Maratha Vidya Prasarak Samaj's

LAW COLLEGE

UDOJI MARATHA BOARDING CAMPUS, GANGAPUR ROAD, NASHIK- 13

Green Audit Report

Academic Year 2022-23

Prepared by

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Nashik - 422002

Eureka Environment Consultant

We Care Our Environment

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Green Audit/ Environmental Audit Certificate

This is to certify that the Eureka Environment Consultant conducted "**Green Audit/ Environmental Audit**" for "**Maratha Vidya Prasarak Samaj's, Law College, at Udoji Maratha Boarding Campus, Gangapur Road, Nashik, 422013, (M.S.) India"** for year 2022 to 2023. The audit focused on assessment of the green/ environment friendly initiatives, planning and implementation at the college campus that consisted of "Green Campus Management, Green Cover, Plantation, Waste Management, Rainwater Harvesting and conservation of energy" etc. We appreciate the efforts of the college and issue the certificate of 'Green Audit/ Environmental Audit" for the year 2022-23.

Place: Nashik

Date: 25.09.2023

EUREKA ENVIRONMENT CONSULTANT NASHIK 422003

Eureka Environment Consultant, Nashik
Certified Lead Auditor
ISO 14001:2015 (Certification No. IN/14019/144785)

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1.0 Introduction

The two major outputs of the twentieth century, modernization and industrialization,have made human life more luxurious and comfortable. They are, on the other hand, responsible for the indiscriminate use of natural resources, the exploitation of forests and wildlife, the production of huge solid waste, the pollution of limited and sacred water supplies, and, ultimately, the unsightly and inhospitable state of our mother Earth. Peopleare becoming more aware of global issues such as global warming, the greenhouse effect, ozone depletion, and climate change, among others. Mother Earth is now thought to have made her final decision. It is past time for people to wake up, unite, and fight for a more sustainable environment.

Green Audit is the most effective ecological instrument for resolving such issues. This type of audit was created in the late 1970s with the goal of inspecting the work that was being done within the institution. It is the systematic identification, quantification, recording, reporting, and analysis of ecological diversity components, as well as the financial or social expression of the same. Green audit provides guidance on how to improve the environmental conditions.

1.1 Green Audit

Green Audit assists colleges in determining whether they are overusing or underusing various types of environmental resources such as water and energy. It also helps in the assessment of college's impact on numerous environmental factors. Green auditing raises health awareness while also raising environmental awareness. The goal of the green audit is to improve understanding of green impacts on college campuses and encourage resource sustainability. If self-assessment is a natural and necessary part of a good education, institutional self-assessment may be said to be a natural and necessary part of a good educational institution. Thus it is imperative that the college evaluate its own contributions toward a sustainable future. As environmental sustainability is becoming an increasingly important issue for the nation, the role of higher educational institutions in relation to environmental sustainability is more prevalent.

People have recently been observed to be unconcerned about the environment. Human actions have a direct or indirect negative impact on the environment, resulting in a variety of environmental challenges. The increase in world population, significant advances in

science and technology, and globalization are all contributing to changes in the eco system. Global warming, ozone depletion, air pollution, and water pollution are some of the issues that develop as a result of this. 'Environmental Audit' is another name for 'Green Audit.' It is the most environmentally friendly method of resolving environmental issues.

Furthermore, in any educational institution, a clean and healthy environment is one of the desired pre-requisites. To achieve this, our institution places a strong emphasis on implementing green practices and raising environmental awareness among all of its stakeholders. This process of making the campus eco-friendly is made easier by the active participation of stakeholders. Adopting energy saving methods, proper waste management, waste water treatment, and tree plantation are some of the strategies employed to make the campus environmentally friendly. Rainwater harvesting, solid and liquid waste disposal, greening the campus, and no vehicle day are all examples of green practices. Further, academic activitiessuch as study tours/visits. Cleaning of campus and the nearby villages on different occasionand projects are also arranged in accordance to Green policy.

1.2 Benefits of Green Audit

In recent years, a Green Audit of an institution has become increasingly significant for self-assessment, as it represents the organization's participation in addressing current environmental issues. Since its establishment, the institution has worked to keep our surroundings clean. As a result, the current green audit's goal is to identify, quantify, explain, and prioritize a framework for environmental sustainability that complies with applicable rules, policies, and standards.

The Government of India issued the National Environment Policy 2006 in 2006, making green auditing essential for all industries. According to the policy, it is a reaction to India's national commitment to a clean environment, as enshrined in Articles 48 A and 51 A (g) of the Constitution (DPSP), and bolstered by judicial interpretation of Article 21. (National Environmental Policy 2006). It is acknowledged that maintaining a healthy environment is not just the responsibility of the government. Every citizen bears responsibility, and via the country's environmental management, a spirit of partnership is to be established.

The Supreme Audit Institution (SAI) formalized the environmental audit process by

following the rules outlined in the Manual of Standard Orders (MSO) released by the Authority of the Controller and Auditor General of India in 2002. The Supreme Audit Institution of India is the country's highest national auditing institution. Because of the necessity for environmental accountability, NAAC, an autonomous agency under the UGC, has included the notion of environmental audit in university and college accreditation processes.

Furthermore, it is part of the Higher Educational Institutions' corporate social responsibility to ensure that they contribute to the decrease of global warming through carbon footprint reduction methods.

- It would aid in the preservation of the ecosystem on and around campus.
- Recognize cost-cutting strategies such as waste reduction and energy conservation.
- Determine the current and upcoming difficulties.
- Give the organization the tools it needs to improve its environmental performance.
- It promotes a positive image of the university by maintaining a clean and greencampus.
- Finally, it will contribute to the creation of a favorable impression for the futureNAAC visit.

1.3 Requirements of NAAC Accreditation:

When asked why Environmental Audits, which are required for industries, are also required for educational institutions, the only answer that comes to mind is: The possibility for environmental conservation and growth in educational institutions is the only response that appears at that moment.

According to NAAC Criterion VII, institutional values and best practices, a college must respond to a variety of questions about environmental sustainability and conciseness. The questions such as Weather institution has facilities for alternate sources of energy and energy conservation measures? Describe the facilities in the Institution for the management of the following types of degradable and non-degradable waste? Water conservation facilities available in the Institution, Green campus initiatives implemented by college. In this regards, throughout the year every college runs various types of actives. College prepare various policies to maintain and support environment.

Under Criterion VII sub point 7.1.6 every college needs to conduct Green Audit, Energy Audit, Environmental Audits etc., and need upload the reports in every years AQAR. The goal of making all of these audits mandatory through NAAC is to help universities become more environmentally friendly and sustainable. NAC has included these challenges in its assessment of the need of the hour, recognizing that schools can better achieve the United Nations' Sustainable Development Goals

1.4 Profile of Maratha Vidya Prasarak Samaj's

The 108-year-old Maratha Vidya Prasarak (MVP) Samaj in Nashik is a well-known educational institution in Maharashtra. MVP Samaj's great thinkers correctly laid the "*Bahujan Hitay, Bahujan Sukhay*" foundation. The institute aspires to offer the horizons of education to the impoverished sectors of society, as its slogan states, "well-being and happiness of the masses." Discipline, Quality, and Transparency are the three guiding principles of the institute.

The Institute began as a boarding school in 1914, with 5 students and a grant of Rs. 1000/- from Rajarshi Shahu Maharaj, the then Chatrapti of Kolhapur. This 100 years old renowned educational institute is in the jurisdiction of University of Pune. At present, the total number of students in its 350 educational and professional institutions is 1,81,683, with a total of 7,478 staff. The budget for the year is Rs. 275 crores. The spectrum of educational institution encompasses Primary Schools, Secondary Schools, Graduate & Postgraduate

Colleges, Professional & Vocational Colleges. It was one of the greatest milestones in the pre-independence history of Nashik. The wellbeing in general and education in particular were considered the sole of human being.

