



# VENKATESH MAHAJAN SENIOR COLLEGE, OSMANABAD

Re-Accredited with 'B' Grade by NAAC

Affiliated to Dr. Babasaheb Ambedkar Marathwada University, Aurangabad.

## 7.1.3 Quality audits on environment and energy regularly undertaken by the Institution,

The institutional environment and energy initiatives are confirmed through the following

Sr. No.	Particular
1	Green Audit/ Environment Audit
2	Energy Audit
3	Clean and Green Campus Activity
4	Beyond the Campus environmental promotional activity

  
**Coordinator**  
Internal Quality Assurance Cell  
Venkatesh Mahajan Senior College  
Osmanabad



  
**PRINCIPAL**  
Venkatesh Mahajan Senior College  
Osmanabad 413501

## **Quality audits on environment and energy regularly undertaken by the Institution,**

The institutional environment and energy initiatives are confirmed through the following:

### **Audit Report**

### **Academic Year**

**2021-22, 2020-21, 2019-20 and 2018-19**

<b>Sr. No</b>	<b>Activity</b>	<b>Status</b>
1	Green Audit	Yes
2	Energy Audit	Yes
3	Environment Audit	Yes

## **Reports on Environment and energy audits submitted by the auditing agency**





## SAHYAGIRI ENTERPRISES

Kalpataroo Building, Near Ram Mandir, Ward No.2 Jath  
Taluka- Jath, Dist- Sangli 416404

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### Green Audit Certificate

This is to certify that the Sahyagiri Enterprises has conducted detailed green audit report of **Venkatesh Mahajan Senior College, Osmanabad** during academic year 2021-2022 to assess the green initiative planning, efforts, activities implemented in college campus like plantation, waste management, rain water harvesting, energy conservation, biodiversity conservation and various environmental activities. This green audit is also aimed to assess impact of green initiative for maintenance of the campus.

The college has submitted necessary data and credentials for scrutiny. The efforts taken by the management, faculty and students towards environment and sustainability are highly appreciated.

Green Audit In charge

SAHYAGIRI ENTERPRISES PRIVATE LIMITED

DIRECTOR

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# GREEN AUDIT REPORT (2021-2022)

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*Tapasvi Public Charitable Trust Yeoti's*

## Venkatesh Mahajan Senior College, Osmanabad



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## 1.0 ACKNOWLEDGEMENT

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Sahyagiri Enterprises Green Audit Team thanks the management of Venkatesh Mahajan Senior College for assigning this important work of Green Audit. We appreciate the co-operation to our team for completion of study.

Our special thanks to:

- Principal of the college – Dr. P.G. Choudhari
- IQAC Head –Dr. A.R. Banale
- IQAC Member – Dr. M.Y. Mane
- Environment Expert at the campus– Dr. A. M. Deshmukh
- Green Audit coordinator–Mrs. A.S. Linge
- Teaching & Supporting Staff of College

For giving us necessary inputs to carry out this very vital exercise of Green Audit. We are also thankful to other staff members who were actively involved while collecting the data and conducting field measurements.

## 2. 0 DISCLAIMER

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Sahyagiri Enterprises Green Audit Team has prepared this report for Venkatesh Mahajan Senior College based on input data submitted by the representatives of College complemented with the best judgment capacity of the expert team.

It is further informed that the conclusions are arrived following best estimates and no representation, warranty or undertaking, express or implied is made and no responsibility is accepted by Audit Team in this report or for any direct or consequential loss arising from any use of the information, statements or forecasts in the report.

Sahyagiri Enterprises and its staff shall keep confidential all information relating to your organisation and shall not disclose any such information to any third party, except that in the public domain or required by law or relevant accreditation bodies. Sahyagiri Enterprises staff, agents and accreditation bodies have signed individual confidentiality undertakings and will only receive confidential information on a 'need to know' basis.



**Report by: Mayuri M. Jadhav**



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## 3.0 CONCEPT

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Green Audit is defined as systematic identification, quantification, recording, reporting and analysis of components of environmental diversity. The 'Green Audit' aims to analyse environmental practices within and outside the college campus, which will have an impact on the eco-friendly ambience. It was initiated with the motive of inspecting the work conducted within the organizations whose exercises can cause risk to the health of inhabitants and the environment. Through Green Audit, one gets a direction as how to improve the condition of environment and there are various factors that have determined the growth of carrying out Green Audit. Green audit is assigned to the criteria 7 of NAAC, (National Assessment and Accreditation Council) which is a self-governing organization of India which declares the institutions as Grade A, B or C according to the scores assigned during the accreditation.

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## 4.0 INTRODUCTION

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A Nation's growth starts from its educational institutions, where the ecology is thought as a prime factor of development associated with environment. Educational institutions now days are becoming more sensitive to environmental factors and more concepts are being introduced to make them ecofriendly. To preserve the environment within the campus, various viewpoints are applied by the several educational institutes to solve their environmental problems such as promotion of the energy savings, recycle of waste, water reduction, water harvesting etc. The activities pursued by colleges can also create a variety of adverse environmental impacts.

Environmental auditing is a process whereby an organization's environmental performance is tested against its environmental policies and objectives. Green audit is defined as an official examination of the effects a college has on the environment. As a part of such practice, internal environmental audit (Green Audit) is conducted to evaluate the actual scenario at the campus.

Green audit is a useful tool for a college to determine how and where they are using the most energy or water or resources; the college can then consider how to implement changes and make savings. It can also be used to determine the type and volume of waste, which can be used for a recycling project or to improve waste minimization plan. Green auditing and the implementation of mitigation measures is a win-win situation for all the college, the learners and the planet. It can also create health consciousness and promote environmental awareness, values and ethics. It provides staff and students better understanding of Green impact on campus.

Green auditing promote financial savings through reduction of resource use. It gives an opportunity for the development of ownership, personal and social responsibility for the students and teachers. 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.

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.

Environmental Management Systems (EMS) is very popular in the industrial sector, but the general belief is that EMS is something pertaining to industries only. Other parts of the world have started adopting compatible environmental management systems either voluntarily or for promoting standards by external certification. International



environmental standards do not suit the existing Indian educational system. Hence Sahyagiri Enterprises has developed a compatible system by developing locally-applicable techniques.

A very simple indigenized system has been devised to monitor the environmental performance of educational institutions. It comes with a series of questions to be answered on a regular basis. Environmental conditions may be monitored from angles that are relevant to Indian requirements, without stress on legal issues or compliance.

This innovative scheme is user-friendly and totally voluntary. The environmental monitoring system helps the institution to set environmental examples for the community and to educate young learners. It can be adapted to urban and / or rural situations.

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## 5.0 OVERVIEW OF INSTITUTE

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College was established in 1999 under the visionary guidance of the late leader Pramodji Mahajan and is affiliated to Dr. Babasaheb Ambedkar Marathwada University Aurangabad and working specially for students below poverty line and specially for girls of this region for whom higher education is not easily available. College has 3 Acre campus Area. College is accredited by NAAC to B grade.

College provides instructions to the students for three year degree courses B.A., B.Com. B.Sc., BCA. and 2 year degree courses M.A Marathi and M.Sc Organic Chemistry. The college, right from its inception has shown academic excellence and students have won meritorious awards and have maintained top ranks in the University examinations as well as in extra-curricular activities. Total Student strength of college is 607. College has total 74 teaching staff and 12 non-teaching staff. College has highly qualified staff.

The infrastructure of a college plays a vital role in the development of the college as the students are now focusing on the labs, class rooms, etc. while selecting a college. It is important that the college

has very good infrastructure with ICT Based Classrooms, Spacious Computer Labs, I.Q.A.C Department, NSS, Separate Canteen, Playground and Store Rooms etc. Various indoor and outdoor games are conducted by college.

The college has also adopted the 'Green Campus' system for environmental conservation and sustainability. The goal is to reduce CO<sub>2</sub> emission, water use while creating an atmosphere where students can learn and be healthy.



## 6.0 AUDIT OBJECTIVES AND SCOPE

The main objective of the green audit is to promote the Environment Management and Conservation in the College Campus. The purpose of the audit is to identify, quantify, describe and prioritize framework of Environment Sustainability in compliance with the applicable regulations, policies and standards. The main objectives of carrying out Green Audit are:

- To introduce and aware students to real concerns of environment and its sustainability.
- To secure the environment and cut down the threats posed to human health by analysing the pattern and extent of resource use on the campus.
- To establish a baseline data to assess future sustainability by avoiding the interruptions in environment that are more difficult to handle and their corrections requires high cost.

- Developing an environmental ethic and value systems in young people.
- Improving environmental standards.
- Benchmarking for environmental protection initiatives.
- Enhancement of College profile.

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## 7.0 EXECUTIVE SUMMARY

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The rapid urbanization and economic development at local, regional and global level has led to several environmental and ecological crises. On this background it becomes essential to adopt the system of the Green Campus for the institute which will lead for sustainable development.

An environmental audit is a snapshot in time, in which one assesses campus performance in complying with applicable environmental laws and regulations. Though a helpful benchmark, the audit almost immediately becomes out-dated unless there is some mechanism in place to continue the effort of monitoring environmental compliance.

Venkatesh Mahajan Senior College done internal green assessment and annual reports published for continual improvements; QS Programme and doing their bid towards environmental protection and environmental awareness at local and global front.

The methodology include: preparation and filling up of questionnaire, physical inspection of the campus, observation and review of the documentation, interviewing key persons and data analysis, measurements and recommendations. It works on the several facets of 'Green Campus' including Water Conservation, Tree Plantation, Waste Management, Paperless Work, Alternative Energy and Mapping of Biodiversity.

This audit report contains observations, appreciations and recommendations for improvement of environmental consciousness.

