



Jalgaon District Maratha Vidya Prasarak Co-op Samaj's,
Art's Commerce and Science College, Yawal

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Jalgaon District Maratha Vidya Prasarak Co-op. Samaj's

Art's Commerce and Science College Yawal



Environment (Green) & Energy Audit Report

(2021-22 & 2022-23)

SRUSHTI EHS Consultant Services

(Registered under MSME, Gov. of India)

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A
Green, Environment & Energy Audit
Report (Sustenance Phase)
of



Jalgaon District Maratha Vidya Prasarak Co-op Samaj's,

Arts Commerce and Science College,
Yawal

For the year

2021 – 22 & 2022 - 23

Submitted by,

SRUSHTI EHS Consultant Services

(Registered under MSME, Gov. of India)

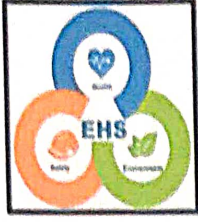
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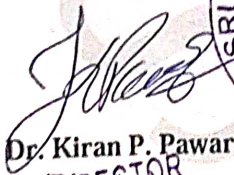



Reg. Under MSME "UDYAM", Gov. of India (Reg. No.: UDYAM-MH-14-0037912)

Environment (Green) & Energy Audit

This is to certify that "J. D. M. V. P. Co-op Samaj's, Arts Commerce and Science College, Yawal, Taluka: Yawal, District: Jalgaon (Maharashtra)" has satisfactorily handled the Environment (Green) & Energy (Sustenance Phase) audit for the college covering all the details in accordance with the required norms for the year 2021-22 and 2022-23.

The audit shall assist them to develop measures to save the environment and its individual units.


Dr. Kiran P. Pawar
(DIRECTOR)
SRUSHTI EHS CONSULTANT
JALGAON



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Preamble

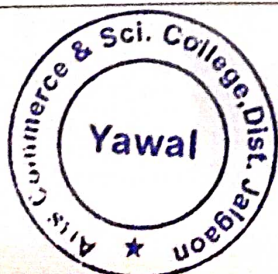
The rapid environmental degradation at local, regional and global level is real, which is leading us to global “Environmental Poverty”. Stabilization of human population, adoption of environmentally sound and sustainable technologies, reforestation, and ecological restoration are crucial elements in creating an equitable and sustainable future for all humankind in harmony with nature. Thus, academic leaders must initiate and support mobilization of internal and external resources and knowledge so that their institute responds to environmental challenges.

JDMVP’s Art’s Commerce and Science College, Yawal is deeply concerned and unconditionally believes that there is an urgent need to address these fundamental problems and reserves the trends. We deeply subscribe to the fact that humans should be steward of Mother Nature and that we all have a profound responsibility to protect the earth’s resources in perpetuity. Being a premier institute of higher learning, J.D.M.V.P. Co.-op. Samaj’s Arts, Commerce and Science College, Yawal has resolved to play a major role in the education, research, and information exchange necessary for a sustained environmental campaign.

The current environmental audit represents the first stage in our efforts to build environmental sustainability on the campus. The audit was conducted by a Dr. Kiran P. Pawar (Director, SRUSHTI EHS Consultant Service, and Jalgaon). SRUSHTI EHS Services have conduct this audit not only for the institution itself, but just as importantly to be role model institution for others to emulate and bring the environmental concerns and related mitigating measures to centre stage of campus life in the village of Yawal, district – Jalgaon, the state of Maharashtra and extend locally, regionally and beyond.

The overall goals of this audit were:

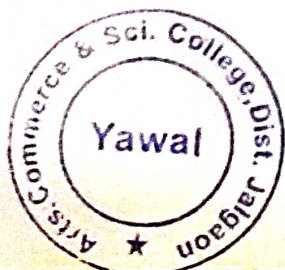
- To introduce students to real concern of environment and its sustainability using the JDMVP’s Art’s Commerce and Science College Campus as a study site.
- To analyze the pattern and extent of resources use on the campus.
- To make the college a more environmentally sustainable institution of higher learning
- To bring out a status report on environmental compliance.



