



JEEVAN VIKAS MAHAVIDYALAYA, DEVGRAM

Tah. Narkhed, Dist. Nagpur-441301 (M.S.)

(Permanent Affiliated to Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur)

College Code: 341

(NAAC Accredited in Cycle II with 'B++' Grade, CGPA 2.93)

ISO 9001:2015 Certified, NIRF Participated

Website: www.jvmd.co.in

E-mail: jvmthugaondeo@gmail.com

JVMD/2022/14

Date: 03/07/2024

Declaration

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Principal
Jeevan Vikas Mahavidyalaya
Devgram (Thugaondeo)
Tah. Narkhed, Dist. Nagpur

JEEVAN VIKAS MAHAVIDYALAYA, DEVGRAM

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Empirical Exergy Private Limited

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CIN No: U74999MP2018PTC045751

Ref. No: EEPL/2021-22/C-85

Date: - 13-12-2021

GREEN AUDIT CERTIFICATE

This is certified that Empirical Exergy Private Limited (EEPL), Indore, M.P. has conducted green audit at **Jeevan Vikas Mahavidyalaya, Devgram (Thugaondeo), Nagpur** for the academic year 2020-21 and audit report has been submitted.

We avail this opportunity to express our deep and sincere gratitude to the management for their whole hearted support and co-operations during the green audit.

This certificate is being issued on the basis of the Green Audit conducted by EEPL.

For- Empirical Exergy Private Limited



Rajesh Kumar Singadiya (Director)

M.Tech (Energy Management), PhD (Research Scholar)

Accredited Energy Auditor [AEA-0284]

Certified Energy Auditor [CEA-7271]

(BEE, Ministry of Power, Govt. of India)

Empanelled Energy Auditor with MPUVN, Bhopal M.P.

Lead Auditor ISO50001:2011 [EnMS] from FICCI, Delhi

Certified Water Auditor (NPC, Govt of India)

Chartered Engineer [M-1699118], The Institution of Engineers (India)

Member of ISHRAE [58150]



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GREEN AUDIT REPORT
CONSULTATION REPORT



Jeevan Vikas Mahavidyalaya,
Devgram (Thugaondeo),
Nagpur - 441 301,
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PREPARED BY

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Year: 2020-21



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ACKNOWLEDGEMENT

Empirical Exergy Private Limited (EEPL), Indore takes this opportunity to appreciate & thank the management of **Jeevan Vikas Mahavidyalaya, Devgram (Thugaondeo), Nagpur** for giving us an opportunity to conduct green audit for the college.

We are indeed touched by the helpful attitude and co-operation of all faculties and technical staff, who rendered their valuable assistance and co-operation the course of study.



**Rajesh Kumar Singadiya
(Director)**

M.Tech (Energy Management), PhD (Research Scholar)
Accredited Energy Auditor [AEA-0284]
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(BEE, Ministry of Power, Govt. of India)
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Chartered Engineer [M-1699118], The Institution of Engineers (India)
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EXECUTIVE SUMMARY

Green Audit is the most efficient way to identify the strength and weakness of environmentally sustainable practices and to find a way to solve problem. The executive summary of the Green Audit report furnished in this section briefly gives the identified green initiative taken by college and further recommendation for green campus, solid waste management and their impact on carbon foot print in the campus.

GREEN INITIATIVE TAKEN BY THE COLLEGE

CAMPAIGN OF PLANTATION AND GREEN CAMPUS

- ❖ College has around **1504** no of plant & trees in the campus. Its good initiative taken by management for green campus under the campaign of plantation. **It's APPRECIABLE.**

- ❖ **sprin**

- ❖ **Liquid waste management**

- Soak pits are made in all buildings of the college and lady's hostel. The waste is drained after reasonable treatment. The drainage is maintained to collect urinals which are connected with these pits. The outlets of the urinals maintained such a way that the urine is collected through pipelines for inorganic fertilization pits.

- ❖ **E-Waste management**

- Computers, printers and other ICT equipment which cannot be used are sold to vendors for recycling or buy back schemes.

- ❖ **The Biomedical Waste Management**

- For Biomedical waste, we either recycle it or dispose it scientifically as per the need without harming the society.

- ❖ **Hazardous chemicals and radioactive waste management**

- Some of the chemicals are neutralized in lab and disposed them safely.



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- Some hazardous chemicals such as cyanide which are of no longer use are returned back to the chemical laboratories.

❖ **Solid waste Management**

- There are total 8 no. of dustbin in college campus. The details of list of dustbin has provided in chapter-5.

Recommendation for Improvement

✚ **Recommendation for Herbal & medicinal plants:**

- ❖ List of recommended of herbal & medicinal plant in annexure list. College management can be purchase above recommended plants in future plantation.

✚ **SOLID WASTE MANAGEMENT:**

Adopt 5 no's. Dustbin systems:

- ❖ College has single dustbin for collection of different type of waste generated by different activity in the campus. The basic principle of good waste management practice is based on the concept of 3Rs, namely, reduce, recycle, and reuse. All the degradable and non-degradable waste material are collected and processed in environmentally friendly way in the College campus.
- ❖ It is recommended to adopt 5 no's dustbin systems for collection of different type of waste material.

Organic converter for canteen area:

- ❖ There is good potential to install organic converter for kitchen waste generated in canteen area. The output of the organic converter is good manure for plant.

✚ **QR CODE SYSTEM ON TREE: -**

While the world seems to be going digital, people lack the time to read books and process the information they contain. Hence, College can be provided QR codes on the trees for its information and to exploit the rapidly growing platform for a unique purpose.



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CHAPTER-1
INTRODUCTION

1.1 About College

Jeevan Vikas Mahavidyalaya, Devgram is run by the society, “Antyoday Mission”, established by Hon’ble Dr.Bhausahab Bhoge in 1972. The college was started in 1996 with mere 40 students in Arts faculty and now it has Arts, Commerce, Science & B.Voc faculties including PG Courses serving more than 1300 students under the guidance of Dr. Devendra S. Bhongade, Principal. It is constantly marching in all fronts bringing laurels at state and national level. It is the matter of great proud that at present the college runs thirteen subjects at BA – Marathi, English, Marathi Literature, English Literature, Economics, Pol. Science, Sociology, History, Geography, Music, Home Economics, Library Science and Military Science; four subjects at MA- English, Marathi, Economics and Political Science; six subjects at B.Com (Marathi Medium)- English, Marathi, Financial Accounting, Business Organization, Business Economics and Company Law; nine subjects at B.Sc. (English Medium)- English, Marathi, Physics, Chemistry, Mathematics, Botany, Zoology, Computer Science and Zoology; four subjects at UGC sponsored skill-based B.Voc. Degree Programme- Food Processing & Engineering, Software Development, Building Technology and Automotive; three subjects at UGC Funded Community College- Automotive, Software Technology and Dress Designing. At Junior College level, the college has six subjects in Arts Faculty (Marathi Medium) – English, Marathi, Economics, History, Political Science and Sociology; six subjects in Commerce Faculty (Marathi Medium) – English, Marathi, Economics, Secretarial Practice, Co-operation, and Book-keeping & Accountancy. In science (English Medium), the college runs two groups. Group – I (General Science) has six subjects- English, Marathi, Chemistry, Biology, Physics and Mathematics and Group – II (Bi-focal) has five subjects in Fishery- English, Chemistry, Biology, Physics, Fresh Water & Fish Culture and five subjects in Computer Science – English, Chemistry, Physics, and Mathematics & Computer Science. Apart from these, the college conducts few Career oriented Value-added Courses, Add-on Courses and Self-finance Certificate, Diploma and Advance Diploma Courses. The college has widened its aura starting YCMOU courses in Arts and Commerce faculties affiliated to Nashik Deemed University. All these courses are efficiently enhancing the profile of the college. UGC sponsored skill-based and Career



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oriented courses opened many new career avenues for the students in global scenario. The college has the pride to have Permanent Affiliation; 2(f) & 12(B); ISO 9001: 2015 Certification, NIRF Participation and accredited by NAAC in Cycle-II at 'B++' Grade (CGPA 2.93). CLL and NSS Wings add feather in the hat. The college boasts on well-qualified and experienced teachers involved in promoting the research culture. Auditorium, Open Gymnasium and Green Gym, vast playground & lush green campus with Wi-Fi connectivity and CCTV protected campus add to the beauty of the institution and make the campus safe and secured from girls' point of view. Advanced Library and modern Computer Lab are always open 24 *7 for students preparing for competitive examinations. The college has become an educational hub coping the demands and satisfying the needs of the region and hence it has got new coinage as one of the best Educational Institutions in the college and Vidarbha region working for Antyoday students. The college is situated at Jalalkheda –Mowad State Highway in Nagpur district of Maharashtra 5 Kms towards North of Jalalkheda. The nearest railway station Narkhed is 18 Kms and the nearest airport Nagpur is 90 Kms from the college. Apart from these, the regular MSRTC buses and private taxis ply continually.

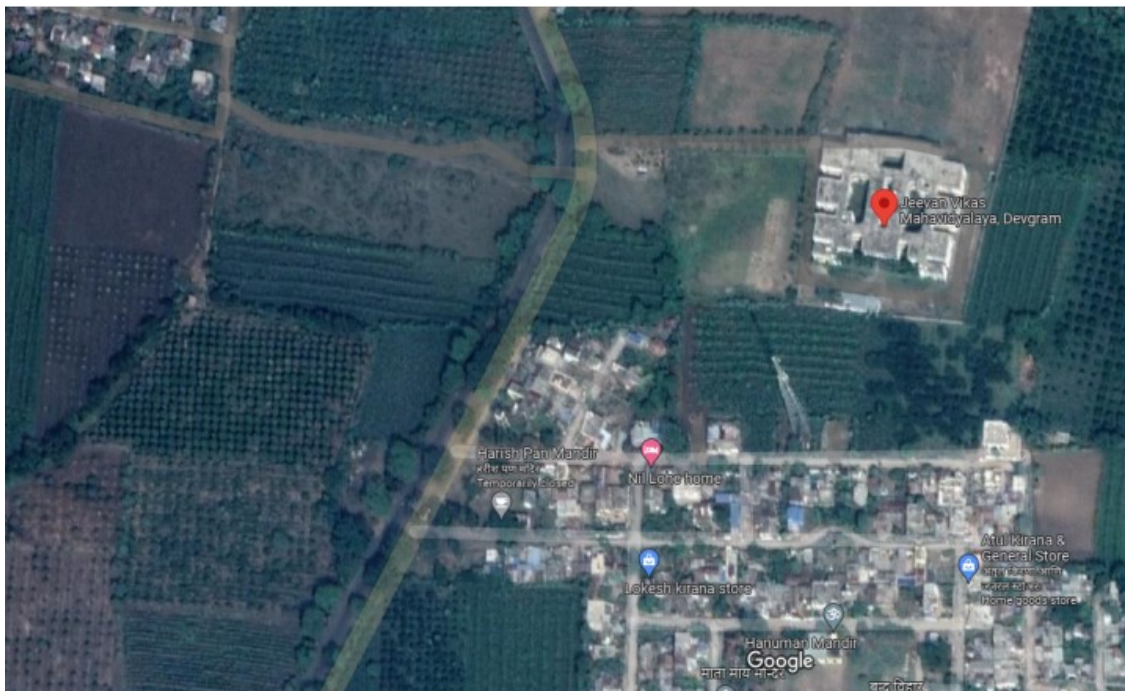


Figure 1.1: - Satellite image of college from Google map



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Vision

The vision of the institution is “Unto the Last”. i.e. To provide academic services to financially backward, deprived students and specially girls students of local community and nearby villages through qualitative and valuable education and work for Antyodaya (poor, needy and downtrodden) people in the community.

Mission

The mission of our institution is in tune with the objectives of higher education policies of the nation. For instance, the institute provides qualitative and valuable higher education to the students of rural, tribal and hilly areas. Through the curricular and extra-curricular activities, the college is pledged to develop overall skills and personality of the students to make them self-reliant and ideal citizen by discharging social and moral responsibilities.

The following mission statements aim at translating college-vision into missionary activities-

1. To impart qualitative and valuable service in the field of education to the residents of Devgram and nearby areas in general language.
2. To attempt community and social development through infrastructure facilities of the institution.
3. To ensure and inculcate perfect discipline in terms of regularity, sincerity and punctuality amongst the students. So that they contribute to the society and nation as the most responsible and respectable citizen.
4. To aim at overall personality development of the students through extra-curricular activities.
5. To provide platform for the students by giving them an opportunity to face all the challenges of the competitive world with utmost utilization of their potential in sports and other events.
6. To adopt Antyodaya students in rural, tribal and hilly areas to give them social justice, opportunities.



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Name of Department

Teaching Departments	Course Name
B.A.	B.A.
Marathi	B.Com.
English	B.Sc.
Economics	Building Technology
Political Science	Food Processing & Eng.
Sociology	Software Development
MLT	Automotive
ELT	Marathi
Music	English
Library Science	Economics
Military Science	
B.Com.	
B.Sc.	
Physics	
Chemistry	
Mathematics	
Computer Science	
Microbiology	
Botany	
Zoology	
Building Technology	
Food Processing & Eng.	
Software Development	
Automotive	
Marathi	
English	
Economics	





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1.2 About Infrastructure:

The college is spread over with plenty of open space and sports area interspersed within academic buildings. The details of various department and building are given in Table 1.1.

Table 1.1 :- Name of the various building in the college

Sr.No.	Block
1	Admin building
2	Academic section
3	New building , Class room, Principal office , Administration office
4	Sports & extension block
5	Sports ground

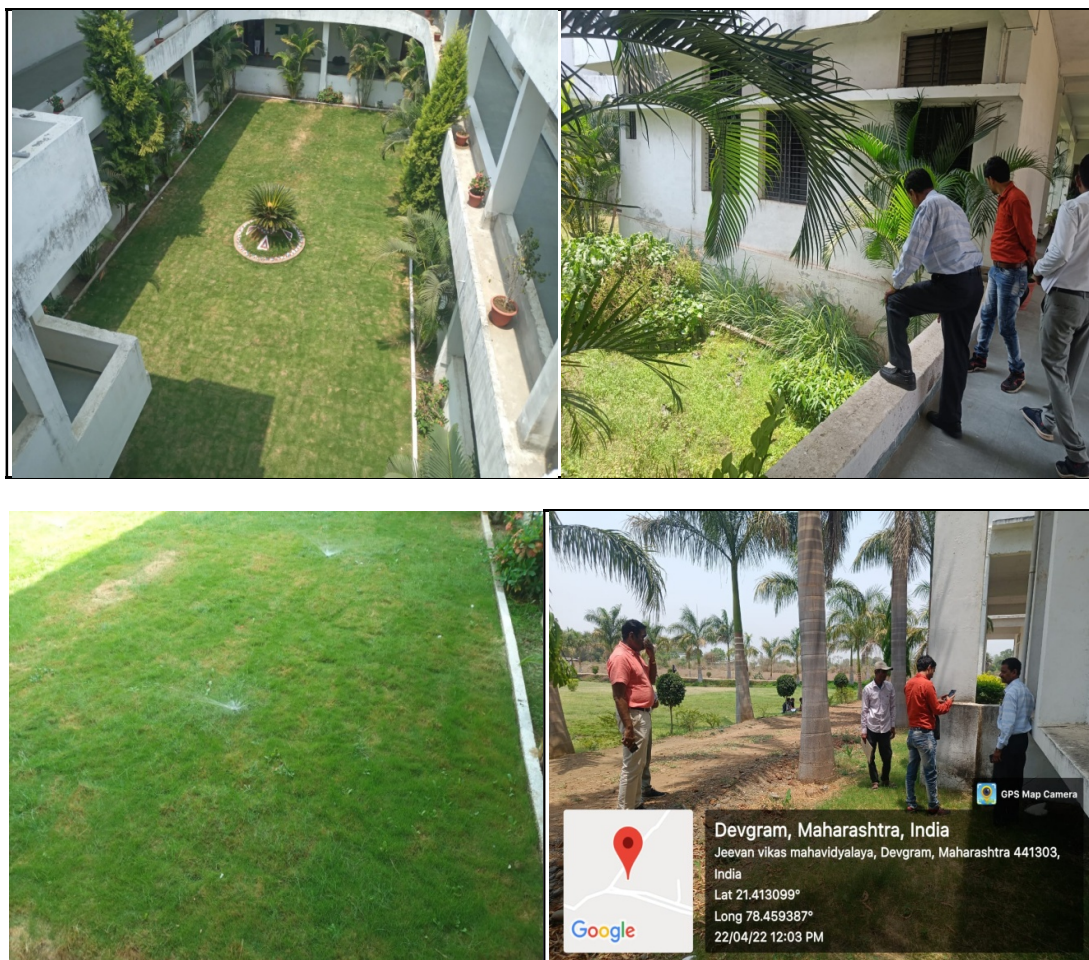


Fig. - Some pics of college campus




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1.4 Green Monitoring Committee

Antyoday Mission's
Jeevan Vikas Mahavidyalaya, Devgram (Thugaondeo)



Tah. Narkhed, Distt. Nagpur- 441 301 (M.S.)
(Permanent Affiliated to Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur)
College Code: 341
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ISO 9001:2015 Certified, NIRF Participated

Website: www.jvmd.co.in E-mail: jvmthugaondeo@gmail.com


JVMD/ Q/2021 Date:- 02/07/2021

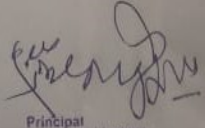
Energy, Environmental & Green Audit Committee:

Energy, Environmental & Green Audit Committee will consist of the following faculty and staff.

