



Green Audit Report

Shri Dadasaheb Gawai Charitable Trust

Ramkrushna Mahavidyalaya Darapur

Darapur, Taq. Daryapur,
Distt., Amravati, Maharashtra 444803, India



(For the AY 2020-21)

Prepared by

AiM Sustainability Services

Pune



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Green Audit Assessment Team would like to express grateful thanks to the management of Ramkrushna Mahavidyalaya Darapur, for assigning this important work of Green Audit. We appreciate the cooperation of our Team for completion of study. Our special thanks to

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

We sincerely hope and believe that the efforts made by the present Green Audit Committee will be helpful for Ramkrushna Mahavidyalaya Darapur, and we hope that it becomes a responsibility of all the stakeholders of this college campus to follow the proposed management plan suggested in the report to reduce our impact on our environment.



Picture 01: Ramkrushna Mahavidyalaya Darapur

Green Audit Team

Dr. Anuradha Borekar: The evaluation of criteria as per chapter 7 of “National Assessment and Accreditation Council (NAAC) - Manual for Affiliated/Constituent UG & PG Colleges, December 2021 and Chapter VII of “Guidelines for the Creation of the Internal Quality Assurance Cell (IQAC) and Submission of Annual Quality Assurance Report (AQAR) by Accredited Institutions” is done by Dr. Anuradha. Dr. Anuradha also examined the “performance indicators of Green Audit & Green Audit Parameters/ Projects performed” as a Lead Auditor from AIMSS. She performed several Green Campus audit at various academic institute as per NAAC guideline. Dr. Anuradha secured the M.Phil. (Botany, Molecular Biology, Biotechnology and plant breeding), Ph.D. (Water quality assessment, Water conservation, Biodiversity and Environment).

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Disclaimer

Green Audit Team has prepared this report for Ramkrushna Mahavidyalaya Darapur, based on input data submitted by the representatives of Institute. Complemented the report with the best judgment capacity of the expert team. While all reasonable care has been taken in its preparation, details contained in this report have been compiled in good faith based on information gathered. It is further informed that the calculations are arrived following best estimates and no representation, warranty or undertaking, express or implied is made and no responsibility is accepted by Audit Team in this report or for any direct or consequential loss arising from any use of the information, statements, or forecasts in the report.

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Abbreviations

AHU: Air Handling Unit

BEE: Bureau of Energy Efficiency

CFL: Compact Fluorescent Lamp

COP: Coefficient of Performance

CPCB: Central Pollution Control Board

DG: Diesel Generator

ECRM: Energy Consumption Reduction Method

EF: Emission Factor

HSD: High Speed Diesel

HOD: Head of Department

HVAC: Heating, Ventilation, And Air Conditioning

ISO: International Standardisation Organisation

Km: Kilometer

kV: kilo Volt

kW: kilo Watts

Lab: Laboratory

LED: Light-Emitting Diode

MNRE: Ministry of New and Renewable Energy

MSEDCL: Maharashtra State Electricity Distribution Co. Ltd.

NSS: National Service Scheme

UGC: University Grant Commission

WHO: The World Health Organization

TR: Tons of Refrigeration



Executive Summary

In accordance with the requirement of chapter 7 of “National Assessment and Accreditation Council (NAAC) - Manual for Affiliated/Constituent UG & PG Colleges, December 2021” Risk-Based Audit conducted at Ramkrushna Mahavidyalaya Darapur, for Academic year 2020-21. Site Visit to perform the green audit at college was done in April 2022. The purpose of the audit was to ensure that the practices followed in the campus are in accordance with the Green Policy adopted by the institution. With this in mind, the specific objectives of the audit were to evaluate the adequacy of the management control framework of Environment Sustainability as well as the degree to which the Departments are in compliance with the applicable regulations, policies and standards. During the initial planning of the audit, an analysis was conducted in order to identify, evaluate and prioritize the risks associated with the environmental sustainability. The analysis was based upon an examination of the policies, supportive documents that govern the environmental sustainability, on data analysis, and on the results of preliminary interviews with personnel considered key in the environmental management in the campus. The criteria and methods used in the audit were based on the identified risks. The methodology used included physical inspection of the campus, review of the relevant documentation, and interviews.

Statement of Assurance

This audit has been conducted in accordance with the NAAC Green Audit requirement. In our professional judgement, sufficient and appropriate audit procedures were completed, and evidence gathered to support the accuracy of the conclusions reached and contained in this report. The conclusions are based on a comparison of the situations as they existed at the time of the audit with the established criteria. Green Audit Report is prepared for the academic session 2020-21.

Summary of Findings

The main findings of the audit show that, in general, all the departments and students are aware about the need for environmental protection at a general level. It was also observed that a number of best practices such as maintaining potted plants, rain water harvesting system, waste management (compost pit), water management, application of day light, cross ventilation, gender equity, health checkup plan, blood donation camp, vaccination camp, Divyangjan student facility, carpooling, biodiversity plantation, e-waste disposal, etc. are followed in the campus. Nevertheless, on detailed review, it was observed that, as the college is continued implementing Green Policy, several best practices are in pipeline. In addition, certain processes could benefit from further review in order to improve their efficiency, and consistency. This report explained the opportunity for improvement. Please refer chapter 5 for more details.



Chapter 01: Introduction

About the College:

Ramkrushna Mahavidyalaya, Darapur established in June 2000 has made considerable progress towards the achievement of the goal of the Higher Education which includes Contribution in curricular development, teaching learning process ,infrastructural development, supportive aspects to the students , create awareness and willingness for the higher education among the rural, destitute, deprived and downtrodden sections of the society .This shows that the Management have smooth governance and leadership qualities and the staff of the college has long sight and set goals to achieve target. The mission undertaken by the parent trust Shri Dadasaheb Gawai Charitable Trust, Amravati was to strive for the realization of the goals laid down by Dr. B.R.Ambedkar, the great visionary and the father of Indian Constitution. The institution owes its existence to the vision and the foresight of His Excellency Hon'ble Shri R.S. alias Dadasaheb Gawai, Ex. Governor of Kerala and Bihar State who inspires us all to seek perfection in our entire endeavor. All the institutions which were started by the Trust seeks to fulfill the goal of providing higher education to students belonging to the socially and the economically backward classes of the society.

The main objective of our institution is to uplift and encourage the poor, downtrodden and the needy students. The blessings bestowed by Shri Dadasaheb Gawai and the devotion, determination and the perseverance shown in completing the goals by the Founder President of the Trust and the Ex .First Lady of Kerala State, Dr. Sau Kamaltai R., Gawai, have culminated in the establishment of this College. Along with the president of the Society and the Administrative officer take stern effort to achieve the desired goal laid by the management.

The College strives hard to realize its goals and objectives. Like other institutions, we too combine our curricular activities with extra-curricular activities. Our students regularly participate in athletic meets and University tournaments. Extension activities like the N.S.S.generate a lot of interest amongst the students. Our student volunteers have been participating in the camps held both by the College and by the University and other institutions both within and outside the state. It is our objective to nurture the talents of some of these students and make them realize the importance of social and voluntary work amongst the poor and the marginalized sections of the society.

Reference http://rmvdar.co.in/?page_id=8

About Trust :

The Trust provides qualitative and invaluable service in the field of Education, especially for the poor and the down trodden classes of the society. The Trust was started by our Hon'ble Patron, Shri. R. S. Gawai. Today the Dadasaheb Gawai Charitable Trust runs 40 Institutions, from Primary schools to colleges. The Ramkrushna Mahavidyalay has sufficient Infrastructural facilities and well qualified teaching faculty. The College is committed to the development of the student's in academics as well as personality and therefore conducts social activities like Meditation Camps and Awareness Drives for Family Planning, Employment for Rural Youth, Diagnostic Camps and Computer education for the poor. Guidance Center for Competitive Examinations and schools for Physical Education in rural areas are also run by the Trust.

Reference: <http://rmvdar.co.in/#>



Principal Desk



Prof. Y.V. Harne

Principal

Governed by Shri Dadasaheb Gawai Charitable Trust Amravati, Ramkrushna Mahavidyalaya Darapur has got Religious Minority Status by Govt. of Maharashtra. With the stern efforts of visionary Leader Shri Dadasaheb Gawai the institution came into being in the year 2000 to uplift and enhance the academic status of the rural and downtrodden students. In the words of Dalai Lama, "When educating the minds of our youth, we must not forget to educate their hearts". Keeping in tune with, we focus on discovering, developing and drawing out the hidden talents dormant in students. From academics to co-curricular activities, perseverance and a never-say-die spirit are entrenched in the heart of every student not only making them good students but educated and active social human beings. In today's dynamic world overall development and technological and advanced skilled grooming is of supreme importance and through our campus and various activities we are creating an environment for future leaders, entrepreneurs and professionals who possess skills and aptitudes.

Our institution has taken a leading role in creating thrust for knowledge among the rural students by imbuing in them value based education synergized with modern ICT based teaching-learning methods to produce well informed and emotionally sound generation. We are very positive that in times to come we will continue this journey with elevated enthusiasm and will persistently provide a platform of holistic learning to the young generation of learners. We spare no efforts to make the educational experience of our students meaningful and relevant to the socio-economic needs of the times and to equip our youth to face the challenges. Skill development courses like B.Voc in Food Processing and Preservation and B.Voc in Tourism and Travel management paves the new avenues in the sector of self employment.

Staff members of the Ramkrushna Mahavidyalaya Darapur strive to focus on each and every student, monitor and mentor them, appreciate their achievement and encourage them to overcome their shortcomings which assists to create appropriate, meaningful and participative learning situations, inculcating life skills among them and made them able to lead the society.

Reference http://rmvdar.co.in/?page_id=12



Chapter 02: Green Audit

The process of assessing the environmental impact of an organization, process, project, product, etc. Green Audit can be defined as systematic identification, quantification, recording, reporting and analysis of components of environmental diversity. The “Green Audit” aims to analyze environmental practices within and outside the college campus, which will have an impact on the eco-friendly ambience. It was initiated with the motive of inspecting the work conducted within the Institute whose exercises can cause risk to the health of inhabitants and the environment. Green audit can be one of the initiatives for such institutes to account their “*energy conservation, water resource use as well as wastewater, E-waste, solid waste generation, biodiversity, rain water harvesting, waste recycling (solid/liquid waste management, e-waste management), carbon neutral, green practices, social aspects*”. Green Audit process can play an important role in promotion of environmental awareness and sensitization about resource use. It can create consciousness towards ecological values and ethics. Through Green Audit, one gets a direction as how to improve the condition of environment and society.

The National Assessment and Accreditation Council (NAAC), which is an autonomous body funded by the University Grants Commission of Government of India, has made ‘Environmental Consciousness’ mandatory criterion (Criterion VII) for grading educational institutes.

NAAC criteria VII Environmental Consciousness:

Universities are playing a key role in development of human resources worldwide. Higher education institutes campus run various activities with aim to percolate the knowledge along with practical dimension among the society. Likewise, different technological problems higher education institutes also try to give solution for issues related to environment. Different types of evolutionary methods are used to assess the problem concerning environment. It includes Environmental Impact Assessment (EIA), Social Impact Assessment (SIA), Carbon Footprint Mapping, Green audit etc. National Assessment and Accreditation Council (NAAC) which is a self-governing organization that declares the institutions as Grade according to the scores assigned at the time of accreditation of the institution. Green Audit has become mandatory procedure for educational institutes under Criterion VII of NAAC. The intention of green audit is to upgrade the environmental condition inside and around the institution. It is performed by considering environmental parameters like water and wastewater accounting, energy conservation, waste management, air, noise monitoring etc. for making the institution eco-friendlier. Students are the major strength of any academic institution. Practicing green actions in any educational institution will inculcate the good habit of caring natural resources in students. Many environmental activities like plantation and nurturing saplings and trees, Cleanliness drives, Bird watching camps, no vehicle day, Rainwater harvesting, etc. will make the students good citizen of the country. Through Green Audit, higher educational institutions can ensure that they contribute towards the reduction of Global warming through Carbon Footprint reduction measures.