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## 8.0 METHODOLOGY

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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:

- Waste Management
- Energy Conservation

- Water Conservation
- Green area management/biodiversity survey
- Noise, Ventilation and Illumination study
- Carbon Footprint
- Best Practices for Environment

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## 9.0 OBSERVATIONS, APPRECIATIONS AND RECOMMENDATIONS

### 9.1 WASTE MANAGEMENT

This indicator addresses waste production and disposal of different wastes like paper, food, plastic, biodegradable, construction, glass, dust etc. and recycling. Furthermore, solid waste often includes wasted material resources that could otherwise be channeled into better service through recycling, repair and reuse. Solid waste generation and management is a burning issue. Unscientific handling of solid waste can create threats to everyone. The survey focused on volume, type and current management practice of solid waste generated in the campus. The different solid wastes collected as mentioned above. A)

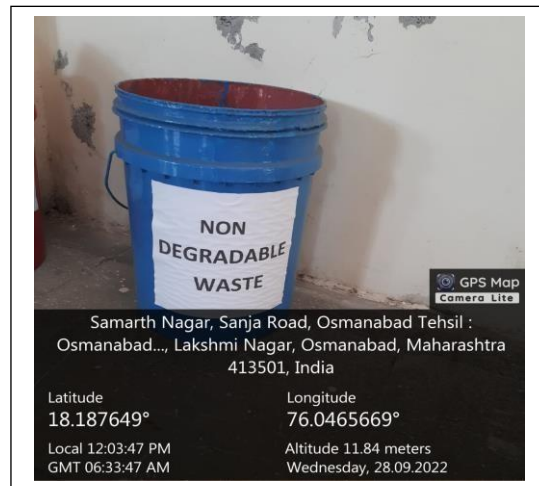
#### **Observations:**

The total organic waste collected in the campus is 20 kg/day. Waste generated from canteen and garden is a major solid waste in the campus. Near about 5 kg/day of non-biodegradable waste is generated in the campus including glass bottles. Near about 1 kg/day hazardous waste and 25-30 lit/day chemical waste is generated from laboratories. The waste is segregated at source by providing separate dustbins for Bio-degradable, Non-Bio-degradable, Hazardous chemical waste, Non-Hazardous waste and Biowaste. Single sided used papers reused for writing and printing in all departments. Very less plastic waste (0.1 kg/day) is generated by departments, office, garden etc. but it is neither categorized at point source nor sent for recycling. The food waste from canteen is sent for vermicomposting. The institute has adopted two vermicomposting units in campus having capacity of 300 kg each and size 12x2 and 12x3 each. The main purpose of this is to breakdown & decomposes all kind of organic waste by using various species of worms to create humus, a rich nutrient-filled material called vermicompost. After complete process of vermicomposting, it is used as manure in the garden and excess vermicompost is sold to the farmers.

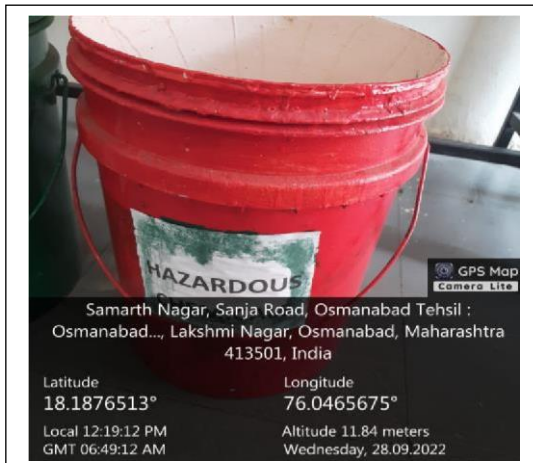




### Vermicomposting Unit



### Dustbins are provided in the campus for Degradable and Non-Degradable waste



### Dustbins are provided in the laboratories for Hazardous and Non-Hazardous waste



Dustbin for culture and media waste



Dustbins for Dry and Wet waste

**B) Appreciations:**

- Each and every place of campus is provided with dustbin.
- Laboratory waste is properly disposed in soak pit.
- E-waste is collected.
- Reuse of paint buckets as a dustbins in the campus.
- Paper waste generated from office and laboratories are transported to the “Sakar” paper industry for recycling.
- Every department and office tries to reduce consumption of paper.
- College reuses empty side of printed paper.

**C) Recommendations:**

- Make full use of all recycling facilities provided by City Municipality and private suppliers, including glass, cans, plastic bottles, batteries, print cartridges, cardboard and furniture.
- Provide sufficient, accessible and well-publicized collection points for recyclable waste with responsibility for recycling clearly allocated.
- Separate E-waste collection centre is necessary. Collected E-waste should supply to E-waste management and disposal facility in order to dispose E-waste in scientific manner.

**9.2 WATER CONSERVATION**

This indicator addresses water consumption, water sources, irrigation, storm water appliances and fixtures. A water audit is an on-site survey and assessment to determine the water use and hence improving the efficiency of its use.

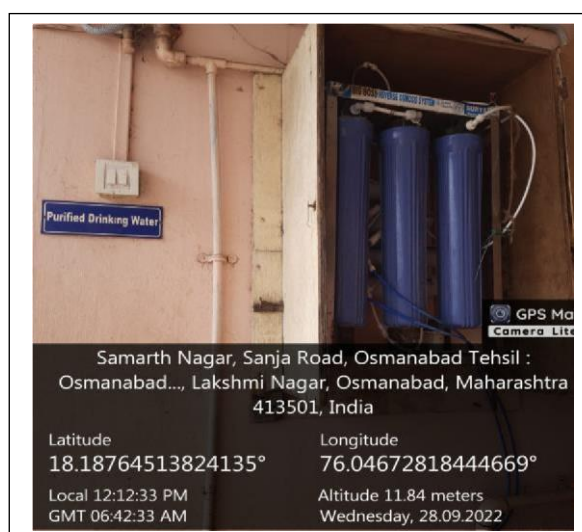
**A) Observations:**

The study observed that bore well water is main source of water in the campus. Water is used for drinking, canteen, toilets, laboratory and gardening purpose. During the survey, loss of water is observed, through

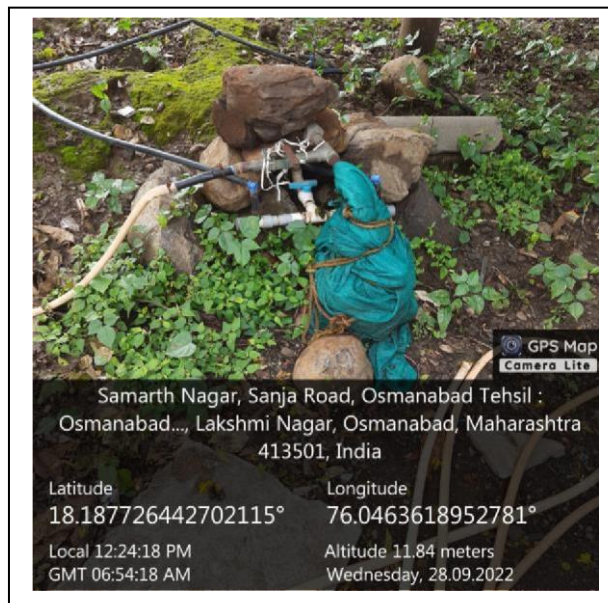
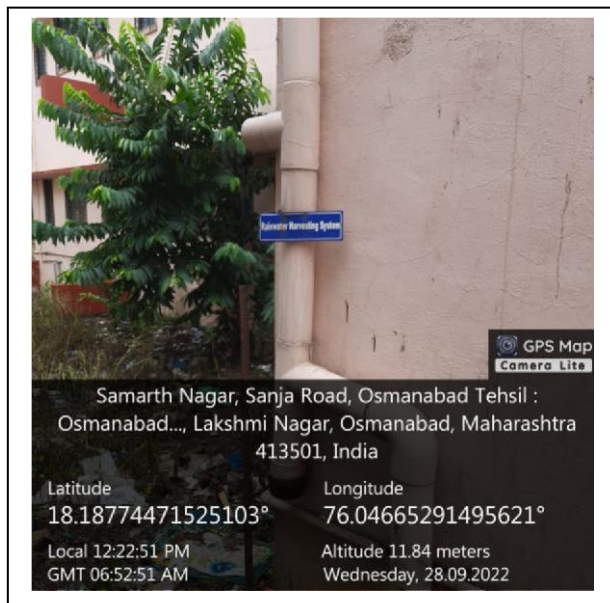
leakages and no over flow of water from overhead tanks. The data collected from all the departments is examined and verified. On an average the total use of water in the college is 2,300 L/day, which include 1,000 L/day for domestic purposes, 500 L/day for gardening and 800 L/day for different laboratories. College has R.O system. The college has rain water harvesting facility in a campus. Water from rooftop of the college is collected and it is used for bore well recharge and it helps to increase water level in the bore well. Water used for drinking purpose analyzed as per IS 10500:2012 drinking water specification and observed it was potable.

### Daily Water Consumption

Parameter	Quantity	Total water consumption
Total tanks	12	2.3 m <sup>3</sup>
Library water consumption	1 m <sup>3</sup>	
College building water consumption	3.5 m <sup>3</sup>	
Ladies hostel water consumption	1.5 m <sup>3</sup>	
RO water consumption	0.3 m <sup>3</sup>	



### R.O. System



### Rainwater Harvesting System

#### Water Sample Analysis Report

Sr. No.	Parameters	Results	Acceptable Limit as per IS 10500: 2012	Units
1.	Colour	< 1	Max. 5	Hazen Units
2.	Odour	Agreeable	Agreeable	-
3.	pH	7.05	6.5-8.5	-
4.	Turbidity	0.3	Max. 1	N.T.U.
5.	Total Dissolved Solids	85	Max.500	mg/L
6.	Calcium (as Ca)	15	Max.75	mg/L
7.	Chloride (as Cl)	11	Max.250	mg/L
8.	Floride (as F)	< 0.03	Max.1	mg/L
9.	Iron (as Fe)	<0.04	Max.0.3	mg/L
10.	Magnesium (as Mg)	4	Max. 30	mg/L
11.	Alkalinity (as CaCO <sub>3</sub> )	26	Max.200	mg/L
12.	Nitrate (as NO <sub>3</sub> )	5.19	Max. 45	mg/L
13.	Sulphate (as SO <sub>4</sub> )	2.86	Max.200	mg/L
14.	Total Hardness (as CaCO <sub>3</sub> )	52	Max.200	mg/L
15.	E. coli	Absent	Not Detectable	/100 ml
16.	Total Coliforms	Absent	Not Detectable	/100 ml

#### B) Appreciations:

- Water is properly used in the campus and water reusing strategy is followed by the college.

- R.O. reject water is reused for gardening purpose.
- Rain water is collected and used for bore well recharge.
- Waste water generated from campus is collected in soak pit. **C) Recommendations:**
- Year wise water consumption report.
- Maintenance of R.O. system is necessary.
- Leakages should be removed because it creates huge water loss.
- Provide leakage free water taps.