Sr. No.	Name of the Faculty	Designation
1	Dr. Devendra Bhongade	Chairperson
2	Dr. Deepak Arajpure	Member
3	Dr. Mangesh Acharya	Member
4	Dr. Yogesh Sarode	Member
5	Miss. Pranali Ingole	Member
6	Dr. Kalyani Thakre	Member
7	Mr. Pritam Sukhdeve	Member
8	Mr. Raju Ingale	Member
9	Mr. Devendra Wasade	Member
10	Mr. Sachin Darokar	Member
11	Mr. Rupesh Shekar	Member

Time duration for this committee is 03 years after which the committee will be reconstituted.




Principal
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1.5 Integrated Energy, Environmental, Green & waste management policy

Antyoday Mission's
Jeevan Vikas Mahavidyalaya, Devgram (Thugaondeo)
Tah. Narkhed, Distt. Nagpur- 441 301 (M.S.)
(Permanent Affiliated to Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur)
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ISO 9001:2015 Certified, NIRF Participated

Website: www.jvmd.co.in E-mail: jvmthugaondeo@gmail.com


JVMD/ Date:- 10/03/2019

Integrated Energy, Environmental Green and Waste Management Policy

Management of our institution is committed to go green for making our nation to *Atma-Nirbhar* (i.e., Self-Sustainable) in the area of energy and environment.

Our Emphasis is to:

1. Ensure continual enhancements in our energy and water conservation methods and usage.
2. Procure and use energy efficient equipment and products.
3. Continuously monitoring the energy consumption patterns through periodic reviews & using latest information systems.
4. Create awareness regarding necessity of energy conservation and making environment pollution free to all staff and students on a regular basis by arranging trainings, workshops, seminars, quiz, competitions, etc.
5. Carry out regular energy, environment and green audits by certified auditors to identify key areas of improvements.


Principal
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Tah. Narkhed, Dist. Nagpur

1.6 The Audit Team

The study team constituted of the following senior technical executives from **Empirical Exergy Private Limited,**

- Mr. Rajesh Kumar Singadiya, [Director & Accredited Energy Auditor , AEA-0284]
- Mr. Rakesh Pathak, [Director]
- Mrs. Laxmi Raikwar Singadiya, [Energy Engineer]
- Mr. Lokesh Kumar Verma, [Project Engineer]
- Mr. Ajay Nahra, [Site Engineer]



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1.7 About Green Auditing

Eco campus is concepts implemented in many educational institutions, all over the world to make them sustainable because of their mass resource utilization and waste discharge in to the environment.




Green audit means to identify opportunities to sustainable development practices, enhance environmental quality, improve health, hygiene and safety, reduce liabilities achieve values of virtue. Green audit also provides a basis for calculating the economic benefits of resource conservation projects by establishing the current rates of resource use and their associated costs.

Green auditing of college enables to assess the life style, action and its impact on the environment. This green audit was mainly focused on greening indicators like utilisation of green energy (solar energy) and optimum use of secondary energy sources (petrol and diesel) in the College campus, vegetation, and carbon foot print of the campus etc. The aim of green auditing is to help the institution to apply sustainable development practices and to set examples before the community and young learners.

1.8 Objectives of Green Auditing

The general objective of green audit is to prepare a baseline report on Plant & Trees, Alternative energy sources (solar energy), measures to mitigate resource wastage and improve sustainable practices.

The specific objectives are:

-  To inculcate values of sustainable development practices through green audit mechanism.
-  Providing a database for corrective actions and future plans.
-  To identify the gap areas and suggest recommendations to improve the green campus status of the College.

1.9 Target Areas of Green Auditing

Green audit forms part of a resource management process. Although they are individual events, the real value of green audit is the fact that they are carried out, at defined intervals, and their results can illustrate improvement or change over time. Target areas included in this green auditing is plant trees, green energy and carbon foot print.



CHAPTER- 2
GREEN CAMPUS & SUSTAINABLE DEVELOPMENT

2.1 Green Audit

In the survey, focus has been given on assessment of present status of diversity in form of plants, in college campus and efforts made by the college authorities for nature conservation. Campus is located in the vicinity of 1504 trees/ medicinal herbs/ ornamental plants.



Fig- 2.1 Green Campus of College



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2.2 Details of Name of Tree/Plant with Quantity in College Campus

Table -2.1 Details of Name of Tree/Plant with Quantity in College Campus

Sr. No	Location/ Name of Building	Plant Name	Quantity (no)
1	Admin Building	Areca, Euphorbia, Cyprus, Gulab Toro, Nagchafa, Cycus	28
2	Academic Zone	Areca Palm, Euphorbia, Cyprus, Cycus, Rose, Nagchafa,	28
3	Sports & Extension Wing	Gulmohor, Bahawa, Royal Palm, Pulish Palm, Drooping Ashoka, Areca Palm, Euphorbia, Bahuniya Kanchan, Chafa	38
4	Sports Ground	Neem, Royal Palm	62
5	Garden	Royal Palm, Black Ficus, Ashoka, vidya, Madhumalti, Euphorbia	162
6	Parking Zone	Babool, Saptarni, Banyan tree, Gulmohor, Bogun Velia	07
7	Back Yard	Royal Palm, Neem Tree	36
8	Management Zone	Royal Palm, Kardali, Cycus, Rose Garden	43
9	Nursery & Botanical Garden	Sita Ashoka, Medicinal Plants Varity	905
10	Oxygen Park	Pandharpuri Tulasi, Green Tulasi, Black Tulasi	85
11	Corridor	Areca, Euphorbia, Cyprus, Silver Oak, Nagchafa, Cycus	110



Fig.2.2 - Some photograph of green campus

2.3 CO₂ Sequestration calculation: Based on list of tree & plant in the campus CO₂ Sequestration is calculated in table 2.2.

Table: 2.2 - CO₂ Sequestered by the trees having age between 05 to 15 Years

Sr. no	Common Name	Average Diameter (25 to 100) in cm	AGB	BGB	Total	Carbon Storage	Amount of CO ₂ Sequestered	No of Tree	Total Amount of CO ₂ Sequestered	Annually CO ₂ Sequestered amount
1	Areca	75	6354168.6	86663.5	6354168.6	86663.5	6354168.6	86663.5	6354168.6	86663.5
2	Euphorbia	60	475084.2	6479.6	475084.2	6479.6	475084.2	6479.6	475084.2	6479.6
3	Cyprus	50	1089253.5	14856.2	1089253.5	14856.2	1089253.5	14856.2	1089253.5	14856.2
4	Gulab Toro	50	1327265.2	18102.4	1327265.2	18102.4	1327265.2	18102.4	1327265.2	18102.4
5	Nagchafa	40	334759.3	4565.7	334759.3	4565.7	334759.3	4565.7	334759.3	4565.7
6	Cycus	55	121325.2	1654.7	121325.2	1654.7	121325.2	1654.7	121325.2	1654.7
7	Areca Palm	40	72334.9	986.6	72334.9	986.6	72334.9	986.6	72334.9	986.6
8	Euphorbia Cyprus	65	65178.0	889.0	65178.0	889.0	65178.0	889.0	65178.0	889.0
9	Cycus	30	83348.5	1136.8	83348.5	1136.8	83348.5	1136.8	83348.5	1136.8
10	Rose	30	74843.5	1020.8	74843.5	1020.8	74843.5	1020.8	74843.5	1020.8
11	Nagchafa	30	73993.0	1009.2	73993.0	1009.2	73993.0	1009.2	73993.0	1009.2
12	Gulmohor	35	35686.6	486.7	35686.6	486.7	35686.6	486.7	35686.6	486.7
13	Bahawa	45	430052.1	5865.4	430052.1	5865.4	430052.1	5865.4	430052.1	5865.4
14	Royal Palm	50	84004.1	1145.7	84004.1	1145.7	84004.1	1145.7	84004.1	1145.7
15	Pulish Palm	36	36824.9	502.3	36824.9	502.3	36824.9	502.3	36824.9	502.3
16	Drooping Ashoka	35	15997.5	218.2	15997.5	218.2	15997.5	218.2	15997.5	218.2
17	Areca Palm	45	165404.6	2255.9	165404.6	2255.9	165404.6	2255.9	165404.6	2255.9
18	Euphorbia	60	2358604.0	32168.6	2358604.0	32168.6	2358604.0	32168.6	2358604.0	32168.6
19	Bahuniya	45	381533.4	5203.7	381533.4	5203.7	381533.4	5203.7	381533.4	5203.7



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20	Kanchan	40	713255.9	9728.0	713255.9	9728.0	713255.9	9728.0	713255.9	9728.0	
21	Chafa	30	425247.3	5799.9	425247.3	5799.9	425247.3	5799.9	425247.3	5799.9	
22	Neem,	65	1644490.5	22429.0	1644490.5	22429.0	1644490.5	22429.0	1644490.5	22429.0	
23	Royal Palm	65	265725.6	3624.2	265725.6	3624.2	265725.6	3624.2	265725.6	3624.2	
24	Royal Palm	25	39021.8	532.2	39021.8	532.2	39021.8	532.2	39021.8	532.2	
25	Black Ficus	35	6152.9	83.9	6152.9	83.9	6152.9	83.9	6152.9	83.9	
26	Ashoka, vidya	36	24988.4	340.8	24988.4	340.8	24988.4	340.8	24988.4	340.8	
27	Madhumalti,	30	53581.2	730.8	53581.2	730.8	53581.2	730.8	53581.2	730.8	
28	Euphorbia	27	132015.4	1800.5	132015.4	1800.5	132015.4	1800.5	132015.4	1800.5	
29	Babool	28	3592.5	49.0	3592.5	49.0	3592.5	49.0	3592.5	49.0	
30	Saptarni,	30	68039.6	928.0	68039.6	928.0	68039.6	928.0	68039.6	928.0	
31	Banyan tree	54	36602.0	499.2	36602.0	499.2	36602.0	499.2	36602.0	499.2	
32	Gulmohor	35	57837.0	788.8	57837.0	788.8	57837.0	788.8	57837.0	788.8	
33	Bogun Velia	37	115016.5	1568.7	115016.5	1568.7	115016.5	1568.7	115016.5	1568.7	
34	Royal Palm	45	22054.0	300.8	22054.0	300.8	22054.0	300.8	22054.0	300.8	
35	Neem Tree	15	15493.7	211.3	15493.7	211.3	15493.7	211.3	15493.7	211.3	
36	Royal Palm	26	52619.6	717.7	52619.6	717.7	52619.6	717.7	52619.6	717.7	
37	Kardali	75	1013380.3	13821.3	1013380.3	13821.3	1013380.3	13821.3	1013380.3	13821.3	
38	Cycus	45	15437.8	210.6	15437.8	210.6	15437.8	210.6	15437.8	210.6	
39	Rose Garden	30	227932.6	3108.7	227932.6	3108.7	227932.6	3108.7	227932.6	3108.7	
40	Sita Ashoka	30	91853.4	1252.8	91853.4	1252.8	91853.4	1252.8	91853.4	1252.8	
									Total=1504	25902300.0	353277.4

College has **1504 trees** in the campus. This is good initiative taken by management for green campus under the campaign of plantation. **It's Appreciable**



Chapter-03

Carbon Foot print

3.1 About carbon foot print.

Climate change is one of the greatest challenges facing nations, governments, institutions, business and mankind today. The total amount of greenhouse gases produced to directly and indirectly support human activities, usually expressed in equivalent tons of carbon dioxide (CO₂).

Carbon footprint is a measure of the impact your activities have on the amount of carbon dioxide (CO₂) produced through the burning of fossil fuels and is expressed as a weight of CO₂ emissions produced in tonnes.

We focus on consumption in each of our five major categories: housing, travel, food, products and services. In addition to these we also estimate the share of national emissions over which we have little control, government purchases and capital investment.

For simplicity and clarity all our calculations follow one basic method. We multiply a use input by an emissions factor to calculate each footprint. All use inputs are per individual and include things like fuel use, distance, calorie consumption and expenditure. Working out your inputs is a matter of estimating them from your home, travel, diet and spending behaviour.

Although working out you inputs can take some investigation on your part the much more challenging aspect of carbon calculations is estimating the appropriate emissions factor to use in your calculation. Where possible you want this emissions factor to account for as much of the relevant life cycle as possible.

We all have a carbon footprint...

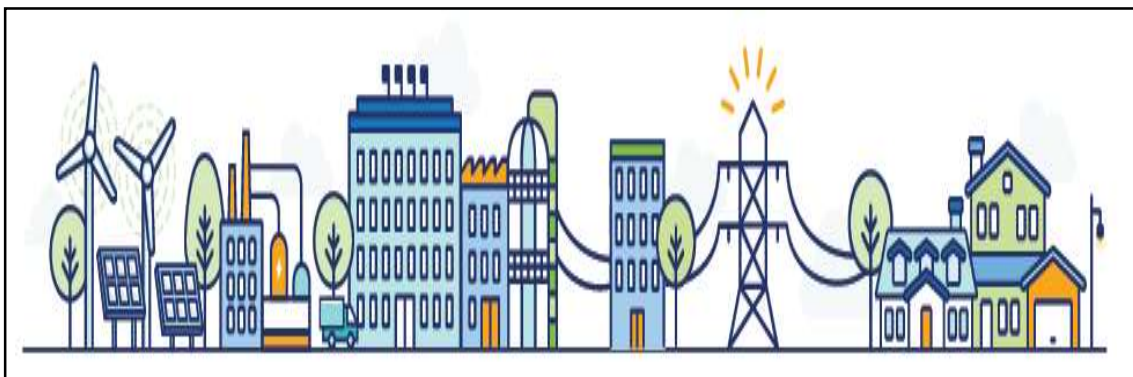


Fig.-3.1 About carbon foot print



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3.2 Methodology and Scope

The carbon footprint gives a general overview of the college greenhouse gas emissions, converted into CO₂ -equivalents and it is based on reported data from internal and external systems.