Goals of Green audit:

Institute has conducted a green audit with specific goals as:

- Identification and documentation of green practices followed by Institute
- Identify strength and weakness in green practices
- Conduct a survey to know the ground reality about green practices
- Analyze and suggest solution for problems identified from survey
- Assess facility of different types of waste management
- Increase environmental awareness throughout campus
- Identify and assess environmental risk
- Motivates staff for optimized sustainable use of available resources
- The long-term goal of the environmental audit program is to collect baseline data of environmental parameters and resolve environmental issue before they become problem

Scope of Work:

The purpose of the audit is to ensure that the practices followed in the campus are in accordance with the Green Policy adopted by the institute. With this in mind, the specific objectives of the audit were to evaluate the adequacy of the management control framework of Environment and Social Sustainability as well as the degree to which the Institute are in compliance with the chapter 7 of "*National Assessment and Accreditation Council (NAAC) - Manual for Affiliated/Constituent UG & PG Colleges*". Therefore, the main objective of this green audit is to get a third-party verification on the quality of various natural / social aspect and to evaluate the opportunities of improvement, possible best practices.

Objectives:

The main objective of this green audit is to assess the environmental quality and the management strategies being implemented in the campus. The specific objectives are:

- To identify and analyze significant environmental issues.
- To monitor environmental management practices.
- To examine the current practices that can impact the environment.
- To create awareness among the various stakeholders of the Institute.
- To prepare a Green Audit Report on green practices followed by different Departments, support services and administration
- To prepare a checklist of flora and fauna diversity in and around the college campus.
- To find out various sources of organic and solid waste generation and mitigation possibilities.
- To suggest sustainable energy usage and water conservation practices.
- Continuous assessment for betterment in performance in green practices and its evaluation.



Methodology

To perform green audit, the methodology included different techniques such as physical inspection of the campus, observation and review of the documentation, interviewing key persons and data analysis, measurements and recommendations. The study covered the following area to summaries the present status of environment and social management in the campus:

- Onsite field visits were conducted by the Green Audit Team
- Enquiries were conducted amongst different stakeholders to know about the various components in connection with water use, energy consumption and waste disposal, biodiversity, renewable energy use, carbon footprint, social aspects etc.
- The water quality analysis was done using standard protocols
- Air quality analyses of the college campus were carried out using standard protocol
- The noise levels were measured using a Sound Level Meter at selected sampling stations during the day time within the campus
- Lux measurement was done at the classroom, library, offices and laboratories
- Electricity consumption and management
- Waste management
- Biodiversity status of the campus



Chapter 03: Target Areas of Green Audit

Environmental Aspects:

1. Water

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

Water assessment can be defined as a qualitative and quantitative analysis of water consumption to identify means of reducing, reusing and recycling of water. Water assessment is nothing but an effective measure for minimizing losses, optimizing various uses and thus, enabling considerable conservation of water in irrigation sector, domestic, power and industrial as well. A water assessment is a technique or method which makes possible to identify ways of conserving water by determining any inefficiencies in the system of water distribution. The measurement of water losses due to different uses in the system or any utility is essential to implement water conservation measures in such an establishment. Please find below reference for permissible limit of Drinking Water as per Indian Standard DRINKING WATER — SPECIFICATION (Second Revision) ICS 13.060.20

https://cpcb.nic.in/wqm/BIS_Drinking_Water_Specification.pdf

Table 1 Organoleptic and Physical Parameters
(Foreword and Clause 4)

Sl No.	Characteristic	Requirement (Acceptable Limit)	Permissible Limit in the Absence of Alternate Source	Method of Test, Ref to Part of IS 3025	Remarks
(1)	(2)	(3)	(4)	(5)	(6)
i)	Colour, Hazen units, <i>Max</i>	5	15	Part 4	Extended to 15 only, if toxic substances are not suspected in absence of alternate sources
ii)	Odour	Agreeable	Agreeable	Part 5	a) Test cold and when heated b) Test at several dilutions
iii)	pH value	6.5-8.5	No relaxation	Part 11	—
iv)	Taste	Agreeable	Agreeable	Parts 7 and 8	Test to be conducted only after safety has been established
v)	Turbidity, NTU, <i>Max</i>	1	5	Part 10	—
vi)	Total dissolved solids, mg/l, <i>Max</i>	500	2 000	Part 16	—

NOTE — It is recommended that the acceptable limit is to be implemented. Values in excess of those mentioned under 'acceptable' render the water not suitable, but still may be tolerated in the absence of an alternative source but up to the limits indicated under 'permissible limit in the absence of alternate source' in col 4, above which the sources will have to be rejected.

2. Air

Air quality in the academic institute is very important for the health of the students, faculty and staff of the institute. The air pollution sources in the college campus are wind, storm, pollen grains, natural dust, vehicular emissions, fire and laboratory fumes etc. Therefore, air quality assessment in the college campus is necessary.

Reference: https://cpcb.nic.in/uploads/National_Ambient_Air_Quality_Standards.pdf



3. Noise

Noise pollution is unwanted and unpleasant sound which can deteriorate human health and other living organisms present in the Environment. At workplace machines, traffic, vehicles create occupational noise. Employees and occupants are exposed to this harmful noise. Due to this occupant can face many health problems such as headache, hearing impairment, hypertension, heart problem, annoyance and sleep disorder. Noise Pollution Monitoring process is a part of Environmental Monitoring & Testing as noise pollution is also increasing exponentially in recent years. Noise intensity distracts the day today working in college campus. Noise intensity is measured in dB. Permission limit as CPCB and WHO guideline is as below.

Reference: <https://cpcb.nic.in/who-guidelines-for-noise-quality/>

In WHO noise quality guidelines, values are summarized with regard to specific environments and effects. For each environment and situation, the guideline values take into consideration the identified health effects and are set, based on the lowest levels of noise that affect health (critical health effect). Guideline values typically correspond to the lowest effect level for general populations, such as those for indoor speech intelligibility. Noise guideline values are for the onset of health effects from noise exposures.

Specific Environment	Time Base (hours)	Standard limits as per WHO guidelines	
		LAeq [dB]	LAm _{ax} , fast [dB]
School class rooms and pre-schools, indoors	During class	35	-
School, playground outdoor	During play	55	-

4. Energy

Consumption of energy helps in understanding the success towards green environment. Lesser the consumption of energy more contribution the environment is. Electricity can be used efficiently by replacing CFL bulbs and tube lights with LED lamps and fluorescent tubes wherever possible and use of LED screens in place of CRT. Star rated Air conditioners should be placed in place of old air conditioners. Efficiency of air conditioners should be increased by minimizing the leakage using through open doors and cupboards of the room. Infrastructural changes that allow maximum natural light but minimizes heat in-grace help in reducing the use of electricity. Simple practices like cleaning skylights and lamps will increase the luminosity. There should not be any idle energy consumption.

This indicator addresses energy consumption, energy sources, energy monitoring, lighting, appliances and vehicles. Energy use is clearly an important aspect of campus sustainability.

The Standards & Labeling Programme is one of the major thrust areas of BEE. A key objective of this scheme is to provide the consumer an informed choice about the energy saving and thereby the cost saving potential of the relevant marketed product. The scheme targets display of energy performance labels on high-energy end-use equipment & appliances and lays down minimum energy performance standards.

Presently, S&L program covers star rating for 26 appliances/equipment. List of the appliances covered under the ambit of Star Labeling is as given below:

Reference: <https://beeindia.gov.in/content/standards-labeling>



For Lighting systems in schools

Reference: https://www.partnershipsforschools.org.uk/documents/Design/SSLD_4_Lighting_systems.pdf

5. Carbon Footprint

Carbon footprint is the total amount of Green House Gases (GHGs) emitted in terms of carbon dioxide by a person, institute, company, state or country. Carbon footprint is typically given in tons of CO₂ equivalent per year. For calculation of carbon footprint the basic data regarding direct and indirect sources of emission of Green House Gases is needed. How we get around and commute to and from college each day has an impact on the environment through the emission of greenhouse gases into the atmosphere by the burning of fossil fuels (such as petrol). The most common greenhouse gases are carbon dioxide, water vapor, methane, nitrous oxide and ozone. Of all the greenhouse gases, carbon dioxide is the most prominent greenhouse gas, comprising 402 ppm of the Earth's atmosphere. The release of carbon dioxide gas into the Earth's atmosphere through human activities is commonly known as carbon emissions

Reference: <https://www.carbonfootprint.com/> and <https://ghgprotocol.org/standards>

Emission factor reference:

CEA: <https://cea.nic.in/cdm-co2-baseline-database/?lang=en>

DEFRA: <https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021>

6. Waste Management

This indicator addresses waste production and disposal of different wastes like paper, food, plastic, glass, dust etc. Furthermore, solid waste often includes wasted material resources that could otherwise be channeled into better service through recycling, repair and reuse. Solid waste generation and management is a burning issue. Unscientific handling of solid waste can create threats to everyone. The present Prime Minister of India Sri Narendra Modi launched 'Swachh Bharat Abhiyan' (Clean India Mission) on 2nd October 2014. In this mission, the proper use of dust/waste bins is one of the major priorities. For the implementation of this mission, collective mass effort is necessary. For proper segregation and management, proper use of waste bins is the only solution for waste management purpose in the college campuses.

E waste management reference: https://cpcb.nic.in/uploads/Projects/E-Waste/e-waste_amendment_notification_06.04.2018.pdf

<https://mpcb.gov.in/waste-management/electronic-waste>

Solid waste management reference:

<https://www.mpcb.gov.in/waste-management/municipal-solid-waste>

https://www.mpcb.gov.in/sites/default/files/solid-waste/msw_rules_2016.pdf

Biomedical waste management: <https://mpcb.gov.in/waste-management/biomedical-waste>



7. Green Belt/ Biodiversity status

To conserve this biodiversity, our first need is to learn about the existing diversity of the place. Unless we know whom to conserve, we will not be able to plan proper conservation initiatives. Also, it is important to understand the biodiversity of an area so that the local people can be aware of the richness of biodiversity of the place they are living in and their responsibility to maintain that richness.

This study allows us to understand the faunal and floral diversity of the surrounding areas of the college premises and their interrelationship

Reference: <https://www.worldwildlife.org/pages/what-is-biodiversity>

Biodiversity is all the different kinds of life you'll find in one area—the variety of animals, plants, fungi, and even microorganisms like bacteria that make up our natural world. Each of these species and organisms work together in ecosystems, like an intricate web, to maintain balance and support life. Biodiversity supports everything in nature that we need to survive: food, clean water, medicine, and shelter.

8. Social Aspects

“Social Auditing is a process that enables an organization to assess and demonstrate its social benefits and limitations. It is a way of measuring the extent to which an organization lives up to the shared values and objectives it has committed itself to. Social auditing provides an assessment of the impact of an organization’s non-financial objectives through systematically and regularly monitoring its performance and the views of its stakeholders.”