### 9.3 ENERGY CONSERVATION: A)

#### Observations:

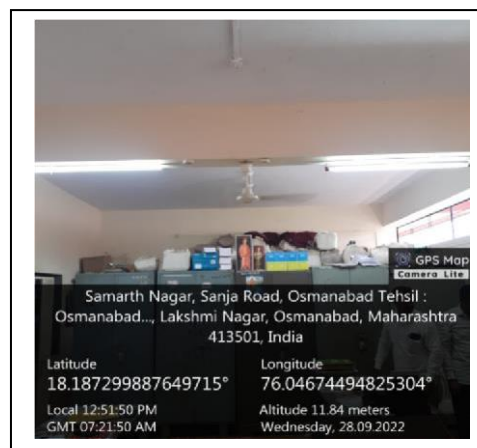
This indicator addresses energy consumption, energy sources, energy monitoring, lighting, appliance, natural gas and vehicles. Energy use is clearly an important aspect of campus sustainability and thus requires no explanation for its inclusion in the assessment.

Energy source utilized by all the departments and common facility center is electricity only. Maximum energy consumption is by major energy consuming equipment. College hostel has solar water heater. All the departments and common facility centers are equipped with LED lamps. Approximately 65 computers, 8 printers, 17 bulbs, 52 fans, 53 tubes, 2 projectors, 2 A.C these all are observed during the survey. Equipment like Computers is used with power saving mode. Also, campus administration runs switch-off drill on regular basis. In various labs after completion of work, electricity was shut down; it is one of the practices for energy conservation.

The campus imports electricity from Maharashtra State Electricity Distribution Co. Ltd. The total electricity that was imported by the college during the year 2021 is as shown below. Total 12 month's energy consumption of the campus is presented below for the year 2021. The graph shows that institute requires more electricity and it costs too much. If instate install solar panels then it will saves electricity charges.



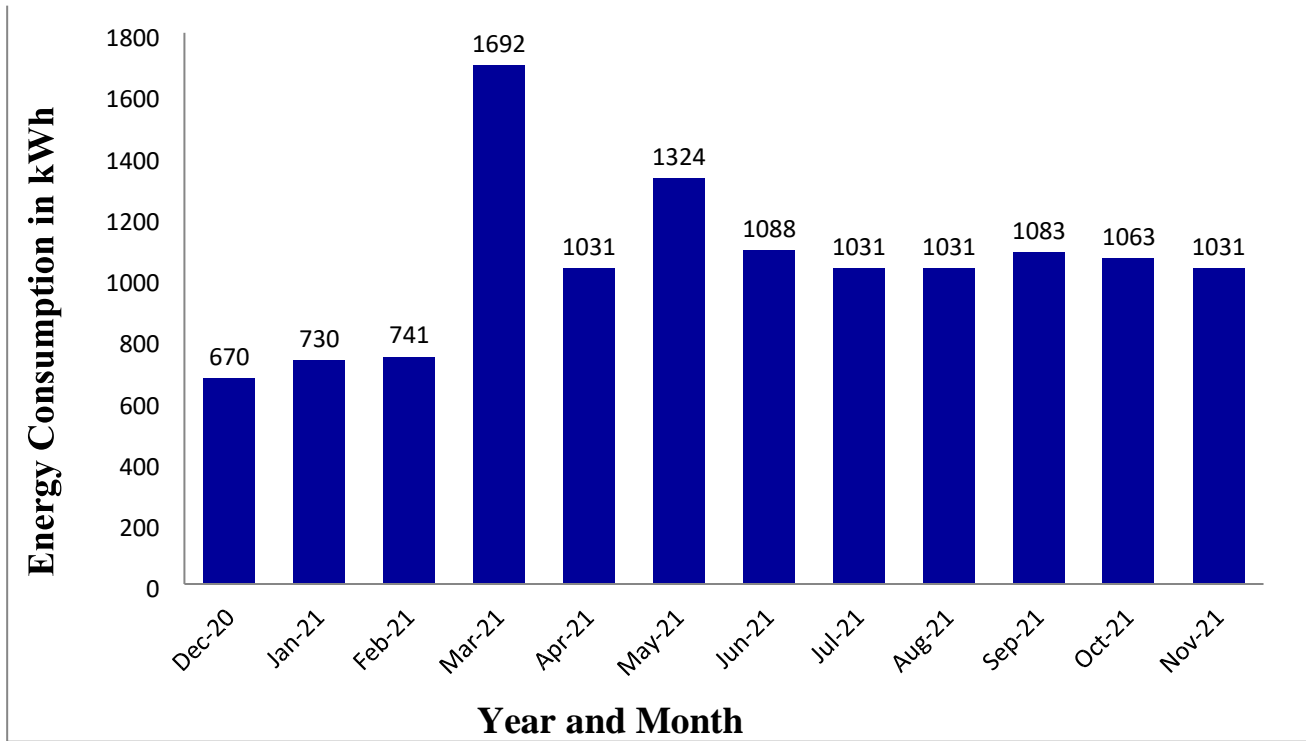
**Solar Water Heater**



**LED Bulb**

**LED Tube Light**

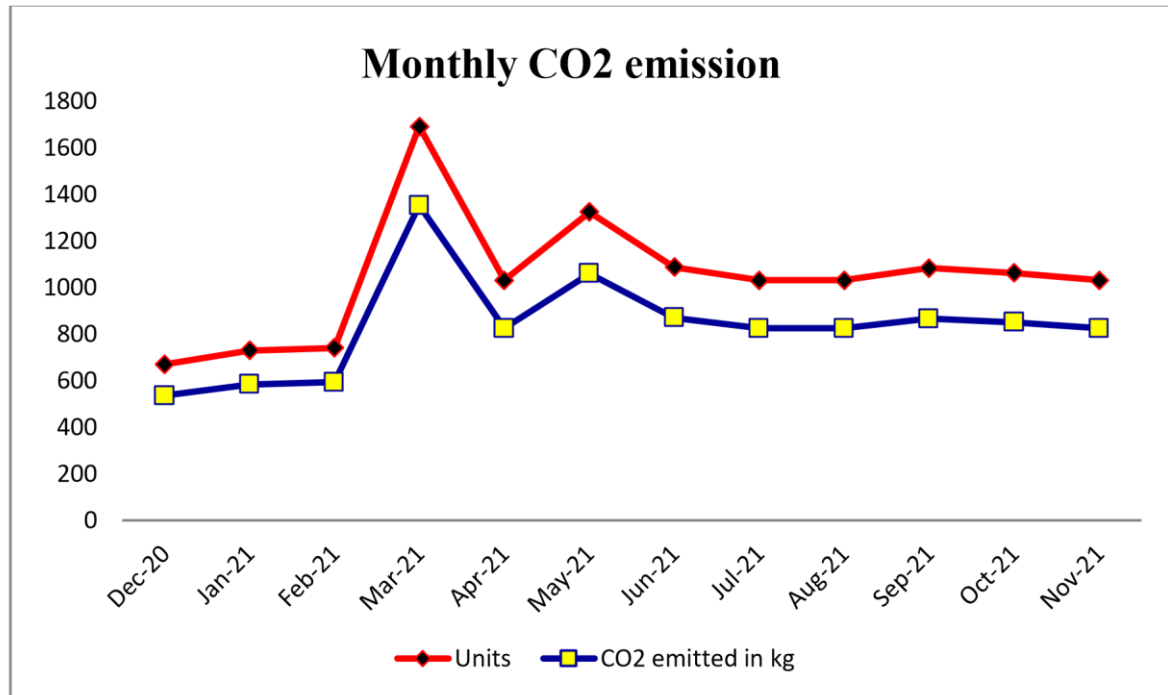
Month	Energy Consumption in units
December -2020	670
January-2021	730
February-2021	741
March-2021	1692
April-2021	1031
May-2021	1324
June-2021	1088
July-2021	1031
August-2021	1031
September-2021	1083
October-2021	1063
November-2021	1031
Avg.	1042.917



#### **CARBON- DIOXIDE EMISSION**

For consumption of 1 Unit (1 kWh) of Electricity, the CO<sub>2</sub> emitted is 0.8 Kg. OR the Emission is 0.8 Kg/kWh. In the following Table we present the total units consumed and CO<sub>2</sub> emitted as under:

Sr.No.	Month	Energy consumption (kWh)	CO <sub>2</sub> emitted in kg
1	December -2020	670	536
2	January-2021	730	584
3	February-2021	741	592.8
4	March-2021	1692	1353.6
5	April-2021	1031	824.8
6	May-2021	1324	1059.2
7	June-2021	1088	870.4
8	July-2021	1031	824.8
9	August-2021	1031	824.8
10	September-2021	1083	866.4
11	October-2021	1063	850.4
12	November-2021	1031	824.8
	Avg.	1042.917	834.3336



## PROVIDING SOLAR PV SYSTEM FOR PART LOAD OPERATIONS DURING DAY TIME

There are mainly Lighting and Computer loads. Since, there is no separate lighting feeder; it becomes necessary to separate out the lighting feeder for those lights where they are used 6 to 8 hours in a day.

A 5 kW Solar PV is proposed for the Lighting load application with minimum Storage batteries.

The power saved considering the 85% loading = 5 kW

Average Daily available hours = 6 h/day

Electricity Saved = 6 x 5 = 30 kWh/day

Yearly availability = 300 days/year

Yearly savings in electricity = 300 x 30 = 9000 kWh/year

Monitory Savings = 9000 x 8 = Rs.72000/year Approximate

cost of the solar system = Rs. 3.6 lac

Payback Period: 360000/72000 = 5 Yrs.

Average life of project: 25 Yrs.



Net Saving: 20 yrs x 72000/yrs. = 14, 40,000/-

**B) Appreciations:**

- Appreciate that college has 3 star electrical appliances like A.C. and LED bulbs.
- Appreciate that college hostel has solar water heater having capacity 150 LPD. It saves 2250 units per year.

**C) Recommendations:**

- Installation of LED lamps instead of CFL is necessary because CFL consumes maximum energy and it is observed that college has maximum CFL lamps.
- Installation of roof top solar panels is necessary.