About the JDMVP, Jalgaon

Jalgaon District Maratha Vidya Prasarak Co-operative Samaj Ltd. Jalgaon (JDMVP) was established in 1917 with the motto, 'Bahujana Hitaya, Bahujana Sukhaya' i.e. 'In the interest of the masses, for the welfare of the masses.' The college strives with the objectives of reaching out to the less privileged, to uplift the needy and poor downtrodden to open for them the avenues of higher education. The objectives encompass the goals to facilitate access to higher education for poor students from nearby villages approximately Jalgaon city for boosting their courage and confidence and develop them into sensitive youths with social and moral commitment. The institution also has objective to broaden their vision towards casteless, creedless society and promote in them the social awareness and to equip them with the knowledge and skills for self-employment opportunities.

When the institution was registered in 1917, the institution started its work with just seven students admitted for education. With the sincere efforts of the visionaries, the institution flourished with lips and bound from a single school of seven students to a multi-institute group delivering quality higher education at all levels. Today J.D.M.V.P. owns and manages 3 senior degree colleges, 30 Secondary schools, 14 Jr. Colleges, 10 M.C.V.C. centers, two Y.C.M.O.U. centers and a girl's high school a D.Ed. College and a primary school.

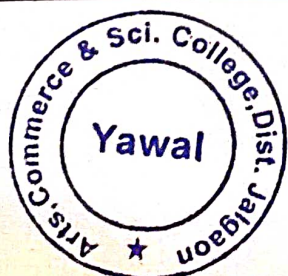


About JDMVP's Art's Commerce and Science College, Yawal

J.D.M.V.P. Co.-Op. Samaj's Arts, Commerce and Science College, is established in 1983 to disseminate the value based education and Upliftment of professional skills of rural tribal masses for their complete development. The college was initially started with Arts and Commerce faculties, the institute considering the demand of the region and need of hour started science faculty in 1993. The college was established in response to direct needs of the young generation of peasants and landless worker and poor down trodden in habitants of the region, who instead of academic brilliance had no hope for higher education. Yawal is located at the base of Satpuda ranges on the bank of Harita and Sarita River. Yawal is famous for only one Maharshi Vyas Mandir in India.



The college is affiliated to Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon. The Institute is one of the leading and pioneering institute for educating the rural and tribal students coping them healthy support for social as well as educational life. The college provides various under graduate programmes in the faculty of Arts, Commerce and Science. The college began with few students, but today almost reached up to 1500 students registered for various courses in the faculties of the A, C.S. The college achieves its mission of creating educational atmosphere for the continuous development of such people the scholarly guidance of pioneers, president and management, principal, teaching and nonteaching staff with the proper representation of students in various committees and activities.



The college has a good infrastructure, well-equipped laboratories and ICT facilities for effective curriculum conveyance. For all round development, college has NSS and Sport unit through which students get the opportunities to participate at zonal, university, state and national level in various activities. The campus beautification is maintained through planting various trees and thus it conserves the natural beauty.

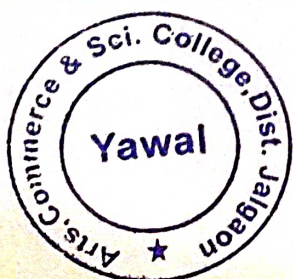
Being an old Institution, the adopted methods, systems and procedures have always been governed by conventions and practices developed by the learned senior teachers over the period of time. The ethos and values established by the first generation of dedicated faculty members have been transformed to new comers in a subtle and informal manner. It is said that, the inheritent ethos, values and conventions are rigid. However, we consider that the heritage of such ethos and values has always been a source of inspiration to gain strength and maturity to the Institution.

The College has set the vision -

"The educational institute dedicated that to prepare learners from tribal, rural and economically backward areas for progressive carriers by providing them with a student centered teaching and practically beneficial quality learner's experience."

Mission: The motto of our institute is "Bahujana Hitaya, Bahujana Sukhaya" i.e. in the interest of masses and for the social welfare of masses. Our purpose is to get quality education to those students who belong to tribal, rural and economically backward areas.

The College aspires "*To be a distinguished Institution which provides high quality education*". It wants to provide such courses which will be uniquely valued by industry and provide a firm basis for its students to build challenging careers in their professional life.