A. Health and Safety

The very purpose of greening of educational campuses is to ensure that the students study and grow up in a healthy environment, giving out the best of their physical and intellectual contributions to the society. The method for assessing the physical wellbeing of the educational institution has been decided as follows:

- i. Examine the prevalence of sickness leave, if there are any.
- ii. Examine the first aid and medical facilities available for resident students and staff.
- iii. Evaluate the atmospheric quality, drainage systems and land pollution – if any within the campus; and Assess the achievements of students in sports and games, especially in inter collegiate and inter-Institute contests.

https://www.ugc.ac.in/pdfnews/4006064_Safety-of-Students-Guidelines.pdf

https://www.education.gov.in/sites/upload_files/mhrd/files/SOP_Guidelines_for_reopening_schools.pdf

https://www.ugc.ac.in/pdfnews/4613471_Guidelines.pdf

B. Accessibility to Divyangjan and Gender Justice

Right of Persons with Disabilities Act, 2016 prohibits discrimination against individuals with physical and mental disabilities. Institute shall be is against all kinds of discrimination on any grounds including disability. Institute shall intend to advance a comprehensive and inclusive teaching and learning environment in which incapacitated students and employees are not distraught or treated unfavorably. The institute must aim to design its programs, administrations, and activities accessible to the students. All the authorities of the institute shall strive in order to extend a help hand towards the differently abled so as to make sure about the Benefits of grounds programs, administrations, and activities.



- Institute shall have Inclusive Culture to avoid discrimination, exploitation and exclusion of Disable Students and Staff from all spheres of work and education.
- Institute shall create suitable regulatory mechanism for effective delivery of services to Disable Students and Staff of the institute
- Institute shall ensure implementation of all legislations with respect to persons with disabilities. Toprovide accessible and inclusive education at the institute.
- Institute shall ensure full participation of persons with disabilities and to provide them the equal opportunities for development.
- Institute shall provide necessary budget allocation to achieve above objectives.

Reference: https://www.ugc.ac.in/pdfnews/1604485_person-with-disabilities-Uni.pdf

https://www.ugc.ac.in/pdfnews/7348678_Guidelines_Exam-Divyangjan-JAN-2019.pdf

<https://disabilityaffairs.gov.in/content/page/guidelines.php>

<https://disabilityaffairs.gov.in/upload/uploadfiles/files/Corrigendum-08-02-19.pdf>

https://disabilityaffairs.gov.in/upload/uploadfiles/files/Guidelines-29_08_2018.pdf

https://upload.indiacode.nic.in/showfile?actid=AC_CEN_25_54_00002_201649_1517807328299&type=notification&filename=Guidelines%20notification_04.01.2018.pdf



Gender Justice:

Reference: <https://www.un.org/sustainabledevelopment/gender-equality/>



Goal 5: Achieve gender equality and empower all women and girls

Gender equality is not only a fundamental human right, but a necessary foundation for a peaceful, prosperous and sustainable world.

There has been progress over the last decades: More girls are going to school, fewer girls are forced into early marriage, more women are serving in parliament and positions of leadership, and laws are being reformed to advance gender equality. Despite these gains, many challenges remain: discriminatory laws and social norms remain pervasive, women continue to be underrepresented at all levels of political leadership, and 1 in 5 women and girls between the ages of 15 and 49 report experiencing physical or sexual violence by an intimate partner within a 12-month period. The effects of the COVID-19 pandemic could reverse the limited progress that has been made on gender equality and women's rights. The coronavirus outbreak exacerbates existing inequalities for women and girls across every sphere – from health and the economy, to security and social protection. Women play a disproportionate role in responding to the virus, including as frontline healthcare workers and carers at home. Women's unpaid care work has increased significantly as a result of school closures and the increased needs of older people. Women are also harder hit by the economic impacts of COVID-19, as they disproportionately work in insecure labour markets. Nearly 60 per cent of women work in the informal economy, which puts them at greater risk of falling into poverty. The pandemic has also led to a steep increase in violence against women and girls. With lockdown measures in place, many women are trapped at home with their abusers, struggling to access services that are suffering from cuts and restrictions. Emerging data shows that, since the outbreak of the pandemic, violence against women and girls – and particularly domestic violence – has intensified.



Chapter 04: Audit Framework and detailed findings

Audit Framework and detailed findings

The following audit framework is used for conducting Green Audit in 2020-2021. The framework also lists the findings and observations for every criterion

Checklist Question	Assessment																								
Organizational Level Efforts																									
Do you have a campus green team?	<p>Yes, Environment Conservation and Protection Committee is available on below link</p> <p>http://rmvdar.co.in/?page_id=595</p> <table border="1"> <thead> <tr> <th>S.N</th> <th>Name</th> <th>Designation</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Prof. Y.V. Harné</td> <td>Chairperson</td> </tr> <tr> <td>2</td> <td>Dr.S.N.Dandage</td> <td>Member</td> </tr> <tr> <td>3</td> <td>Mr.G.H.Pande</td> <td>Member</td> </tr> <tr> <td>4</td> <td>Mr.C.S.Ingole</td> <td>Member</td> </tr> <tr> <td>5</td> <td>Mr. P. W. Mhaske</td> <td>Member</td> </tr> <tr> <td>6</td> <td>Dr. P.W. Khedkar</td> <td>Member</td> </tr> <tr> <td>7</td> <td>Mr. A. D. Gawande</td> <td>Member</td> </tr> </tbody> </table>	S.N	Name	Designation	1	Prof. Y.V. Harné	Chairperson	2	Dr.S.N.Dandage	Member	3	Mr.G.H.Pande	Member	4	Mr.C.S.Ingole	Member	5	Mr. P. W. Mhaske	Member	6	Dr. P.W. Khedkar	Member	7	Mr. A. D. Gawande	Member
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Have you established an environmental mission/vision for your campus?	<p>Vision:</p> <hr/> <p>To impart skill based qualitative and invaluable service in the field of education to the poor and rural backward class student of the society.</p> <p>Mission:</p> <hr/> <ul style="list-style-type: none"> To enhance and upgrade Buddhist minority section of society. To accomplish the overall personality development of the students through extra and co-curricular activities in cooperation with various social and cultural organization. To enhance the downtrodden and rural section of the society through the instrument of education ,health and employment . To create a society with does not discriminate anyone on the basis of caste, religion ,color or gender. To provide a platform to the students by giving them an opportunity to face all challenges of a skillful competitive world. <p>Goals and Objectives</p> <hr/> <ul style="list-style-type: none"> To provide affordable education to rural minority Section. To help in the development of backward area through social and management expertise. 																								



	<ul style="list-style-type: none"> • To foster the development of marginalized section of the society. • To provide employment opportunities to students through a sustainable global education. • To upgrade and enhance skill of the rural students. <p>Reference http://rmvdar.co.in/?page_id=9</p>
<p>Have you set environmental goals for your campus?</p>	<p>Yes, audit team verified the Green Campus Goals, which includes below</p> <p>During discussion with Green Committee, we noted below upcoming initiatives</p> <ol style="list-style-type: none"> 1] Solid Waste management 2] E-waste management 3] Installation of Solar P.V module 4] 100 % coverage of Drip Irrigation for all plantation places in campus 5] Indore plantation 6] Development of Lawn and Garden in various places in Campus
<p>Do you encourage sustainable behavior via?</p> <ul style="list-style-type: none"> ➤ education campaigns? ➤ Poster, placard, message, stickers ➤ contests? ➤ awards? 	<p>Institute took several initiatives under NSS program like plantation, cleanliness campaign. NSS team organizes the plantation program every year.</p> <p>Audit team observed the messages like “switch off light when not in use” ,Posters showing the importance of water, trees and clean environment at various location.</p>



	<p>Institute has received awards and cognization from Grampanchayat, Darapur in 2021 for cleanliness campaign conducted by NSS students.</p> <p>Please refer annexure for the awards secured by Institute.</p>
<p>Are sustainability concepts and environmental literacy integrated across disciplines? between the environment, society?</p>	<p>Yes, the institute is quite aware of its role and responsibility towards the environmental consciousness.</p> <p>Efforts towards green practices in the campus</p> <ul style="list-style-type: none"> • Students, staff using Bicycles Most of the students are belongs to the rural and have poor economic background. Most of the students use bicycle to attained the college. As the distance of the college from the nearby villages is within the periphery of to seven kms. As far as the staff members are concern no one use bicycle • Public Transport- College made the facility of the state transport Bus which is available on the schedule of the college. • Pedestrian friendly roads- Arrangements of the roads are available with the supervision of the PWD of the division. • Plastic free campus- Plastic Glasses and the Plastic bottles are used less in numbers. Fine is penalized on use of the plastic bags in the premises. • Paperless office -With the installation of the office automation software use of paper in the office is reduced. IQAC circulated the messages on WhatsApp group • Green landscaping with tree and plants Green grass and plants are planted in the premises <p>Aiming towards environment consciousness the Institute has executed the following activities at the campus:</p> <ul style="list-style-type: none"> • Tree plantation program is conducted every year under NSS unit. • Compost Pit Construction for solid waste Management.



	<ul style="list-style-type: none"> • The waste water from the water cooler reused to the plants of the garden nearby to the building. • Rainwater Harvesting of Building.
Are staff encouraged to teach sustainability concepts, including the relationship	Yes, Environmental sustainability is the dedicate subject in each stream of education.
What are the environment and social awareness programs conducted in the	<p>Audit team reviewed below awareness program via celebrations of several days by institute under NSS.</p> <ul style="list-style-type: none"> • College organizes expert talk on environment awareness programming conducts Tree Plantation on 13/7/2021 • The unit has seen active participation in all the public campaigns against AIDS and Illiteracy on.12/10/2020 • Formation of “Red Ribbon Club” to create awareness about AIDS on 12/10/2020 • Celebration of Teachers Day on 05/09/2020 by giving awards to best Lecturers. • College has conducts COVID -19 awareness campaign in may-2020 • Distribution of Daily Need Material to the Old Age Home at Walgaon on 13 /07/2021 on occasion of birthday of honorable president of management. • Awareness Campaign about Blood Donation in the neighboring community on Dec -2020 • To create clean and hygienic social premises Waste Free Campaign is conducted from 08/ 08/2020 TO 15 /08/2020 (programmes like campus cleaning, plantation, awareness posters, sanitization, essay writing etc.) <ul style="list-style-type: none"> • To create awareness about the individual rights Human Rights Day is celebrated on 10/12/2020 <p>Please refer annexure for the details above.</p>
Does it include key stakeholders?	<p>Yes, below key stakeholders are recognized by Green campus committee</p> <ul style="list-style-type: none"> • Administration • Staff • Students • Facility manager • Volunteers
Does it meet regularly?	Yes, frequency of meeting is once in year
Is it empowered to recommend projects to campus leadership?	Yes committee, identify the projects and submit the feasibility report to the society management. LED installation project are one of the examples.



