitions of carbon footprint are in literature. But the most recognized definition given by Wiedmann "the Carbon footprint is the measure of carbon dioxide

emissions directly or indirectly caused by an activity or accumulated over the life stages of a product." In otherwords, "A carbon footprint is the total greenhouse gas (GHG) emissions caused directly and indirectly by an individual, organization, event or product."

As the SLBS Degree College considered as institutional organization, the various energy resources like electricity, solar roof top systems are used. It is necessary to calculate the carbon footprint of the College to upgrading the Clean Developmental Mechanism (CDM) in various processes. All the data from the various sources were collected from all the sectors where energy resources are used. The collected data is calculated by using standard emission factors.

Efforts for Carbon Neutrality

Air pollution is a matter of serious concern in the campus owing to its urban location. SLBS Degree College as a responsible institution understands the importance of its carbon footprint and developed a plan to reduce greenhouse gas emissions in all its activities. Strictly ban on burning of dried leaves and waste paper in College.

Electricity carbon footprint:

In the College, electricity is used for various purposes like residential, office use and in the laboratories. The total electricity used in the College liberates mass kg of CO₂ per year. The laboratory equipments consume highest electricity which emits the large amount of carbon CO₂ per year.

The solar panels are installed on the roof of various buildings produces electricity from solar panels which further saves ample mass of CO₂ per year.

Paper footprint:

The papers are used in the institution for various purposes like exam answer sheets, circulars, notices, office work etc. The papers are responsible for the emission of CO₂. The College used total uses approx. 600 reams of papers which emits the 0.30 tons of CO₂. In the College campus various departments follows paperless methods of communication to reduce the footprint by use of papers.

The paperless work reduces approximately 0.5 tons of CO₂ approximately. The total 0.25 tons of biomass is saved by paperless communication i.e. green computing.

Recommendations

1. Green Computing Practices:

- Continue promoting and implementing green computing practices such as virtual desktops, paperless workflows, and energy-efficient hardware.
- Encourage faculty and staff to adopt energy-saving practices on their workstations to further reduce the College's carbon footprint.

2. Clean Development Mechanism (CDM) Awareness:

- Organize workshops and information sessions for faculty, students, and staff to educate them about CDM principles and encourage resource-efficient practices.
- Implement incentives and recognition programs to reward individuals and departments that demonstrate exemplary resource conservation efforts.

3. Electric Vehicle Fleet:

- Gradually replace traditional gasoline-powered vehicles with electric vehicles for campus transportation needs, significantly reducing greenhouse gas emissions.
- Install charging infrastructure across campus to facilitate convenient recharging of electric vehicles.

4. Carbon Sequestration Survey:

- Conduct a comprehensive "Carbon Sequestration" survey to assess the College's existing carbon storage capacity through vegetation and soil.
- Implement measures to enhance carbon sequestration on campus, such as planting more trees, promoting sustainable land management practices, and fostering soil health.

5. Environmental Performance Reporting:

- Develop and publish annual environmental performance reports that transparently track progress towards sustainability goals and highlight key achievements.
- Engage in open dialogue with the campus community and external stakeholders to share environmental data and encourage collaborative efforts for continuous improvement.

VI. GREEN INITIATIVES

College is located at the area which is one of the important wilder areas of city with its precious biodiversity. The College aims to protect and conserve its biodiversity, fresh and clean ambience through many initiatives.

The College has taken following green initiatives to protect and conserve the nature.

1. **SOLAR ELECTRICITY GENERATION:**



The College has installed solar panels system for electricity generation which produces electricity which is helpful for electricity bill reduction. Most of the buildings are constructed considering the need of Light and ventilation which reduces the use of electricity. The air conditioners are used only in essential conditions in the laboratories and offices to reduce electricity consumption.

2. BAN OF SINGLE USE PLASTIC IN CAMPUS

SLBS Degree College has a responsibility to promote environmental sustainability and set a positive example for our students and community. Single-use plastics are a significant contributor to plastic pollution, harming our environment and wildlife. Implementing a ban on single-use plastics on campus aligns with our commitment to environmental stewardship and fosters a culture of sustainability.