The purposes of the carbon indicators are to measure the carbon intensity per unit of product, in addition to showing environmental transparency towards external stakeholders.

The carbon footprint reporting approach undertaken in this study follows the guidelines and principles set out in the “Greenhouse Gas Protocol Corporate Accounting and Reporting Standard” (hereafter referred to as the GHG Protocol) developed by the Greenhouse Gas Protocol Initiative and international standard for the quantification and reporting of greenhouse gas emissions -ISO 14064.

This is the most widely used and accepted methodology for conducting corporate carbon footprints. The study has assessed carbon emissions from the College Campus. This involves accounting for, and reporting on, the GHG emissions from all those activities for which the company is directly responsible.

The items quantified in this study are as classified under the ISO 14064 standards:

The report calculates the greenhouse gas emissions from the College. This includes electricity, as well as emission associated with diesel consumption in the institute vehicle. The emission associated with air travel, waste generation, administration, and marketing related activities has been excluded from the current study. Emissions from business activities are generally classified as scope 1, 2 or 3 areas classified under the ISO 14064 standards.



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3.3 Carbon emission from electricity

Direct emissions factors are widely published and show the number of emissions produced by power stations in order to produce an average kilowatt-hour within that grid region

Unlike with other energy sources the carbon intensity of electricity varies greatly depending on how it is produced and transmitted. For most of us, the electricity we use comes from the grid and is produced from a wide variety of sources. Although working out the carbon intensity of this mix is difficult, most of the work is generally done for us.

Electricity used in the site is the significant contributors towards GHGs emission from the unit. Electricity used onsite is the most direct, and typically the most significant, a contributor to a unit's carbon footprint. Thus, using an average fuel mix of generating electricity, carbon dioxide intensity of electricity for national grid is assumed to be 0.9613 KgCO₂/kWh

(Reference: Central Electricity Authority (CEA) Baseline Carbon Dioxide Emission database http://cea.nic.in/reports/others/thermal/tpece/cdm_CO2/database_11.zip) Electricity

Purchased from the grid

Electricity purchase of the college from grid

SR.NO.	Year	Annual Energy Consumption (kWh)
1	2019-20	1,921
2	2020-21	2,827

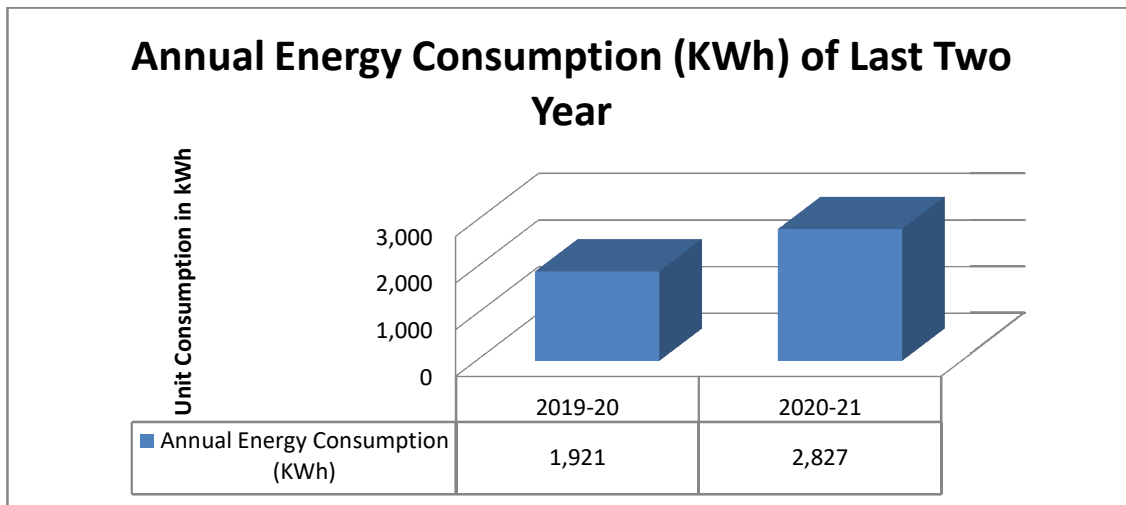


Fig.3.2 - Annual Unit Consumption (From Year 2019 to Year 2021)



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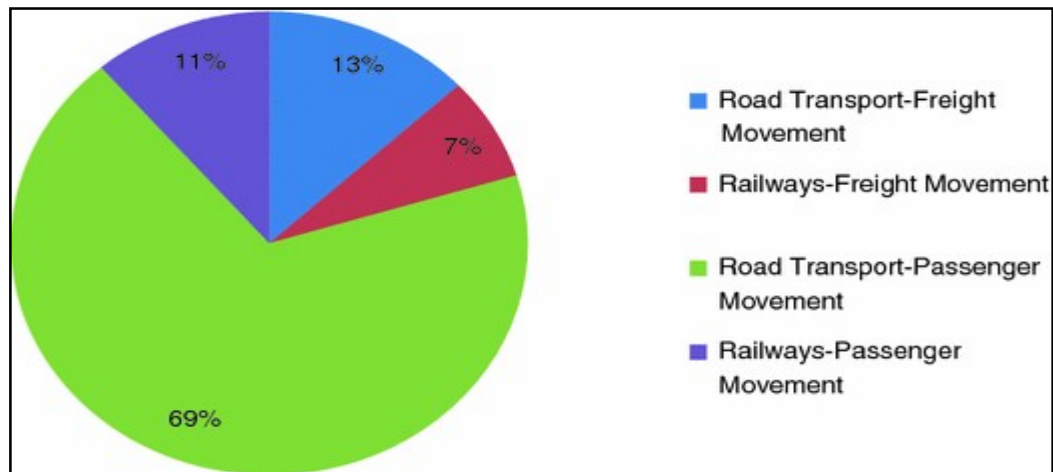


Table:- 3.2 Electricity Purchased from the grid and Emissions from the electricity Import

Sr. No	Parameter	Value	Unit	Emission Factor kg CO ₂ e/kWh	Emission ton CO ₂ e/year
1	Electricity 2020-21	6,846	kWh	0.91	6.22
				Total	6.22

Carbon emission from vehicles

In India, it is the third most CO₂ emitting sector, and within the transport sector, road transport contributed more than 90% of total CO₂ emissions (IEA, 2020; Ministry of Environment Forest and Climate Change, 2018)



Transportation (29 percent of 2019 greenhouse gas emissions) – The transportation sector generates the largest share of greenhouse gas emissions. Greenhouse gas emissions from transportation primarily come from burning fossil fuel for our cars, trucks, ships, trains, and planes.

3.4 List of vehicles in college

We have also considered the total GHGs emission done by transportation facilities available in campus like Cars, Buses etc. We consider the different type of vehicles which are operated on petrol and diesel fuels. Energy team was analysed following vehicles are movement for campus.



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3.5 Calculation of Carbon foot print in campus: -

As per discussion by concern department in the college and data provided by management 150 KM per day travel done by all vehicles. Also, we have estimated value considered 250 bikes run per day approx. 1000 KM by other services like college staff, housekeeping staff, and other

Following details are given in table: 3.3 -

Sr. No	Vehicle Type	Fuel Type	Average Mileage (Per Litter)	Quantity (Nos.)
1	Car	Diesel	17	1
2	Bus	Diesel	13	1

- ❖ CO₂ Emissions from a gallon of gasoline: 8,887 grams CO₂/ gallon
- ❖ CO₂ Emissions from a gallon of diesel: 10,180 grams CO₂/ gallon
- (1 US Gallon = 3.7854 liters)**
- ❖ CO₂ Emissions from a Litter of gasoline: 2347.95 grams CO₂/ Litter.
- ❖ CO₂ Emissions from a Litter of diesel: 2689.56 grams CO₂/ litter.

$$\text{Total CO}_2 \text{ Emissions} = \frac{\text{CO}_2 \text{ Per litter}}{\text{Average Mileage (Km/Litre)}} \times \text{Distance (in km)}$$

$$\text{Total CO}_2 \text{ Emissions} = \frac{2689.59}{17} \times 150 = \mathbf{23,731.67 \text{ gram or } 23.731\text{Kg/day}}$$

When Vehicle travelling in 320 Days in Year =

$$23.731 \times 320 = 7593.92 \text{ Kg/year or } \mathbf{7.593 \text{ ton/year}}$$



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3.6 Other Emissions Excluded

This study did not evaluate the carbon sequestration potential of existing plantation activities and emission from the staff commuting, food supply, official flights, paper products, water supply, and waste disposal and recycling due to limited data availability. The current study identifies areas where data monitoring, recording and archiving need to be developed for enlarging the scope of mapping of GHGs emission in the future years. Accordingly, a set of tools and record keeping procedure will be developed for improving the quality of data collection for the next year carbon footprint studies.

Total Carbon Footprint generated = Carbon footprint by electricity
By the campus +
Carbon foot print by vehicle

Total Carbon Foot
Print by campus: - $6.22 + 7.59 = 13.82 \text{ tons/year}$



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CHAPTER- 4
WASTE MANAGEMENT

4.1 About Waste:

Human activities create waste, and it is the way these wastes are handled, stored, collected and disposed of, which can pose risks to the environment and to public health. Waste management is important for an eco-friendly campus. In college different types of wastes are generated, its collection and management are very challenging.

Solid waste can be divided into three categories: bio-degradable, non-biodegradable and hazardous waste. A bio-degradable waste includes food wastes, canteen waste, wastes from toilets etc. Non-biodegradable wastes include what is usually thrown away in homes and schools such as plastic, tins and glass bottles etc. Hazardous waste is waste that is likely to be a threat to health or the environment like cleaning chemicals, acids and petrol.

Unscientific management of these wastes such as dumping in pits or burning them may cause harmful discharge of contaminants into soil and water supplies, and produce greenhouse gases contributing to global climate change respectively. Special attention should be given to the handling and management of hazardous waste generated in the college. Bio-degradable waste can be effectively utilized for energy generation purposes through anaerobic digestion or can be converted to fertilizer by composting technology. Non-biodegradable waste can be utilized through recycling and reuse. Thus the minimization of solid waste is essential to a sustainable college. The auditor diagnoses the prevailing waste disposal policies and suggests the best way to combat the problems.

Table-4.1 Different types of waste generated in the college campus.

Sr. No.	Types of Waste	Particulars
1	Solid wastes	Damaged furniture, paper waste, paper plates, food wastes etc
2	Plastic waste	Pen, Refill, Plastic water bottles and other plastic containers, wrappers etc
3	E-Waste	Computers, electrical and electronic parts etc
4	Glass waste	Broken glass wares from the labs etc
5	Chemical wastes	Laboratory waste etc
6	Bio-medical Waste	Sanitary Napkin etc



4.2 Waste management Practices adopted by the college

College is implemented “Single dust Bin” waste collection system. All kind of waste generated from various activity is collected.



Figure 4.1: - Waste collection bin in college campus

Recommendation:

It is recommended adopted 5 Bin Waste Collection System for collect different type of waste generated in college premises.

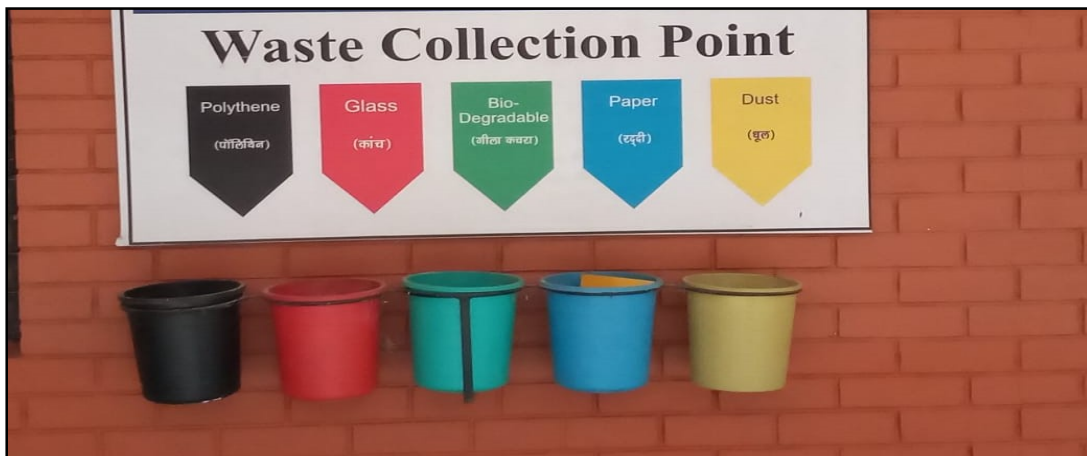


Fig. 4.2: Recommended 5 Dust Bin waste collection System



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4.3 Waste Collection Points:

Audit team also visited various departments, and find out waste generation area and waste collection points for further improvement.

Table:4.2 Detailed of Waste collection Dust bin system in College Campus

Sr. No	Location/ Name of Building	Type of waste	Type of Colour	Quantity (no.)
1	Admin Building	Pages, Register cover, files, plastic file covers, pen, refills, markers, stapler pins, CD	Green	1
2	Academic Zone	Paper files, threads, pins, gloves, glass wares, aprons, needles, pen, pencils waste, covers, syringe, laboratory equipment, chemical bottles	Green	1
3	Sports & Extension Wing	Woods, wood powder, broken bods, crush balls, sticks, ropes, bandages, water bottles, gloves, boxes, clothes (sport), socks, shoes, waste sport material	Green	1
4	Sports Ground	Organic wastes, water bottles, glucose bottles, bandages, fruit wastes, pipes, broken instruments, nets	Green	1
5	Garden	Broken Plants, leaves, organic waste, rappers, water can, pots, sapling covers, sapling pots, fertilizer and medicinal bottles	Green	1
6	Parking Zone	Tyre tubes, oil, petrol bottles, sponges, seat covers, vehicle spare parts, water bottles, polyethene	-	0
7	Back Yard	Snack pockets, Candy packets, unusable pen and pencils, waste stationeries	-	0
8	Management Zone	Pages, Register cover, files, plastic file covers, pen, refills, markers, stapler pins, CD	Green	1
9	Nursery & Botanical Garden	Broken Plants, leaves, organic waste, rappers, water can, pots, sapling covers, sapling pots, fertilizer and medicinal bottles	Green	1
10	Oxygen Park	Dry leaves, plastic, broken pipe	-	0
11	Corridor	Pages, pen wastes, refills, markers, stapler pins, dry leaves	Green	1

Observation

There is no dustbin in Parking zone, Back yard & Oxygen Park.



CHAPTER- 5

RECOMMENDATIONS AND SUGGESTIONS

5.1 QR Code Systems

While the world seems to be going digital, people lack the time to read books and process the information they contain. Hence, College can be provided QR codes on the trees for its information and to exploit the rapidly growing platform for a unique purpose.



Fig: 5.1 QR Code System for plants

These codes can give students all the information they need to know about the tree from its scientific name to its medicinal value. They only need to put their smart-phones to use. QR codes to them, making it easier for everybody to learn about a plant or a tree at the tip of their fingers,” If any app generating a QR code, which is available for free on the online stores, can be used to avail the information of the trees.