Energy Conservation																																														
Have you done an energy audit? (Personal, classroom, campus)	No																																													
Do you track your energy use and cost? (Personal, classroom, campus)	Yes, institute keep the track of monthly electricity bill, LPG cylinder.																																													
	LPG Consumption: LPG – 02 Cylinders – 39 kg for AY 2020-2021 HSD Consumption = 12 lit. HSD for AY 2020-2021																																													
Electricity bill amount for the last year	<p>Electricity bill amount for the last year Rs. 7560 /-</p> <p>Below is the electricity consumption for year 2020-2021</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">Sr. No</th> <th style="width: 60%;">Month</th> <th style="width: 30%;">kWh/month(2020-21)</th> </tr> </thead> <tbody> <tr><td>1</td><td>January</td><td>22 Unit</td></tr> <tr><td>2</td><td>February</td><td>22 Unit</td></tr> <tr><td>3</td><td>March</td><td>22 Unit</td></tr> <tr><td>4</td><td>April</td><td>22 Unit</td></tr> <tr><td>5</td><td>May</td><td>22 Unit</td></tr> <tr><td>6</td><td>June</td><td>22 Unit</td></tr> <tr><td>7</td><td>July</td><td>22 Unit</td></tr> <tr><td>8</td><td>August</td><td>22 Unit</td></tr> <tr><td>9</td><td>September</td><td>22 Unit</td></tr> <tr><td>10</td><td>October</td><td>22 Unit</td></tr> <tr><td>11</td><td>November</td><td>22 Unit</td></tr> <tr><td>12</td><td>December</td><td>22 Unit</td></tr> <tr><td></td><td>Total</td><td>264 Unit</td></tr> <tr><td></td><td>Average-</td><td>22 Unit</td></tr> </tbody> </table>	Sr. No	Month	kWh/month(2020-21)	1	January	22 Unit	2	February	22 Unit	3	March	22 Unit	4	April	22 Unit	5	May	22 Unit	6	June	22 Unit	7	July	22 Unit	8	August	22 Unit	9	September	22 Unit	10	October	22 Unit	11	November	22 Unit	12	December	22 Unit		Total	264 Unit		Average-	22 Unit
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Do you offer energy conservation lessons and programs?	Yes, Environmental sustainability is the dedicate subject in each stream of education.
Do you encourage responsible energy use via? <ul style="list-style-type: none"> ➤ education campaigns? (Lights Off, Power Down, Energy Conservation Month ➤ incentives? ➤ contests? 	Yes, during audit, we observed the, energy saving/ power off stickers. Display of instructions / boards / notices regarding saving electricity consumption in the campus observed. Please refer annexure.
Do you use natural lighting when possible	Yes, audit team observed good application of day light at classroom and laboratories.
Do you use task lighting instead of overhead area lighting?	Mostly day light is used at classroom and laboratories. Energy efficient overhead lights e.g., LED are applied across all classroom and laboratories.
Have you installed lighting occupancy sensors?	There is no location observed, where sensors can be applied. Since day light is widely utilized. Building architect promotes day light application. There is no occupancy sensor installed in the campus.
Do you use natural ventilation/windows when possible?	Yes, all classroom, admin building, library, laboratory, wash rooms, corridor are full of natural ventilation, windows. We observed the cross ventilation across windows. Audit team observed need to improve windows structure in college library to good application of day light for reading.



<p>Have you enabled the power management settings on your computers/monitors/all-in one machines?</p>	<p>Yes, audit team observed that all computers are kept in sleep mode, when not in use, screen savers are disabled, power off label, when not in use.</p>																																								
<p>Do you purchase ENERGY STAR® certified equipment?</p>	<p>Yes, we have seen energy efficient light purchase e.g., LED lamps, energy efficient AC, refrigerators etc.</p> <table border="1" data-bbox="632 622 1445 1064"> <thead> <tr> <th>Room No. / name</th> <th>Electrical device/ item</th> <th>Quantity</th> <th>usage time (hr./day)</th> </tr> </thead> <tbody> <tr> <td>01 to 33</td> <td>1. LED Bulbs & Tubs</td> <td>48</td> <td>Four Hours per Day</td> </tr> <tr> <td></td> <td>1. Fan</td> <td>61</td> <td>Four Hours per Day</td> </tr> <tr> <td></td> <td>2. Computer</td> <td>64</td> <td>Four Hours per Day</td> </tr> <tr> <td></td> <td>3. Printer</td> <td>09</td> <td>Four Hours per Day</td> </tr> <tr> <td></td> <td>4. Scanner</td> <td>07</td> <td>Four Hours per Day</td> </tr> <tr> <td></td> <td>5. Frieze</td> <td>01</td> <td>Four Hours per Day</td> </tr> <tr> <td></td> <td>6. Mixer</td> <td>01</td> <td>Four Hours per Day</td> </tr> <tr> <td></td> <td>7. Microwave</td> <td>01</td> <td>Four Hours per Day</td> </tr> <tr> <td></td> <td>8. Biometric Thumb ma.</td> <td>01</td> <td>Four Hours per Day</td> </tr> </tbody> </table> <p>Item: Bulbs (CFL, incandescent, LED); A/c, fan, computer, instruments</p>	Room No. / name	Electrical device/ item	Quantity	usage time (hr./day)	01 to 33	1. LED Bulbs & Tubs	48	Four Hours per Day		1. Fan	61	Four Hours per Day		2. Computer	64	Four Hours per Day		3. Printer	09	Four Hours per Day		4. Scanner	07	Four Hours per Day		5. Frieze	01	Four Hours per Day		6. Mixer	01	Four Hours per Day		7. Microwave	01	Four Hours per Day		8. Biometric Thumb ma.	01	Four Hours per Day
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<p>Do you minimize the use of personal appliances, such as microwaves and refrigerators?</p>	<p>There is no personal appliance used in campus e.g. microwaves and refrigerators</p>																																								
<p>Have you maximized the efficiency of your refrigerators/freezers by?</p> <ul style="list-style-type: none"> ➤ unplugging mini refrigerators/freezers and using communal ones? ➤ setting energy-efficient temperatures for your refrigerators (36°- 40° F) and freezers (0°- 2° F)? 	<p>Yes, Refrigerator used at Laboratory. All control measures are observed during audit to save the electricity.</p>																																								



<ul style="list-style-type: none"> ➤ ensuring refrigerators/freezers properly seal? ➤ keeping the refrigerator/freezer full? ➤ cleaning condenser coils on the back of the refrigerator/freezer? 	
<p>List ways that you use energy in your Institute. (Electricity, electric stove, kettle, microwave, LPG, firewood, Petrol, diesel and others)</p>	<p>Below energy sources and application observed.</p> <p>Electricity – Lamps, fan, Lab equipment's, pump, AC, computers, refrigerator, microwave etc.</p> <p>HSD – Institute vehicle and DG set</p> <p>Microwave -in Home economics lab.</p> <p>LPG – gas stove at canteen, laboratory</p>
<p>How many LED bulbs has your Institute installed? Mention use (Hours used/day for how many days in a month)</p>	<p>Please find below installed energy efficient lighting.</p> <p>LED Bulbs – 20 and LED Tubes – 28</p>
<p>How many fans are installed in your Institute? Mention use (Hours used/day for how many days in a month)</p>	<p>61 Fans, are observed in campus.</p> <p>(Average 4 hours per day, approx. 24 days in month)</p>
<p>How many air conditioners are installed in your Institute? Mention use (Hours used/day, for how many days in a month)</p>	<p>There is no Air conditioner observed in institute.</p>
<p>How many computers are there in your Institute? Mention the use (Hours used/day for how many days in a month)</p>	<p>64 Computer</p> <p>(Average 4 hours per day, approx. 24 days in month)</p>
<p>How many photocopiers/printers are installed by your Institute? (Hours used/day for how many days in a month).</p>	<p>9 printers</p> <p>(Average 2 hours per day, approx. 24 days in month)</p>
<p>How many scanners are installed by your Institute? (Hours used/day for how many days in a month).</p>	<p>7 scanners</p> <p>(Average 2 hours per day, approx. 24 days in month)</p>
<p>How many inverters your Institute installed?</p>	<p>7 inverters</p>



Mentions use (Hours used/day for how many days in a month)	
How many electrical equipment are used in different labs of your Institute? Mention the use (Hours used/day for how many days in a month)	193 different type of electrical equipment are used in different labs of institute – used as per need
How many boards displayed for saving energy awareness?	72 boards, we have observed, “switch off, when not in use” boards at majority of electric panels.
Renewable Energy	
Are any alternative energy sources/nonconventional energy sources? employed / installed in your Institute? (Photovoltaic cells for solar energy, windmill, energy efficient stoves, etc.,) Specify.	No, Institute needs to installed roof top Solar PV module to generate electricity and to become carbon neutral.
Have you purchased renewable energy certificates for your campus' electricity use?	NA
Water Conservation	
Have you done a water audit? (Personal, classroom, campus)	Although there is no external water audit conducted but water saving measures are implemented. Audit team measured the TDS and PH of drinking water. Please refer annexure for reading.
Do you encourage responsible water use via? ➤ education campaigns? (Skip the Drip) ➤ incentives? ➤ contests? ➤ awards?	Yes, institute applied several measures for water recycle, reuse.
Have you installed low-flow faucets, automatic faucets, and/or faucet aerators?	Recommendation: installation low-flow faucets, automatic faucets, and/or faucet aerators is recommended.



Do you use collected rainwater for onsite watering needs?	Yes, rainwater harvesting is installed at main building of institute. Roof top water is collected into one rainwater harvesting pits. Roof top water is used to recharge the water table.
Have you optimized your irrigation system (if applicable) to? <ul style="list-style-type: none"> ➤ operate at night or early morning hours to minimize evaporation? ➤ water the minimum time and frequency necessary for the applicable vegetation 	No, audit team is not observed any irrigation system. drip irrigation is recommended for watering the garden area.
List uses of water in your Institute	Major water consumption is for washroom, drinking, laboratory and gardening.
What are the sources of water in your Institute?	Institute intake water from bore well and Municipality.
How many wells are there in your Institute?	2 wells
No. of motors used for pumping water from each well and HP of motor	One Motor for 1.5 HP
Quantity of water stored in your overhead water tank. (In liters)	Quantity of water tank -4 Three Water Tank of 1000 Lt. and one 500 Lt. Tank
Quantity of water pumped every day. (In liters)	Average 2000 Lt. water pumped every day. Recommendation: Institute can install the water meters for domestic application and Laboratory
Where does waste water come from?	From canteen, Laboratory and wash room
Where does the wastewater go?	To the sewage water pipeline
What happens to the water used in your labs? Whether it gets mixed with ground water?	lab water is collected through separate pipeline and it is joined to the sewage water pipeline
Is there any treatment for the lab water?	No there is no separate treatment for Lab water since its of very small quantity.
No. of water coolers. Amount of water used per day. (In liters)	Water cooler No.- 01, Amount of water used per day - 600 Lt. per day
No. of toilet, urinals. Amount of water used per day?	Average 700 Lt. per day amount of water used.