The founders of the Samaj were inspired and driven by the great work of Mahatma Jyotiba Phule and Chhatrapati Rajarshi Shahu Maharaj of Kolhapur. The pioneers, devoted and dedicated team of MVP Samaj includes the names of great social workers and educationalists as Karmaveer Raosaheb Thorat, Bahusaheb Hiray, Kakasaheb Wagh, Annasaheb Murkute, Ganpatdada More, Kirtiwanrao Nimbalkar, D.R. Bhosale, and Vithoba Patil Jadhav. The students & professionals produced by the institutions of NDMVP Samaj forum the real backbone of modern society.

Table No. 1.1 List of Branches of MVP Samaj

Sr. No.	Institution Type	Number
1	Preprimary School (Marathi Medium)	73
2	Preprimary School (English Medium)	15
3	Primary School (Marathi Medium)	70
4	Primary School (English Medium)	16
5	Ashram School (Primary)	03
6	Ashram School (Secondary)	02
7	Secondary School (Marathi Medium)	158
8	Secondary School (English Medium)	08
9	Higher Secondary Section	63
10	D.Ed. College	04
11	B.Ed. College	01
12	Arts, Science & Commerce Colleges	22
13	College of Pharmacy	01
14	College of Architecture	01
15	Bachelor of Design	01
16	Nursing College	01
17	Management Institute (IMRT)	01
18	Training & Skill Development	01
19	Printing Press	01
20	ITI	08

21	Medical College	01
22	Medical College Hospital & Research Centre	01
23	Hostels	22
24	Agriculture School	01
25	School of fine Art	01
26	Jan Shikshan Sansthan	01
27	D Pharmacy	01
28	Training College of Nursing	01
29	College of Engineering	01
30	College of Agriculture	01
31	College of Physiotherapy	01
32	Law College	01
33	College of Social Work	01
34	Polytechnic College	01
35	Nagari Aarogya Kendra	01
36	Gramin Arogya Kendra	01

1.5 Profile of MVP Samaj's Law College:

M. V. P. Samaj established M.V.P. Samaj's Law College in June 2004 facilitating legal education for Students from the Nashik district. M.V.P. Samaj's Law College, Nashik was established in June 2004 with the approval letter No. NMV 2003/Law/(12/03) M.S. 3 Higher and Technical Education Dept. Dated 6 Nov. 2003 of the Government of Maharashtra to run different post graduate diploma and degree courses. The college is affiliated to Savitribai Phule Pune University, Pune I.D. No (PU/NSL/LAW /80/2004. The college is approved by Bar Council of India. The college is in the process of NAAC accreditation.

The MVP Samaj's Law College is located on the Gangapur Road. It is in the Heart of City of Nashik, at a distance of 20 minutes from Central Bus Station Nashik. It is a part of MVP Samaj's Educational Complex on the sprawling 33 acres of area near the holy river-Godavari.

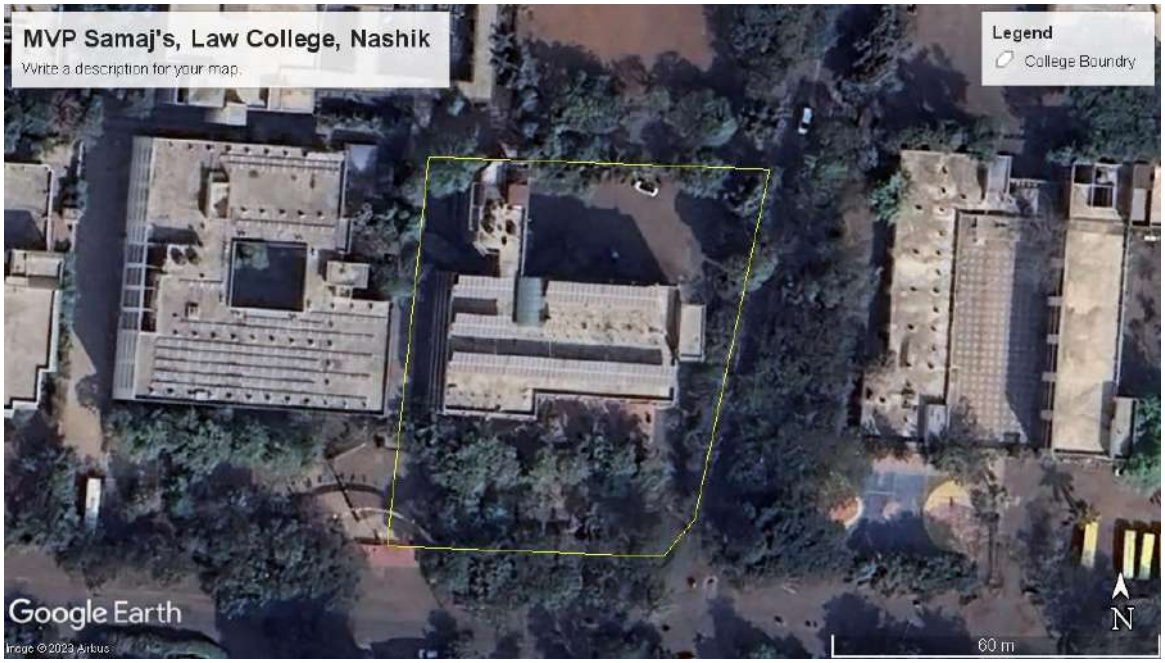


Photo No. 1 Google image of MVP Samaj's Law College, Nashik

The college offers full-fledged degree programmes in law as LL.B 3 years course, B.A.LL.B 5 years integrated course and one year diploma courses as Diploma in taxation law (D.T.L.), Diploma in Labour Law and Labour welfare (D.L.L. & L.W.) and Diploma in intellectual property rights law (D.I.P.R.L).

Table No. 1.2 Courses offered by College

Sr.NO.	Name of Faculty	Name of Program
1.	Faculty of Law	LL.B
		B.A.LL.B
2.	Diploma	DTL
		D.L.L.&L.W
		D.I.P.R.L.

2.0 Methodology Used for Green Audit

With the importance of Green audit in mind, the current study examines the process of environmental audit and the important steps that academic institutions may do to help the environment. Green audit is done through various stages.

2.1 Pre Audit Stage:

The implementation of a College Green Audit/ Environmental Conservation Committee (ECC) by an organization is the first and most essential part of a green audit. The ECC is the backbone of the auditing process, with a wide range of responsibilities. This system keeps track of every facet of the green audit. The following table shows the details of college ECC.

Table No. 2.1 College Green Audit/ Environmental Conservation Committee

Sr. No.	Name of Member	Designation	Title in Committee
1.	Dr. Sandhya T. Gadakh	Principal	Chairman
2.	Dr. Kapil S. Shirsath	Physical Director	Coordinator
3.	Mr. Swapnil D. Pawar	Assistant Professor	Member
4.	Mrs. Geetanjali Endyat	Assistant Professor	Member
5.	Mr. Prashant Dawande	Office Superintendent	Member

The ECC should declare an organization's "Environmental Policy" and communicate it to all teachers, nonteaching staff and students. The policy reflects the organization's environmental sustainability goals, objectives, scope, and priorities. ECC should provide all the necessary base line data to external auditing agency.

The ECC shall organize and carry out its programs and operations in a thorough and systematic way, as stated in the declared environmental policy. Before such operations are planned, the environmental issues of the organization, as well as their legal obligations, should be evaluated.

ECC members must define roles, responsibilities, and authorities of key personnel during the implementation and operation processes, commit to staff training, maintain effective communication channels, adopt effective documentation and operational controls, and maintain sufficient emergency preparedness awareness among the staff. All implemented programs and processes should be evaluated by the ECC, which should then be modified in accordance with the environmental policy.

2.2 Onsite Audit Stage

Higher education institutions must conduct and verify their own Audit through external auditing organizations. The ECC of the college plans the visit of auditor's from external agencies and execute the audit process. During the visit, the auditor thoroughly examines the documentation and makes any required comments. The auditor conducts an audit of the Environment Policy by evaluating documents and conducting personal interviews with stakeholders' representatives. The auditor also conducts an assessment of all planned and implemented programs or activities through document evaluation and personal interviews with stakeholders' representatives.