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5.2 Other Useful Suggestions

Some of the very important suggestions are: -

- ✚ Adopt the proposed Environmentally Responsible Purchasing Policy, and work towards creating and implementing a strategy to reduce the environmental impact of its purchasing decisions.
- ✚ Increase recycling education on campus.
- ✚ Increase Awareness of Environmentally Sustainable Development in College campus.
- ✚ Practice Institutional Ecology- Set an example of environmental responsibility by establishing institutional ecology policies and practices of resource conservation, recycling, waste reduction, and environmentally sound operations.
- ✚ Involve All Stakeholders- Encourage involvement of government, foundations, and industry in supporting interdisciplinary research, education, policy formation, and information exchange in environmentally sustainable development.
- ✚ Collaborate for Interdisciplinary Approaches- To develop interdisciplinary approaches to curricula, research initiatives, operations, and outreach activities that support an environmentally sustainable future.
- ✚ Increase reduces, reuse, and recycle education on campus.
- ✚ Develop a butterfly garden that arouses appreciation towards flora and fauna diversity.
- ✚ Name all the trees and plants (Plant DNA barcodes) with its common name and scientific name.
- ✚ Arrange training programmes on environmental management system and nature conservation.
- ✚ Renovation of cooking system in the canteen to save gas by installation solar water heater system with heat pump.
- ✚ Establish a procurement policy that is energy saving and eco-friendly.



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ANNEXURE

Recommendation for Herbal & medicinal plants:

S.No.	Hindi Name	Botanical Name	Family
1	Asopalav	<i>Polyalthia longifolia</i>	Annonaceae
2	Gudhal	<i>Hibiscus-rosa-sinensis</i>	Malvaceae
3	Nandee	<i>Ficus Benjamina</i>	Moraceae
4	Bahera	<i>Terminalia Bellirica</i>	Combretaceae
5	Khirni	<i>Manilkara hexandra</i>	Sapotaceae
6	Kaner	<i>Nerium indicum</i>	Apocynaceae
7	Champa	<i>Plumeria fragrance</i>	Apocynaceae
8	Peepal	<i>Ficus religiosa</i>	Moraceae
9	Jackfruit	<i>Artocarpus heterophyllus</i>	Moraceae
10	Amla	<i>Emblica officinalis</i>	Euphorbiaceae
11	Bael	<i>Aegle marmelos</i>	Rutaceae
12	Amrood	<i>Psidium guajava</i>	Myrtaceae
13	Ghratkumari	<i>Aloe barbadensis</i>	Liliaceae
14	Nimbu	<i>Citrus lemon</i>	Rutaceae
15	Mogra	<i>Jasminum sambac</i>	Oleaceae
16	Parijaat	<i>Nyctanthes arbor-tristis</i>	Oleaceae
17	Aam	<i>Mangifera indica</i>	Anacardiaceae
18	Peela kaner	<i>Thevetia nerifolia</i>	Apocynaceae
19	Jaamun	<i>Syzygium cumini</i>	Myrtaceae
20	Kachnar	<i>Bauhinia variegata</i>	Fabaceae
21	Ratanjot	<i>Jatropha curcas</i>	Euphorbiaceae
22	Shewt ark	<i>Calotropis procera</i>	Asclepiadaceae
23	Drumstick	<i>Moringa oleifera</i>	Moringaceae
24	Neem	<i>Azadirachta indica</i>	Meliaceae
25	Arandi	<i>Ricinus communis</i>	Euphorbiaceae
26	Arjuna	<i>Terminlia arjuna</i>	Combretaceae
27	Putranjiva	<i>Putranjiva roxburghii</i>	Putranjivaceae
28	Anjeer	<i>Ficus carica</i>	Moraceae
29	Shikakai	<i>Acacia concina</i>	Fabaceae
30	Pila amaltas	<i>Cassia glauca</i>	Fabaceae
31	Nirgundi	<i>Vitex negundo</i>	Lemiaceae
32	Sheesham	<i>Dalbergia sissoo</i>	fabaceae
33	Dhawda/ Gumghatti	<i>Anogeissus latifolia</i>	Combrataceae
34	Paras peepal	<i>Thespsia populina</i>	Malvaceae
35	Kanak champa	<i>Pterospermum acerifolium</i>	Malvaceae
36	Maulshree	<i>Mimusops alengi</i>	Sapotaceae
37	Tendu	<i>Diospyros melanoxylon</i>	Ebanaceae



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CIN No: U74999MP2018PTC045751

Ref No: EEPL/2021-22/C-83

Date: 13-12-2021

ENERGY AUDIT CERTIFICATE

This is certified that Empirical Exergy Private Limited (EEPL) Indore, M.P. has conducted Detailed Energy audit at **Jeevan Vikas Mahavidyalaya, Devgram (Thugaondeo), Nagpur** for the academic Year 2020-21 and audit report has been submitted.

We avail this opportunity to express our deep and sincere gratitude to the management for their whole hearted support and co-operations during the energy audit.

This certificate is being issued on the basis of the Energy Audit conducted by EEPL.

For- Empirical Exergy Private Limited



Rajesh Kumar Singadiya (Director)

M.Tech. (Energy Management), Ph.D. (Research Scholar)
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Chartered Engineer [M-1699118], The Institution of Engineers (India)
Member of ISHRAE [58150]



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Jeevan Vikas Mahavidyalaya, Devgram
(Thugaondeo), Nagpur, Year 2020-21



ENERGY AUDIT REPORT

CONSULTATION REPORT



Jeevan Vikas Mahavidyalaya,
Devgram (Thugaondeo),
Nagpur - 441 301,
Maharashtra State, India

PREPARED BY

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Year: 2020-21



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ACKNOWLEDGEMENT

Empirical Exergy Private Limited (EEPL), Indore (M.P) takes this opportunity to appreciate & thank the management of **Jeevan Vikas Mahavidyalaya, Devgram (Thugaondeo), Nagpur** for giving us an opportunity to conduct energy audit for the college.

We are indeed touched by the helpful attitude and co-operation of all faculties and technical staff, who rendered their valuable assistance and co-operation the course of study.



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CERTIFICATION OF ACCREDITATION

 **BUREAU OF ENERGY EFFICIENCY**

Examination Registration No.: **EA- 7271**

Accreditation Registration No.: **AEA-284**



Certificate of Accreditation

This is to certify that Mr./Ms. **Shri. Rajesh Kumar Singadiya** having its trade/registered office at has been given accreditation as accredited energy auditor. The certificate shall be effective from **9th** day of **May, 2018**


The certificate is subject to the provisions of the Bureau of Energy Efficiency (Qualifications for Accredited Energy Auditors and Maintenance of their List) Regulations, 2010.

This certificate shall be valid until it is cancelled under regulation 9 of the Bureau of Energy Efficiency (Qualifications for Accredited Energy Auditors and Maintenance of their List) Regulations, 2010.

On cancellation, the certificate of accreditation shall be surrendered to the Bureau within fifteen days from the date of receipt of order of cancellation.

Your name has been entered at AEA No. **284** in the register of list of accredited energy auditors. Your name shall be liable to be struck out on the grounds specified in regulation 8 of the Bureau of Energy Efficiency (Qualifications for Accredited Energy Auditors and Maintenance of their List) Regulations, 2010.

Given under the seal of the Bureau of Energy Efficiency, Ministry of Power, this **5th** day of **October, 2018**


Secretary,
Bureau of Energy Efficiency
New Delhi



EXECUTIVE SUMMARY

The executive summary of the energy audit report furnished in this section briefly gives the identified energy conservation measures and other recommendation during the project that can be implemented in a phased manner to conserve energy, increase productivity inside the college campus.

ENERGY MANAGEMENT INITIATIVE TAKEN BY COLLEGE

✚ Energy awareness & poster Presentation

Implementing energy saving techniques is ensured by checking that all the lights and fans are switched off by floor peons and staff after completion of the work of the day. Classrooms are having small green patches adjacent to each room for freshness and are made with sufficient cross ventilation and light so that the use of electricity can be minimized. Slogans like “Save Power”, “To save Energy is to create Energy” are displayed in the classrooms. This shows the institution’s commitment towards energy conservation.

RECOMMENDATION FOR IMPROVEMENT

✚ Alternate Energy Initiatives (Renewable energy sources)

The college campus has total power requirement of 3KW. Out of which 2.2 KW is required for bulbs and near about 0.3 KW is required for others. The Institute has planned to install Solar Power Energy set up for the entire college building and campus.

It is recommended

✚ LIGHTING SYSTEM:

Management has adapted procurement policy for energy efficiency / BEE star rated product in the collage premises. **It’s APPRECIABLE.**



AREA OF IMPROVEMENT

GRID CONNECTED ROOF TOP SOLAR PV SYSTEM

There is good potential for installation of 4 KWp grid connected roof solar system under “Net Metering Polices of Maharashtra Government”. Expected solar energy generation by recommended system will be 5,760 unit per year @ 4 units per day per KWp.

Case Study No.	Section	Identification	Observation	Recommendation	Annual energy saving (kWh)	Annual cost saving (Rs.)	Investment (Rs.)	Simple payback Period (Year)
01	Electrical room	Potential for solar project as per Net Metering policy	100 % Energy taken from MSEDCCL	4 KWp grid connected solar roof top system .	5,760 KWh Generation annual	55,000	1,80,000/	3.2
Total						55,000	1,80,000/	3.2



✚ Replacement of conventional Lighting

- Replace old AC's with BEE star rated air conditioners to save electricity.
- Reduce/ optimized adjust the power, standby, and sleep settings for printer & laptop PC to save electricity.

✚ TIMER CONTROLLED STREET LIGHTS

Installation of “Timer control on street lighting” in college campus is recommended.

✚ CEILING FAN AND EXHAUST FAN:

- Replacement of “conventional ceiling fan (80W)” by energy efficient star rated fan or BLDC based energy efficient fan (28W) in “all departments classes” have great potential for energy saving.
- Replacement of “conventional exhaust fan (60 Watt)” by energy efficient star rated fan or BLDC based energy efficient Fan (20 Watt) in all departments classes and faculties cabin have great potential for energy saving.

✚ IOT BASED ENERGY MONITORING SYSTEM AT MAIN FEEDER

- Installation of “Cloud based (IoT based) energy monitoring system” including harmonic measurement (total voltage and current harmonic distortion %) in power house will be good initiate for energy monitoring as well as student demo project for management. Expected energy saving potential about 2 to 4%.

✚ Energy Management Workshop and Training:

- Develop energy management policies for college. Establish a procurement policy that is energy saving and eco-friendly.
- Conduct awareness and training programs for faculty, student and non-teaching staffs. Conduct seminars, workshops and exhibitions on energy management education.
- Involve All Stakeholders- Encourage involvement of government, foundations, and industry in supporting interdisciplinary research, education, policy formation, and information exchange in energy management system.



CHAPTER-1

INTRODUCTION

1.1 About College

Jeevan Vikas Mahavidyalaya, Devgram is run by the society, “Antyoday Mission”, established by Hon’ble Dr.BhausahabBhoge in 1972. The college was started in 1996 with mere 40 students in Arts faculty and now it has Arts, Commerce, Science & B.Voc faculties including PG Courses serving more than 1300 students under the guidance of Dr. Devendra S. Bhongade, Principal. It is constantly marching in all fronts bringing laurels at state and national level. It is the matter of great proud that at present the college runs thirteen subjects at BA – Marathi, English, Marathi Literature, English Literature, Economics, Pol. Science, Sociology, History, Geography, Music, Home Economics, Library Science and Military Science; four subjects at MA- English, Marathi, Economics and Political Science; six subjects at B.Com (Marathi Medium)- English, Marathi, Financial Accounting, Business Organization, Business Economics and Company Law; nine subjects at B.Sc. (English Medium)- English, Marathi, Physics, Chemistry, Mathematics, Botany, Zoology, Computer Science and Zoology; four subjects at UGC sponsored skill-based B.Voc. Degree Programme- Food Processing & Engineering, Software Development, Building Technology and Automotive; three subjects at UGC Funded Community College- Automotive, Software Technology and Dress Designing. At Junior College level, the college has six subjects in Arts Faculty (Marathi Medium) – English, Marathi, Economics, History, Political Science and Sociology; six subjects in Commerce Faculty (Marathi Medium) – English, Marathi, Economics, Secretarial Practice, Co-operation, Book-keeping & Accountancy. In science (English Medium), the college runs two groups. Group – I (General Science) has six subjects- English, Marathi, Chemistry, Biology, Physics and Mathematics and Group – II (Bi-focal) has five subjects in Fishery- English, Chemistry, Biology, Physics, Fresh Water & Fish Culture and five subjects in Computer Science – English, Chemistry, Physics, Mathematics & Computer Science. Apart from these, the college conducts few Career oriented Value-added Courses, Add-on Courses and Self-finance Certificate, Diploma and Advance Diploma Courses. The college has widened its aura starting YCMOU courses in Arts and Commerce faculties affiliated to Nashik Deemed College. All these courses are efficiently enhancing the profile of the college. UGC sponsored skill-based and Career oriented courses opened many new career avenues for the students in global scenario. The college has the pride to have Permanent Affiliation; 2(f) & 12(B); ISO 9001: 2015 Certification, NIRF Participation and



Energy Audit Report
Jeevan Vikas Mahavidyalaya, Devgram
(Thugaondeo), Nagpur, Year 2020-21



accredited by NAAC in Cycle-II at 'B++' Grade (CGPA 2.93). CLL and NSS Wings add feather in the hat. The college boasts on well- qualified and experienced teachers involved in promoting the research culture. Auditorium, Open Gymnasium and Green Gym, vast playground & lush green campus with Wi-Fi connectivity and CCTV protected campus add to the beauty of the institution and make the campus safe and secured from girls' point of view. Advanced Library and modern Computer Lab are always open 24 *7 for students preparing for competitive examinations. The college has become an educational hub coping the demands and satisfying the needs of the region and hence it has got new coinage as one of the best Educational Institutions in the college and Vidarbha region working for Antyoday students. The college is situated at Jalalkheda –Mowad State Highway in Nagpur district of Maharashtra 5 Kms towards North of Jalalkheda. The nearest railway station Narkhed is 18 Kms and the nearest airport Nagpur is 90 Kms from the college. Apart from these, the regular MSRTC buses and private taxis ply continually.

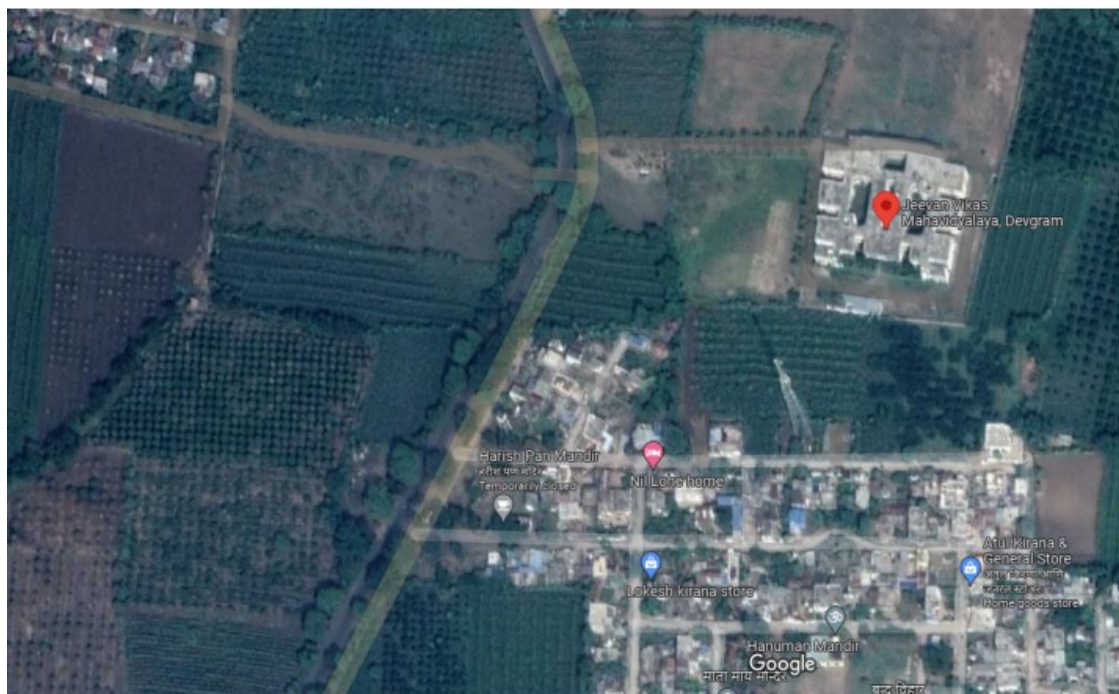


Figure 1.1: - Satellite Image of college from Google map



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Vision

The vision of the institution is “Unto the Last”. i.e. To provide academic services to financially backward, deprived students and specially girls students of local community and nearby villages through qualitative and valuable education and work for Antyodaya (poor, needy and downtrodden) people in the community.