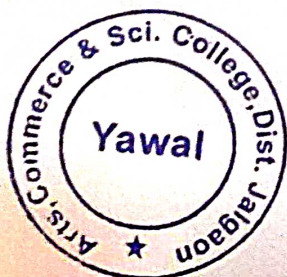


Audit Team**External Audit (Expert) Member**

Sr. No.	Name of Auditors	Designation
1	Dr. Kiran P. Pawar	Director, SRUSHTI EHS Consultant Service, Jalgaon

Internal Audit Team Members

Sr. No.	Name of Auditors	Designation
1	Dr. Sandhya M. Sonawane	Principal, JDMVP's Art's Commerce and Science College, Yawal
2	Dr. Hemant Ghansham Bhangale	Assistant Professor, Dept. of Physics, JDMVP's Art's Commerce and Science College, Yawal
3	Mr. Shantaram Ramkrishna Gaikwad	Assistant Professor, Dept. of Mathematics, JDMVP's Art's Commerce and Science College, Yawal



Executive Summary

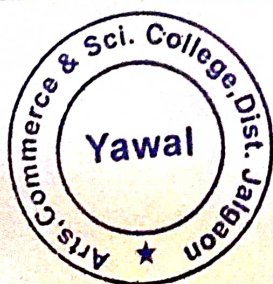
The rapid urbanization and economic development at local, regional and global level has led to several environmental and ecological crises. On this background it becomes essential to adopt the system of the Green Campus for the institute which will lead for sustainable development.

JDMVP Art's Commerce and Science College, Yawal is intensely concerned and totally believes that there is an urgent need to address these basic problems and reverse the trends. Being a leading institution of higher learning, the college has initiated 'The Green Campus' program two years back that actively promote the various projects for the environment protection and sustainability. The purpose of the audit was to ensure that the practices followed in the campus are in accordance with the Green Policy adopted by the institution. With this in mind, the specific objectives of the audit were to evaluate the adequacy of the management control framework of Environment Sustainability as well as the degree to which the Departments are in compliance with the applicable regulations, policies and standards.

JDMVP's Art's Commerce and Science College, Yawal "Nature Club" and "Environment Committee" to perform various activities in the field of Green Campus. College is adopting zero waste discharge facility to manage the solid, liquid and e-waste.

Solid waste management: Around 10 kg/ day food and other waste is generated in the form of biodegradable solid waste from the canteen and tiffin. It is daily dispatched to solid waste collection vehicle of Municipal Corporation. With regard to green waste generated on campus, which includes grass clippings, leaf litter, and other landscaping related refuse is being treated for composts.

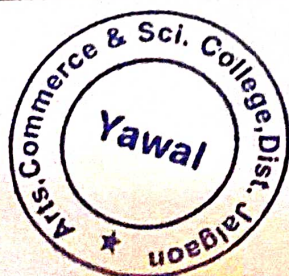
Liquid waste management: The college has designed the outflow of the liquid waste in such away as to prevent contamination in the campus. A properly constructed leakage proof sewer system is used for drainage.



e-waste management: All electronic gadgets are periodically repaired for efficient utilization and replaced under buy back scheme of supplier. Hence, minimum e-waste is generated in the campus. The remaining non-working computers, monitors and printers are discarded and scrapped on a systematic basis. If some parts are useful, in other systems they are kept aside for future use.

College is concern about water conservation, so the college authority save the runoff of rain water from the terrace of the buildings constructed in the college campus by Rain water harvesting structures. Rooftop of main building is used to collect the rain water which is used by department of chemistry for regular practical sessions. The runoff from the unpaved area is intercepted at certain locations by collection trenches. This runoff eventually facilitates groundwater recharge.

Colleges willingly accepted the green practices and strictly follow them. The college conducts campaign for students and faculty to understand the importance of environmental protection and be mindful about saving energy. The authority frequently appeals to the students and faculty to maintain the tradition of no vehicle day on Saturday. To understand the plant biodiversity of the campus, the college has been conducting census of tree, herbs and shrubs every five years since 2005. As per recent survey (2021-22), the college campus has rich plant biodiversity having 45 no's big tree species and 290 no's small plants species.



Statement of Assurance

The audit has been conducted in accordance with the standard procedures for the professional practice of internal auditing.

In our professional judgment, sufficient and appropriate audit procedures were completed and evidence gathered to support the accuracy of the conclusions reached and contained in this report. The conclusions are based on a comparison of the situations as they existed at the time of the audit with the established area.