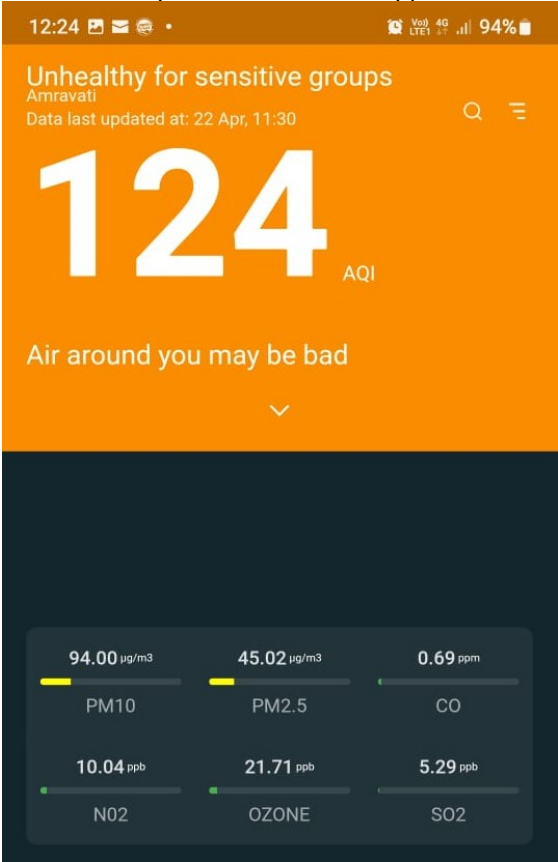


Amount of water used per day for garden use.	For gardening average 700 Lt. per day water used.										
Total use of water in each hostel?	NA										
Is there any water used for agricultural purposes?	NA										
Does your Institute harvest rainwater? If yes, how many rainwater harvesting units are there?	Yes, rainwater harvesting is installed at institute. Rooftop collected rainwater is used for recharging the water table. 1 rainwater harvesting system installed in the campus.										
How many of the taps are leaky? Amount of water lost per day?	No, we have observed no any tap is leaking during Audit.										
Are there signs reminding people to turn off the water? Yes / No	Yes, we have observed sign regarding water turn off										
Are there any waterless toilets?	NA										
How many water fountains are there?	NA										
How often is the garden watered?	Once in day or twice in a week depending on the season, in rainy season no need to water the plants.										
Is there any water saving techniques followed in your Institute? What are they?	Institute kept turn off sign for water saving. Further rejected water from water cooler filter is reuse for gardening purpose. Rain Water Harvesting unit is installed. Please refer Annexure to know more about the techniques applied by Institute for water recycle.										
Transport											
<p>Do you provide green transportation infrastructure such as?</p> <ul style="list-style-type: none"> ➤ safe, connected, and accessible walkways and pathways? ➤ bike paths and/or lanes ➤ bike racks ➤ green vehicle priority parking? (fuel-efficient, alternative fuel, carpool) 	<p>We have observed, carpooling, bike pooling in general. Majority of students travelled by public transport – Bus.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Vehicles in institute</th> <th style="text-align: left;">Numbers</th> </tr> </thead> <tbody> <tr> <td>Cycles</td> <td>120</td> </tr> <tr> <td>Two-wheeler</td> <td>60</td> </tr> <tr> <td>Four-wheeler</td> <td>12</td> </tr> <tr> <td>Buses</td> <td>MSRTC, Local Bus, Auto as per need</td> </tr> </tbody> </table> <p>Pedestrian-friendly pathways:</p> <p>College has pedestrian friendly pathway and used for entry of students, staff, visitors to office and college campus. The college has tactile paths for the students as well as special ramps for Divyangjan.</p>	Vehicles in institute	Numbers	Cycles	120	Two-wheeler	60	Four-wheeler	12	Buses	MSRTC, Local Bus, Auto as per need
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Do you offer walking/biking field trips?	As part of NSS program, such initiatives are taken by institute.
Purchase	
Have you done a purchasing audit? (campus)	Yes, we have collected the bills of major purchase to understand the environmentally friendly product.
<p>Do you have a green product list for items such as?</p> <ul style="list-style-type: none"> ➤ green cleaning products? ➤ paper/paper products with minimum recycled content (at least 30% postconsumer waste) and responsibly managed and harvested trees? ➤ refillable pens/pencils? ➤ no- to low-odor (VOC) markers? ➤ no- to low-VOC paints? (Via Facilities) ➤ plates, cups, and serving ware that are reusable, contain minimum recycled content, and/or are recyclable/compostable? ➤ compostable bags for compost collection? ➤ rechargeable batteries and chargers? ➤ ENERGY STAR certified computers, monitors, printers, refrigerators, and other energy-using equipment? ➤ Water Sense labeled faucets, toilets, showerheads, and other water-using equipment? ➤ printers with duplexing (double-sided) functionality? 	<p>During review of purchase bill, we have seen below important purchase</p> <ul style="list-style-type: none"> • LED Lamps • ENERGY STAR certified computers, monitors, printers, refrigerators • printers with duplexing (double-sided) functionality • plates, cups, and serving ware that are reusable • paper/paper products with minimum recycled content



<p>Do you track your purchasing to ensure adherence to any green product guidelines</p>	<p>Yes, during interview with admin staff, we noted that, major purchase is securitizing via green policy.</p>
<p>Do you limit the purchase of single-serve bottles and containers?</p>	<p>Yes, Single use plastic is not promoted at institute. Audit team observed the same during campus survey. Ban on the use of Plastics: Stickers and boards are displayed in campus at various locations to restrict and reduce the use of plastics.</p>
<p>Indoor and Outdoor Air Quality</p>	
<p>Have you done an air quality audit? (campus)</p>	<p>We have measured the ambient air temperature and humidity. Air Quality Index are captured from online app</p> 
<p>Do you have indoor plants to naturally clean the air?</p>	<p>Yes, few places indoor plantation are observed.</p>
<p>Do you regularly replace air filters?</p>	<p>Not applicable.</p>



Are A/C intake vents at least 10 feet from odor or emission sources (dumpsters, chicken coops, compost piles, pick-up/drop-off locations)	Not applicable.
Have you located printers in well-ventilated areas that minimize frequent/repeated exposure to students/staff?	Yes, Audit team observed printers are located in well-ventilated areas that minimize frequent exposure to students and staff.
Do you practice regular housekeeping practices to minimize dust and allergens?	Yes, institute developed regular housekeeping practice to minimize dust and allergens.
Waste Management	
Have you done a waste audit? (Personal, classroom, campus)	Audit team took the data of biodegradable, non-biodegradable waste, e waste.
Do you know where your trash goes when it leaves your campus?	Yes Housekeeping staff are appointed on monthly basis to keep the campus clean. Biodegradable waste(canteen and garden waste) is collected regularly and disposed into compost pit. Non-biodegradable waste is collected and handed over to gram panchayat, Darapur. Dustbins are placed at various places in the campus and laboratories to collect solid wastes. Instructions/ notices/ boards are displayed at various places in the campus.
Do you track the amount of waste that leaves your campus?	Quantity of various waste is not monitored at campus level.
Do you have accessible, consistent zero waste stations set up campus-wide that include all applicable waste disposal options (landfill, compost, recycle) with containers	Audit team observed, compost pit, where all garden waste is collected and left to decay to convert into compost. Same compost is used in the garden to fertile the soil. Information regarding garden waste management: The waste produced in garden and college premises are collected manually and disposed in composting pit on alternate days. Information regarding liquid waste management: The liquid waste of Lab ,Canteen and Washroom water waste is connected with municipal drainage line.



<p>Do you reduce cafeteria waste via?</p> <ul style="list-style-type: none"> ➤ reusable trays, plates, bowls, cups/bottles, and serving ware? o minimizing use of products with excess packaging? (Plastic-wrapped utensils) ➤ engaging students to properly sort waste? ➤ engaging parents to reduce packaging waste and single-serve containers? 	<p>Yes, at canteen reusable plates, trays, bowls, cups are utilized.</p> <p>In the college Canteen Steel and glass plates, steel glasses or crystal glasses are used instead of Plastic plates and cups.</p> <p>Information regarding canteen compost Management as applicable -Canteen waste is collected and disposed into composting pit.</p>
<p>Do you reduce paper waste via?</p> <ul style="list-style-type: none"> ➤ encouraging digital reading, note-taking, and activities? 	<p>Digital learning/reading is promoted at institute.</p> <p>Institute also used e-library to access the books material.</p>



<ul style="list-style-type: none"> ➤ setting printers and computers to default to duplex (double-sided) printing? ➤ reducing margins and white space on documents that must be printed? ➤ printing multiple pages per sheet? ➤ minimizing paper correspondence with families? ➤ opting out of unwanted mail? 	<p>Double side printer is employed to reduce the paper consumption.</p> <p>The institute is environmentally conscious and committed to reuse paper and reduce office paper usage. Following are the creative ways the institute use to reuse papers.</p> <ul style="list-style-type: none"> ➤ Drafts are printed on the unused side of the old papers before printing final documents. ➤ Scrap papers are reused for notes and memos. ➤ Papers are shredded and reused for notes and memos ➤ Papers are printed on both the sides.
<p>Do you provide recycling collection for additional recyclable materials—like plastic bags, CFL (spiral) light bulbs, batteries, drink pouches, candy wrappers, and electronics—that cannot go in the single-stream blue bins?</p>	<p>E-Waste is separately collected and supplied to the Engineering and Poly technique college in the premises for reuse</p> <p>Institute needs to establish the MOU With Third Party to Handle and Recycle the E-Waste, Which Includes Computer Peripheral, Batteries, Lamps, Circuits, Cables Etc.</p> <p>Plastic waste is Collected separately in a sack and supplied to scrap vendor to reduce and reuse.</p>
<p>Are cleaning products, grease, strippers, batteries, fluorescent lighting, science lab materials, and other potentially hazardous products disposed of properly?</p>	<p>Any of our electronics waste generated is collected in respective department and after combining sent to E-Waste management facility.</p> <p>No hazardous, chemical waste generated in the Institute.</p>
<p>How is the waste generated in the Institute managed? Methods</p> <ul style="list-style-type: none"> ➤ Composting ➤ Recycling ➤ Reusing ➤ Others (specify) 	<p>Following methods are applied to manage waste generated in the institute</p> <ul style="list-style-type: none"> • Compost – garden waste, food waste are collects and disposes in compost pit for composting • Recycle – plastic waste, e waste, metal scrap are collected and recycle in proper way.



	<ul style="list-style-type: none"> • Reuse – rejected water from water cooler is reuse for gardening.
Is there any waste wealth program practiced in the Institute?	NA
Can you achieve zero garbage in your Institute? (Reduce, Recycle, Reuse, Refuse) If yes, how?	Recommendation: We recommend the institute to strive for zero waste to landfill. Institute needs to identify to projects and implement in coming years to reduce the waste generation and avoid landfill
Green Belt & landscaping, Including Bio Diversity	
<p>Have you taken an action to green your Institute yard through implementation of?</p> <ul style="list-style-type: none"> ➤ onsite composting? ➤ habitat gardens? ➤ native and drought-tolerant landscaping? ➤ livestock, fowl, bees, and other animals? ➤ tree planting and care? 	<p>Audit team observed</p> <ul style="list-style-type: none"> • Onsite compost • Tree plantation <p>List of tree plantation is given in the annexure.</p>
Is there a garden in your Institute? Area?	Yes, garden is developed by institute. Gardens inside the college premises are found well maintained.
List the plants in the garden, with approx. numbers of each species.	List of plants are given in annexure along with species. Total number of grown plants are 188
Whether you have displayed scientific names of the trees in the campus?	Yes, scientific name of few plants is displayed within campus
<p>What are the vegetables cultivated in your vegetable garden?</p> <p>(Mention the quantity of harvest in each season)</p>	NA
How much water is used in the vegetable garden and other gardens? (Mention the source and quantity of water used)	NA
Are you using any type of recycled water in your garden?	NA
List the name and quantity of pesticides and fertilizers used in your gardens?	No use of pesticide and fertilizers were observed during audit. Institute uses the inhouse compost in the garden area.
Whether you are doing organic farming in your Institute? How?	NA



Is there any botanical garden in your campus? If yes give the details of campus flora.	Recommendation: Institute may develop a small botanical garden in the corner of entrance gate of campus.
What is the involvement of students in the green cover maintenance?	Yes, NSS team organizes the plantation program every year. through NSS program, students were involved in tree plantation initiative.
Noise Level	
Do you measure ambient noise level at <ul style="list-style-type: none"> • Classroom • Near main gate • Near main building • Near admin building 	Yes, audit team measured the dB level at below location <ul style="list-style-type: none"> • Classroom • Near main gate • Near main building • Near admin building <p>Please refer annexure for reading.</p>
Carbon Footprint	
Annual HSD consumption by DG generators	AY 2020-2021 : 12 Lit.
Annual LPG consumption used in the canteen	AY 2020-2021 : 2 cylinder- 39 kg.
Annual electricity consumption	AY 2020-2021 : 264 Units
Scope 1 GHG Emission	Please refer annexure for results
Scope 2 GHG Emission	Please refer annexure for results
Social awareness Audit	
Do you encourage staff and students to conduct social awareness programs?	Yes, Institute and management always encourage staff and students to conduct social awareness programmes. <ul style="list-style-type: none"> • The unit has seen active participation in all the public campaigns against AIDS and Illiteracy on.12/10/2020 • Formation of "Red Ribbon Club" to create awareness about AIDS on 12/10/2020 • Celebration of Teachers Day on 05/09/2020 by giving awards to best Lecturers. • College has conducts COVID -19 awareness campaign in may-2020 • Distribution of Daily Need Material to the Old Age Home at walgaon on 13 /07/2021 on occasion of birthday of honorable president of management.