Impact of Single-Use Plastics:

- **Pollution:** Single-use plastics often end up in landfills, oceans, and waterways, causing harm to wildlife and ecosystems. They can take hundreds of years to decompose, releasing harmful chemicals into the environment.
- **Health Concerns:** Certain types of single-use plastics contain harmful chemicals like BPA (Bisphenol A) that can leach into food and beverages, posing potential health risks.
- **Economic Burden:** The cost of managing single-use plastic waste, including collection, transportation, and disposal, is a significant economic burden.

Benefits of a Ban:

- **Reduced Waste:** Implementing a ban on single-use plastics will significantly reduce plastic waste generated on campus, contributing to a cleaner and more sustainable environment.
- **Cost Savings:** The college will save money on the purchase and disposal of single-use plastic items. These savings can be directed towards more sustainable initiatives.
- **Educational Value:** A ban on single-use plastics will raise awareness about the environmental impact of these items and promote responsible waste management practices among students and staff.
- **Positive Image:** By taking a proactive stance against single-use plastics, SLBS Degree College will demonstrate its commitment to sustainability and inspire others to follow suit.

3. BAN ON MOTOR VEHICLES AND CARS FOR ONE DAY IN A WEEK IN THE CAMPUS

To further our commitment to sustainability and promote a healthier campus environment, SLBS Degree College is exploring a pilot program banning motor vehicles and cars for one day each week. This initiative would encourage alternative modes of transportation like cycling, walking, or using campus shuttles, reducing air pollution, noise levels, and traffic congestion. The car-free day would create a more pedestrian-friendly atmosphere, fostering a stronger sense of community and encouraging physical activity.

4. PLANTATION OF MORE AND MORE TREES IN THE CAMPUS



SLBS Degree College is nestled amidst one of the city's most significant wild areas, renowned for its rich biodiversity and pristine environment. Recognizing its responsibility towards this precious natural heritage, the College has embarked on a series of green initiatives aimed at protecting and conserving the area's unique ecosystem.

One of the key initiatives is the annual Plantation Drive, held on World Environment Day (June 5th). This event mobilizes students and staff to plant trees across the campus, contributing to its green cover and promoting environmental awareness. The planted trees are nurtured by dedicated groups of students from various departments, ensuring their survival and long-term growth.

By actively engaging the student community in these initiatives, the College fosters a sense of environmental responsibility and empowers them to become stewards of their natural surroundings. This dedication to environmental protection demonstrates SLBS Degree College's commitment to preserving the rich biodiversity and vibrant atmosphere of its surrounding area.

World Environment Day celebration happens every year at SLBS Degree College. Various plant saplings of different species being planted in various sites of the College campus during the program.

This year during the eve of celebration the college has done the major plantation activities on during the month of June and July.

5. GREEN COMPUTING PRACTICE:

As an academic institution, paper consumption for exam answer sheets, circulars, notices, office work, document printing, and photocopying is substantial. This demand translates to deforestation for paper manufacturing, leading to reduced carbon sequestration and increased carbon footprint.

To address this challenge, SLBS Degree College prioritizes paper reduction initiatives and actively promotes digital communication methods. Emails, online forms, and document sharing platforms are preferred over paper-based communication, significantly reducing reliance on physical documents.

This commitment to "paperless work" has yielded significant environmental benefits. By minimizing paper usage, the College has saved tons of CO₂ emissions and preserved valuable biomass. This green computing practice exemplifies the College's dedication to sustainable practices and environmental responsibility.

VII. SUMMARY & CONCLUSION

SLBS Degree College has conducted a comprehensive "Green Audit" during the 2022-23 academic year to evaluate its environmental practices and assess its progress towards sustainable development. This audit aimed to identify strengths and weaknesses in existing green initiatives and provide recommendations for future improvement.