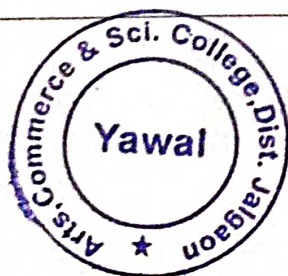
Methodology of Audit

In order to meet its objectives, this audit combined physical inspection with review of relevant documentation and interactions with departmental staff members and students.

- **Review of the Documentation:** For the purpose of this audit Green audit frame work was reviewed.
- **Interviews:** Interviews were conducted with the principal, departmental faculties and students.
- **Physical Inspection:** The audit team was conduct physical observation in the college campus to inspect the green practices.

Summary of Findings

The main findings of the audit show that, all the department staff and students are aware about the needed for environmental protection at a general level. It was also observed that a number of best practices such as maintaining the collection of waste separately, introduce rain water harvesting to new building structures, implementing plastic free campus etc. are followed in the college premises.



Audit framework and detailed findings

The following audit framework is used for conducting Green Audit in 2021-22 & 2022-23. The framework also lists the finding and also observations for every criterion.

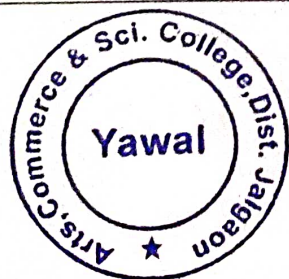
Criteria- 1 (A): Waste Generation and Management

Objective: Maximize the waste recycled and minimize the quantity of non-recycled refuse.

Activity: Segregation of waste

Audit Observation: Waste Material is segregated as per category like Paper, Cardboard, Scrap Wood, Scrap Metal, Plastic scrap, glass, laboratory rags etc. Each waste is stored at departmental level and periodically sending to other purposes.

Type of waste	Audit Observation
Paper Waste	<ul style="list-style-type: none"> One side rough paper is used for the printing of Notices, Time Tables etc. in each department. Email and Mobile media communication is used for minimize the use of paper.
Scrap Material	<ul style="list-style-type: none"> Plastic bottles, caps and other waste material are stored separately at departmental level and handover to Yawal Nagarpalika system as a scrap material
Glass Waste	<ul style="list-style-type: none"> Empty chemical glass bottles are sending as a scrap material
Construction Waste	<ul style="list-style-type: none"> Construction waste is use for land filling and landscaping within the college premises.
Electrical Waste	<ul style="list-style-type: none"> Electrical waste like damaged electrical board, switches, cut wires are collect by electrician and replace this with new one and remaining wastage is sold as scrap. Electrical waste related to computer, key boards, and mouse is collect by Computer science department for repairing and replaces the damaged one and remaining wastage is handed over to garbage management system of Nagarpalika.



Criteria- 1 (B): Waste Generation and Management

Objective: Management of Garden Waste.

Activity: Installation of Vermi-compost bins

Audit Observation: The collected wastes from garden, debris, leaf litter are collect dumped into vermicomposting bins to prepare the compost manure from the waste. Eisenia Foetida species of earthworm is used for the process.



Water Audit

(Academic Year 2021-22 & 2022-23)

Water User Includes students, staff, visitors etc.

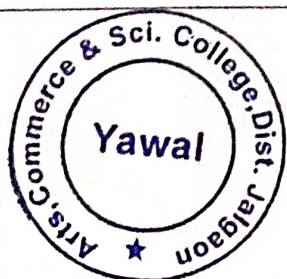
- a. Total number of water users : Approx. 1000
- b. Number of Employee: 35
- c. Number of students : 849
- d. Number of visitors (daily Average) : 5 Approximately
- e. Average working days: 06
- f. Office timings: 10:00 AM to 5:00 PM
- g. Rain water harvesting system availability : Yes
- h. Is rain water harvesting system working? Yes
- i. Daily water supply (liters) :20000 liter

Assessment of water requirement

Sr. No.	Site	Total no. of Sources	Measurement of water Uses (Daily)				
			Rate of Discharge (Liter/min)	Average Duration of Use (min)	Average Quantity per use (liter)	No. of Uses (No.)	Total Daily Use (liter)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1.	Urinals/Bathroom	04	01	2.00	2.00	2000	2000
2.	Laboratory	05	05	05	20	80	1600
3.	Canteen	01	05	300	800	01	800
4.	Garden and green campus	6,357.446 Sq. M.	04	01	04	6357.446	25429.78
5.	Other (Drinking purpose with RO)	01	0.70	10	07	700	4900
TOTAL							34729.784

Water Source & Storage:

Water from tube-well & Nagarpalika is directly pumped to the overhead tank.