2.3 Post Audit Stage:

An auditor's role at the post-audit stage to analyze, interpret the provided baseline data and onsite observations and prepare a detailed audit report. In relation to the higher education institute, the auditor evaluates all of the audit's facts and observations together. The auditor must evaluate all the findings as per the available standard norms. In consultation with the ECC, the auditor creates a brief report of the audit, including recommendations. External auditors must provide detailed recommendation to ECC of the higher educational institution. According to an auditor's suggestions, the ECC should devise an action plan and carry it out successfully. The auditor monitors the programs or activities on a regular basis. An organization will be awarded a certificate if the audit is completed successfully.

3.0 Environmental Aspects Covered Under Green Audit

3.1 Water Environment

3.1.1 Water Audit

Water conservation is not only good for Society and the environment; it's also excellent practice. Water conservation can help you save money on your water, wastewater, and energy bills, as well as reduce on-site treatment expenses. Every company is different, but a water audit is a good place to start.

Water audits allow you to inventory all of your facility's water uses and suggest strategies to improve water efficiency. The findings can assist you in prioritizing actions to take in order to adopt cost-effective water-saving measures. A water audit might help you save money by lowering your water bill at home (and sewer bill if you are connected to a public sewer system). By applying easy conservation measures and without dramatically altering your lifestyle, you may reduce your water usage by up to 30%.

Table No. 3.1 Total Population of the Campus and Water Quantity Requirement

Sr. No.	Particulars	Total number	Required Water Supply (lpcd)	Water Requirement (lpcd)
1.	College Staff - Teaching and Non-Teaching	26	45	1170
2.	College Students (Girls and Boys)	869	45	39105
3.	Residential Students	10	45	450
3.	Floating Population (Visitors)	12	45	540
	Total	917		41265

Water demand for various institutions, in addition to home consumption, is also analyzed for a town or city. Hospitals, schools, restaurants, hotels, railway stations, bus terminals, and offices of various departments are all found in a well-developed city or town. On average, additional per capita demand for these units ranges from 25 to 60 liters per head per day (lpcd), depending on the village, town or city. As per the standard guidelines given in National Drinking Water Mission the service level benchmark is to provide 150 lpcd water supply for metro cities, 135 lpcd for other cities/towns with sewage system and 45 lpcd without sewage system city/town. The minimum water demand according to the world health organization (WHO) is 20 liter per person per day.

3.1.2 Water Storage Capacity:

There are 3 Overhead tank with 12000 liters capacity, 1 overhead tank with 2000 lit capacity and 2 PVC tank with 5000 lit capacities. The Municipal water source, bore well and open well all are source of water for college. Only that the municipal corporation water connection provides the appropriate amount of water to the college on a regular basis. According to the discussion with ECC, the college premises use water from 30,000-liter water tank. The municipal corporation provide 20000lit water, while water from open well is extracted once in 15 days that provide 5000 lit water, lastly bore well is used once in a week to give 5000 lit water. Based on available data and water supply benchmarks as per the National Building Code (NBC), if college students use water for two available above tanks, the campus college receives 14265 liters less water per day. The college population has been steadily expanding in recent years, necessitating the installation of a new water tanks on the roof of the college building.

3.1.3 Water Quality

Table 3.2 Drinking Water (Bore well and NMC) Analysis Results

Sr. No.	Parameters	Bore well	Municipal corporation	Acceptable Limit as per IS 10500 : 2012	Units
1	pH	7.9	7.6	6.5-8.5	-
2	Total Dissolved Solids	625	363	500	mg/lit
3	Calcium	52	51	75	mg/lit
4	Chloride	135	143	250	mg/lit
5	Alkalinity	151	119	200	mg/lit
6	Total Hardness	256	143	200	mg/lit
7	E. Coli	Absent	Absent	Should be Absent	/ 100 ml
8	Total Coliform	Absent	Absent	Should be Absent	/ 100 ml

Some physico-chemical parameters, such as total hardness and TDS are found to be over the acceptable limit for boar well water but other parameters are within the permissible limit. Water is not polluted with fecal coliform after bacteriological parameters are assessed.

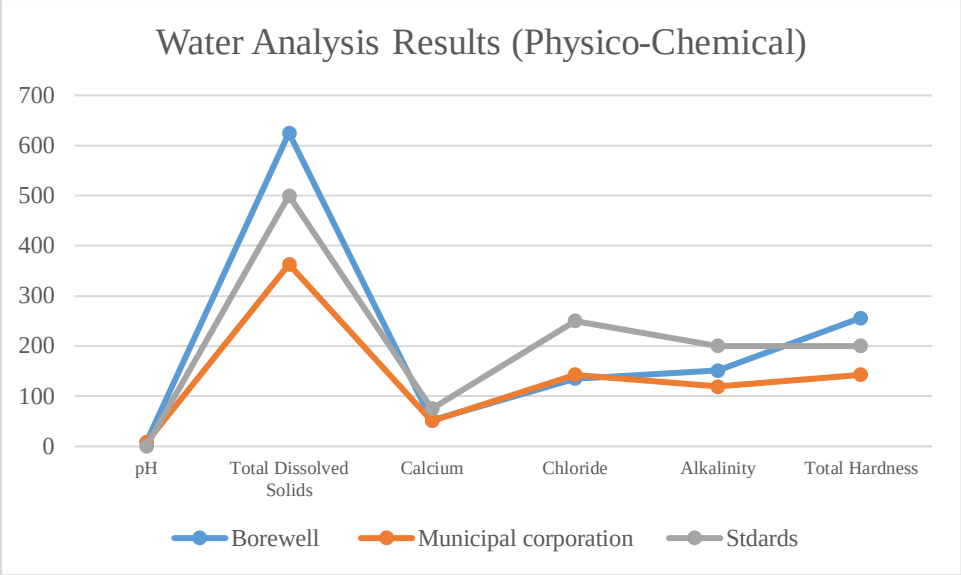


Figure No. 1 Physico-chemical Assessment of Drinking Water

Photo No. 2 Overhead Water Storage Tanks

3.1.4 Quantification of Wastewater:

Table No. 3.3 Quantification of wastewater generation on college campus

Sr. No.	Particulars	Total number	Required Water Supply (lpcd)	Water Requirement (lpcd)	Total Wastewater Generated (lpcd)
1.	College Staff - Teaching and Non-Teaching	26	45	1170	936
2.	College Students (Girls and Boys)	869	45	39105	31284
3.	Residential students	10	45	450	360
4	Floating Population (Visitors)	12	45	540	432
	Total	917		41265	33012

It is reported that the college gets its water from a various source. Taking in account the deteriorated water quality and health of population in the premises a water purification system is required. Cleaning water tanks on a regular basis is also very important.

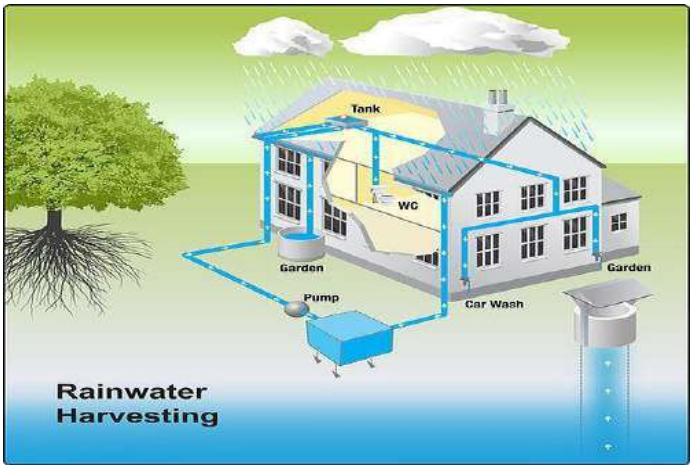
According to the Central Public Health and Environmental Engineering Organization (CPHEEO), wastewater accounts for 70-80 percent of total water supplied. The MVP Samaj's Law College, Nashik generates roughly 33012 liters of wastewater per day, based on the number of users and per capita water used. In areas like Nashik, there is a big river passing the city, still requires water conservation strategies. It is observed that large amount of water is generated in a college's toilets and bathrooms.