Mission

The mission of our institution is in tune with the objectives of higher education policies of the nation. For instance, the institute provides qualitative and valuable higher education to the students of rural, tribal and hilly areas. Through the curricular and extra-curricular activities, the college is pledged to develop overall skills and personality of the students to make them self-reliant and ideal citizen by discharging social and moral responsibilities.

The following mission statements aim at translating college-vision into missionary activities-

1. To impart qualitative and valuable service in the field of education to the residents of Devgram and nearby areas in general language.
2. To attempt community and social development through infrastructure facilities of the institution.
3. To ensure and inculcate perfect discipline in terms of regularity, sincerity and punctuality amongst the students. So that they contribute to the society and nation as the most responsible and respectable citizen.
4. To aim at overall personality development of the students through extra-curricular activities.
5. To provide platform for the students by giving them an opportunity to face all the challenges of the competitive world with utmost utilization of their potential in sports and other events.
6. To adopt Antyodaya students in rural, tribal and hilly areas to give them social justice, opportunities.




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1.3 Green Monitoring Committee

Antyoday Mission's
Jeevan Vikas Mahavidyalaya, Devgram (Thugaondeo)



Tah. Narkhed, Distt. Nagpur- 441 301 (M.S.)
(Permanent Affiliated to Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur)
College Code: 341
(NAAC Accredited in Cycle II at 'B++' Grade, CGPA 2.93)
ISO 9001:2015 Certified, NIRF Participated

Website: www.jvmd.co.in E-mail: jvmthugaondeo@gmail.com


JVMD/ Q/2021 Date:- 02/07/2021

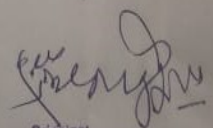
Energy, Environmental & Green Audit Committee:

Energy, Environmental & Green Audit Committee will consist of the following faculty and staff.

Sr. No.	Name of the Faculty	Designation
1	Dr. Devendra Bhongade	Chairperson
2	Dr. Deepak Arajpure	Member
3	Dr. Mangesh Acharya	Member
4	Dr. Yogesh Sarode	Member
5	Miss. Pranali Ingole	Member
6	Dr. Kalyani Thakre	Member
7	Mr. Pritam Sukhdeve	Member
8	Mr. Raju Ingale	Member
9	Mr. Devendra Wasade	Member
10	Mr. Sachin Darokar	Member
11	Mr. Rupesh Shekar	Member

Time duration for this committee is 03 years after which the committee will be reconstituted.




Principal
Jeevan Vikas Mahavidyalaya
Devgram (Thugaondeo)
Tah. Narkhed, Dist. Nagpur




Energy Audit Report
Jeevan Vikas Mahavidyalaya, Devgram
(Thugaondeo), Nagpur, Year 2020-21



1.4 Integrated Energy, Environmental Green & waste management policy

Antyoday Mission's
Jeevan Vikas Mahavidyalaya, Devgram (Thugaondeo)

 **Tah. Narkhed, Distt. Nagpur- 441 301 (M.S.)**
(Permanent Affiliated to Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur)
College Code: 341
(NAAC Accredited in Cycle II at 'B++' Grade, CGPA 2.93)
ISO 9001:2015 Certified, NIRF Participated

Website: www.jvmd.co.in E-mail: jvmthugaondeo@gmail.com


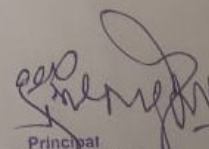
JVMD/ Date:- 10/03/2019

Integrated Energy, Environmental Green and Waste Management Policy

Management of our institution is committed to go green for making our nation to *Atma-Nirbhar* (i.e., Self-Sustainable) in the area of energy and environment.

Our Emphasis is to:

1. Ensure continual enhancements in our energy and water conservation methods and usage.
2. Procure and use energy efficient equipment and products.
3. Continuously monitoring the energy consumption patterns through periodic reviews & using latest information systems.
4. Create awareness regarding necessity of energy conservation and making environment pollution free to all staff and students on a regular basis by arranging trainings, workshops, seminars, quiz, competitions, etc.
5. Carry out regular energy, environment and green audits by certified auditors to identify key areas of improvements.

 
Principal
Jeevan Vikas Mahavidyalaya
Devgram (Thugaondeo)
Tah. Narkhed, Dist. Nagpur



Energy Audit Report
Jeevan Vikas Mahavidyalaya, Devgram
(Thugaondeo), Nagpur, Year 2020-21



1.5 The Audit Team

The study team constituted of the following senior technical executives from Empirical Exergy Private Limited,

- ✚ Mr. Rajesh Kumar Singadiya, [Director & Accredited Energy Auditor , AEA-0284]
- ✚ Mr. Rakesh Pathak, [Director]
- ✚ Mrs. Laxmi Raikwar Singadiya, [Energy Engineer]
- ✚ Mr. Lokesh Kumar Verma, [Project Engineer]
- ✚ Mr. Ajay Nahra, [Site Engineer]

1.6 About Energy Audit

Energy audit helps to understand more about the ways energy is used in any plant and helps in identifying areas where waste may occur and scope for improvement exists. The overall energy efficiency from generation to final consumer becomes 50%. Hence one unit saved in the end user is equivalent to two units generated in the power plant.

Energy audit is the most efficient way to identify the strength and weakness of energy management practices and to find a way to solve problems. Energy audit is a professional approach in utilizing economic, financial, and social and natural resources responsibility. Energy audits “adds value” to management control and is a way of evaluating the system.

Empirical Exergy Private Limited (EEPL), Indore M.P. carried out the “Energy Audit” at the site to find gaps in the energy consumption pattern for Jeevan Vikas Mahavidyalaya, Devgram (Thugaondeo), Nagpur. A technical report is prepared as per the need and the requirement of the project.

1.7 Objectives of Energy Auditing

An energy audit provides vital information base for overall energy conservation program covering essentially energy utilization analysis and evaluation of energy conservation measures. It aims at:

- Identifying the quality and cost of various energy inputs.
- Assessing present pattern of energy consumption in different cost centers of operations.
- Relating energy inputs and production output.
- Identifying potential areas of thermal and electrical energy economy.
- Highlighting wastage in major areas.



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- Fixing of energy saving potential targets for individual cost centers.
- Implementation of measures for energy conservation & realization of savings.

1.8 Methodology:

Methodology adopted for achieving the desired objectives viz.: Assessment of the current operational status and energy savings include the following:

- ✚ Discussions with the concerned officials for identification of major areas of focus and other related systems.
- ✚ Team of engineers visited the site and had discussions with the concerned officials / supervisors to collect data / information on the operations and load distribution within the plant and same for the overall premises. The data was analyzed to arrive at a base line energy consumption pattern.
- ✚ Measurements and monitoring with the help of appropriate instruments including continuous and / or time-lapse recording, as appropriate and visual observations were made to identify the energy usage pattern and losses in the system.
- ✚ Trend analysis of costs and consumptions.
- ✚ Capacity and efficiency test of major utility equipment's, wherever applicable.
- ✚ Estimation of various losses
- ✚ Computation and in-depth analysis of the collected data, including utilization of computerized analysis and other techniques as appropriate were done to draw inferences and to evolve suitable energy conservation plan/s for improvements/ reduction in specific energy consumption.

1.9 Present Energy Scenario:

College uses energy in the form of electricity purchased from grid connected system. The electricity bill is based on the 73/LT-X B10-20 KW Public service oth. The college has contract demand of 4KW.

Total billing amount of electricity bill of College has been found to be about INR 3,09,410/- for 12 months analysis period from July - 2020 to June- 2021.



CHAPTER- 2 ELECTRICITY BILL ANALYSIS

2.1 Annual Energy Consumption of College (2 Year)

Electricity bills of last One years were analysed. Detailed of unit consumption, annual average power factor and annual per unit charges are determined as follow:

Table -2.1 Annual Energy Consumption of College (2 Year)

SR.NO.	Year	Annual Energy Consumption (KWh)
1	2019-20	3,734
2	2020-21	6,846

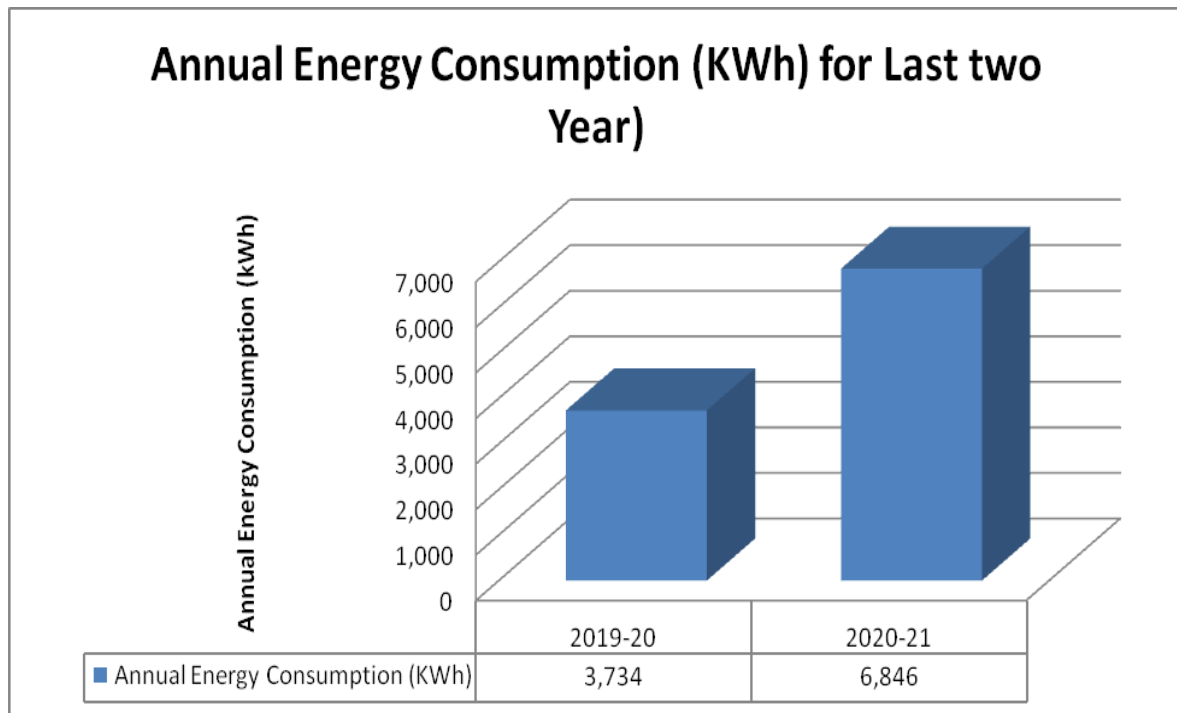


Figure 2.1–Yearly electrical Consumption for last two year



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2.2 Monthly Energy Consumption of College (Year 2020-21)

Table 2.2 Energy consumption and billing amount (year 2020-21)

Sr. No	Month & Year	Total Unit (kWh)
1	Jul-20	487
2	Aug-20	364
3	Sep-20	454
4	Oct-20	405
5	Nov-20	218
6	Dec-20	848
7	Jan-21	590
8	Feb-21	242
9	Mar-21	1150
10	Apr-21	977
11	May-21	881
12	Jun-21	230
	Total	=6,846

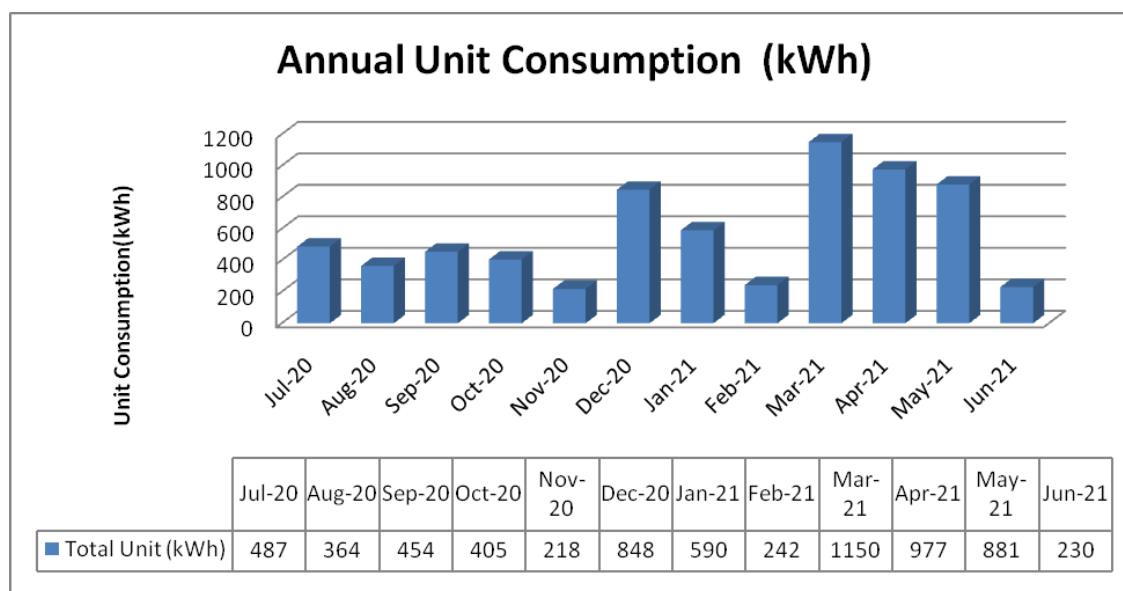


Fig.2.2- Graphical Presentation for Monthly Energy Consumption (kWh)



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2.3 Monthly Load factor analysis:

The monthly load factor for the college is given in the following table:

Table 2.3- Load factor of college year 2020-21

Sr. No	Month & Year	Average Load Factor (%)
1	Jul-20	17
2	Aug-20	13
3	Sep-20	14
4	Oct-20	14
5	Nov-20	08
6	Dec-20	30
7	Jan-21	18
8	Feb-21	08
9	Mar-21	35
10	Apr-21	33
11	May-21	31
12	Jun-21	8
	Average	19

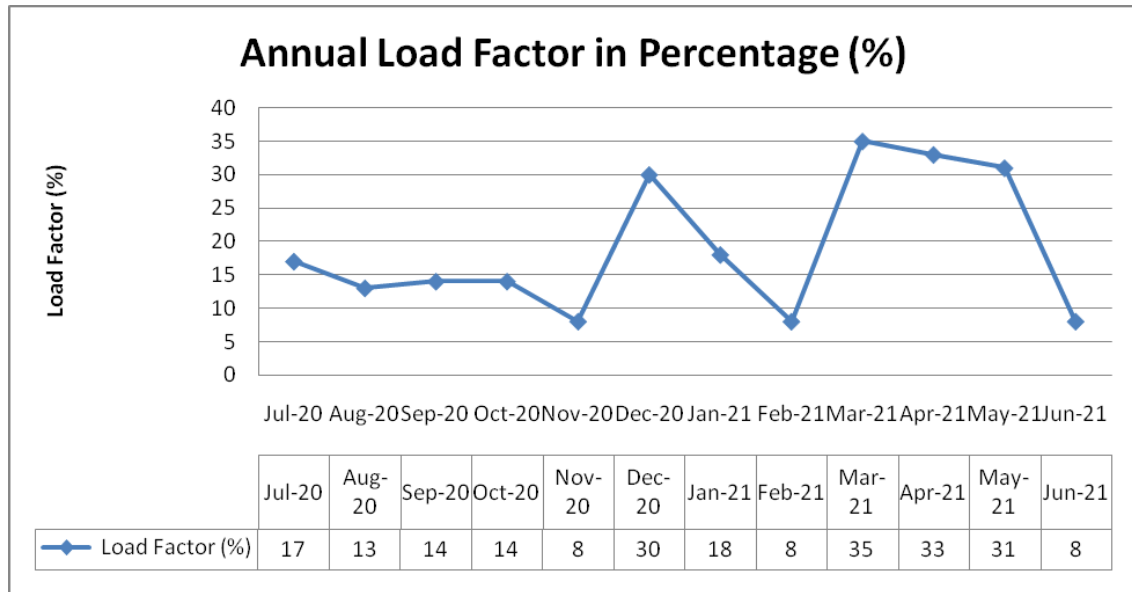


Fig.2.3 – Graphical Presentation for Annual Load Factor

Observation:

Average load factor is 19 % in last 12 months.