Criteria- 3 (A): Energy Consumption (Electrical Energy)

Objective: To save the electrical energy.

Activity: Propose to Installation of “Solar Panels” at main building.

Audit Observation: Installation of solar panels is sanctioned and in progress at main building to save the electrical energy using natural resource.

Criteria- 3 (B): Energy Consumption (Electrical Energy)

Objective: To save the electrical energy.

Activity: Installation of LED light at administration.

Audit Observation: LED lights are installed to office area so conserve the electrical energy instead of tube lights.



Criteria- 6: Air Quality of the Campus**Objective:** To assess the air quality of Campus.

Activity: The status of ambient air pollution will be monitored by using High Volume Sampler (Envirotech APM 460 BL Respirable Dust Sampler-RDS). SPM samples were collected with the help of high volume sampler on cup for 24 hr. with air flow rate of 1- 1.5 m³ min⁻¹. The difference in initial and final weights of the cup and filter paper was give the total quantity of SPM collected over the 24 h period. Measurement of SO₂ (µg m⁻³) in the ambient air will be analyzed by the West- Gaeke method (1956) and NO₂ (µg m⁻³) gas by the modified method of Jacob and Hochheisher (1958).

Audit Observation:

Google Earth Image of College Campus with Monitoring Locations



Location Code	Locations	Parameters		
		SO _x	NO _x	SPM
L-1	Main Gate	27.23	61.21	207.5
L-2	Left Side of the college	29.21	62.34	177.9
L-3	Right Side of the college	31.52	58.69	172.6
L-4	Back side of the college	26.12	58.11	143.8
NAAQS Limits		80	80	200

Status of Ambient Air Quality within the premises of College

Criteria- 7: Green Campus

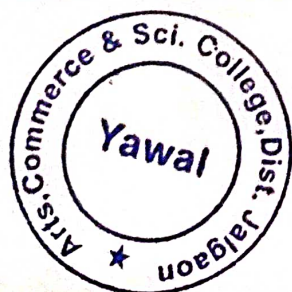
Objective: To increase the Green Cover within the college campus.

Activity: Establishment of Botanical garden, Green House and Shade Net House

Audit Observation: To understand the plant biodiversity of the campus, the college has been conducting census of tree, herbs and shrubs every five years. As per recent survey (2020), the college campus has rich plant biodiversity including 45 big tree species and 285 small plant species.



Green Cover within the College Campus - 1

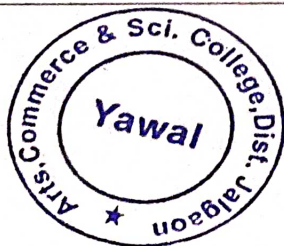




Green Cover within the College Campus - 2



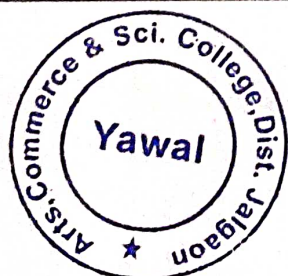
Green Cover within the College Campus - 3



Recommendations

Following the audit, several recommendations were made to the college authority by external audit team.

Sr. No.	Criteria	Recommendations
1	Noise Monitoring	Noise monitoring study must be conducted by external competent person/agency
2	Illumination Monitoring	To check the light intensity, illumination monitoring study must be conducted by external competent person/agency
3	Fire-fighting Training	Firefighting Awareness Training for Teaching & Non-Teaching Staff must be conducted to aware the use of Fire Extinguishers.



Declaration

I agree with all the recommendations and observations mentioned in this report.

Original signed with college seal by,



Dr. Sandhya M. Sonawane
(Principal)

ACT. PRINCIPAL
J.D.M.V.P.CO-OP.SAMAJ'S
ARTS, COMMERCE & SCIENCE
COLLEGE, YAWAL, DIST. JALGAON