As was revealed, there is no separate drainage system for collecting and transferring sewage and liquids from college. There is currently a combined drainage system in place that carries all liquid effluent to a sewage system. It is necessary to collect grey and black water. After minimal treatment, grey water must be used for plant irrigation, and black water must be effectively treated with a simple septic system and soak pits

3.1.5 Rainwater Harvesting.

In terms of managing their natural resources, higher education institutions (HEIs) have a great deal of autonomy. They are virtually self-governing and internally regulated, whereas people, businesses, industries, and others are subjected to strict external oversight and accountability. This ability to self-regulate, with their own university presidents presiding over their own resource management system as the final authority, can serve as a

springboard for water conservation. Every individual and system must have water conservation embedded not only in their minds, but also in their actions



The campus buildings possess a terrace areas and paved surface. Currently, the college buildings have Rain Water Harvesting (RWH) System. The campus has a potential for RWH but due to average rainfall the harvested rain water could fulfil whole requirement of college but can help to reduce the stress on up-liftment of underground water. As only underground reservoirs are the main source of water for consumption except drinking, the rain water harvesting system may help the college management to fulfil the need of depended population. Keeping this as an objective of water management, installation of Rain water harvesting system has been implemented in the college campus.

Average Rainfall at Nashik: 1037 mm

Table 3.4. Total Rainwater Harvesting from the college roof:

Sr. No.	Building Name	Roof type	Rooftop Area Sq.m.	Runoff factor	Water harvested (litre/day)
1.	Main Building	RCC	1138.47	0.7	2617.9
2.	College Canteen	Corrugated Sheets	300	0.8	788.4

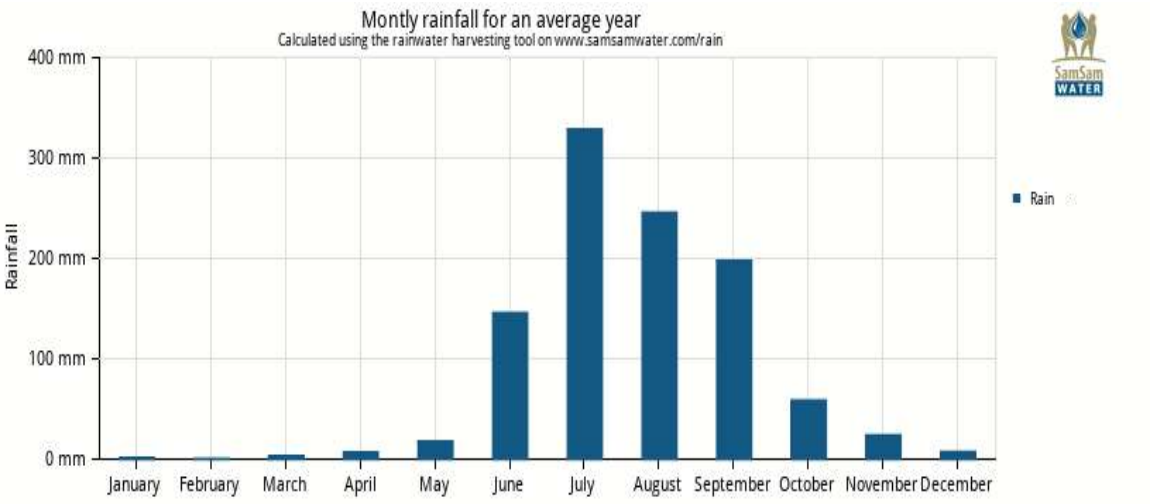


Fig No.2 Showing Monthly Rainfall data for Nashik city

a) **For RCC Roof:** The runoff coefficient of a flat roof is 0.7, which suggests that 70% of the rain can be collected. Based on this runoff coefficient with a roof area of 1138.479 square meters, 318 liters of water can be collected in the driest month (February) and 261561 liters in the wettest month (July). In an average year, the total amount of water that may be collected from the roof is 382500 liters. The water demand is 41265 liters per day, which equals to about 1237950 liters per month. The total water demand is 15061700 liters (15061.725 m^3) per year. The amount of water that can be collected from the roof (825m3) is less than the water demand (15061.725 m^3). Only a part of the water demand can be fulfilled using a rainwater harvesting system.

   The total amount of water that can be collected from this roof is not enough to fulfil the total water demand. However, it might still be worthwhile to construct a rainwater harvesting system. With a storage reservoir of **454700 liters** (454.7 m^3) a rainwater harvesting system could provide 2261 liters of water per day, which is 5% of the total demand.

b) **For Corrugated Metal Sheet:** A metal roof has a runoff coefficient of 0.9, which means that 90% of the rain can be harvested. Based on this runoff coefficient and a roof area of 300 square meters a volume of 108 liters (0.4 mm x 300 m^3 x 0.9) of water can be collected in the driest month (February) and 88695 liters (328.5 mm x 30 m^3 x 0.9) in the wettest month (July).The total yearly amount of water that can be collected from the roof is 279900 liters (280m^3) in an average year. The water

demand is 41265 liters per day, which equals to about 1237950 liters per month. The total water demand is 15061700 liters (15061.725 m^3) per year. The amount of water that can be collected from the roof (280m^3) is less than the water demand (15061.725 m^3). Only a part of the water demand can be fulfilled using a rainwater harvesting system. With a storage reservoir of **154200 liters** (154.2 m^3) a rainwater harvesting system could provide 767 liters of water per day, which is 2% of the total demand.

A suitable filtration system is necessary for better recharge. The classic sand bed filter usescoarse riverbed sand, pebbles, and rocks stacked one on top of the other in a limited masonry construction. Rainwater from one end is allowed at the top, while filtered water is retrieved from the other.

Figure No. 3 Design of Rainwater harvesting pit

Photograph No.3 Showing Rainwater Recharge Pit in the College Campus

3.2 Air Environment:

Air pollution has long term and short term impact on the biotic and abiotic component of the environment. Air pollution sources for rural areas are vehicular activities and domestic firewood burning, fuel burning etc. The major pollutants released in the atmosphere are PM_{10}, $PM_{2.5}$, SO_2, and NO_x, CO etc.

The health of the students, instructors, and staff at the academic institute is dependent on the air quality. Windstorms, pollen grains, natural dust, traffic emissions, generators, fires, and laboratory smells, among other things, are all causes of air pollution on the college campus. But in the present study whole city is considered and the data is extracted from nearby government air quality monitoring stations.

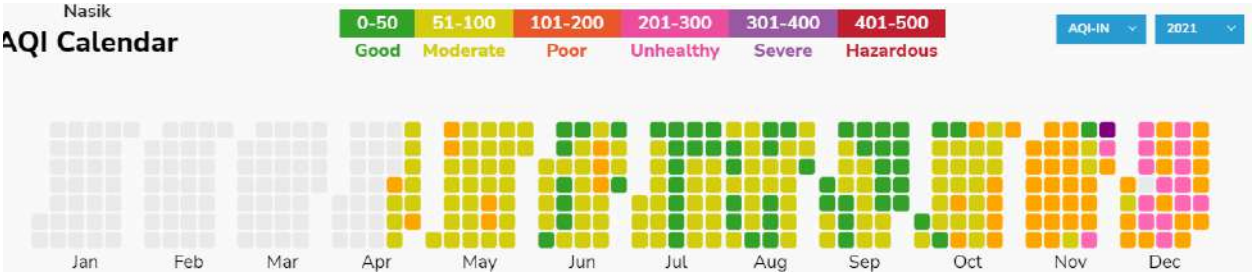


Figure no.4 Showing Air Quality Index for year 2023

Table 3.5. Showing Ambient Air Quality Parameters for Nashik City

Sr. No.	Parameter	Result	NAAQS 2009	Unit
1	Average Wind	15.5	-	Km/h
2	Wind Direction	W-E	-	-
3	Pressure	1010	-	Mb
4	Temperature	30/10	-	^oC
5	Sulphur Dioxide	22	80	$\mu g/m^3$
6	Nitrogen Dioxide	08	80	$\mu g/m^3$
7	Carbon Monoxide	03	4	mg/ m^3
8	Particulate matter < 10µm	154	100	$\mu g/m^3$
9	Particulate matter < 2.5 m	280	60	$\mu g/m^3$
10	Ozone	23	180	$\mu g/m^3$

Causes of Air Pollution in Nashik:

(i) The primary causes of outdoor air pollution are solid, liquid particles called aerosols & gas from vehicles emissions, construction activities, factories, burning stubble & fossil fuels and wildfire, etc.