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2.4 ON Site power measurement in College campus

Table 2.4 ON Site power measurement in college campus

Sr. No.	Building Name	Volt (V)	Amp	Power (KW)
1	Admin Building (Main Panel)	355	5.8	2.45
2	Borewell	359	70.3	4.71

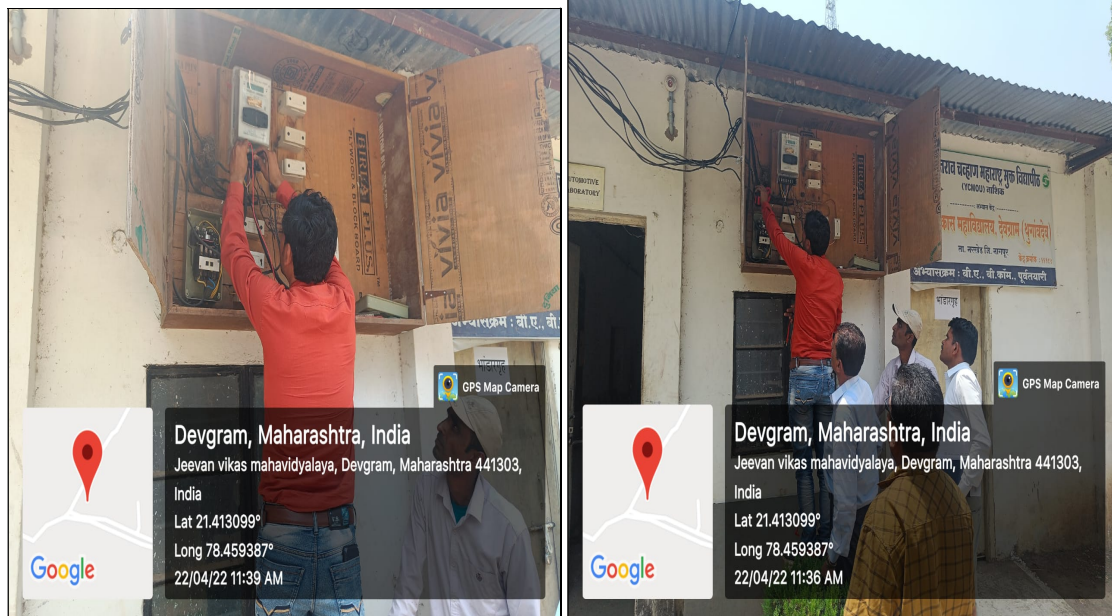


Fig.-2.4 Photograph of ON Site power measurement in college campus



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CHAPTER -3
CONNECTED LOAD DETAILS

3.1 Connected Load of college:

Table 4.1 :- Connected load of college

Sr. No	Location/ Name of Building	Type of Electrical Equipment	Rated (watt)	Quantity (no)	Total Watt	Load (%)
1	College Campus	Tube Light (LED)	20	18	360	2.80
		Ceiling Fan	60	58	3,480	27.07
		Exhaust Fan	60	07	420	3.26
		Split AC	1.5 Ton	01	1400	10.89
		PC	70	58	4,060	31.58
		Laptop	71	04	284	2.20
		Printer	150	08	1200	9.33
		Photocopy M/c	550	03	1650	12.83
Total Connected Load					12,854	100.00

Street Light Detailed

Sr. No	Location	Type of Light	Rated Watt	Quantity (NO)	Total Watt	Load (%)
1.	Main Gate	HPSV Lamp	400 Watt	2	800	64.0
		Metal Halide	250 Watt	1	250	20.0
		LED	100 Watt	2	200	16.0
Total Connected Load					1,250	100.00

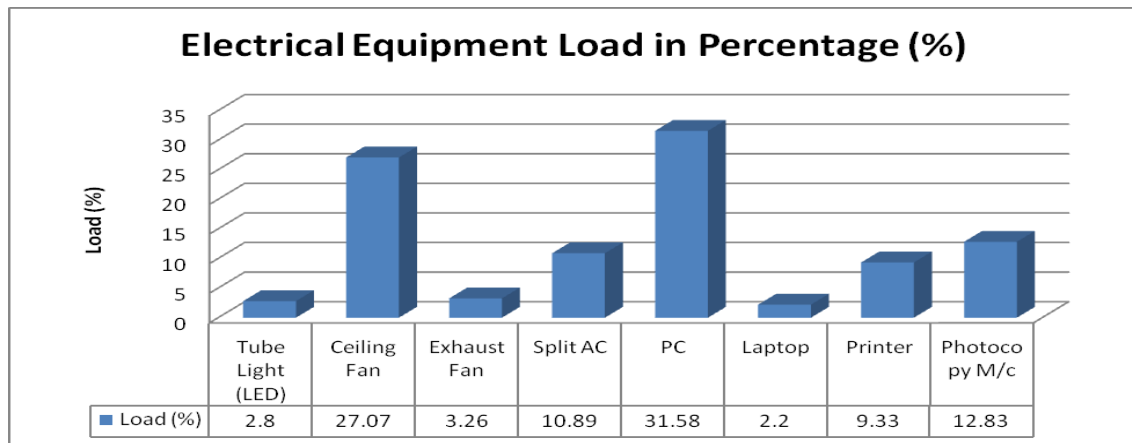


Fig.3.1- Electrical Equipment Load in Graphical Presentation



CHAPTER- 4 ENERGY CONSERVATION MEASURES

4.1 Case Study No.-1 Grid Connected Roof Top Solar Pv System (4 KWp):

There is good potential for installation of 4 KWp grid connected roof solar system under “Net Metering Polices of Maharashtra State Government”. Expected solar energy generation by recommended system will be 5760 unit per year @ 4 units per day per KWp

Table-4.1 Grid Connected Roof Top Solar Pv System (4 KWp)

Case Study No.	Section	Identification	Observation	Recommendation	Annual energy saving (kWh)	Annual cost saving (Rs.)	Investment (Rs.)	Simple payback Period (Year)
01	Electrical room	Potential for solar project as per Net Metering policy	100 % Energy taken from MSEDCL	4 KWp grid connected solar roof top system .	5760 KWh Generation annual	55000	1,80,000/	3.2
Total						55000	1,80,000/	3.2



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4.2 Case Study No.-2

Replacing (400 W) HPSV Lamp on street Light with 150 W LED Street lights

Sr. No	Items	Parameters	Units
1	Total (400W) HPSV Lamp	No.	02
2	Rated Power	Watt/ unit	400
3	Operating Hrs	Hrs/day	12
4	Operating Annual Days	Days/Year	365
5	Unit Consumed Annually (AI*All*B*C)/1000)	kWh/Year	3504
6	REPLACEMENT		
7	Replacement with 150 W LED Street Light	Watt/unit	150
8	Unit Consumed Annually	kWh/Year	1314
9	Energy Saving (Old- New Annual Consumption)	kWh	2190
10	Annual Energy Cost Saving @ Rs. 6.20 per unit	INR	13,578
11	COST BENEFIT CALCULATION		
12	Capital Cost @Rs4,250/- per item	INR	8,500/-
13	TOTAL INVESTMENT	INR	8,500/-
14	Net Annual Saving	INR	13,578/-
15	Simple payback (Investment/annual savings)	Month	7.5

4.3 Case Study No.3

Replacing (250W) Metal halide Lamp on street Light with 100 W LED Street lights

Sr. No	Items	Parameters	Units
1	Metal halide Lamp (250W)	No.	01
2	Rated Power	Watt/ unit	250
3	Operating Hrs	Hrs/day	12
4	Operating Annual Days	Days/Year	365
5	Unit Consumed Annually (AI*All*B*C)/1000)	kWh/Year	1095
6	REPLACEMENT		
7	Replacement with 100W LED Street Light	Watt/unit	100
8	Unit Consumed Annually	kWh/Year	438
9	Energy Saving (Old- New Annual Consumption)	kWh	657
10	Annual Energy Cost Saving @ Rs. 6.20 per unit	INR	4,073/-
11	COST BENEFIT CALCULATION		
12	Capital Cost @Rs3500/- per item	INR	3,500/-
13	TOTAL INVESTMENT	INR	3,500/-
14	Net Annual Saving	INR	4,073/-
15	Simple payback (Investment/annual savings)	Month	10.3

Note : simple pay back period depend on working hours & load factor of the system.



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(Thugaondeo), Nagpur, Year 2020-21



4.4 Case Study No.4

Replacing Ceiling Fan 60W by 28 W BLDC Ceiling Fan

Sr. No	Items	Parameters	Units
1	Ceiling Fan (80W)	No.	58
2	Rated Power	Watt/ unit	60
3	Operating Hrs	Hrs/day	12
4	Operating Annual Days	Days/Year	330
5	Unit Consumed Annually (AI*AII*B*C)/1000)	kWh/Year	13781
6	REPLACEMENT		
7	Replacement with 28 W BLDC Ceiling Fan	Watt/unit	28
8	Unit Consumed Annually	kWh/Year	6431
9	Energy Saving (Old- New Annual Consumption)	kWh	7350
10	Annual Energy Cost Saving @ Rs. 6.20 per unit	INR	45,569/-
11	COST BENEFIT CALCULATION		
12	Capital Cost @1800 per item	INR	1,04,400/-
13	TOTAL INVESTMENT	INR	1,04,400/-
14	Net Annual Saving	INR	45,569/-
15	Simple payback (Investment/annual savings)	Month	27.4

4.5 Case Study No.5

Replacing 225MM EX Fans by 250MM BLDC EX Fans

Sr. No	Items	Parameters	Units
1	225MM EX Fans (60 W)	No.	07
2	Rated Power	Watt/ unit	60
3	Operating Hrs	Hrs/day	12
4	Operating Annual Days	Days/Year	300
5	Unit Consumed Annually (AI*AII*B*C)/1000)	kWh/Year	1512
6	REPLACEMENT		
7	Replacement with 20W (250MM BLDC) EX Fans	Watt/unit	20
8	Unit Consumed Annually	kWh/Year	504
9	Energy Saving (Old- New Annual Consumption)	kWh	1008
10	Annual Energy Cost Saving @ Rs. 6.20 per unit	INR	6,250/-
11	COST BENEFIT CALCULATION		
12	Capital Cost @2000 per item	INR	14,000/-
13	TOTAL INVESTMENT	INR	14,000/-
14	Net Annual Saving	INR	6,250/-
15	Simple payback (Investment/annual savings)	Month	26.8

Note : simple pay back period depend on working hours & load factor of the system.





Energy Audit Report

Jeevan Vikas Mahavidyalaya, Devgram (Thugaondeo), Nagpur, Year 2020-21



Annexure -1



Maharashtra State Electricity Distribution Company Limited

Web Self Service Home > Make Payment

Web Self Service

Make Payment

Home

New User Registration

Login

Forgot Login Name/Password?

View/Pay Bill

Consumption Calculator

Energy Bill Calculator

New Connection Request

Complaint Registration

Complaint Status

Submit Reading

Shri Vilasrao Deshmukh Abhay Yojana

View ASD Details

View HT Consumer Info

View RE Consumption

Track Status, Upload Documents and Pay Charges

*Online Payment of Other Charges

*Register / Update Mobile number, Email, Aadhar number, TDS and PAN No

Process Flow for Shri Vilasrao Deshmukh Abhay Yojana (Help Manual & Video)

Consumer Information

Consumer Number	426890476951	BU	0560 JALAKHEDA
Name	SHRI ANTODAY MISSION OF INDIA THUGAMDEO	Connection Type	LT
Address	THUGAMDEO THUGAMDEO 441304	Contact Numbers	9823421427

Consumer No.	BU / Circle Code	Bill Month	Consumption (Units)	Bill Amount	Bill Due Date	Status
426890476951	0560 JALAKHEDA	Apr 2022	1043	7,010.00	02 May 2022	LIVE

Now you can also make additional advance payment in multiples of Rs. 500 , up to a maximum of Rs. 10,000.

Benefits of Additional Advance Payments

- You can pay a lump sum amount in advance, and avoid paying every month.
- Never miss a due date by keeping sufficient credit balance.
- Receive Prompt Payment discount when your advance payment sufficiently covers your next bill.
- Your monthly bill will reflect the balance amount.

For information related to online payment please click on given link [Help](#)

To proceed with payment please verify the details below choosing your payment option:

Bill Details	
Consumer Number	426890476951
BU/Circle	0560 JALAKHEDA
Processing Cycle	3
Consumption	1043
Due Date	02 May 2022
Bill Amount	7010
Prompt Payment Discount Date	4/18/2022 12:00:00 AM
Prompt Payment Discount Amount	68.27

Energy Bill **Other Payment** **Additional Security Deposit**

Mobile Number*

Amount to Pay*

You have chosen to pay an amount of Rs 7,010 from your credit card/specified bank account for Maharashtra State Electricity Distribution Co. Ltd.

Conditions for Online Payment:

- International cards are blocked for paying MSEDCCL bills.
- Please note that a convenience fee i.e. Gateway charges levied by Master/Visa/others will be applicable for credit card exceeding Rs. 500 . Gateway charges are waived Off for Net Banking , Debit card , UPI, Digital Wallet & Cash Card payments.
- In case of duplicate/multiple payment and advance payment for a single bill, credit for the extra amount paid will be passed on in the subsequent bill.
- To avoid fraudulent transaction, it is recommended not to reveal details of your card to anybody; make payment yourself without going through any channels/agents.
- Do not open multiple payment windows simultaneously. For multiple consumer numbers, make payments one at a time.
- In case of Online payment after due date, Consumer agrees to the conditions mentioned in disclaimer.
- If consumer choose corporate Banking option for payment , Checker final approval date will be considered as receipt date.
- Please note transaction completion date will be treated as receipt date for credit/updation to consumer ledger.
- You can choose an alternate Payment Gateway, in case of online payment failure.

agree to the above conditions for Online Payment.