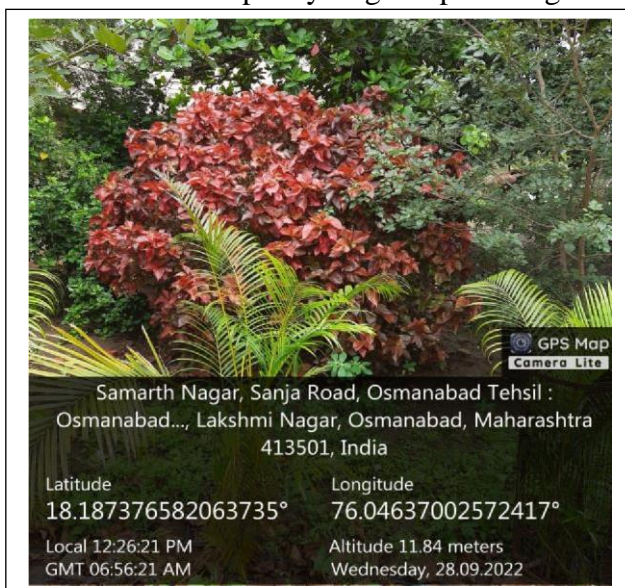
**9.4 GREEN AREA MANAGEMENT/BIODIVERSITY SURVEY**

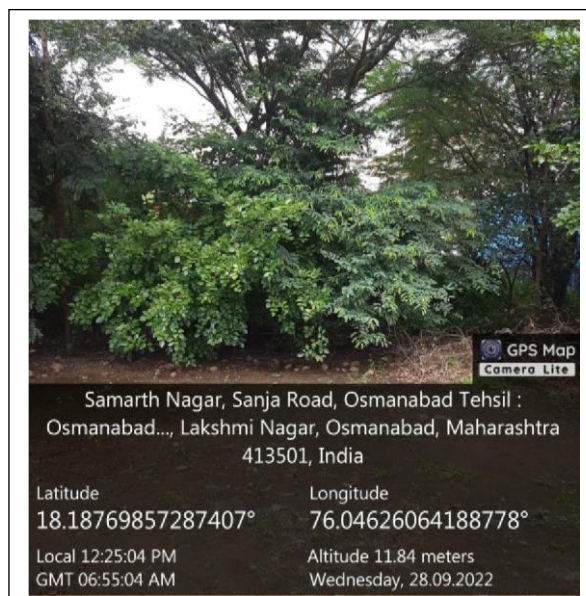
This includes the plants, greenery and sustainability of the campus to ensure that the buildings conform to green standards. This also helps in ensuring that the Environmental Policy is enacted, enforced and reviewed using various environmental awareness programs. **A) Observations:**

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.

Campus is located in the vicinity of approximately 100 (species) of trees total no. 530, 15 (species) of shrubs total no.100. Approximately 15 species of birds, 6 species of mammals and 4 species of reptiles are found in the campus. Various tree plantation programs are being organized during the month of July and August at college campus and outside the college campus. This program helps in encouraging ecofriendly environment which provides pure oxygen within the institute and awareness among students and staff members. The plantation program includes plantation of various type of indigenous species of ornamental and medicinal as well as wild plant species under the biodiversity and ecological survey.

The Institute has a policy of gift a plant to guests in any program. It is a good thing for environment.





### Green Campus

#### B) Appreciations:

- Appreciate that the college has well developed Botanical Garden, medicinal plant (Shatavari) project, nursery project etc.
- Appreciate that the college has variety of trees, bushes & shrubs.
- Campus created Bar Code system for trees which give all the information about that tree after scan it.
- Appreciate that college celebrates 1<sup>st</sup> June as 'Krushi Din', every year and plant trees on this day to make the campus Greener.
- Appreciate that college celebrates 5<sup>th</sup> June as 'Environment Day', every year and plant trees on this day to make the campus Greener.

#### C) Recommendations:

- Review periodically the list of trees planted in the campus, allot numbers and names to the trees and keep records.
- Try to plant more trees in the campus.
- Promote environmental awareness as a part of course work in various curricular areas, independent research projects and community services.
- Ensure that an audit is conducted annually. And action is taken on the basis of audit report and recommendation and findings.

## 9.5 NOISE, VENTILATION AND ILLUINATION MONITORING

### 1. Noise Study:

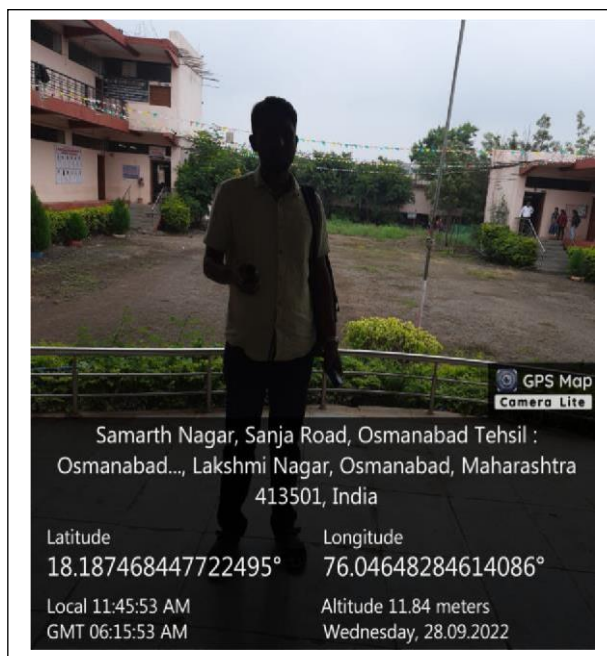
The noise levels measurements were carried out using Noise level meter. The Noise level survey was carried out at two locations, at outside as well inside the study area campus. The major source of noise

identified in the study area has been predominantly the vehicular movement and the transportation activities.

Location	Time	1	2	3	4	5	Noise Level Readings dB (A)
Outside	11:45	72	70	65	55	51	62.6
	12:45	70	59	63	60	57	61.8
Inside	12:00	65.4	54	62	58	61	60.04
	01:00	61	62.4	60	64	59.2	61.32

As per The Noise Pollution (Regulation & control) Rules, 2000 (Rules 3(1) and 4(1))

Area Code	Area Type	Limits in dB(A) weighted scale	
		Day (6 a.m. to 10 p.m.)	Night (10 p.m. to 6 a.m.)
B	Commercial	65	55



### Noise Level Monitoring Outside the Campus

### Noise Level Monitoring Inside the Campus

#### Observation:

All results of Noise level monitoring (Inside & Outside) found within limits as per the Noise Pollution (Regulation & control) Rules, 2000.

#### 2. Ventilation Study:

The ventilation study was carried out by using anemometer. The study was carried out in classroom.

Sr. No.	Name of Location	Temperature (° c)	Air velocity (m/s)
1.	Classroom	27.2	1.4

2.	Laboratory	27.1	0.5
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Ventilation Monitoring in Classroom



Ventilation Monitoring in Laboratory

**Observation:**

All results of ventilation study (classroom & Laboratory) found within limits as per Factory Act 1948, Rule 22-A.

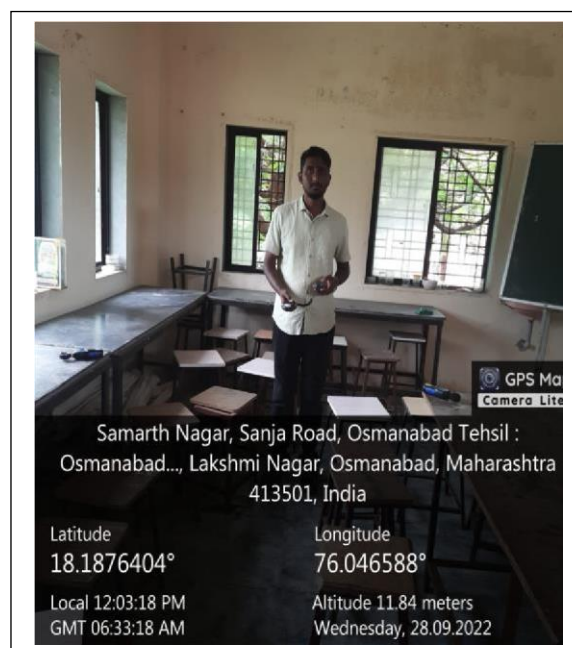
**3. Illumination Study:**

The Illumination Study was carried out using Lux meter. And it was carried out in classroom.

Sr. No.	Location	Time	Lux Level Reading (LU X)				Average Lux
			1	2	3	4	
1.	Classroom	11:55	160	158	190	211	179.75
2.	Laboratory	12:55	139	142	161	160	150.5



**Illumination Monitoring in Classroom**



**Illumination Monitoring in Laboratory**

**Observation:**

All results of Illumination Study (Classroom& Laboratory) found within limits as per MF RulesSection-35, Schedule B.

**9.6 CARBON FOOTPRINT**

A carbon footprint (CF) is the total amount of greenhouse gases (including carbon dioxide and methane) that are generated by our actions.

A carbon footprint is an estimate of the climate change impact of activity – such as making a product, living a lifestyle or running a company.

There are many existing and evolving standards for calculating carbon footprints but in truth no footprint is precise. For more complicated activities these uncertainties are greatly multiplied. **a) Carbon**

**Emissions:**

**List of carbon emissions**

Classification/Scope	Sources	Description
<b>Scope 1 (Direct)</b>	Equipments usage	DG set
<b>Scope 2 (Indirect)</b>	Electricity Use	Venkatesh Mahajan Senior College uses electricity to heat, cool, light, and run appliances at its facilities.
<b>Scope 3 (Indirect)</b>	Employee commuting	Employees commute from their residences to the college

**Emission Data and Calculations:**

- Scope 1 – All Direct Emissions from the activities of an institution or under their control. Including fuel combustion on site such as gas, etc.

**Scope 1 Emissions**

Type of Fuel	Quantity	Emission Factor	KgCO <sub>2</sub> /month
Fuel used for DG set	90 lit/month	2.653	238.77
TOTAL SCOPE 1 EMISSIONS			<b>238.77 kgCO<sub>2</sub>/month</b>

- Scope 2 – Indirect Emissions from electricity purchased and used by the institution. Emissions are created during the production of the energy and eventually used by the organization.

**Emissions from Purchased electricity:**

**Indirect Emissions /scope 2 emissions**

Type of Emission	Quantity	Emission Factor	KgCO <sub>2</sub>
Emissions from Purchased electricity	1042.917 kWh/month	0.97	1011.63 KgCO <sub>2</sub> /month
TOTAL SCOPE 2 EMISSIONS			<b>1011.63 KgCO<sub>2</sub>/month</b>

- Scope 3 – All Other Indirect Emissions from activities of the institution, occurring from sources that they do not own or control.