(ii) Main causes of indoor air pollution are harmful gases from cooking fuels (such as wood, crop wastes, charcoal, coal and dung), damp, mould smoke, chemicals from cleaning materials, etc.

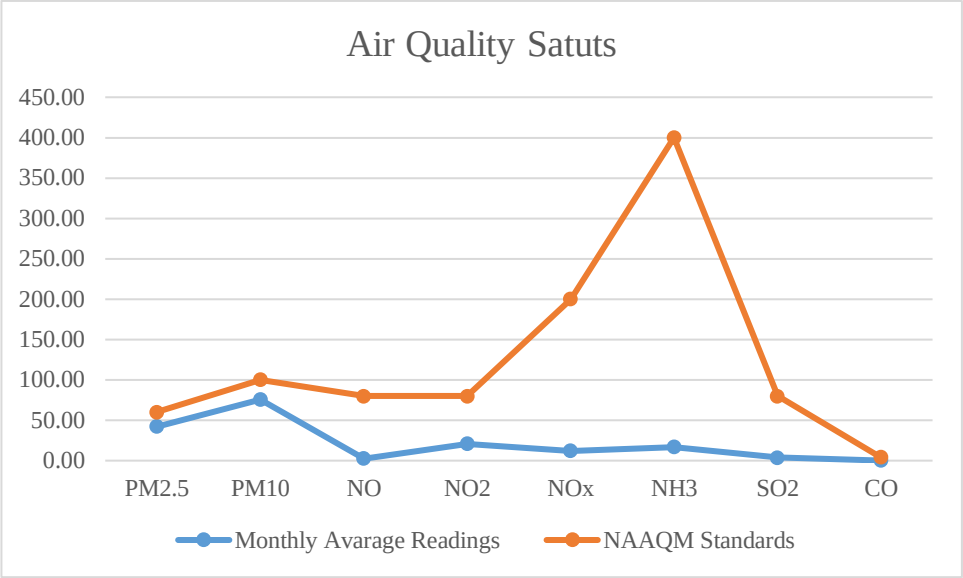


Figure No. 5 Air Quality Status of Gangapur Road Air Monitoring Station for the month of April 2023

All of the air quality parameters were found within NAAQS standards. The air quality is good in nearby areas of the college because surrounding area of the college campus is rural zone and mostly farm field.

3.3 Noise Environment

Sound pressure level (SPL) measurements were automatically recorded with the help of an Integrated Sound Level Meter. The noise levels measurements were carried out using noise level meter. The major source of noise identified in the study area has been predominantly the vehicular movement and the transportation activities. There is no industrial or commercial zone nearby college. Therefore noise level survey was carried out at seven locations within the college campus.

Table No. 3.6 Noise Monitoring Results in the College Campus

Locations	Leq dB(A) Minimum	Leq dB(A) Maximum	Leq dB(A) Average	Limit dB(A)
Main gate	49	70	57	50
Campus	38	81	60	50
Corridor	34	83	59	50
Admin Office	34	61	50	50
Staff Room	40	72	60	50
Classroom	42	82	48	50

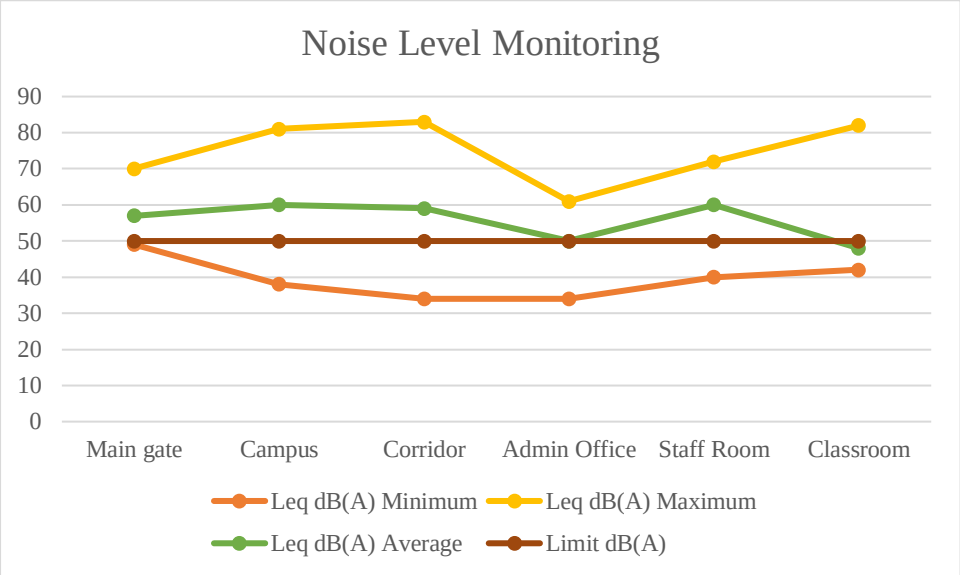


Figure No. 6 Noise Level Monitoring

From the noise monitoring survey it was observed that the noise levels were observed in the range of 34 - 83 dB (A) that shows the values confirming to the prescribed standards.

3.4 SOLID WASTE MANAGEMENT:

Solid waste generation and management has become a most emerging issue in recent years. The rate of solid waste generation is extremely significant, while in other side there is lack of adequate technologies to manage the garbage generated. All garbage other than liquid waste is classified as solid waste. If solid trash is not properly disposed of, it can cause serious health problems as well as an unpleasant living environment. As a result, it is critical to manage solid waste in proper way to lessen the pressure on waste management systems. The goal of this inventory is to determine the amount, volume, type, and present

management practice of solid waste generated in MVP's Law College, Nashik. This study will aid in the continued management of solid waste and enhance the beauty of campus in terms of green cover.

A. Quantification of waste generated on campus

This indicator looks at the production and disposal of various wastes such as paper, food, plastic, biodegradable, construction, glass, dust, and so on, as well as recycling. Furthermore, solid trash frequently contains unused material resources that may be put to greater use through recycling, repair, and reuse. The creation and management of solid waste is a hot topic. Unscientific solid waste management can endanger everyone. The survey inquired about the amount, kind, and present handling of solid waste created on campus. As previously noted, various solid wastes were gathered.

Photo No. 4 Showing dustbins for waste collection

B. Segregation of Waste:

The college has its own facilities to treat decomposable garbage, which is then utilized as manure in the garden. The campus's overall solid trash collection rate is 40 kilograms per day. The garbage created by tree droppings is a significant source of decomposable solid waste on campus. Separate dustbins for biodegradable and non-biodegradable garbage are provided at the point of collection. Solid waste generated in all over the college campus is likewise segregated. In all areas, single-sided old papers were reused for writing and printing. After their preservation term has expired, important and confidential reports/papers are transferred to an approved raddi facility for recycling.