Audit Conclusions:

- **Efficient waste disposal:** The College demonstrates a commitment to responsible waste management by utilizing appropriate disposal methods for the majority of its waste. This includes adopting green computing practices like online payment systems, circulars, and examination procedures (SRPD) to minimize paper usage and associated carbon footprint.
- **Composting and vermicomposting:** Biodegradable waste is effectively processed through composting and vermicomposting programs are in the future course of actions in order to reduce landfill waste and creating valuable organic fertilizer.
- **Ban on single use plastic:** SLBS Degree College has a responsibility to be a sustainability leader. Banning single-use plastics on campus reduces waste, saves money, and promotes environmental awareness. By offering reusable alternatives and clear communication, we can create a cleaner, healthier campus for everyone.
- **Energy-efficient lighting:** The College has made progress in adopting LED lights and tube lights, but further encouragement and expansion of these energy-efficient lighting solutions are encouraged.
- **Water conservation:** While the College strives for water conservation, however further reduction in the consumption in bathrooms and urinals is always beneficial. Replacing outdated taps with water-saving models can significantly address this issue.
- **Air quality:** The overall ambient air quality on campus is satisfactory. However, potential air quality concerns arising from development activities must be addressed proactively.
- **Noise levels:** The sound levels on campus remain within acceptable limits.
- **Green Chemistry:** The commitment of science departments to practicing green chemistry principles helps minimize chemical waste generation.

These conclusions provide a valuable roadmap for SLBS Degree College to further enhance its green initiatives and solidify its position as a leader in environmental sustainability within the academic community.

Key Recommendations:

SLBS Degree College can further enhance its environmental performance by implementing the following key recommendations, which also serve as an Environment Management Plan (EMP):

1. Environmental Policy:

- Develop a comprehensive environmental policy document outlining the College's commitment to sustainable practices, incorporating all existing green initiatives and recommendations from this audit.
- Disseminate the policy document widely to all staff and students to ensure awareness and understanding of environmental priorities.

2. Energy Conservation:

- Promote the electrification of street lights using solar power to reduce dependence on conventional grid electricity.
- Install sensor-based fixtures for lights, fans, and other electrical appliances to minimize energy consumption.
- Explore the feasibility of installing solar panels on building rooftops to generate clean energy and reduce reliance on fossil fuels.
- Implement rainwater harvesting systems to capture and utilize rainwater for various purposes, reducing dependence on freshwater resources.

3. Waste Management:

- Implement a system for regular measurement, monitoring, and recording of all waste generated on campus.
- Develop internal procedures for proper waste segregation, collection, and disposal, ensuring compliance with relevant environmental legislation.
- Maximize the reuse and recycling of solid waste through effective waste management practices.
- Encourage the reuse of glass bottles for chemical storage or return them to suppliers for recycling.

4. Water Conservation:

- Conduct regular maintenance of pipes, overhead tanks, and plumbing systems to address leaks, overflows, and corrosion, preventing water wastage.
- Develop and implement systems in science laboratories to reuse water used in the distillation process for other purposes, minimizing water consumption.

5. Environmental Awareness and Education:

- Organize regular environmental awareness programs and workshops for staff and students to promote responsible environmental behavior.
- Integrate environmental education into relevant academic curricula to foster a deeper understanding of sustainability principles.
- Encourage active participation in environmental conservation initiatives and community outreach programs.

6. Continuous Improvement:

- Periodically review and update the EMP based on audit findings and evolving environmental best practices.
- Establish performance metrics to track progress towards environmental goals and ensure accountability.
- Allocate appropriate resources and personnel to implement environmental initiatives effectively.

By implementing these recommendations, SLBS Degree College can demonstrate its unwavering commitment to environmental stewardship and contribute to a more sustainable future.