Go green registration Benefits:

- Consumer will get discount of Rs. 10 on every Electricity Bill.
- In Go green Facility, consumer will receive E-Bill on registered email address and will not receive physical copy.
- For More Details Check Go Green [FAQs](#).
- Do you want to register for Go Green ? If yes, please [Click here](#).

If you are finding any difficulty to make payment. Please refer help Manuals on Block or allow pop-ups, before clicking on PAY NOW button. [Document](#) [Video](#)

JEEVAN VIKAS MAHAVIDYALAYA, DEVGRAM

Tah. Narkhed, Dist. Nagpur (Maharashtra)

GREEN AUDIT REPORT **Solid Waste Audit Year - 2018-2019**

INTRODUCTION

The Green Audit of Jeevan Vikas Mahavidyalaya was conducted to assess the quantity, composition, and management of solid waste generated within the college premises. This audit aims to provide insights into waste generation patterns and offer recommendations for improved waste management practices, contributing to the institution's sustainability goals and environmental responsibility.

AIMS AND OBJECTIVES

1. **Assess Waste Generation:** Determine the quantity and types of solid waste generated in various departments and facilities.
2. **Analyse Waste Composition:** Identify the components of waste to improve segregation and recycling practices.
3. **Evaluate Management Practices:** Review current waste management practices and identify areas for improvement.
4. **Provide Recommendations:** Suggest actionable measures to minimize waste generation and enhance waste management strategies.

DATA COLLECTION

Data was collected from various sources within the college over a specific period, capturing weekly waste generation in different areas:

1. **Library**
2. **Main Office**
3. **Classrooms**
4. **Arts Department**
5. **Science Department**
6. **Commerce Department**
7. **College Canteen**

Types of waste recorded include paper, hardware paper, polythene, chalk, biomass, glass, and food waste.

DATA ANALYSIS

Table 1: Weekly Waste Generation in grams

Places	Paper	Hardware Paper	Polythene	Chalk	Biomass and Other
Library	15000	00	55	00	5500
Main Office	1500	55	80	00	40000
Class Room	00	00	60	600	1300
Total	16500	55	195	600	58500

Table 2: Weekly Department-wise Waste Generation (in grams)

Department	Paper	Polythene	Glass	Chalk	Garden	Biomass and Other
Arts	7500	175	00	00	00	5000
Science	20000	150	1000	1000	5000	00
Commerce	7500	100	00	00	00	00
Total	35000	425	1000	1000	5000	5000

Table 3: Weekly Waste Generation at College Canteen (in grams)

Source	Food	Kitchen	Polythene	Glass	Hardware Paper
College Canteen	1000	2000	400	100	100
Total	1000	2000	400	100	100

OBSERVATIONS

1. **Paper Waste:** The Commerce Department generates the highest paper waste, followed by the Science Department. The Library, while significant, is less than the Commerce Department.
2. **Biomass Waste:** The Main Office and Arts Department generate substantial biomass waste, with the Main Office having the highest amount.

3. **Polythene Usage:** Polythene waste is observed in all departments, with the highest amounts in the Commerce Department and the College Canteen.
4. **Food and Kitchen Waste:** The College Canteen generates a significant amount of food and kitchen waste, indicating potential areas for improved waste management.

COMMENTS ON RECOMMENDATIONS

1. Paper Waste Reduction:

Digital Transition: Promote the use of digital documents and communication to reduce paper usage.

Recycling Programs: Implement comprehensive recycling programs for paper in all departments.

2. Biomass Waste Management

Composting: Introduce composting systems for biomass waste to recycle organic materials effectively.

3. Polythene Reduction:

Alternative Materials: Encourage the use of biodegradable or reusable alternatives to polythene.

Awareness Campaigns: Conduct awareness campaigns to reduce polythene usage among students and staff.

4. Food Waste Management:

Food Donation: Establish a system to donate surplus food to local charities.

Waste Audits: Regularly audit food waste to identify and address areas of excessive waste.

5. Regular Monitoring:

Waste Tracking: Implement a tracking system to monitor waste generation trends and the effectiveness of waste management practices.

CONCLUSION

The solid waste audit for Jeevan Vikas Mahavidyalaya reveals areas of significant waste generation and provides a basis for enhancing waste management practices. Key areas of focus include reducing paper and polythene waste, improving biomass management, and addressing food waste at the canteen.

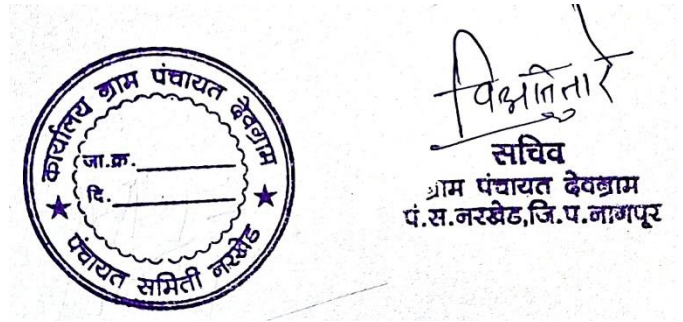
DISCUSSION

The audit data shows that while paper waste is high in departments such as Commerce and Science, there is potential for significant improvements in recycling and digital documentation. Biomass waste is prominent in specific areas, suggesting that composting could be an effective solution. The College Canteen's food and kitchen waste indicates a need for better waste segregation and management.

Overall, implementing the recommendations from this audit can help reduce the environmental impact of the college, promote sustainability, and foster a culture of environmental responsibility within the institution. Regular monitoring and engagement with the college community will be crucial in achieving these goals.

Place: Devgram

Date: 30/04/2019



JEEVAN VIKAS MAHAVIDYALAYA, DEVGRAM

Tah. Narkhed, Dist. Nagpur (Maharashtra)

GREEN AUDIT REPORT **Solid Waste Audit Year 2019- 2020**

INTRODUCTION

The Green Audit of Jeevan Vikas Mahavidyalaya was conducted to assess the quantity, composition, and management of solid waste generated within the college premises. This audit aims to provide insights into waste generation patterns and offer recommendations for improved waste management practices, contributing to the institution's sustainability goals and environmental responsibility.

AIMS AND OBJECTIVES

1. **Assess Waste Generation:** Determine the quantity and types of solid waste generated in various departments and facilities.
2. **Analyse Waste Composition:** Identify the components of waste to improve segregation and recycling practices.
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4. **Provide Recommendations:** Suggest actionable measures to minimize waste generation and enhance waste management strategies.

DATA COLLECTION

Data was collected from various sources within the college over a specific period, capturing weekly waste generation in different areas:

1. **Library**
2. **Main Office**
3. **Classrooms**
4. **Arts Department**
5. **Science Department**
6. **Commerce Department**
7. **College Canteen**

Types of waste recorded include paper, hardware paper, polythene, chalk, biomass, glass, and food waste.

DATA ANALYSIS

Table 1: Weekly Waste Generation in grams

Places	Paper	Hardware Paper	Polythene	Chalk	Biomass and Other
Library	15000	00	65	00	5500
Main Office	1500	55	80	00	40000
Class Room	00	00	60	600	1300
Total	16500	55	205	600	58500

Table 2: Weekly Department-wise Waste Generation (in grams)

Department	Paper	Polythene	Glass	Chalk	Garden	Biomass and Other
Arts	7500	175	00	00	00	6000
Science	20000	150	1000	1000	5000	00
Commerce	7500	100	00	00	00	00
Total	35000	425	1000	1000	5000	6000

Table 3: Weekly Waste Generation at College Canteen (in grams)

Source	Food	Kitchen	Polythene	Glass	Hardware Paper
College Canteen	1000	2000	400	100	200
Total	1000	2000	400	100	200

OBSERVATIONS

- Paper Waste:** The Commerce Department generates the highest paper waste, followed by the Science Department. The Library, while significant, is less than the Commerce Department.
- Biomass Waste:** The Main Office and Arts Department generate substantial biomass waste, with the Main Office having the highest amount.

3. **Polythene Usage:** Polythene waste is observed in all departments, with the highest amounts in the Commerce Department and the College Canteen.
4. **Food and Kitchen Waste:** The College Canteen generates a significant amount of food and kitchen waste, indicating potential areas for improved waste management.

COMMENTS ON RECOMMENDATIONS

1. Paper Waste Reduction:

Digital Transition: Promote the use of digital documents and communication to reduce paper usage.

Recycling Programs: Implement comprehensive recycling programs for paper in all departments.

2. Biomass Waste Management

Composting: Introduce composting systems for biomass waste to recycle organic materials effectively.

3. Polythene Reduction:

Alternative Materials: Encourage the use of biodegradable or reusable alternatives to polythene.

Awareness Campaigns: Conduct awareness campaigns to reduce polythene usage among students and staff.

4. Food Waste Management:

Food Donation: Establish a system to donate surplus food to local charities.

Waste Audits: Regularly audit food waste to identify and address areas of excessive waste.

5. Regular Monitoring:

Waste Tracking: Implement a tracking system to monitor waste generation trends and the effectiveness of waste management practices.

CONCLUSION

The solid waste audit for Jeevan Vikas Mahavidyalaya reveals areas of significant waste generation and provides a basis for enhancing waste management practices. Key areas of focus include reducing paper and polythene waste, improving biomass management, and addressing food waste at the canteen.

DISCUSSION

The audit data shows that while paper waste is high in departments such as Commerce and Science, there is potential for significant improvements in recycling and digital documentation. Biomass waste is prominent in specific areas, suggesting that composting could be an effective solution. The College Canteen's food and kitchen waste indicates a need for better waste segregation and management.

Overall, implementing the recommendations from this audit can help reduce the environmental impact of the college, promote sustainability, and foster a culture of environmental responsibility within the institution. Regular monitoring and engagement with the college community will be crucial in achieving these goals.

Place: Devgram

Date: 30/04/2020



पिपित्तार
सचिव
ग्राम पंचायत देवग्राम
पं.स.नरखेड, जि.प.नागपूर

JEEVAN VIKAS MAHAVIDYALAYA, DEVGRAM

Tah. Narkhed, Dist. Nagpur (Maharashtra)

GREEN AUDIT REPORT **Solid Waste Audit Year – 2020-2021**

INTRODUCTION

The Green Audit of Jeevan Vikas Mahavidyalaya was conducted to assess the quantity, composition, and management of solid waste generated within the college premises. This audit aims to provide insights into waste generation patterns and offer recommendations for improved waste management practices, contributing to the institution's sustainability goals and environmental responsibility.

AIMS AND OBJECTIVES

1. **Assess Waste Generation:** Determine the quantity and types of solid waste generated in various departments and facilities.
2. **Analyse Waste Composition:** Identify the components of waste to improve segregation and recycling practices.
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DATA COLLECTION

Data was collected from various sources within the college over a specific period, capturing weekly waste generation in different areas:

1. **Library**
2. **Main Office**
3. **Classrooms**
4. **Arts Department**
5. **Science Department**
6. **Commerce Department**
7. **College Canteen**

Types of waste recorded include paper, hardware paper, polythene, chalk, biomass, glass, and food waste.

DATA ANALYSIS

Table 1: Weekly Waste Generation in grams

Places	Paper	Hardware Paper	Polythene	Chalk	Biomass and Other
Library	500	00	00	00	100
Main Office	300	10	00	00	00
Class Room	00	00	00	00	000
Total	800	10	00	00	100

Table 2: Weekly Department-wise Waste Generation (in grams)

Department	Paper	Polythene	Glass	Chalk	Garden	Biomass and Other
Arts	000	00	00	00	00	000
Science	00	00	100	00	4000	00
Commerce	00	00	00	00	00	00
Total	00	00	100	00	4000	00

Table 3: Weekly Waste Generation at College Canteen (in grams)

Source	Food	Kitchen	Polythene	Glass	Hardware Paper
College Canteen	00	00	00	00	00
Total	00	00	00	00	00

OBSERVATIONS

1. **Due to Covid pandemic, the entry of students to college was restricted. Hence there is a drastic fall in the values**

CONCLUSION

The solid waste audit for Jeevan Vikas Mahavidyalaya reveals areas of significant waste generation and provides a basis for enhancing waste management practices. Key areas of focus

include reducing paper and polythene waste, improving biomass management, and addressing food waste at the canteen.

Place: Devgram

Date: 30/04/2021



विद्यतितारे
सचिव
ग्राम पंचायत देवग्राम
पं.स.नरसोड,जि.प.नागपुर

JEEVAN VIKAS MAHAVIDYALAYA, DEVGRAM

Tah. Narkhed, Dist. Nagpur (Maharashtra)

GREEN AUDIT REPORT **Solid Waste Audit Year – 2021-2022**

INTRODUCTION

The Green Audit of Jeevan Vikas Mahavidyalaya was conducted to assess the quantity, composition, and management of solid waste generated within the college premises. This audit aims to provide insights into waste generation patterns and offer recommendations for improved waste management practices, contributing to the institution's sustainability goals and environmental responsibility.

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1. **Assess Waste Generation:** Determine the quantity and types of solid waste generated in various departments and facilities.
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4. **Arts Department**
5. **Science Department**
6. **Commerce Department**
7. **College Canteen**

Types of waste recorded include paper, hardware paper, polythene, chalk, biomass, glass, and food waste.

DATA ANALYSIS

Table 1: Weekly Waste Generation in grams

Places	Paper	Hardware Paper	Polythene	Chalk	Biomass and Other
Library	18000	00	75	00	6000
Main Office	1500	75	80	00	40000
Class Room	00	00	60	800	1300
Total	19500	75	215	800	59000

Table 2: Weekly Department-wise Waste Generation (in grams)

Department	Paper	Polythene	Glass	Chalk	Garden	Biomass and Other
Arts	7500	175	00	200	00	7000
Science	20000	150	1000	1000	5000	00
Commerce	7500	100	00	00	00	00
Total	35000	425	1000	1200	5000	7000

Table 3: Weekly Waste Generation at College Canteen (in grams)

Source	Food	Kitchen	Polythene	Glass	Hardware Paper
College Canteen	1000	2000	400	100	100
Total	1000	2000	400	100	100

OBSERVATIONS

- Paper Waste:** The Commerce Department generates the highest paper waste, followed by the Science Department. The Library, while significant, is less than the Commerce Department.
- Biomass Waste:** The Main Office and Arts Department generate substantial biomass waste, with the Main Office having the highest amount.

3. **Polythene Usage:** Polythene waste is observed in all departments, with the highest amounts in the Commerce Department and the College Canteen.
4. **Food and Kitchen Waste:** The College Canteen generates a significant amount of food and kitchen waste, indicating potential areas for improved waste management.

COMMENTS ON RECOMMENDATIONS

1. Paper Waste Reduction:

Digital Transition: Promote the use of digital documents and communication to reduce paper usage.

Recycling Programs: Implement comprehensive recycling programs for paper in all departments.

2. Biomass Waste Management

Composting: Introduce composting systems for biomass waste to recycle organic materials effectively.

3. Polythene Reduction:

Alternative Materials: Encourage the use of biodegradable or reusable alternatives to polythene.

Awareness Campaigns: Conduct awareness campaigns to reduce polythene usage among students and staff.

4. Food Waste Management:

Food Donation: Establish a system to donate surplus food to local charities.

Waste Audits: Regularly audit food waste to identify and address areas of excessive waste.

5. Regular Monitoring:

Waste Tracking: Implement a tracking system to monitor waste generation trends and the effectiveness of waste management practices.

CONCLUSION

The solid waste audit for Jeevan Vikas Mahavidyalaya reveals areas of significant waste generation and provides a basis for enhancing waste management practices. Key areas of focus include reducing paper and polythene waste, improving biomass management, and addressing food waste at the canteen.