Table No. 3.7 Segregation of the Solid Waste

Sr. No.	Specification (Y/N)	Quantity generated (kg/day)	Recycled (Y/N)	Reuse (Y/N)	Other(specify)
1.	Paper	3	Yes	Yes	Recycled through Authorized Vendor
2.	Cardboard	1	Yes	Yes	--
3.	Plastic	1	Yes	No	Sold to authorized Vendors
4.	Food waste form mess of girls hostel	12	Yes	--	Used in vermicomposting
5.	E Waste	45*	Yes		E waste is sent to ITI for recycling
6.	Hazardous waste	--	--	--	No Laboratory, No chemicals used
7.	Glass	368*	Yes	--	sent to ITI for recycling
8.	Metals	736*	Yes	--	sent to ITI for recycling
9.	Biodegradable waste	40	--	--	Plant waste used in vermicomposting
10.	Construction waste	--	--	--	Only during construction Period

Note: * indicate waste generated once in academic year

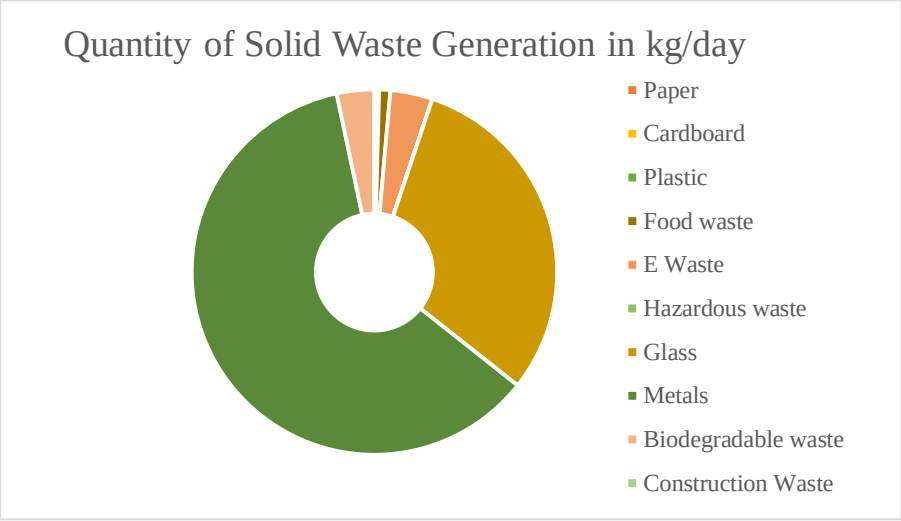


Figure No. 7 Chart for the classification of the solid waste generated

As per the analysis of the above data average solid waste generation within the college campus is 120 kg/month. Out of which the biodegradable solid waste 96 kg/day generated in recyclable waste. Other waste is sent to dumping using facility of ghantagadi as per the need.

C. Vermicomposting plant for biodegradable waste processing

The college do not have its own vermicomposting unit. As the K.D.S.P. College of Agriculture, Nashik, MVP Samaj's Law College and College of Architecture, Nashik have same premises, thus the degradable material is added to the vermiculture unit of College of Agriculture. The total capacity of vermiculture unit is 255 Kg. The major goal is to limit the amount of disposable garbage on campus. The species used for Vermicomposting is *Eisenia foetida*. It is utilized as manure in the garden and lawns and also provided to the farmers when the vermicomposting process is completed.

Photo No.5 Showing Vermin Composting Pit

D. E-Waste:

Consumer and corporate electronic equipment that is nearing or at the end of its useful life is referred to as e-waste. Electronic components contain cadmium, lead, mercury, and polychlorinated biphenyls (PCBs), which can harm human health and the environment. They account for around 5% of all municipal solid trash globally, although they are far more harmful than other garbage.

E-waste generated in the campus is very negligible. The college has total Computers & laptops and printers, Xerox machine, Smart boards, LCD Projectors, Scanner in working condition. The cartridges of printers are refilled and reused. Administration conducts the awareness programmes regarding E-waste Management with the help of various

departments.

At Mother Institute level e-waste is reduced, reused and recycled. Source reduction is achieved through installation of modular and upgradable type of instruments. The e-waste is systematically recorded in registers with information about the source and reason for disposal.

The e-waste is categorized based on their defects and processed for future use.

The audit team observed that the technical life time / service life of most electronic instruments has not yet expired, resulting in little waste creation at this time. However, the college hand over the E-waste to the Institute ITI College for further processing as prescribed by the norms of Institute.

3.5 Green Cover of the College Campus:

Any area with grass, trees, or horticulture is considered a green area. Tree canopy analysis is effective for estimating the amount of green cover in a specific area. The covering generated by the branches and crown of plants or trees is known as canopy cover (green cover). The proportion of a specified area of the ground covered by tree crowns is referred to as green cover. According to the National Mission for Green India (GIM), one of eight missions under the National Action Plan on Climate Change (NAPCC), and previous national forest policy, 33 percent of total accessible land should be covered by vegetation. It will help in the reduction of greenhouse gas emissions because plants and trees are the best carbon sinks. Green cover of the college campus is calculated by using following formula

$$Green\ Cover\ (\%) = \frac{Total\ Green\ Cover\ in\ sq.meter}{Total\ area\ of\ campus\ in\ sq.meter}\ x\ 100$$

Table 3.8 Green Cover Calculations

Sr.NO.	Total Area of Campus (sq. meter)	Total Green Cover (sq. meter)	Percent Green Cover
1.	4187	1468	35.06

According to information gathered during the location visit, the college campus has a total area of 4187 square metres. There are roughly 1160 square metres under construction and 3027square metres of open space available out of the total available. Tree canopies are

scanned and the area of each tree canopy is determined using Google Earth Pro. The estimated tree canopy cover is at 1468 square metres, accounting for 35.06 percent of the total open space.

Table 3.9. List of available trees on college campus:

Sr. No.	Botanical Name	Family	No. of Plants
1.	*Polyscias cumingiana*	Araliaceae Juss.	2
2	*Hypoestes*	Acanthaceae Juss.	200
3.	*Justicia gendarussa*	Acanthaceae Juss.	54
4.	*Justicia adhatoda*	Acanthaceae Juss.	1
5.	*Hymenocallis littoralis*	Amaryllidaceae J.St.-Hil.	146
6.	*Zephyranthes carinata*	Amaryllidaceae J.St.-Hil.	10
7.	*Hippeastrum reginae*	Amaryllidaceae J.St.-Hil.	8
8.	*Mangifera indica .*	Anacardiaceae R.Br.	28
9.	*Annona squamosal*	Annonaceae Juss.	13
10.	*Monoon longifolium*	Annonaceae Juss.	11
11.	*Annona reticulata.*	Annonaceae Juss.	4
12.	*Tabernaemontana divaricata*	Apocynaceae Juss.	144
13.	*Cascabela thevetia*	Apocynaceae Juss.	54
14.	*Plumeria alba*	Apocynaceae Juss.	21
15.	*Tabernaemontana divaricata*	Apocynaceae Juss.	17
16.	*Alstonia scholaris*	Apocynaceae Juss.	8
17	*Nerium oleander*	Apocynaceae Juss.	7
18	*Plumeria pudica*	Apocynaceae Juss.	2
19	*Calotropis gigantea*	Apocynaceae Juss.	1
20	*Carissa spinarum .*	Apocynaceae Juss.	1
21	*Dieffenbachia sp.*	Araceae	36
22	*Philodendron bernardopazii*	Araceae Juss.	5
23	*Zamioculcas zamiifolia*	Araceae Juss.	2
24	*Caladium bicolour*	Araceae Juss.	157
25	*Polyscias cumingiana*	Araliaceae Juss.	2
26	*Heptapleurum arboricola*	Araliaceae Juss.	6
27	*Heptapleurum arboricola*	Araliaceae Juss.	2
28	*Araucaria heterophylla*	Araucariaceae Henkel & W.Hochst.	1
29	*Cocos nucifera*	Arecaceae	5
30	*Dypsis lutescens*	Arecaceae Bercht. & J.Presl	60
31	*Phoenix sylvestris*	Arecaceae Bercht. & J.Presl	18
32	*Wodyetia bifurcat*a	Arecaceae Bercht. & J.Presl	17
33	*Roystonea regia*	Arecaceae Bercht. & J.Presl	6
34	*Butia capitata*	Arecaceae Bercht. & J.Presl	1
35.	*Thrinax parviflora*	Arecaceae Bercht. & J.Presl	1
36.	*Bismarckia nobilis*	Arecaceae Bercht. & J.Presl	1
37.	*Ophiopogon japonicas*	Asparagaceae Juss.	216
38.	*Asparagus racemosus*	Asparagaceae Juss.	100