	<ul style="list-style-type: none"> • Awareness Campaign about Blood Donation in the neighboring community on Dec -2020 • To create clean and hygienic social premises Waste Free Campaign is conducted from 08/ 08/2020 TO 15 /08/2020 (programmes like campus cleaning, plantation, awareness posters, sanitization, essay writing etc.) • To create awareness about the individual rights Human Rights Day is celebrated on 10/12/2020 <p>Please refer annexure for the details above.</p>																
Number of Divyangjan students in your institute.	One Divyangjan student is studying in the institute.																
Special facilities provided to Divyangjan student	<p>To ensure equality, freedom, Justice and Dignity to the differently abled students-</p> <ul style="list-style-type: none"> ➤ Special ramps constructed for differently abled students for their conveyance in the campus ➤ Convenient seating arrangements and writer made available during examinations ➤ Wheel Chair arrangement for easy access 																
Have you maintained gender equity ratio (Male/Female ratio) in your institute?	Yes, Audit team observed the satisfactory strength of girl's student at Institute																
Gender equity	<table border="1"> <thead> <tr> <th>Particular</th> <th>Total</th> <th>Male</th> <th>Female</th> </tr> </thead> <tbody> <tr> <td>No of students</td> <td>423</td> <td>241</td> <td>182</td> </tr> <tr> <td>No of teachers</td> <td>12</td> <td>11</td> <td>01</td> </tr> <tr> <td>No of Non-teaching staffs</td> <td>06</td> <td>06</td> <td>----</td> </tr> </tbody> </table>	Particular	Total	Male	Female	No of students	423	241	182	No of teachers	12	11	01	No of Non-teaching staffs	06	06	----
Particular	Total	Male	Female														
No of students	423	241	182														
No of teachers	12	11	01														
No of Non-teaching staffs	06	06	----														



<p>Health and safety</p> <p>Is there a health surveillance Programme / Medical checkup once in a year?</p>	<p>Institute have conducted below health surveillance programs</p> <ul style="list-style-type: none"> • Free medical checkup camp • Blood donation camp • COVID -19 awareness campaign
<p>Do you provide some health facilities for students and employees in your campus?</p>	<p>For students health point of view, sports department encourage students to take participate in different games at national and international level. And sport department provides good coaching and excellent facilities to the students for their physical as well as mental health.</p> <p>Institute provides some basic medical facilities like medical room, First Aid Box, Medical Officer Visit to the institute.</p>
<p>Have you conducted health awareness camps or programmes in your institute?</p>	<p>Yes. Institute have conducted below Camps and programs under NSSScheme</p> <ul style="list-style-type: none"> • The unit has seen active participation in all the public campaigns against AIDS and Illiteracy on.12/10/2020 • Formation of “Red Ribbon Club” to create awareness about AIDS on 12/10/2020. • College has conducts COVID -19 awareness campaign in may-2020 • Awareness Campaign about Blood Donation in the neighboring community on Dec -2020 • Health Check Up Camp • blood donation camp • International Yoga Day 2021 on 21 6 2021
<p>What are the safety measures for staff and students in your institute?</p>	<p>Audit team does not found any documents related to Mediclaim policy of all staff.</p>
<p>Health and Safety point of view, Do you fulfil below basic needs for staff and student?</p> <ul style="list-style-type: none"> • Adequate ventilation • Easily accessible emergency exits • Sanitation in cafeterias and restrooms • Access to potable water • Exposed or unmarked electrical wiring • Emergency response plan • Fire suppression equipment and evacuation plans 	<p>Yes, all classroom, admin building, library, laboratory, washrooms, corridor are full of natural ventilation, windows. We observed the cross ventilation across windows.</p> <p>Yes, proper arrangement of sanitation is observed.</p> <p>Yes, good quality of potable water is available.</p> <p>No</p> <p>Not available</p> <p>Yes, College has Fire Hydrant System, Fire Extinguishers at every floor, and in Lab available for safety purpose.</p>



<p>Child Labor</p> <p>Have you given an employment to the underage candidates?</p> <p>Are there any underage candidates working in your institute?</p>	<p>No, audit team observed</p> <p>Any underage candidate is not working in the institute. They are strictly against child labour.</p>
<p>Do you protect your students and staff from discrimination based on origin, caste, race, religion, gender, political affiliation, and other attributes?</p>	<p>Yes. As per interviews of staff members, there are no incident recorded for discrimination based on origin, caste, race, religion, gender, political affiliation, and other attributes</p>



Chapter 05: Audit Observations

BEST Practices of Institute:

The institute is quite aware of its role towards the environmental consciousness and hence the institute follows the various green practices for the same.

1. **Restricted entry of automobiles:** Students also use Public Transportation for travelling to college. Some of the student use sharing vehicles and most of the faculty use carpooling.
2. **Use of Bicycles:** Use of bicycle by student and faculty members promoting benefits of cycling and conservation of environment by minimizing fuel pollution.
3. **Ban on use of Plastic:** In the college Canteen Steel plates, steel glasses or crystal glasses are used instead of Plastic plates and cups. Paper bags are widely used in the college at the time of events.
4. **Landscaping with trees and plants:** NSS team organizes the plantation program every year. A gardener is appointed to maintain the trees present in the Institute campus. Many indoor plants are arranged in campus. Proper care is taken of the garden and old trees.
5. **Paperless office** -With the installation of the office automation software use of paper in the office is reduced. IQAC circulated the messages on WhatsApp group
6. **Computing Equipment**-The College Computer Lab is also used as the central computing facility. Staff and the students use it when they have to download information from the Internet, have to run software or to take prints from the computers. All departments have access to the computer facility through computer lab which is available to the faculty members and students. Students use computers for their seminar preparation
7. **Games and Sports**-The institution has adequate facilities for sports, games (indoor, outdoor, gymnasium, yoga center etc.) and cultural activities. Being located in the rural area, since beginning of the college students are very much interested in the games and sports. With the due interest of the student and for the overall development of the admitted students college has taken many initiatives for the adequate facilities for sports, games and cultural activities. Details of the related facilities are as follows

Aiming towards environment consciousness the Institute has executed the following activities at the campus:

- Tree plantation program is conducted every year under NSS unit.
- Vermi Compost Project Constructed to manage and recycle the garden and canteen waste
- The waste water from the basins and water cooler are transferred to the plants of the garden nearby to the building.
- Institute has maintained good schedule of water cooler tank cleaning.
- Rain water harvesting project implemented to recharge the water table
- College campus with green lawns on both side of main gate



- Various types of medicinal air purifying trees have been planted in the college premises

Aiming towards Social awareness the Institute has implemented and conducted the following activities

- All easily accessible facilities provided to Divyangjan student like ramp, and wheelchairs. Dedicated department for Divyangjan students to support any kind of help.
- Institute has installed Fire Hydrant System, Fire Extinguishers at every floor, and in Lab available for safety purpose
- Institute has provided health facilities like, Medical Room, First Aid Box in each department.
- Health awareness programmes, camp conducted
- The NSS department Organizes Blood Donation Camps every year in the College.
- During Covid-19 NSS students conducted different activities like, Food distribution, Groceries distribution, Area Sanitization campaign, COVID awareness.
- Institute is having many jobs oriented short term and degree courses which helps directly placement of students after completion of degree education.

Opportunity of Improvement:

- Adopt an Environment , Health and Safety policy for the Institute
 - Establish a purchase policy to promote environmentally friendly materials
 - Conduct more seminars and group discussions on environmental and social education
 - Students and staff can be permitted to solve local environmental and social problems
 - Environmental and Social advisory committee could be formed. The discussions/ information sharing among different departments can generate lot of ideas and awareness on green issues and social causes
 - Maintain minutes of meetings of environment and social committees; evaluate the effectiveness of various environmental programs conducted by the institutes. Set annual targets for Green Initiatives & monitor them closely. Create 'Green Champions'
 - Establish water, waste and energy management systems
 - Encourage efficient water use and reporting by installing water meters at key locations. Provide information on water usage and savings to students/ staff through notices, screen savers in computer labs.
 - Institute can start metering water consumption, measuring waste generation. Drinking water testing on periodic basis, recording all readings on periodic basis, so that monthly data can be establish.
 - Installation low-flow faucets, automatic faucets, and/or faucet aerators is recommended.
 - We recommend the institute to strive for zero waste to landfill. Institute needs to identify to projects and implement in coming years to reduce the waste generation and avoid landfill
 - Institute needs to establish the MOU With Third Party to Handle and Recycle the E-Waste, Which Includes Computer Peripheral, Batteries, Lamps, Circuits, Cables Etc.
 - Institute should collect different types of waste generated in the college separately and dispose in proper way to reduce, reuse and recycle that material.
-
- Institute needs to install solar PV module to reduce grid electricity consumption and to become 100% carbon neutral.
 - Installation of sensor-based electrification items like fans, lights, etc. can save electricity.