DISCUSSION

The audit data shows that while paper waste is high in departments such as Commerce and Science, there is potential for significant improvements in recycling and digital documentation. Biomass waste is prominent in specific areas, suggesting that composting could be an effective solution. The College Canteen's food and kitchen waste indicates a need for better waste segregation and management.

Overall, implementing the recommendations from this audit can help reduce the environmental impact of the college, promote sustainability, and foster a culture of environmental responsibility within the institution. Regular monitoring and engagement with the college community will be crucial in achieving these goals.

Place: Devgram

Date: 30/04/2022



JEEVAN VIKAS MAHAVIDYALAYA, DEVGRAM

Tah. Narkhed, Dist. Nagpur (Maharashtra)

GREEN AUDIT REPORT

Solid Waste Audit Year – 2022-2023

INTRODUCTION

The Green Audit of Jeevan Vikas Mahavidyalaya was conducted to assess the quantity, composition, and management of solid waste generated within the college premises. This audit aims to provide insights into waste generation patterns and offer recommendations for improved waste management practices, contributing to the institution's sustainability goals and environmental responsibility.

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- Classrooms**
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- Science Department**
- Commerce Department**
- College Canteen**

Types of waste recorded include paper, hardware paper, polythene, chalk, biomass, glass, and food waste.

DATA ANALYSIS

Table 1: Weekly Waste Generation in grams

Places	Paper	Hardware Paper	Polythene	Chalk	Biomass and Other
Library	15000	00	55	00	5500
Main Office	10000	100	80	00	40000
Class Room	00	00	90	900	1300
Total	25500	100	225	900	58500

Table 2: Weekly Department-wise Waste Generation (in grams)

Department	Paper	Polythene	Glass	Chalk	Garden	Biomass and Other
Arts	7500	175	500	00	00	7000
Science	20000	150	1000	1000	5000	00
Commerce	7500	500	00	00	00	00
Total	35000	925	1500	1000	5000	7000

Table 3: Weekly Waste Generation at College Canteen (in grams)

Source	Food	Kitchen	Polythene	Glass	Hardware Paper
College Canteen	5000	4000	400	100	100
Total	5000	4000	400	100	100

OBSERVATIONS

- Paper Waste:** The Commerce Department generates the highest paper waste, followed by the Science Department. The Library, while significant, is less than the Commerce Department.
- Biomass Waste:** The Main Office and Arts Department generate substantial biomass waste, with the Main Office having the highest amount.

3. **Polythene Usage:** Polythene waste is observed in all departments, with the highest amounts in the Commerce Department and the College Canteen.
4. **Food and Kitchen Waste:** The College Canteen generates a significant amount of food and kitchen waste, indicating potential areas for improved waste management.

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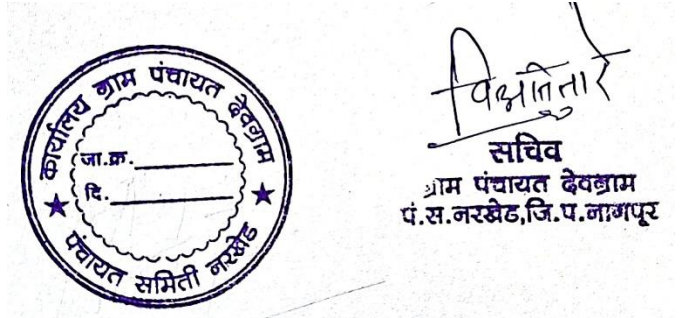
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Overall, implementing the recommendations from this audit can help reduce the environmental impact of the college, promote sustainability, and foster a culture of environmental responsibility within the institution. Regular monitoring and engagement with the college community will be crucial in achieving these goals.

Place: Devgram

Date: 30/04/2023



POLICY DOCUMENT



ANTYODAY MAHAVIDYALAYA, DEVGRAM
Tah. Narkhed, Dist. Nagpur-441301 (M.S.)

College Policies & Directives



Permanent Affiliated to
Rashtrasant Tukadoji Maharaj
Nagpur University, Nagpur

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14 Sustainable Campus Policy

Preamble

The Stockholm Conference on the Human Environment, 1972, drew attention to the need for green education i.e. education relating to environment protection. The most oft quoted definition of Sustainable development has been given by the United Nations World Commission on Environment and Development (Brundtland Commission) in its 1987 Report. Our Common Future which defines it as development "which meets the needs of the present without compromising the ability of future generations to meet their own needs."

Mankind has pursued increased industrialisation and urbanisation and brought about economic development, which has often been at the cost of tremendous environmental degradation. We have been witnessing this in the form of pollution, acid rain, deforestation, desertification, ozone-depletion, global warming, early signs of climate change.

In 2008, the G8 University Summit adopted the Sapporo Sustainability Declaration for internalising environmental consciousness in university academic frameworks and on campus. In 2015, India committed itself to the UN 2030 Agenda for Sustainable Development (for fulfilment of the UN Sustainable Development Goals 2015-2030). The UGC has laid down the SATAT framework to encourage environment friendly practices on campuses of Higher Educational Institutions. In keeping with the UGC's guidelines, The College has adopted an Environment Sustainability Policy.

Objectives

To incorporate sustainable practices like optimisation of material use, promoting water and energy conservation, waste management, no plastic use.

To establish a Teaching-Learning and Research environment conducive to safe and sustainable future by including sustainability related topics in academic programmes and research.

To create an institutional culture which supports sustainable thinking by encouraging HEI stakeholders (students, faculty, non-teaching staff, civil society) to embrace green life styles, sustainability principles and practices.

To foster a culture of sustainability via advocacy to and engagement of the immediate stakeholders (students, staff) and promote beyond campus environment awareness programs for civil society.

To ensure voluntary participative implementation of sustainability practices by the HEI stakeholders through adherence to the principles of REDUCE, REUSE, RECYCLE, REPAIR, REPORT to the best possible extent.


Director
Internal Quality Assurance
Cell 0844 1397 0000
Old, Nagpur (I.S.)




Principal
Jyoti Vihar Mahavidyalaya
Durgam (Thane Road)
Old, Nagpur (I.S.)

AMD Policies



ANTYODAY MISSION

JEEVAN VIKAS MAHAVIDYALAYA, DEVGRAM

BIODIVERSITY POLICY

Jeevan Vikas Mahavidyalaya, Devgram, a renowned HEI, recognizes that conserving biodiversity is in long term interest of our mission and society at large. Towards this, the HEI shall strive to identify and implement appropriate actions within our departments/units and supply-chains and work with our stakeholders. This will be achieved through implementation of biodiversity management framework that is aligned with the provisions of the Convention on Biological Diversity¹ (CBD, 1992).

In order to achieve the above in all countries relevant for our operations, we shall endeavor, through the Sustainable framework to:

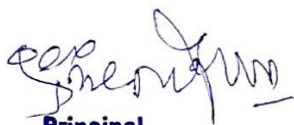
1. Maintain legal compliance to biodiversity-related laws and regulations;
2. Assess risks to biodiversity and associated ecosystem services from existing and planned activities;
3. Strive for *no net loss* of biodiversity at our operated/ owned sites having biodiversity risks;
4. Implement the mitigation hierarchy by avoiding, minimizing, restoring and if necessary offsetting residual impacts on biodiversity;
5. Avoid operating in critical habitats and ecologically sensitive areas;
6. Avoid the introduction of any new potentially invasive, non-native species and seek to eradicate these within our operational sites;
7. Develop and implement Biodiversity Management Plans with clear targets and action plans, to support the conservation of species, habitats and ecosystems in our areas of operation;
8. Identify, engage and collaborate with key biodiversity stakeholders to integrate their knowledge, perceptions and guidance to ensure inclusive biodiversity management;
9. Contribute to the enhancement of biodiversity knowledge in collaboration with experts;
10. Provide appropriate resources to adequately manage biodiversity at our sites; and
11. Monitor, review and assess biodiversity performance against measurable biodiversity targets to drive continuous improvement, and openly communicate the results.

The HEI signs up to this policy or develops an equivalent that shall be implemented throughout its operations.

This policy shall be reviewed periodically for its suitability and updated as necessary.

Place: Devgram
Date: 10/03/2023




Principal
Jeevan Vikas Mahavidyalaya
Devgram (Thugaondeo)
Tah. Narkhed, Dist. Nagpur

¹ <https://www.cbd.int>



ANTYODAY MISSION

JEEVAN VIKAS MAHAVIDYALAYA, DEVGRAM

NOISE POLICY

1. PURPOSE

The purpose of this noise policy is to maintain a conducive learning environment on campus by minimizing noise disturbances. This policy applies to all students, faculty, staff, and visitors within the college premises.

2. SCOPE

This policy covers all areas within the college campus, including classrooms, libraries, study areas, common areas, dormitories, and outdoor spaces.

3. GENERAL GUIDELINES

- **Quiet Hours:** Quiet hours are enforced from [specific time, e.g., 10:00 PM to 6:00 AM] daily. During this time, noise should be kept to a minimum in all areas, especially in residential and study areas.
- **Classrooms & Laboratories:** All forms of disruptive noise (e.g., loud talking, music, mobile phones) are prohibited during class sessions and laboratory activities. Mobile phones should be set to silent or vibrate mode.
- **Libraries & Study Areas:** Absolute silence is expected in libraries and designated study areas. Any form of noise, including conversations, phone calls, and loud keyboard typing, should be avoided.
- **Outdoor Spaces:** Noise levels in outdoor spaces should be kept at a moderate level, particularly near classrooms, administrative buildings, and study areas. Events or activities that may generate high noise levels should be pre-approved by the administration.
- **Special Events:** For special events (e.g., festivals, sports days), noise levels may exceed the usual limits but must be pre-approved by the administration. These events should be scheduled and communicated in advance to minimize disruption.

4. ENFORCEMENT & COMPLIANCE

- **Reporting:** Any concerns or violations of this noise policy should be reported to the Principal or campus security.

- **Consequences:** Violations of this policy may result in warnings, fines, or other disciplinary actions as deemed appropriate by the college administration.

5. EXCEPTIONS

Any exceptions to this policy must be pre-approved by the college administration. This includes events or activities that are inherently noisy but are essential for the college's functioning (e.g., maintenance work).

6. REVIEW AND AMENDMENTS

This policy will be reviewed annually by the college administration and updated as necessary to reflect changes in campus needs and community standards.

7. CONTACT INFORMATION

For questions or concerns regarding this policy, please contact [Dr. Raju Shrirame, Vice Principal @ jvmthugaondeo@gmail.com, 7620881729].

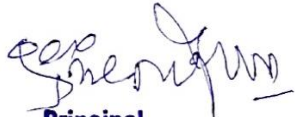
The HEI signs up to this policy and shall be implemented throughout its operations.

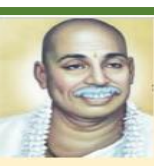
This policy shall be reviewed periodically for its suitability and updated as necessary.

Place: Devgram

Date: 10/03/2023




Principal
Jeevan Vikas Mahavidyalaya
Devgram (Thugaondeo)
Tah. Narkhed, Dist. Nagpur



कार्यालय

ग्राम पंचायत देवग्राम

तह. नरखेड, जि. नागपूर - ४४१३०१ (महाराष्ट्र)

सौ. पायल नी. गडेकर

सरपंच

श्री. देवेन्द्र वा. लोहे

उपसरपंच

कु. विजया अ. तिजारे

सचिव

जावक क्रमांक: ग्रा.प.दे. 123/2019

दिनांक: 30/04/2019

CERTIFICATE OF APPRECIATION

We sincerely thank Jeevan Vikas Mahavidyalaya, Devgram for participating and implementing Solid Waste Management.

The College, Jeevan Vikas Mahavidyalaya, Devgram has implemented Solid Waste Management in an environment friendly manner and diverted 120 Kg of solid waste from landfill to recycling during the year 2018-2019.

Let us continue to recycle waste and save environment.

Place: Devgram

Date: 30/04/2019



विजया अ. तिजारे
सचिव
ग्राम पंचायत देवग्राम
पं.स.नरखेड, जि.प.नागपूर



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कु. विजया अ. तिजारे

सचिव

जावक क्रमांक: ग्रा.प.दे./316/2020

दिनांक: 30/04/2020

CERTIFICATE OF APPRECIATION

With pleasure, we certify that the College, Jeevan Vikas Mahavidyalaya, Devgram, Tah. Narkhed, Dist. Nagpur participated in Solid Waste Management drive in the academic session 2019-2020.

The College, Jeevan Vikas Mahavidyalaya, Devgram has collected 170 Kg of Solid Waste from various locations in Devgram with the help of students in an environment friendly manner and diverted it to recycling.

We highly appreciate their participation and contribution in this eco-friendly activity and hope to co-operate in future, too.

Place: Devgram

Date: 30/04/2020



विजया अ. तिजारे
सचिव
ग्राम पंचायत देवग्राम
पं.स.नरखेड, जि.प.नागपूर



कार्यालय

ग्राम पंचायत देवग्राम

तह. नरखेड, जि. नागपूर - ४४१३०१ (महाराष्ट्र)

सौ. पायल नी. गडेकर
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उपसरपंच

कु. विजया अ. तिजारे
सचिव

जावक क्रमांक: ग्रा.प.दे./564/2021

दिनांक: 30/04/2021

CERTIFICATE OF APPRECIATION

This is to certify that the College, Jeevan Vikas Mahavidyalaya, Devgram, Tah. Narkhed, Dist. Nagpur with the help of students collected 156 Kg of Solid Waste from the Devgram and nearby community in an environment friendly manner and diverted it to recycling in the academic session 2020-2021.

We highly appreciate their participation and contribution in this Solid Waste Management drive.

Place: Devgram

Date: 30/04/2021





कार्यालय

ग्राम पंचायत देवग्राम

तह. नरखेड, जि. नागपूर - ४४१३०१ (महाराष्ट्र)

सौ. पायल नी. गडेकर
सरपंच

श्री. देवेन्द्र वा. लोहे
उपसरपंच

कु. विजया अ. तिजारे
सचिव

जावक क्रमांक: ग्रा.प.दे./889/2022

दिनांक: 30/04/2022

CERTIFICATE OF APPRECIATION

This certificate of Appreciation is issued to the Principal, Jeevan Vikas Mahavidyalaya, Devgram, Tah. Narkhed, Dist. Nagpur for participating and implementing in Solid Waste Management.

The College, Jeevan Vikas Mahavidyalaya, Devgram has participated and implemented in Solid Waste Management drive with the help of college students and diverted 165 Kg of solid waste from landfill to recycling during the year 2021-2022.

Place: Devgram

Date: 30/04/2022



सचिव
ग्राम पंचायत देवग्राम
पं.स.नरखेड, जि.प.नागपूर



कार्यालय

ग्राम पंचायत देवग्राम

तह. नरखेड, जि. नागपूर - ४४१३०१ (महाराष्ट्र)

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कु. विजया अ. तिजारे

सचिव

जावक क्रमांक: ग्रा.प.दे./1013/2023

दिनांक: 30/04/2023

CERTIFICATE OF APPRECIATION

I am happy to certify that the College Jeevan Vikas Mahavidyalaya, Devgram, Tah. Narkhed, Dist. Nagpur during the academic session 2022-2023 participated in Solid Waste Management drive.

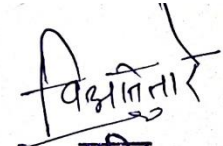
The College collected 162 Kg of Solid Waste from the community and to recycling and helped in the protection of environment. We highly appreciate their participation and contribution in this social service.

Hence, this Certificate is issued.

Place: Devgram

Date: 30/04/2023




सचिव
ग्राम पंचायत देवग्राम
पं.स.नरखेड, जि.प.नागपूर