**A. Employee Transportation:** Increase in student intake can lead to increased greenhouse gas (GHG) pollution caused by the resulting growth in vehicular traffic, energy use, and other activities. This unit seeks to identify the impact on global climate change through its emissions of greenhouse gases (GHGs), notably carbon dioxide (CO<sub>2</sub>). Transportation is the fastest growing major contributor to global climate change, accounting for 23% of energy-related carbon dioxide (CO<sub>2</sub>) emissions. Fuel Consumption through Upstream Transportation

Mode of transportation	Daily Count	Travelling distance (km/Vehicle) (to and fro)	Total Km	Emission Factor	Kg CO <sub>2</sub>
2 wheeler (teachers)	75	10	750	0.0319	23.925
4 Wheeler (Cars)	15	10	40	0.13	5.2

<b>TOTAL</b>	<b>29.125 KgCO<sub>2</sub>/day</b>
	<b>873.75 KgCO<sub>2</sub> /month</b>

**Fuel Consumption through students Transportation**

Mode of transportation	Daily Count	Travelling distance (km/Vehicle) (to and fro)	Total Km	Emission Factor	Kg CO <sub>2</sub>
2 wheeler (teachers)	607	10	6070	0.0319	193.633
4 Wheeler (Cars)	100	10	1000	0.13	130
<b>TOTAL</b>					<b>323.633 KgCO<sub>2</sub>/day</b>
					<b>9708.99 KgCO<sub>2</sub> /month</b>

**B) Solid Waste Generation:**

**Dry Solid Waste Generation**

Wet waste generated	Emission factor	Total Kg CO <sub>2</sub>
20 kg/month	0.21	<b>4.2 KgCO<sub>2</sub> /month</b>

**Total emissions throughout a year**

**Total emissions throughout a year**

Reporting Year	Total Emissions (kg CO <sub>2</sub> /month)	Total Emissions (kg CO <sub>2</sub> /year)
<b>2022</b>	<b>11837.34</b>	<b>142048.08</b>

**C) Recommendations:**

- Make sure most teachers and students opt for public transport instead of using personal vehicle.
- Use as much renewable sources of energy as you can.
- Reduce the waste generated by biology, chemistry and other departments.
- For reducing Carbon Footprint of the college, try to conduct 'No Vehicle Day' on every Saturday.

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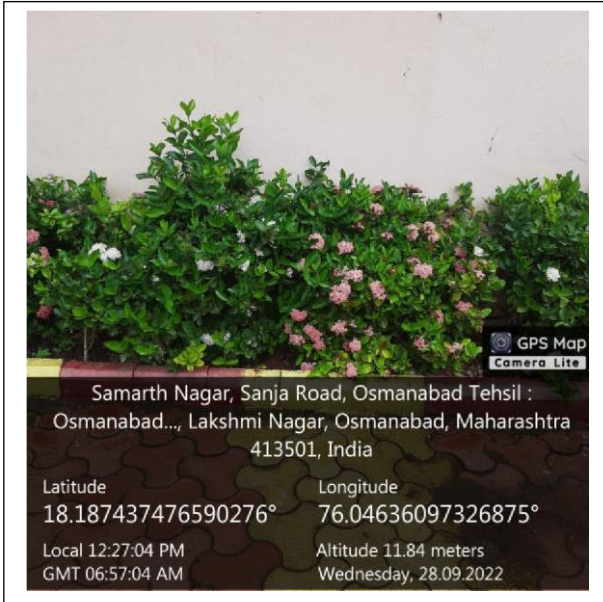
## 10. BEST PRACTICES FOR ENVIRONMENT

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### 1. **Biodiversity Conservation:**

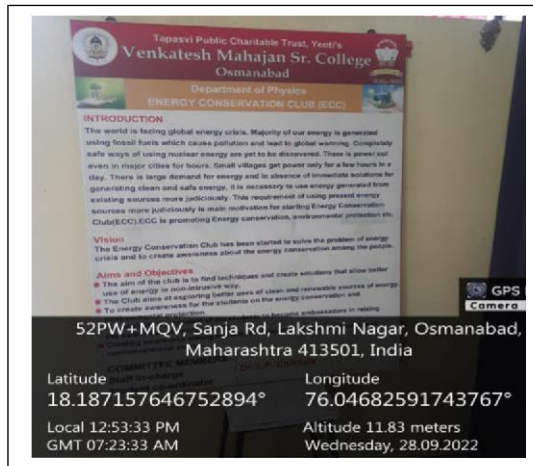
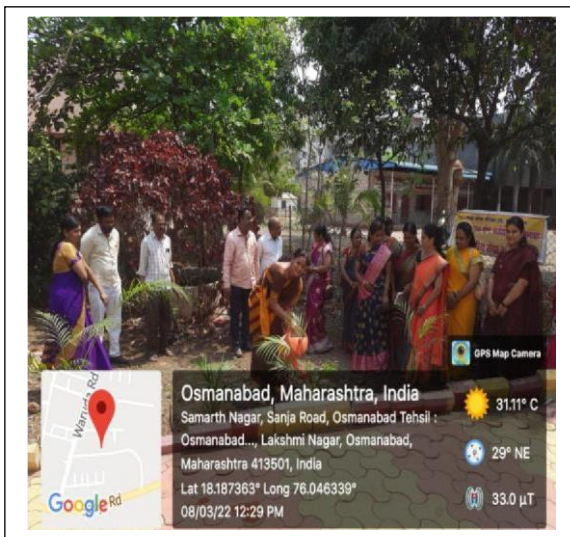
- They have green campus which provides habitat to various species.
- They maintain flora and fauna in the campus.
- They invented QR code system for trees which will give all the information about that tree after scanning it.
- QR Code Technology used for study materials and plants this news shown on DD Sahyadri News.





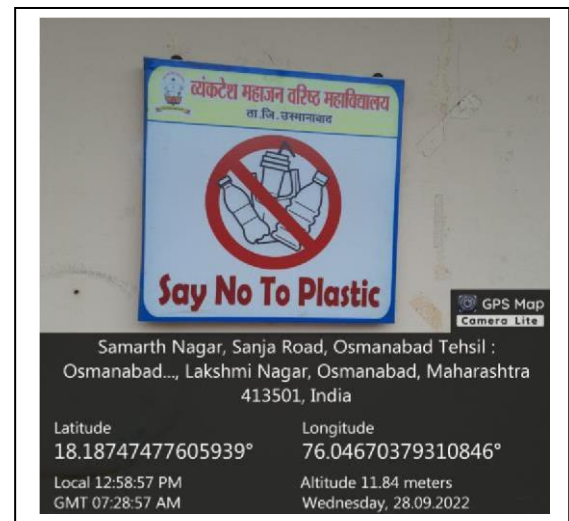
## 2. Tree Plantation Drives and Days Celebrations

- Periodically the plantation drives conducted by students and staff of campus.
- Every Guest is honored by tree at campus.
- World Environment Day, Wetland Day, Ozone Day, Krushi Din etc. Celebrated by students and staff every year.
- College has Energy Conservation Club.



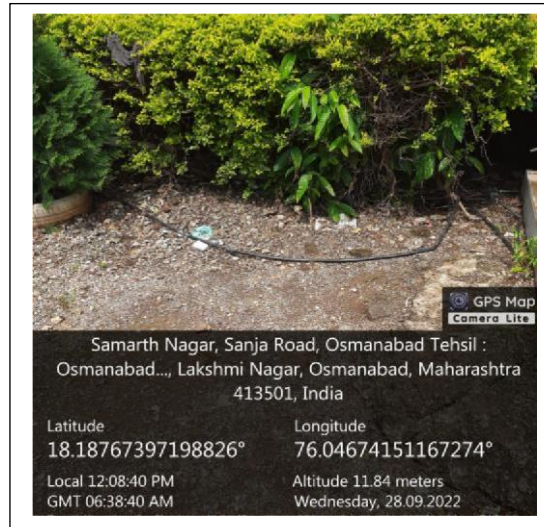
### 3. Solid Waste Management

- ❑ Different mechanisms for proper disposal of biodegradable, non-biodegradable and MSW are implemented in campus.
- ❑ Cleanliness drives are arranged by college.
- ❑ Reuse of Tires for tree plantation.
- ❑ Sign boards for awareness of environment are there in the campus.



#### 4. Water Conservation

- Water saving push taps fitted in the drinking water zone and the toilets to avoid the wastage of water.
- Drip irrigation system is applied through the campus for watering plants, and it saves water.



## 11. OVERALL RECOMMENDATIONS

- Formation of Environment Policy and communicated to all faculties and other staff members.
- Environmental Monitoring i.e. (Ambient Air Quality monitoring, D.G set monitoring, Water monitoring) need to be conducted by approved laboratory with frequency of six month.
- Reduction in use of paper work by go digital system.
- Need of installation of roof top solar panels.
- Increase in Environmental promotional activities for spreading awareness at campus.
- As practically feasible avoid use of personal vehicles inside the campus.

- Need of E-waste management is necessary.



## 12. CONCLUSION

This audit involved extensive consultation with all the campus team, interactions with key personnel on wide range of issues related to Environmental aspects. The Venkatesh Mahajan Senior College has Environmental Committee for sustainable use of resources. The audit has identified several observations for making the campus premise more environmental friendly. The recommendations are also mentioned with observations for campus team to initiate actions. The audit team opines that the overall site is maintained well from environmental perspective. The paperless work system, green campus management, implementation of drip irrigation, solid waste management, reuse of tires, rain water harvesting system, composting unit and water conservation practices are noteworthy.

As part of green audit of campus, we carried out the environmental monitoring of campus which includes Illumination, Noise level, Ventilation monitoring and Water Testing which is used for drinking purpose in the campus. It was observed that Illumination and Ventilation is adequate considering natural light and air velocity present. Noise level in the campus is well within the limit i.e. below 65 dB at day time. Drinking water also analyzed and found it was potable.

There are some major observations and they are installation of solar panels, leakage proof campus is necessary. And few minor things are important to initiate urgently are waste management records by monthly inventory, water balance cycle and periodic inspection of buildings housekeeping and environment policy.





# VENKATESH MAHAJAN SENIOR COLLEGE, OSMANABAD

Re-Accredited with 'B' Grade by NAAC

Affiliated to Dr. Babasaheb Ambedkar Marathwada University, Aurangabad.

## 7.1.3 Quality audits on environment and energy regularly undertaken by the Institution,

The institutional environment and energy initiatives are confirmed through the following:

### Audit 2020-21

Sr. No	Activity	Status
1	Green Audit	Yes
2	Energy Audit	Yes
3	Environment Audit	Yes

  
**Coordinator**  
Internal Quality Assurance Cell  
Venkatesh Mahajan Senior College  
Osmanabad



  
**PRINCIPAL**  
Venkatesh Mahajan Senior College  
Osmanabad 413501



**VENKATESH MAHAJAN  
SENIOR COLLEGE  
OSMANABAD**



**ENVIRONMENTAL  
AUDIT 2020-21**



## Environment Audit Committee

### **Chairman:**

**Prof. Dr. Arvind.M. Deshmukh**  
President  
(Microbiology Society of India).

### **Member :**

**1)Prof Dr. Mahadik S. C.**  
Head Dept. of Botany  
R.P. College, Osmanabad

**2) DR. Padwal Nitin**  
Dept. of Zoology  
S. P. Mahavidhyalaya Bhoom, Osmanabad



  
**PRINCIPAL**  
Venkatesh Mahajan Sr. College  
Osmanabad

**Introduction :-**

“Green Audit can be defined as ,systematic ,Identification quantification , recording reporting and analysis of component of environmental diversity”. Through green audit, we gets the direction as how to improve the condition of environment. The Environment audit focuses on the green campus,

- 1) **Greenery/ plantation**
- 2) **Waste management**
- 3) **Water management**
- 4) **Energy management, conservation**
- 5) **Carbon foot printing**

**Objective**

- 1 The main objective of green Audit is to promote the environment Management and conservation in the college campus.
- 2 The purpose of green Audit is to identify describe and prioritize Framework of environment sustainability in compliance with the Applicable regulation polices and standards.