- Replace all tube lights by 100% energy efficient LEDs.
- Replace old ceiling fans by new energy efficient fans.
- Institute needs to make provision for use of day light for reading in Library.
- Vertical gardening can be done using indoor plants. Hydroponic garden can be an option where in small space also plants can be planted.
- Installation of 100% drip irrigation recommended to conserve water.
- Install sanitary pad vending machine in girls washroom
- Installation of incinerator for Bio Medical waste disposal
- Installation of waterless urinals can be considered to reduce water consumption
- Institute can report birds, reptiles and animal biodiversity



Reference list of Websites

- i. IEEE 519 - <http://ieeexplore.ieee.org/xpl/mostRecentIssue.jsp?punumber=2227>
- ii. <http://mnre.gov.in/solar-energy/ch2.pdf>
- iii. BEE - <http://www.beeindia.in/>
- iv. ECBC - <http://beeindia.in/content.php?page=schemes/schemes.php?id=3>
- v. http://www.energymanagertraining.com/new_index.php
- vi. http://www.usalighting.com/stuff/contentmgr/files/1/92ffeb328de0f4878257999e7d46d6e4/misc/lighting_comparison_chart.pdf
- vii. <https://www.bijlibachao.com/lights/use-energy-efficient-lights.html>
- viii. <http://www.bijlibachao.com/air-conditioners/air-conditioner-selection-understand-tonnage-eercop-and-star-rating.html>
- ix. <http://www.indiawaterportal.org/sites/indiawaterportal.org/files/Room%20Top%20Rainwater%20>
- x. https://mausam.imd.gov.in/imd_latest/contents/all_india_forecast_bulletin.php
- xi. <http://www.cea.nic.in/tpeandce.html>
- xii. <https://timesofindia.indiatimes.com/india/power-ministry-may-make-24-degree-celsius-as>



Annexure 1 : Reference Documents / Surveys

Sr. No.	Reference documents/ Survey
1.	Institute Registration details, pervious NAAC certificate
2.	Institute Awards, recognition
3.	Academic staff, designation and qualification
4.	Short note about institute including establishment details, area, subjects, faculty, staff, labs, students, campus etc. mission, vision, values, policy statement
5.	List of environmental issues identified by institute
6.	List of environmentally friendly practices, List of projects - energy conservation, rain water harvesting, waste recycling (solid/liquid waste management, e-waste management), renewable energy project, plantation etc.
7.	List of days celebration like – Environment day, energy day etc. with program details and photos
8.	institution facilitates the differently abled (Divyangjan friendliness)
9.	Social responsibility project list, CSR project for community, village, support to economically challenged students, Child labour, Human rights.
10.	Drinking water facility: Functionality of RO water plant
11.	Recycle of water: Utilization of RO reject water for gardening
12.	Natural resource utilization: Setup for rain water harvesting
13.	Information regarding canteen compost Management as applicable
14.	Information regarding garden waste management
15.	Information regarding liquid waste management
16.	Measures for maintaining cleanliness in campus
17.	Measures for garbage collection and disposal
18.	Plantation Measures – Biodiversity, list of species observed in the campus
19.	Measures for construction waste management (use of construction waste for filling purpose.
20.	Electricity Bills for duration of 12 months
21.	Measures for health and safety of students and staff
22.	Roll of staff, students and management to save electricity in campus
23.	Lighting survey (number of tube lights, CFL and LED)
24.	AC survey (number of AC and their star rating)
25.	Water harvesting (Photographs of the water harvesting structure)
26.	Initiatives by college for the community NSS camps, Swatch Bharat with photos
27.	Details about promotion of below programs. <ul style="list-style-type: none"> • Pedestrian-friendly pathways • Ban on the use of Plastics • Landscaping with trees and plants
28.	Outside campus plantation program implemented by Institute
29.	Gender ratio in staff and student – diversity
30.	Policy statement by Leadership w.r.t. Environment conservation.



Annexure 2: Physical Structure of College

The college is located in about 2.5 acres of land. The built-up area of the college is 01 acres.

Departments	11940 Sq. Ft.
Laboratories	3771 Sq. Ft.
Conference halls	915 Sq. Ft.
Libraries	1493 Sq. Ft.
Auditorium	Nil
Canteens	1000 Sq. Ft.
Hostel	Nil

Measurement of the class room is as follows

Room No.	Name of the building/ Room/Cabin	Area in Sq.Ft.
Room No 01	Office(Administration)	458 Sq.Ft.
Room No 02	Principal's Cabin(Administration)	279 Sq.Ft.
Room No 04	Staff Room	351 Sq.Ft.

Rooms Available for Academic activities:-

Room No.	Class Room for Teaching Learning	Area in Sq.Ft.
Room No.-3	COP in Tourism	189 Sq.Ft
Room No. – 6	B. Voc. - Part- I	583 Sq. Ft
Room No. –7	B. Voc. - Part- II	440 Sq. Ft
Room No. 10	College Central Library	1493 Sq. Ft
Room No 12	Commerce Department	667 Sq Ft
Room No 13	B.A. Part- III	667 Sq Ft
Room No 14	B.A. Part- III	667 Sq Ft
Room No 15	B.A.- Part- I	915 Sq. Ft
Room No. 16	IQAC	278 Sq. Ft
Room No. 17	B. Voc. – Part – III	189 Sq. Ft
Room No 18	Girls Common Room	540 Sq. Ft
Room No 19	B.A.- Part- I	696 Sq. Ft
Room No 20	B.A. Part- II	630 Sq. Ft
Room No 21	B.A. Part- II	630 Sq. Ft
Room No 25	B.Com –Part- I	667 Sq.Ft
Room No 26	B.Com –Part- II	667 Sq.Ft
Room No 29	Ambedkar Study Centre	189 Sq. Ft
Room No 31	B.Com –Part- III	666 Sq. Ft
Room No 32	Buddhist Study Centre	666 Sq. Ft
Room No 33	B.Lib. Sc.	666 Sq. Ft
Room No 09	NSS	240 Sq. Ft

Every class room is well equipped with well furnish desk benches, Green Boards, Lights, Fans Podium and with proper ventilation and free air without any outer disturbance

Laboratories –Every Laboratory is well equipped with well furnish desk benches, Green Boards, Lights, Fans Podium and with proper ventilation and free air without any outer disturbance.

College has following laboratories. Space for the laboratories is as follows



Room No.	Name of the Laboratory	Area in Sq.Ft.
Room No 05	KirtiGruhaUdyog	746 Sq. Ft.
Room No. 22	Home Economics & Food Technology	880 Sq.Ft
Room No. 23	Computer Lab	940 Sq. Ft
Room No. 24	English Language Lab	190 Sq. Ft
Room No. 25	Geography Lab.	470 Sq. Ft.
Room No. 26	Fashion Designing	356 Sq. Ft
Room No 11	Store Room	189 Sq. Ft



Annexure 3: Waste management

Different types of waste generated in the college and their disposal.

Types of waste	Particulars	Disposal method
E-waste	Computers, electrical and electronic parts	Waste is supplied to the Engineering and Poly technique college in the premises for reuse
Plastic waste	Pen, Refill, Plastic water bottles and other plastic containers, wrappers etc.	Collected in a sack and supplied to scrap vendor
Solid waste	Garden waste, food wastes in home economic dept. and canteen.	Collected in compost bin
Waste water	Washing, urinals, bathrooms	Drained in savage
Chemical waste	Laboratory waste	N.A.
Glass waste	Broken glass wares from the labs	Collected in bins and supplied to the scrap vendor for recycle purpose
Sanitary napkins	Medical waste	Collected separately and disposed
Others		Nil



Annexure 4 : On site Measurement

Date:	22 April 2022
Ambient Temperature:	35.9 Degree Celsius
Relative humidity:	31% RH

Lighting Survey

Location	Lux - Spot 01	Lux - Spot 02	Lux - Spot 03	Lux - Spot 03	Comment
Class room 01	350	270	630	540	OK, Lux level is within permissible limit. Classrooms are full of daylight.
Class room 02	560	1145	450	400	
Class room 03	1705	800	650	710	
Class room 04	230	1070	320	430	

Water Quality Survey

Location	TDS (ppm)	pH	Comment
Water cooler 01	176	8.0	OK, within permissible limit.
Water cooler 02	-	-	
Water cooler 03	-	-	

Ambient Noise level Survey

Locations	Average reading dB Level during Day time	Comments
Near main gate	60.8	OK
Near main building	51.3	OK
Near college office	54	OK
Classroom	45.7	OK



Annexure 5: Carbon Footprint Calculation

AY 2020-2021

Scope	Annual Ele consumption (MWh)	EF (tCO ₂ /MWh)	tCO ₂	Ref of EF
2	0.264	0.92	0.24	CEA User guide ver16 (2020)
Scope	Annual HSD consumption (ton)	EF (tCO ₂ /ton)	tCO ₂	Ref of EF
1	0.012	3.954	0.05	Defra guideline 2020 (including WTT)
Scope	Annual LPG consumption (ton)	EF (tCO ₂ /ton)	tCO ₂	
1	0.039	3.298	0.13	Defra guideline 2020 (including WTT)



Annexure 6: List of Plants and Trees Biodiversity

List of Plants and Trees Biodiversity in college campus

Sr. No.	Botanical Name	Total No.
1	Ashoka Trees	09
2	Suptarni	04
3	Neem	06
4	Benjamin Fakes	10
5	Sitafal	02
6	Brogan well	07
7	Gilistariya	04
8	Subabul	05
9	Coconut Trees	04
10	Vidya	15
11	Gulab Rose	20
12	Kadubadam	10
13	Elshotzia Ciliata	06
14	Agave	04
15	Pilea Microphyliya	04
16	Money Plant	10
17	Euphorbia Trigona	04
18	Euphorbia mili Des Moul	04
19	Chamaerops Hinmilis	10
20	Jasvand	04
21	Lili	10
22	Peepal	02
23	Alove Vera	04
24	Hazel	06
25	Champa	06
26	Tulip	04
27	Gulmohar	06
28	Banyan	02
29	Bael	02
30	Bakul	04
Total No.		188



Annexure 7: List of Awareness Program Undertaken by Institute

Cleanliness Campaign



Tree plantation program under NSS





COVID -19 awareness campaign

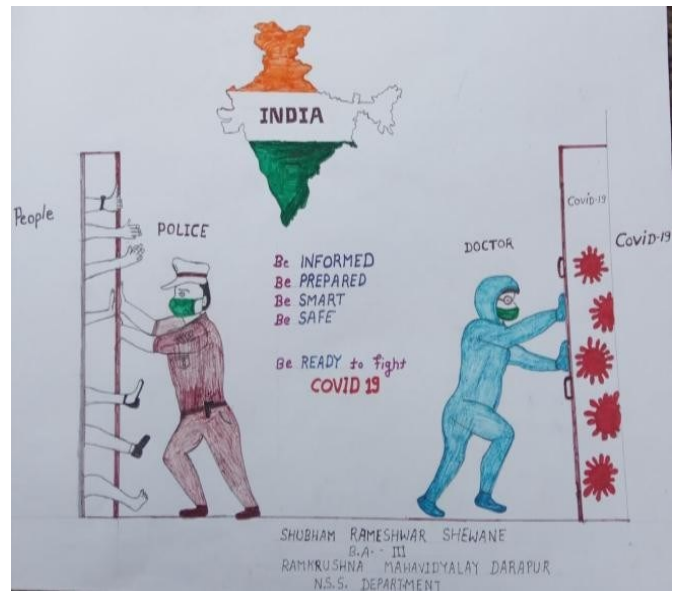
Ramkrushna Mahavidyalaya, Darapur
Tq. Daryapur, Dist. Amravati

Department of National Service Scheme



Ramkrushna Mahavidyalaya, Darapur
Tq. Daryapur, Dist. Amravati

Department of National Service Scheme





Daily Need Material Distributed to the Old Age Home at walgaon



REDMI NOTE 5 PRO
MI DUAL CAMERA

Human Rights Day

रामकृष्ण महाविद्यालय दारापुर येथे मानवाधिकार दिनानिमित्त व्याख्यानाचे आयोजन

ता.प्रतिनिधी/१४ डिसेंबर
दारापूर-श्री दादासाहेब गवई चारीटेबल ट्रस्ट द्वारा संचालित रामकृष्ण महाविद्यालय दर्यापूर याठिकाणी जागतिक मानवाधिकार दिनाचे औचित्य साधून व्याख्यानाचे आयोजन करण्यात आले होते.