CLOSING REMARKS

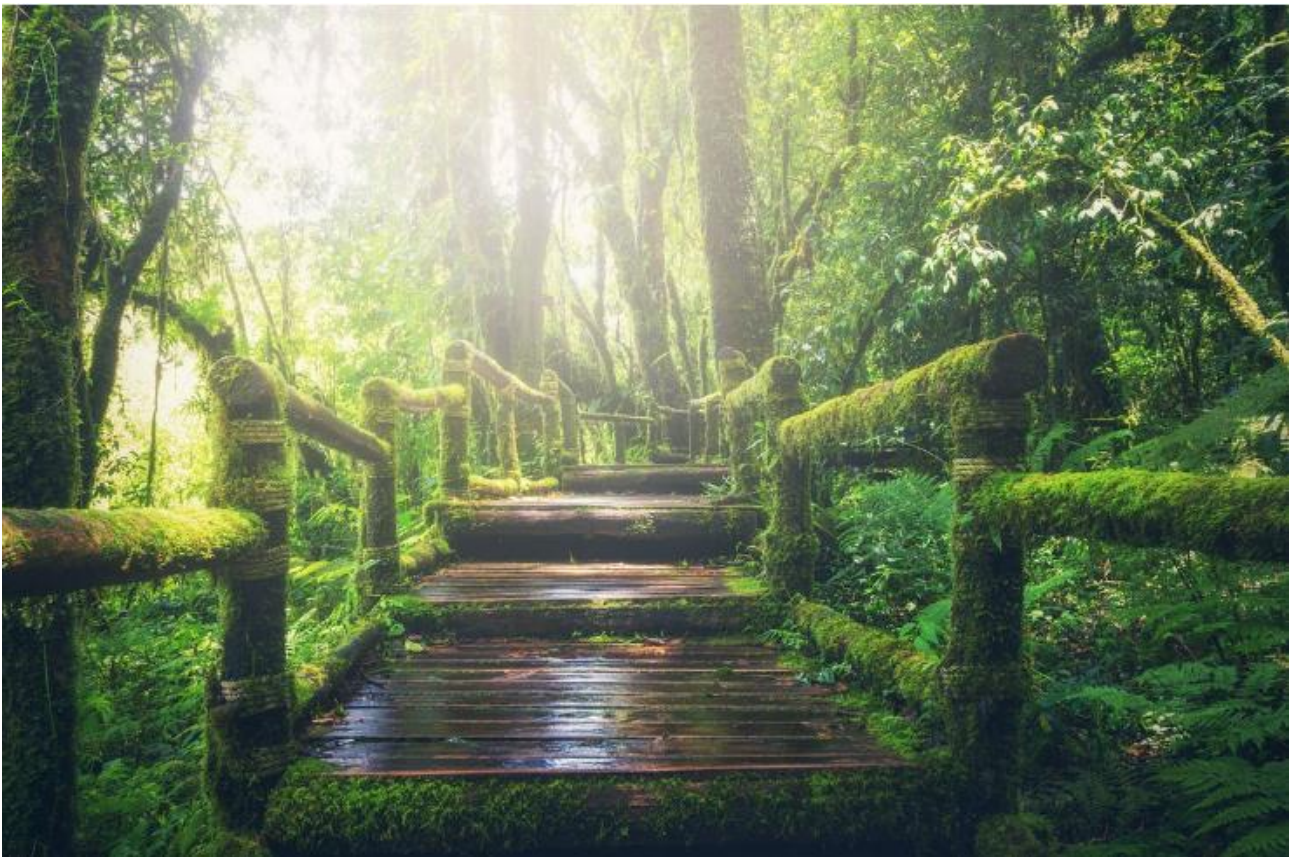
SLBS Degree College places equal emphasis on development and environmental restoration. We aim to strike a harmonious balance between growth and ecological preservation. Recognizing the importance of both, we are dedicated to fostering responsible development while protecting the environment.

SLBS DEGREE COLLEGE BOLDLY ANNOUNCES ITS TRANSFORMATION INTO AN ECO-CONSCIOUS HAVEN! OUR UNWAVERING COMMITMENT TO SUSTAINABILITY FUELS INNOVATIVE GREEN PRACTICES WOVEN INTO THE VERY FABRIC OF OUR CAMPUS LIFE.

ACKNOWLEDGEMENT

The Green Audit Team extends its sincere gratitude to the esteemed Principal Sir and IQAC Committee for their unwavering support in implementing the college's waste management and solar energy initiatives. Their vision and dedication have been instrumental in achieving these goals, which significantly contribute to SLBS Degree College's Environmental, Social, and Governance (ESG) objectives.

This collaborative effort positions the college as a leader in sustainability, fostering a healthy environment for students and staff while promoting responsible practices for the future.





REPORT BY-
KOGNITIVE STREET CONSULTING SOLUTIONS PVT. LTD.

END OF THE REPORT