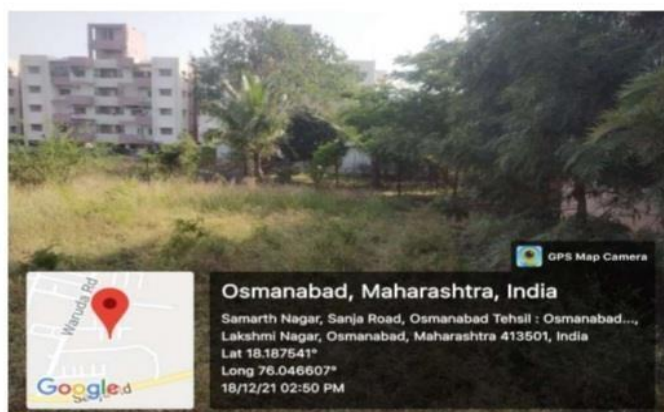
**Major Activities**

In this academic year efforts were made to maintain ecofriendly atmosphere in the campus. Following programs were initiated.

- Drip irrigation system is installed for water conservation & prevention of water wastage
- Installation of LED bulbs instead of florescent Bulbs as for as possible.
- Online poster making competition was organized on the occasion of World Soil Day “by dept. of Botany
- Carbon dioxide neutrality is maintained on the campus by developing greenery
- Encourage the student to keep campus green through various activity like plantation & Gardening.
- Department of physics established “Energy conservation club”.

**IGREENERY /CONSERVATION OF PLANTS:**

- College has two botanical gardens in college premises. These Botanical garden contain various medicinal plant. which is useful to create awareness and importance about medicinal plant. This include Aloe Vera, Ashwagandha, Shatavari, Neem Citrus, Amla, Adathoda vasica.
- ❖ Besides these we grow plants in available areas of college premises and near the library.
- ❖ There are 300 plants of different species in our premises.
- ❖ These include medicinal plants, energy plants and ornamental plants.
- ❖ College maintain Greenery all over the campus. Student of department of Botany also maintain the botanical Garden.



## II) WASTE MANAGEMENT

Waste management consist of-

- I) Solid waste management
- II) Liquid waste management
- III) E- waste

**I) Solid waste Management** – Generated waste is separated as biodegradable & non – biodegradable

- **1) Degradable waste–**
- It includes paper waste, Food waste All biological waste e.g. plant part, leaves, dead twigs dead flowers etc. debris decompose rapidly under natural condition.
- These biological waste is transferred to vermibeds where it is converted into Vermicomposting which is used for maintaining botanical garden
- The department Botany of has started a model vermicomposting facility. The main purpose of this **to recycle biodegradable** (organic waste) in the college campus. After complete Process of vermicomposting it is used as a manure for plant.
- **Segregation of solid waste (Kg/day) --** - Total = 5 Kg / day

**2) Non – degradable waste** - Broken Glasswares from lab, bottles e waste plastic, metal etc.

### Management

- Broken glassware, bottle, plastic - Disposal from Lab to municipal waste Collection centers.

Plastic paper and Metal - It is sold to scrap dealer for further recycling.

3) **Hazardous waste** – Chemical waste material and expired acids from laboratory.

**Management-**

Expired chemical are buried in nearby area of college campus to avoid their hazardous effect of these chemicals.

4) **Non-Hazardous waste** - Waste material like- stains culture media, damage specimens and material from laboratory.

**Management**

It is dumped into pits

- Dustbins are placed at strategic spots so as to cover the premises.

Three color waste bins are used for collection of solid waste in every department

\* **Re-use and Recycling of solid waste -**

a) Each and every department and office tries to reduce consumption of printing paper by use of waste one sided printed paper generated in office and departments

b) Paper waste is generated in office and lab is transported to the ' Sakar paper industry for further recycling

**Bio - Waste Management**– culture media from microbiology It is carefully Segregated, sterilized and Dumped into pit.

**II) Liquid waste Management**

Liquid waste from all laboratory is properly transfer into soak pits.

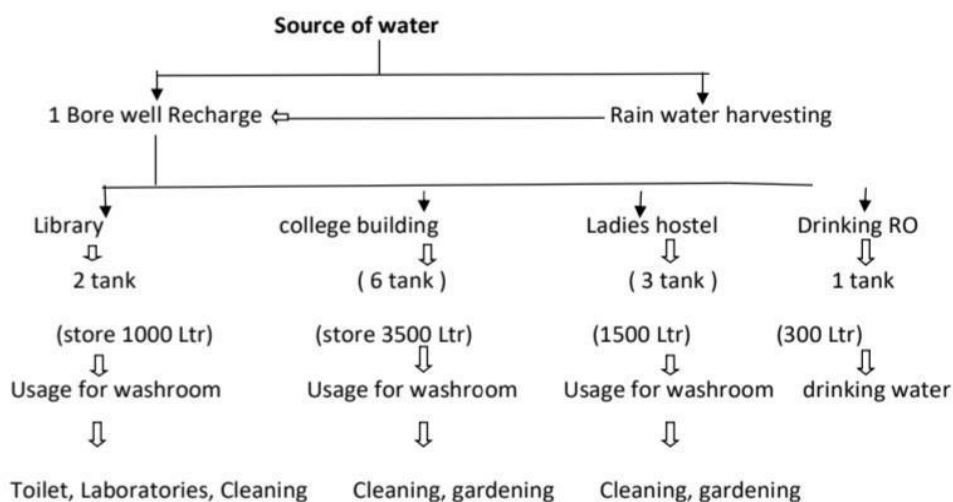
**III) E-Waste Management** - E waste can be described as electronic equipment that is near or at the end of its useful life it is more hazardous than other waste.

Electronic equipment from physics and comp laboratory.

In this year E-waste generated in the campus is very less.

### III WATER MANAGEMENT:

- ❖ College has one bore well as a water source.
- ❖ Water supply is regularly maintained throughout the college. It is stored in overhead tanks and circulated through well maintained pipelines
- ❖ water distribution system in college.



**Total Availability of water = 6000 Ltr filled after 3 days**  
**= 2000 Ltr/day + 300 Ltr daily for drinking**  
**= 2300 Ltr/day usage**

**\*Rain water Harvesting System:** Rain water harvesting system is comprised of roof top and surface runoff, through RWH rain water collected is used for recharging 1 bore well through ground water pipeline

#### **Waste Water Management:**

- ❖ Old leakage tap are replaced by new tap.
- ❖ All science laboratories are having good supply of water though pipelines.
- ❖ Drip irrigation system is installed for gardening leads to water conservation.

### III) ENERGY MANAGEMENT:

Energy use is an important aspect of campus sustainability and thus it is very important for Environment audit. Energy auditing deals with the conservation and method to reduce its consumption. Understanding the importance of efficient energy use college has initiated the process of replacing old incandescent bulbs to energy efficient LED bulbs.

Energy use is an important aspect of campus sustainability.

- ❖ Electricity is available in the college campus.

#### Energy Management Chart

Sr. No.	Hall No.	Power Points	Points	AC
1	Hall No.1	1	22	AC 1
2	Hall No.2	3	30	
3	Hall No.3 (Computer Lab)	1	50	AC 1
4	Hall No.4	1	23	Nil
5	Hall No.5	4	10	Nil
6	Hall No.6	2	10	Nil
7	Hall No.7		06	Nil
8	Hall No.8		09	Nil
9	Hall No.9	1	08	Nil
10	Hall No.10	-	23	Nil
11	Hall No.11	02	09	Nil
12	Hall No.12	-	04	Nil
13	Stage	-	07	
14	Passage	-	10	
15	Library	03	60	1 Photocopy Machine
16	Hostel	-	40	
17	Auditorium		22	
<b>Total</b>		<b>Power Point 12</b>	<b>Point 343</b>	

3 Phase connection. Meter is present.

- ❖ 4-inverter
- ❖ 2 AC
- ❖ 1 Photocopy Machine
- ❖ Employees use two wheelers for commuting

**Energy Conservation Policy:** Every department follows the rule of switching off switches when not in use.

- ❖ Institute strictly observes to see that no electric equipment is on unnecessarily.
- ❖ LED bulbs are used instead of incandescent bulbs to ensure that energy is saved.
- ❖ Thus enough measure are taken to use electricity carefully.
- ❖ Department of physics established Energy conservation club

### **1) TRANSPORT MANAGEMENT:**

- ❖ Institute does not has its own vehicle but commercial vehicle are hired as required.

**2) HAZARDOUS WASTE** :- Hazardous waste in chemistry laboratory is diluted and transfer it properly into sock pit

### **3) ENVIRONMENT FRIENDLY ACTIVITIES**

- ❖ Tree plantation & maintainance of tree.
- ❖ Organizing Environment Awareness programme By Dept of botany. On The occasion of "world soil Day" 5 Dec 2020
- ❖ Drip irrigation system is installed in college campus.
- ❖ Department of Physics established Energy conservation Club



### Cleaning Activity in College Campus – Biological Waste



**TREE PLANTATION ACTIVITY**



### Vermicomposting project - Vermibed





**Inauguration Function of energy Conservation Club- Dept of physics**



**4) PRESENT STATUS OF COLLEGE :-**

Sr No	Particulars	Current Status
1	Waste Management	Good
2	Water Management	Good
3	Energy Management	Good
4	Transport	N A
	Other	N A

**RECOMMENDATIONS :-**

- 1) Felicitate more students who are using bicycle.
- 2) Celebrate every year 5 June as world environment day
- 3) Indore plantation can be initiated to inculcate interest among the student.
- 4) Establish a college environmental committee that will hold responsibility for improvement of environment and sustainability.

**1) WATER:**

- 1) Remove damaged tap & install sensitive taps to reduce water wastage,
- 2) Some boards to make awareness for controlling over exploitation of water, are displayed near the taps.
- 3) In campus small scale recycle of water system is necessary
- 4) Minimize wastage of water.
- 5) Vegetable cultivation can be initiated.
- 6) Increase tree plantation and maintenance.