39.	*Cordyline fruticosa*	Asparagaceae Juss.	11
40.	*Asparagus densiflorus*	Asparagaceae Juss.	10
41.	*Dracaena fragrans*	Asparagaceae Juss.	4
42.	*Dracaena longifolia*	Asparagaceae Juss.	3
43.	*Chlorophytum comosum*	Asparagaceae Juss.	1
44.	*Ophiopogon japonicus*	Asparagaceae Juss.	200
45.	*Agave amica*	Asparagaceae Juss.	110
46.	*Dracaena trifasciata*	Asparagaceae Juss.	3
47.	*Asplenium nidus*	Aspleniaceae Newman	2
48.	*Tecoma stans*	Bignoniaceae Juss.	101
49.	*Kigelia africana*	Bignoniaceae Juss.	8
50.	*Spathodea campanulata*	Bignoniaceae Juss.	7
51.	*Oroxylum indicum*	Bignoniaceae Juss.	3
52.	*Jacaranda mimosifolia*	Bignoniaceae Juss.	2
53.	*Opuntia elatio*r	Cactaceae Juss.	1
54.	*Canna generalis*	Cannaceae	7
55.	*Canna indica .*	Cannaceae Juss.	20
56.	*Carica papaya*	Caricaceae Dumort.	2
57.	*Terminalia catappa*	Combretaceae R.Br.	45
58.	*Terminalia arjuna*	Combretaceae R.Br.	7
59.	*Terminalia bellirica*	Combretaceae R.Br.	1
60.	*Tradescantia spathacea*	Commelinaceae Mirb.	764
61.	*Tradescantiaz*ebrina	Commelinaceae Mirb.	123
62.	*Platycladus orientalis*	Cupressaceae Gray	2
63.	*Acalypha wilkesiana*	Euphorbiaceae Juss.	332
64.	*Euphorbia tithymaloides*	Euphorbiaceae Juss.	32
65.	*Codiaeum variegatum*	Euphorbiaceae Juss.	6
66.	*Codiaeum variegatum*	Euphorbiaceae Juss.	3
67.	*Jatropha integerrima*	Euphorbiaceae Juss.	1
68.	*Dalbergia sissoo*	Fabaceae	5
69.	*Senna siamea*	Fabaceae Lindl.	32
70.	*Acacia mangium*	Fabaceae Lindl.	21
71.	*Samanea saman*	Fabaceae Lindl.	19
72.	*Bauhinia purpurea*	Fabaceae Lindl.	14
73.	*Tamarindus indica*	Fabaceae Lindl.	8
74.	*Acacia auriculiformis*	Fabaceae Lindl.	8
75.	*Albizia lebbeck*	Fabaceae Lindl.	5
76.	*Delonix regia*	Fabaceae Lindl.	4
77.	*Mimosa pudica*	Fabaceae Lindl.	4
78.	*Cassia fistula.*	Fabaceae Lindl.	3
79.	*Pongamia pinnata*	Fabaceae Lindl.	2
80.	*Bauhinia racemosa*	Fabaceae Lindl.	2
81.	*Peltophorum pterocarpum*	Fabaceae Lindl.	1
82.	*Dalbergia sissoo*	Fabaceae Lindl.	1
83.	*Leucaena leucocephala*	Fabaceae Lindl.	1
84.	*Pithecellobium dulce*	Fabaceae Lindl.	1
85.	*Iris*	Iridaceae Juss.	2

86.	*Ocimum tenuiflorum .*	Lamiaceae Martinov	66
87.	*Tectona grandis*	Lamiaceae Martinov	15
88.	*Coleus scutellarioides*	Lamiaceae Martinov	22
89.	*Dracaena fragrans*	Liliaceae	78
90.	*Dendrophthoe falcate*	Loranthaceae Juss.	6
91.	*Cuphea hyssopifolia*	Lythraceae J.St.-Hil.	70
92.	*Magnolia champaca*	Magnoliaceae Juss.	6
93.	*Galphimia gracilis*	Malpighiaceae Juss.	11
94.	*Hibiscus rosa-sinensis*.	Malvaceae Juss.	8
95.	*Thespesia populnea*	Malvaceae Juss.	1
96.	*Bombax ceiba*	Malvaceae Juss.	1
97.	*Sterculia foetida*.	Malvaceae Juss.	1
98.	*Azadirachta indica*	Meliaceae Juss.	19
99.	*Azadirachta indica*	Meliaceae Juss.	4
100.	*Khaya senegalensis*	Meliaceae Juss.	1
101.	*Aglaia cucullata*	Meliaceae Juss.	1
102.	*Tinospora cordifolia*	Menispermaceae Juss.	50
103.	*Ficus benjamina*	Moraceae Gaudich.	79
104.	*Ficus racemosa*	Moraceae Gaudich.	18
105.	*Ficus benghalensis*.	Moraceae Gaudich.	9
106.	*Ficus religiosa*	Moraceae Gaudich.	6
107.	*Morus alba*	Moraceae Gaudich.	6
108.	*Ficus macrophylla*	Moraceae Gaudich.	1
109.	*Moringa oleifera*	Moringaceae Martinov	1
110.	*Muntingia calabura*	Muntingiaceae C.Bayer, M.W.Chase & M.F.Fay	6
111.	*Syzygium cumini*	Myrtaceae Juss.	11
112.	*Psidium guajava*	Myrtaceae Juss.	5
113.	*Eucalyptus globulus*	Myrtaceae Juss.	2
114.	*Bougainvillea spectabilis*	Nyctaginaceae Juss.	40
115.	*Nymphaea nouchali*	Nymphaeaceae Salisb.	10
116.	*Jasminum samba*c	Oleaceae Hoffmanns. & Link	23
117.	*Nyctanthes arbor-tristis*	Oleaceae Hoffmanns. & Link	5
118.	*Pandanus baptistii*	Pandanaceae R.Br.	246
119.	*Pandanus furcatus.*	Pandanaceae R.Br.	4
120.	*Pandanus amaryllifolius*	Pandanaceae R.Br.	32
121.	*Phyllanthus emblica*	Phyllanthaceae Martinov	15
122.	*Phyllanthus reticulatus*	Phyllanthaceae Martinov	3
123.	*Phyllanthus acidus*	Phyllanthaceae Martinov	1
124.	*Cenchrus* sps.	Poaceae Barnhart	62
125.	*Dendrocalamus strictus*	Poaceae Barnhart	52
126.	*Bambusa ventricosa*	Poaceae Barnhart	26
127.	*Dendrocalamus brandisii*	Poaceae Barnhart	6
128.	*Bambusa balcooa*	Poaceae Barnhart	5
129.	*Zealandia pustulata*	Polypodiaceae J.Presl & C.Presl	12
130.	*Grevillea robusta*	Proteaceae Juss.	101

131.	*Rosa indica*	Rosaceae Juss.	20
132.	*Hamelia patens*	Rubiaceae Juss.	29
133.	*Neolamarckia cadamba*	Rubiaceae Juss.	7
134.	*Mussaenda frondosa*	Rubiaceae Juss.	1
135.	*Pentas lanceolata*	Rubiaceae Juss.	7
136.	*Citrus × limon*	Rutaceae Juss.	17
137.	*Aegle marmelos*	Rutaceae Juss.	7
138.	*Bergera koenigii*	Rutaceae Juss.	7
139.	*Murraya paniculata*	Rutaceae Juss.	3
140.	*Santalum album*	Santalaceae R.Br.	4
141.	*Cestrum diurnum*	Solanaceae Juss.	11
142.	*Ravenala madagascariensis*.	Strelitziaceae Hutch.	12
143.	*Holoptelea integrifolia*	Ulmaceae Mirb.	1
144.	*Duranta erecta*	Verbenaceae J.St.-Hil.	199
145.	*Lantana camara*	Verbenaceae J.St.-Hil.	6
146.	*Lantana montevidensis*	Verbenaceae J.St.-Hil.	1
147.	*Alpinia galanga*	Zingiberaceae Martinov	40
148.	*Hedychium coronarium*	Zingiberaceae Martinov	23
149.	*Kaempferia galangal*	Zingiberaceae Martinov	6
150.	*Alpinia galanga*	Zingiberaceae Martinov	3
		Total	4869

Photo No.6 Showing Some Canopy Trees on the college campus

4.0 Energy Conservation Practices:

According to Energy Conservation Act, 2001, Energy Audit is the verification, monitoring, and analysis of the use of energy including submission of a technical report containing recommendations for improving energy efficiency with cost-benefit analysis and an action plan to reduce energy consumption. The Energy and electricity audit aimed to cover the aggregate consumption of Electrical energy within the All the buildings of Law college and KBT Engineering college are designed and constructed in such a way that during day time no electricity is consumed for lighting of tube lights and other electric lights. Proper day light and ventilation facilities are available for every building.