  
**PRINCIPAL**  
 Venkatesh Mahajan Senior College  
 Osmanabad 413501



# VENKATESH MAHAJAN SENIOR COLLEGE, OSMANABAD

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### Audit 2019-20

Sr. No.	Activity	Status
1	Green Audit	Yes
2	Energy Audit	Yes
3	Environment Audit	Yes

  
Coordinator  
Internal Quality Assurance Cell  
Venkatesh Mahajan Senior College  
Osmanabad



  
PRINCIPAL  
Venkatesh Mahajan Senior College  
Osmanabad 413501



**VENKATESH MAHAJAN SENIOR COLLEGE**

**OSMANABAD**

**ENVIRONMENTAL AUDIT**

**2019-20**



## Environmental Audit Committee

### **Chairman:**

**Prof. Dr. ArvindM. Deshmukh**

President

Microbiology Society of India.

### **Member :**

**1) Prof Dr. Mahadic Shama C.**

Head

Dept. of Botany

R.P. College, Osmanabad

**2) Mr Kamble H. A.**

Dept. of Botany

P. College, Osmanak



  
**PRINCIPAL**  
Venkatesh Mahajan Sr. College  
Osmanabad



**Introduction :-**

The Environment focuses on the green campus, water management, waste management, Air pollution, Energy management & Carbon Footprint etc. being implemented by college management.

In this year college expresses its commitment to sustainability in many ways. It has taken a number of positive steps to reduce it's environmental sustainability.

The college conduct internal green audit in each academic year to maintain eco-friendly atmosphere on the campus these program mes are as follows.

- Like, water conservation & prevention of water wastage.
- Use of CFL bulb's instead of florescent Bulb's.
- promoted student by taking Environment awareness programme  
Organised by dept of botany
- Corbondixide neturality is maintained on the campus by developing greenery.
- vegetable cultivation.
- Encourage the student to keep campus green through various activity like planting & Gardening.
- Field visit , for observaing ecology & Environment.

### **CONSERVATION OF PLANTS:**

- ❖ College has two botanical gardens and one garden in ladies hostel premises. Besides these we grow plants in available areas in college premises and near the library.
- ❖ There are over 100 plants of different species in our premises. These include medicinal plants, energy plants and ornamental plants

#### **1) WASTE MANAGEMENT**

- ❖ All biological waste e.g. plant leaves, dead twigs dead flowers, etc debris decompose rapidly under natural condition.
- ❖ These biological waste are used to prepare manure ( bio-fertilizer ).
- ❖ some manure used for maintaining botanical garden.
- ❖ Generated waste is separated as biodegradable & non – biodegradable
- ❖ Non-biodegradability are subjected to combustion and converted it to residue.
- ❖ While Bio-degradable waste is dumped near ladies hostel to make compost which later on used for all garden plants
- ❖ Expired chemical are buried in nearby area of college campus to avoid their hazardous effect of these chemicals.
- ❖ Paper cane, Newspaper, wastepaper are used to be recycle.
- ❖ Dustbins are placed at strategic spots so as to cover the premises. All classrooms, laboratory, library, veranda, etc.
- ❖ Water Supply is maintained for all science laboratories, for drinking water, latrines toilet & Two botanical gardens.

### **WATER MANAGEMENT:**

- ❖ College has one bore well as a water source.
- ❖ Water supply is regularly maintained throughout the college. It is stored in overhead tanks and circulated through well maintained pipelines
- ❖ For water storage-

6 Large overhead tanks (Capacity 1000 lit)

1 Small tank (Capacity 300 lit)

### **2) WASTE WATER MANAGEMENT:**

- ❖ Waste water of Laboratory is used for garden.
- ❖ One rain water harvesting unit / tank is present.
- ❖ All science laboratories are having good supply of water through pipelines.

**ENERGY MANAGEMENT:**

Energy use is an important aspect of campus sustainability and thus it is very important for Environment audit . Energy auditing deals with the conservation and method to reduce its consumption. Understanding the importance of efficient energy use college has initiated the process of replacing old incandescent bulbs to energy efficient LED bulbs.

**ENERGY MANAGEMENT:**

- ❖ Electricity is available in the college campus.

**Energy Management Chart**

Sr. No.	Hall No.	Power Points	Points	AC
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<b>Total</b>		<b>Power Point 12</b>	<b>Point 343</b>	

- ❖ 3 Phase connection. Meter is present.
- ❖ 4-inverter

- ❖ 2 AC
- ❖ 1 Photocopy Machine
- ❖ Employees use two wheelers for commuting
- ❖ Principal uses diesel car for commuting
- ❖ Scanners
- ❖ Electronic and electrical equipment used the department like Fridge, incubator, oven

**Energy Conservation Policy :** Every department follows the rule of switching off switches when not in use.

- ❖ Institute strictly observes to see that no electric equipment is on unnecessarily.
- ❖ LED bulbs are used instead of incandescent bulbs to ensure that energy is saved.
- ❖ Thus enough measure are taken to use electricity carefully.
- ❖

### **3) TRANSPORT MANAGEMENT:**

- ❖ Institute does not has its own vehicle but commercial vehicle are hired as required.

### **4) HAZARDOUS WASTE:- NIL**

### **5) ENVIRONMENT FRIENDLY ACTIVITIES**

- ❖ Tree plantation & maintenance
- ❖ Organizing . Environment Awareness programme. By Dept of botany.
- ❖ Increase activities in college to inculcate more environmental values among students by arranging field visit, , Industrial visit etc.

- ❖
- ❖
- ❖
- ❖

❖ Environment awareness programme 10 Jan 2020



❖ Environment awareness programme 10 Jan 2020



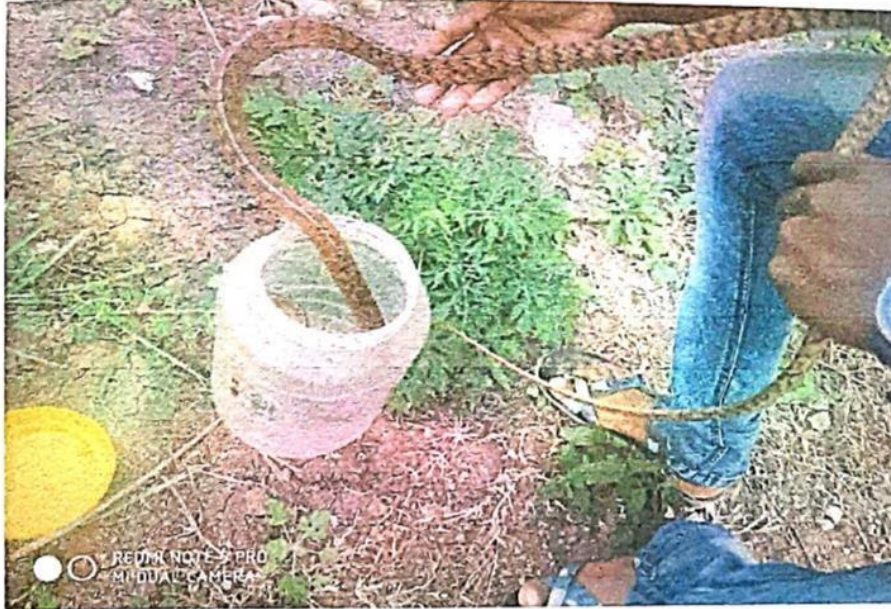
❖ Environment awareness programme 10 Jan 2020



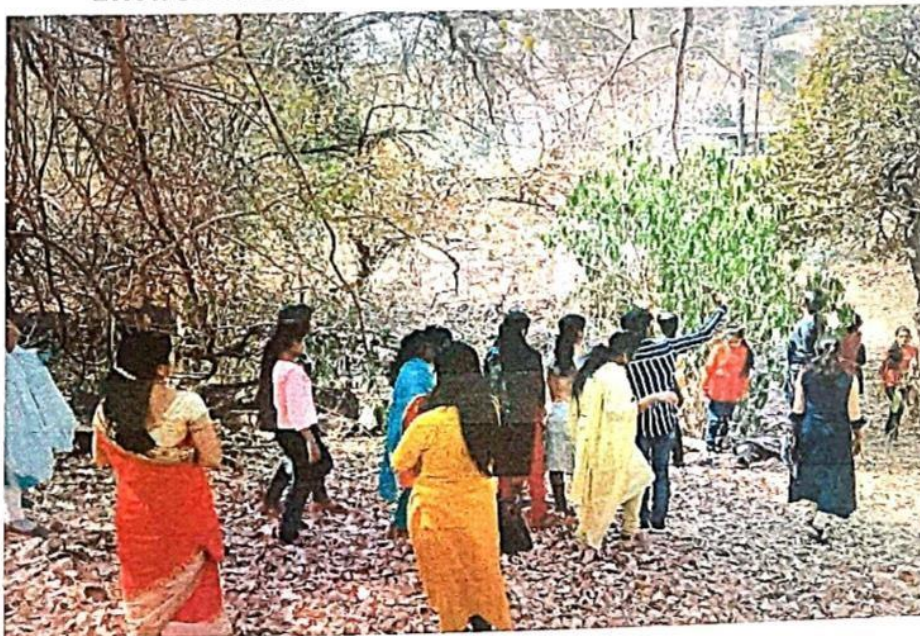
❖ Ecofriendly Activity – “ Sarpamitra” Catching snake in collage campus



❖ Ecofriendly Activity – “ Sarpamitra” Catching snake in collage campus

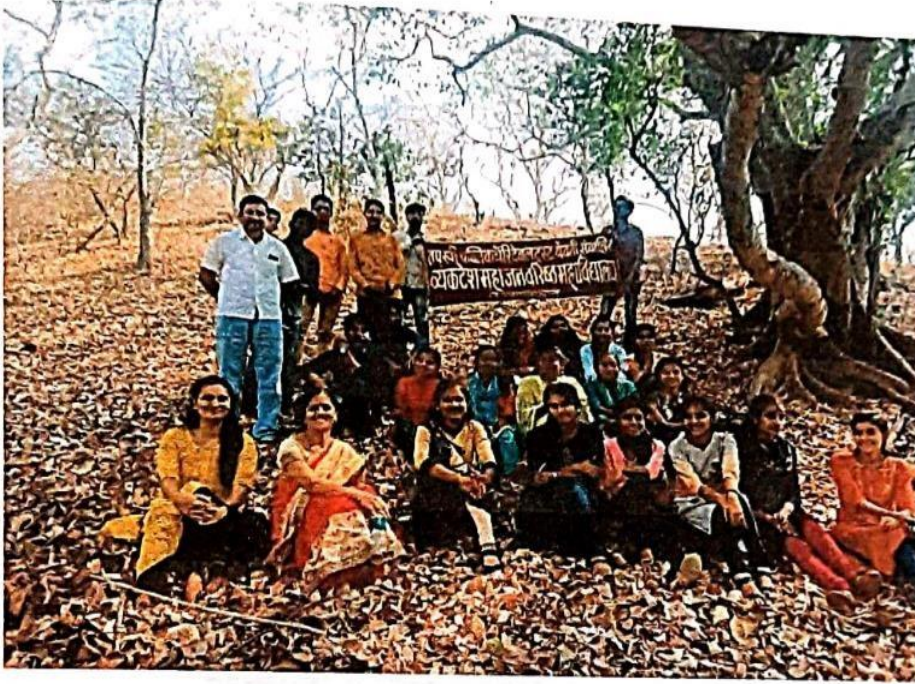


❖ Field visit at Ramlling Yedsi to study ecology and Environment





❖ **Field visit at Ramling Yedsi to study ecology and Environment**



**6) PRESENT STATUS OF COLLEGE:-**

Sr No	Particulars	Current Status
1	Waste Management	Good
2	Water Management	Good
3	Energy Management	Good
4	Transport	N A
5	Other	N A

**RECOMMENDATIONS:-**

- 1) Felicitate more students who are using bicycle.
- 2) Generate vermin compost.

**1) WATER:**

- 1) Remove damaged tap & install sensitive taps to reduce water wastage,
- 2) Some boards to make awareness for controlling over exploitation of water, are displayed near the taps.
- 3) Drip irrigation for garden.
- 4) Vegetable cultivation can be initiated.
- 5) Increase tree plantation and maintenance.

**2) ENERGY:**

- 1) Observe power saving day every year.
- 2) Use of more LED Bulb's.

**3) E.WASTE :**

- 1) Establish a functional biogas plant.
- 2) Practice waste segregation to be initiated.
- 3) A model vermicomposting plant to be set-up in the college campus.
- 4) Avoid paper plate & cups for all function in the college.

**4) GREEN CAMPUS:**

- 1) Create automatic drip irrigation system during summer holidays.

**2) ENERGY:**

- 1) Observe power saving day every year.
- 2) Use of more LED Bulbs.

**3) E-WASTE:** There is no proper e-waste management**4) GREEN CAMPUS**

- 2) Encouraging student not just words but through the action for making the college campus green, conducting competition about awareness program to promote student interest in making the campus green.

**COMPLIANCE OR ACTION TAKEN: -**

- 1) More trees are planted.
- 2) College campus cleaning is organized periodically.
- 3) Department of botany organized poster making activity in the occasion of world soil day 5 Dec 2020
- 4) Drip irrigation system is established in this year
- 5) Removed damaged taps and install new taps to reduce water wastages.
- 6) Waste bins are installed in all department.
- 7) Vermicomposting Unit is started in the college campus.
- 8) College has adopted a policy to use only environmental friendly material.
- 9) Department of physics established "Energy conservation club".



Dr. Mahadi S. C.  
Member

Dr. Padwal N. D.  
Member

  
**PRINCIPAL**  
Venkatesh Mahajan Senior College  
Osmanabad 413501



## VENKATESH MAHAJAN SENIOR COLLEGE, OSMANABAD

Re-Accredited with 'B' Grade by NAAC

Affiliated to Dr. Babasaheb Ambedkar Marathwada University, Aurangabad.

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### 7.1.3 Quality audits on environment and energy regularly undertaken by the Institution,

The institutional environment and energy initiatives are confirmed through the following:

#### Audit 2018-19

Sr. No.	Activity	Status
1	Green Audit	Yes
2	Energy Audit	Yes
3	Environment Audit	Yes

  
**Coordinator**  
Internal Quality Assurance Cell  
Venkatesh Mahajan Senior College  
Osmanabad



  
**PRINCIPAL**  
Venkatesh Mahajan Senior College  
Osmanabad 413501



**VENKATESH MAHAJAN SENIOR COLLEGE**  
**OSMANABAD**

**ENVIRONMENTAL AUDIT**

**2018-19**



## Environmental Audit Committee

**Chairman:**

**Prof. Dr. Arvind M. Deshmukh**

President

Microbiology Society of India.

**Member :**

**1) Prof Dr. Mahadic Shama C.**

Head

Dept. of Botany

R.P. College, Osmanabad

**2) Mr Kamble H. A.**

Dept. of Botany

R.P. College, Osmanabad

### **Introduction :-**

The Environment focuses on the green campus, water management, waste management, Air pollution, Energy management & Carbon Footprint etc. being implemented by college management.

In this year college expresses its commitment to sustainability in many ways. It has taken a number of positive steps to reduce its environmental sustainability.

The college conduct internal green audit in each academic year to maintain ecofriendly atmosphere on the campus these programmes are as follows.

- Like water conservation & prevention of water wastage.
- Use of CFL bulbs instead of fluorescent Bulbs.
- Usage of paper bags was promoted among students by taking awareness campaign.
- Carbon dioxide neutrality is maintained on the campus by developing greenery.

### **CONSERVATION OF PLANTS:**

- ❖ College has two botanical gardens and one garden in ladies hostel premises. Besides these we grow plants in available areas in college premises and near the library.
- ❖ There are over 100 plants of different species in our premises. These include medicinal plants, energy plants and ornamental plants

#### **1) WASTE MANAGEMENT**

- ❖ All biological waste e.g. plant leaves, dead twigs, dead flowers, etc. debris decompose rapidly under natural condition.
- ❖ These biological waste are used to prepare manure ( bio-fertilizer ).
- ❖ some manure used for maintaining botanical garden.
- ❖ Generated waste is separated as biodegradable & non – biodegradable
- ❖ Non-biodegradable waste are subjected to combustion and converted it to residue.
- ❖ While Bio-degradable waste is dumped near ladies hostel to make compost which later on used for all garden plants
- ❖ Expired chemical are buried in nearby area of college campus to avoid their hazardous effect of these chemicals.
- ❖ Paper cane, Newspaper, wastepaper are used to be recycle.
- ❖ Dustbins are placed at strategic spots so as to cover the premises. all classrooms, laboratory, library, verandah, etc.
- ❖ Water Supply is maintained for all science laboratories, for drinking water, latrines toilet & Two botanical gardens.



### **WATER MANAGEMENT:**

- ❖ College has one bore well as a water source.
- ❖ Water supply is regularly maintained throughout the college. It is stored in overhead tanks and circulated through well maintained pipelines

- ❖ For water storage-

6 Large overhead tanks (Capacity 1000 lit)

1 Small tank (Capacity 300 lit)

### **2) WASTE WATER MANAGEMENT:**

- ❖ Waste water of Laboratory is used for garden.
- ❖ One rain water harvesting unit / tank is present.
- ❖ All science laboratories are having good supply of water through pipelines.

**ENERGY MANAGEMENT:**

- ❖ Electricity is available in the college campus.

**Energy Management Chart**

Sr. No.	Hall No.	Power Points	Points	AC
1	Hall No.1	1	22	AC 1
2	Hall No.2	3	30	
3	Hall No.3 (Computer Lab)	1	50	AC 1
4	Hall No.4	1	23	Nil
5	Hall No.5	4	10	Nil
6	Hall No.6	2	10	Nil
7	Hall No.7		06	Nil
8	Hall No.8		09	Nil
9	Hall No.9	1	08	Nil
10	Hall No.10	-	23	Nil
11	Hall No.11	02	09	Nil
12	Hall No.12	-	04	Nil
13	Stage	-	07	
14	Passage	-	10	
15	Library	03	60	1 Photocopy Machine
16	Hostel	-	40	
17	Auditorium()		22	
	<b>Total</b>	<b>Power Point 12</b>	<b>Point 343</b>	

- ❖ 3 Phase connection. Meter is present.
- ❖ 4-inverter
- ❖ 2 AC
- ❖ 1 Photocopy Machine
- ❖ Employees use two wheelers for commuting
- ❖ Principal uses diesel car for commuting

**Energy Conservation Policy :** Every department follows the rule of switching off switches when not in use.

- ❖ Institute strictly observes to see that no electric equipment is on unnecessarily.

- ❖ Collegeb organizes frequent cleaning drives to develop accountability amongst students towards the environment.

#### 6) PRESENT STATUS OF COLLEGE:-

Sr No	Particulars	Current Status
1	Waste Management	Good
2	Water Management	Good
3	Energy Management	Good
4	Transport	N A
5	Other	N A

#### RECOMMENDATIONS:-

- 1) Felicitate more students who are using bicycle.
  - 2) Increase activities in college to inculcate more environmental values among students
  - 3) Generate vermin compost.
- 1) WATER:
    - 1) Remove damaged tap & install sensitive taps to reduce water wastage,
    - 2) Some boards to make awareness for controlling over exploitation of water, are displayed near the taps.
    - 3) Drip irrigation for garden.
    - 4) Vegetable cultivation can be initiated.

5) Increase tree plantation and maintenance.

2) ENERGY:

1) Observe power saving day every year.

2) Use of more LED Bulbus.

3) E.WASTE:

1) Establish a functional biogas plant.

2) Practice waste segregation to be initiated.

3) A model vermicomposting plant to be set-up in the college campus.

4) Avoid paper plate & cups for all fuction in the college.

4) GREEN CAMPUS:

1) Create automatic drip Irrigation system during summer holidays.

2) Encouraging student not just words but through the action for making the college campus green conducting competition among department, awareness programme to promote student interest in making the campus green.

**COMPLIANCE OR ACTION TAKEN :-**

1) More trees are planted.

2) College campus cleaning is organized periodically.

3) College has organized social activity through Department of Rotany about environment awareness by distributing paper bags and pamphlets in local market area.


4) Removed damaged taps and install new taps to reduce water wastages.

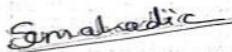
water, are displayed near the taps.

3) Drip irrigation for garden.

4) Vegetable cultivation can be initiated.

- 5) We are planned to install new drip irrigation system in the garden.
- 6) Waste bins are installed in all department.
- 7) Vermicomposting system are decided to installed in the campus.
- 8) College has adopted a policy to use only environmental friendly material.

  
Prof. Deshmukh A. M.  
Chairman

  
Dr Mahadik S. C.  
Member

  
Dr Kamble H. A.  
Member

  
PRINCIPAL  
Venkatesh Mahajan Sr. College  
Osmanabad