Moreover, College is taking its initiative to utilize renewable energy has installed roof top solar panels of capacity 100 kWp Grid Connected Solar PV system. The approximat quantity of energy used is 10441.9 kWhr.

Photo No. 7 Solar panels installed

5. Other Facilities:

A. Green Gym

Photo No. 8 Green Gym

B. Sanitary Napkin Vending Machine and Incinerator

Photo No. 9 Sanitary Napkin Vending Machine & Incinerator

C. Fire Extinguisher

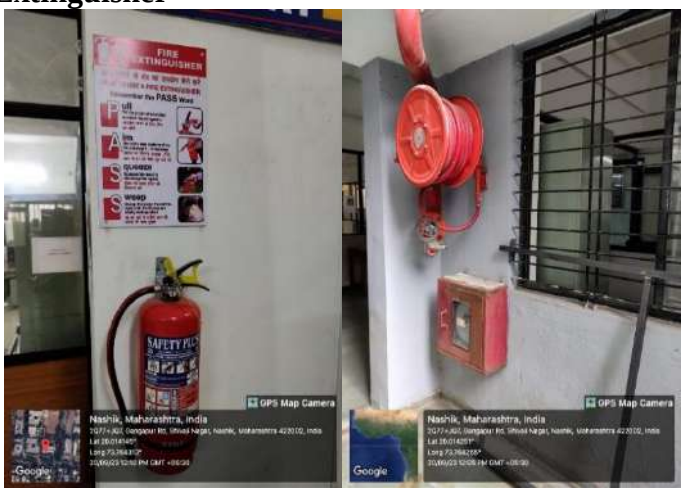


Photo No. 10 Fire Extinguisher

D. Public Awareness Boards

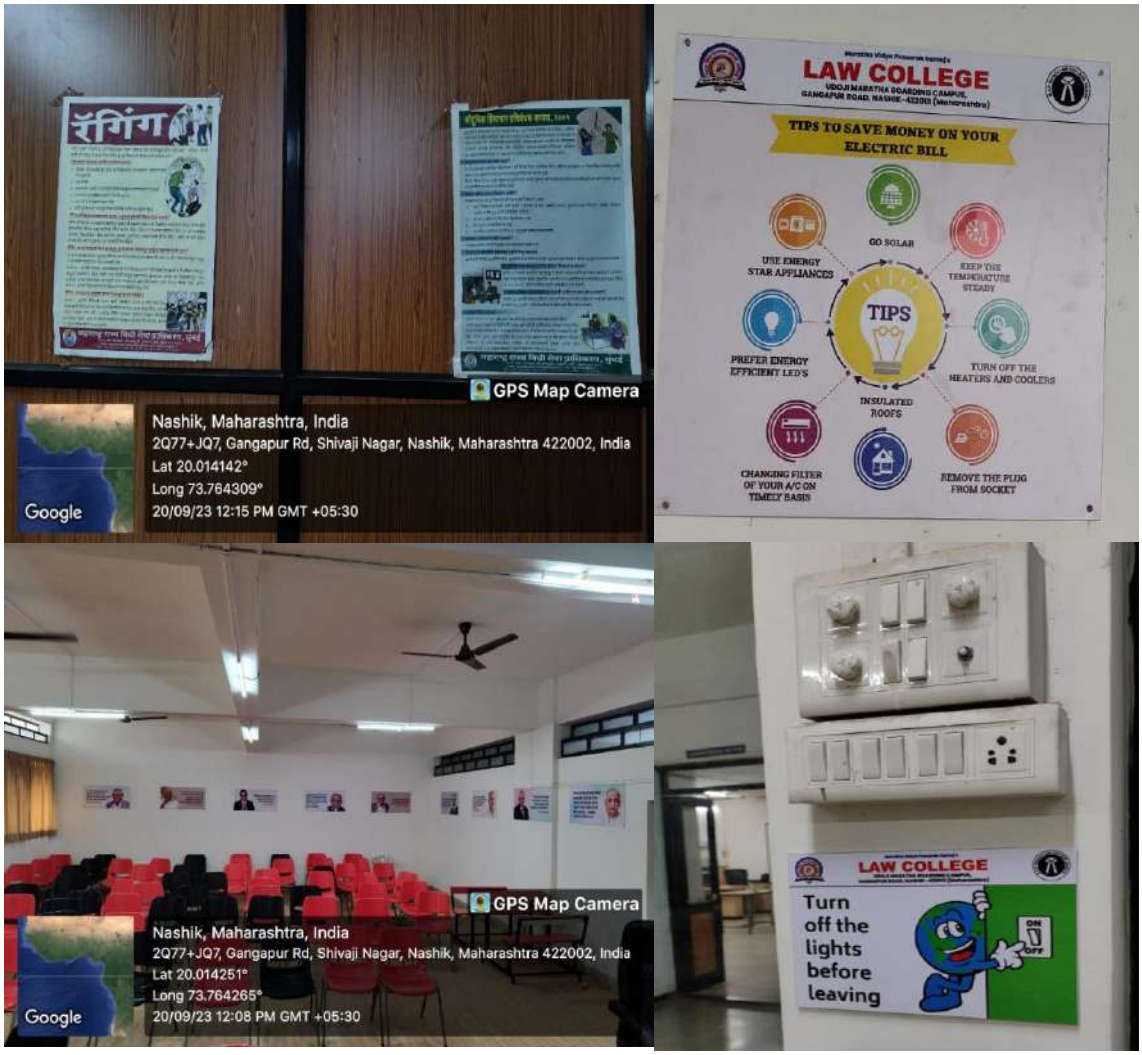


Photo No. 11 Public Awareness Boards

6.0 Conclusion and Recommendations

The Green Audit of MVP's Law College Nashik is conducted in Academic year 2022-2023. The process of discovering and determining if an institution's operations are environmentally friendly and sustainable is known as green audits. The key objective of the college's green audit is to evaluate the college's green initiatives and execute a well-structured audit to determine at which we stand on a grade of environmental sanity.

Conclusion

During the process of green audit and from observations some of the conclusions are made as follows:

1. College takes efforts to dispose majority waste by following recycling and reuse practices.
2. Sufficient Water supply is form Nashik Municipal Corporation. Roof top rainwater harvesting technology will be used for ground water recharge.
3. Toilets and bathrooms are new and without any leakages.
4. Toilets and bathrooms wastewater is treated in soak pits and septic tanks.
5. Air quality on the campus is found good.
6. Noise level monitoring is done at different locations within the campus. Noise level observed within the prescribed standards as the college is situated in populated.
7. Plastic waste, paper waste etc., is disposed properly. Sometimes ghantagadi facility is being used when necessary.
8. No hazardous waste is generated in the college because it runs courses comes under stream.
9. E waste is also insignificant as there are no major uses of the laboratories and equipment's. E-waste segregation, handling and disposal are properly done with nearby ITI College.
10. Sufficient ventilation is available in the college building, in classrooms, in staffrooms, in library, in seminar hall and many more.
11. Electricity is minimized by using LED lights and solar panel for campus and street lights. These practices help in energy conservation and functioning properly.

Recommendations

Following are some recommendations for improving environment friendly practices withinthe campus.

1. College required near about 40 m^3 water on daily basis. Use of push back taps will helps to conserve water on daily basis.
2. College needs to increase capacities overhead as college only has 12000

liters overhead tank capacity

3. Except TDS all the water quality parameters are within the limits. Water filters should be cleaned and maintained frequently.
4. College has constructed ground water recharge pit. If college construct separate underground tank of collection of rain water. It will fulfill at least 5% of the daily water requirement.
5. College must manage e-waste though Maharashtra Pollution Control Board authorized recyclers.
6. In future college should try to plant indigenous trees.
7. College needs to celebrate various environmental awareness programs in the college.