याप्रसंगी कार्यक्रमाचे अध्यक्ष प्राचार्य यशवंती हरणे तसेच कार्यक्रमाचे प्रमुख अतिथी प्राध्यापक रोहिणी गायधने संत गाडगेबाबा अमरावती विद्यापीठ अमरावती राज्यशास्त्र विभाग उपस्थित होते कार्यक्रमाचे प्रस्ताविक राज्यशास्त्र विभाग प्रमुख प्राध्यापक डॉक्टर प्रशांत खेडकर यांनी केले याप्रसंगी प्रमुख वक्त्या प्राध्यापक रोहिणी



गायधने यांनी मानव अधिकार दिनाची ची ऐतिहासिक पार्श्वभूमी मानवाधिकाराचा अर्थ मानवाधिकाराचा भारतीय संविधानामध्ये असलेला समावेश युनोच्या जाहीरनाम्याचा आढावा तसेच मानवाधिकाराचे होत असलेले उल्लंघन आंतरराष्ट्रीय स्थिती याविषयी विद्यार्थ्यांना मार्गदर्शन केले याप्रसंगी महाविद्यालयाचे सर्व प्राध्यापक वृंद व शिक्षकेतर कर्मचारी व सर्व विद्यार्थी उपस्थित होते.





Awareness Campaign about Blood Donation





Annexure 8: Best Practices of Institute

Solid Waste Management





Waste Recycling System / Rain Water Harvesting





Institution facilitates the differently able (Divyangjan friendliness)

Ramps.



Divyangjan Dept.





**Drinking water facility: Functionality of RO water plant.
Water Filter**



Indoor Plants





Green belt – Biodiversity of plant and trees in campus





Use of LED bulbs/ power efficient equipment



Solid waste management-Compost pit





Annexure 9: Environmental Awareness Posters/Stickers




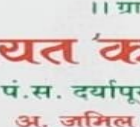



Annexure 10: Awards and Recognitions

॥ ग्रामसमृद्धी ॥

ग्रामपंचायत कार्यालय दारापूर

पं.स. दर्यापूर, जि. अमरावती.

 श्रीमती आशा बा. गवई सरपंच मो. 9730089876	 अ. जमिल अ. मजिद पटेल उपसरपंच मो. 8668224322 Email :- gpdarapur1gmail.com	 श्री. वि. एस. बाळते ग्रामसचिव मो. 9284377224
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दिनांक. ११/१२/२०२२

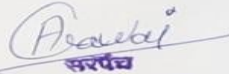
मा. प्राचार्य,
रामकृष्ण महाविद्यालय, दारापूर.

विषय :- स्वच्छता पुरस्कार प्रदान करणेबाबत

महोदय,

उपरोक्त विषयानुसार आपणारा कळवितांना अत्यंत आनंद होत आहे की, आपले महाविद्यालयातील राष्ट्रीय रोवा योजना पथकाद्वारे सन २०२०-२०२१ या कालावधीत ग्राम स्वच्छतेमध्ये प्रचार, प्रसार व प्रत्यक्ष स्वच्छताकार्यामध्ये केलेल्या कार्याबद्दल ग्रामपंचायतद्वारा सन्मानित करण्याचे ठरविले आहे. तरी आपण दि. १६/०९/२०२१ रोजी ठिक १०.०० वा. ग्रामपंचायत कार्यालय दारापूर येथे आपल्या राष्ट्रीय रोवा योजना पथकास उपस्थित राहावे हि विनंती.

न्यूनवादपूर्वक... एक कदम स्वच्छता की ओर


सरपंच
ग्रामपंचायत, दारापूर
जि. अमरावती

सौ. आशाताई गवई
ग्रामपंचायत, दारापूर



Annexure 11: Information about gender equity ratio

Gender ratio of Students.

Shri Dadasaheb Gawai Charitable Trust Amravati's
Ramkrushna Mahavidyalaya Darapur.
Statement of Admitted Students (Session 2020-21)

Name of Exam	SC		ST		VJ		NT		OBC		SBC		MARATHA		MUSLIM		OPEN		HANDICAP		BLIND		Third Person	Total		Total
	B	G	B	G	B	G	B	G	B	G	B	G	B	G	B	G	B	G	B	G	B	G		B	G	
B.A. I	51	23	04	01	01	-	07	05	27	23	01	02	-	-	-	-	04	01	-	-	-	-	-	95	55	150
B.A. II	23	19	01	01	-	-	02	02	20	12	-	01	-	-	-	-	01	-	-	-	-	-	-	47	35	82
B.A.III	08	12	-	-	-	-	02	06	06	14	02	01	-	-	-	-	-	01	-	-	-	-	-	18	34	52
B.Com I	02	02	-	-	-	-	-	03	05	10	-	-	-	-	-	-	05	01	-	-	-	-	-	12	16	28
B.Com II	03	05	-	-	-	-	01	01	07	14	02	-	-	-	-	-	02	01	-	-	-	-	-	15	21	36
B.Com.III	01	04	02	-	-	-	-	01	04	12	-	-	-	-	-	-	-	-	-	-	-	-	-	07	17	24
B.Lib Sci. & Inf.	13	02	-	-	-	-	01	-	09	01	02	01	-	-	-	-	01	-	-	-	-	-	-	26	04	30
B.Voc (F.P.P.)	12	-	-	-	-	-	-	-	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21	-	21
Total	113	67	07	02	01	-	13	18	88	86	07	05	-	-	-	-	13	04	-	-	-	-	-	241	182	423

Gender ratio of Staff.

Sr. nu.	Teaching Staff		Non -Teaching Staff	
	Male	Female	Male	Female
1	13	03	06	00



List of Faculty

Sr. no.	Name of the Full-time teacher	Qualification	Designation	Year of appointment	Name of the Department
1	Prof. Dr. Sarika Nandakishor Dandge (Bodade)	M.A.(Hec.)M. Phil. Ph.D	Associate Professor	19-11-2001	Home-Economics
2	Prof. Dr. Anil Bhimrao Bhagat	M.A.(Mar.) NET. Ph.D	Professor	8/12/2003	Marathi
3	Prof. Chandrashekhar Surendra Ingole	M. P. Ed. NET. M. Phil	Assistant Professor	4/8/2007	Phy. Director
4	Prof. Prakash Wamanrao Mhaske	M.A.(His.) SET	Assistant Professor	26-11-2007	History
5	Prof. Dr. Shitalbabu Ambadas Tayade	M.A.(Eng. His. Soc.) B. Ed., M. Phil., SET, Ph. D	Assistant Professor	15-06-2009	English
6	Prof. Dr. Prashant Wamanrao Khedkar	M.A.(Pol. Sci.)M. Phil. Ph. D	Assistant Professor	15-06-2009	Political Sci.
7	Prof. Sudhir Balkrushna Sangole	M. Lib., M. Phil.	Assistant Professor	15-06-2009	Librarian
8	Prof. Gangadhar Hariman Pande	M.A.(Pali.) NET	Assistant Professor	15-06-2009	Pali Prakrut
9	Prof. Dr. Kundan Ajabrao Alone	M.A.(Geo. His. Pol.) M. Ed. Ph. D	Assistant Professor	11/4/2011	Geography
10	Prof. Khemanand Sukhdeo Fulzele	M.A.(Eco.) NET-JRF	Assistant Professor	1/8/2011	Economics
11	Prof. Sandip Mahadeo Hadole	M.A.(Soc.)M. Phil. NET	Assistant Professor	11/6/2012	Sociology
12	Prof. Yashwant Vinayak Harne	M.Com. M. Com. Additional(co- operation) B. Ed., M. Phil. Ph. D	Assistant Professor	3/9/2013	Co-operation



Annexure 12: Information about sports, Games and health facilities

The institution has adequate facilities for sports, games (indoor, outdoor, gymnasium, yoga center etc..) and cultural activities

Outdoor Stadium.

Sr. No.	Facilities for Sports – Outdoor	Measurement	Establishment	User Rate
1	Play Ground for Kabaddi(Men)	10 X 13Mtr	20	Daily
2	Play Ground for Kabaddi(Women)	10 X 12 Mtr	2007	Daily
3	Volleyball Play Ground (Men)	9 X 18 Mtr	2007	Seasonal
4	Softball Play Ground (Men& Women)	250 Ft.	2007	Daily
5	Baseball Play Ground (Men& Women)	300 Ft.	2007	Daily
6	Basketball (Men& Women)	28 x 15 Mtr	2013	Seasonal
7	Korfball (Men& Women)	20x40 Mtr	2007	Seasonal
8	5Ground for athletics activities	2 acres	2011	Daily



Facilities for Games / Sports – Indoor

Sr. No	Facilities for Sports – Outdoor	Measurement	Establishment	User Rate
1	Ball badminton	24 x12 Mtr	2016	Seasonal
2	Carrom	-	-	-
3	Chess	-	-	-
4	Indoor Stadium for Various activities	1405 Sq. Mtr	2016	Daily

Health Centre for the Students

Sr. No	Health Centre Facilities details	Measurement	Establishment	User Rate
1	<ul style="list-style-type: none"> • Power Station Machines – 06 • Chest Machine- 01 • Dumbbells - 10 • Power Weights – 05 	20 x 25 ft	2010	Daily

Facilities for Cultural activities

Sr. No.	Details of Facilities for Cultural activities	Measurement	Establishment	User Rate
1	Cultural / Seminar Hall	915 SqMtr	2001	As per Need



Annexure 13: List of courses in the institute

The institution has academic courses as follows

Sr. No	Name of the Courses
1	B.A.
2	B. Com
3	B. Lib. Sc
4	B. Voc. Food Processing & Preservation
5	B. Voc. Tourism & Management
6	Certificate Course in Ambedkar Studies
7	Certificate Course in Buddhist Studies
8	Certificate Course in Fashion Designing
9	Certificate Course in Communication Skills
10	Certificate Course in House Hold Industries- Introduction & Establishment
11	Certificate Course in Problem of Social & Economics in Scheduled Tribe Women's Labours in Rural Division.



Annexure – 14 : List of Interviewed Staff

Green Campus Audit	Attendance Register	
--------------------	---------------------	--

- External Audit
- Internal Audit
- Experience Exchange Meeting
- Other: _____

Date: 22/4/22
 Location: R. K. M. Datta Park

TOPICS:

- _____
- _____
- _____

Name	Position	Signature
Mr. P. W. Mhaske	Asst. Prof.	
Mr. C. S. Injole	Asst. Prof.	
Dr. Anil B. Bhogal	Professors	
Mr. R. C. Patil	Asst. Prof.	
Mr. M. H. Bhutkar	Asst. Prof.	
K. S. Carlake	Asst. Prof.	
G. H. Patil	Asst. Prof.	
Y. V. Harne	Asst. Prof.	

ENERGY AUDIT REPORT
of
RAMKRUSHNA MAHAVIDYALAYA DARAPUR,
Tal: Daryapur, Dist. Amravati 444 814



Year: 2021-22

Prepared by

ENGRESS SERVICES

Yashashree, 26, Nirmal Bag Society,
Near Muktangnan English School, Parvati, Pune 411009
Phone: 09890444795, Email: engress123@gmail.com



MAHARASHTRA ENERGY DEVELOPMENT AGENCY



Maharashtra Energy Development Agency

(Government of Maharashtra Institution)

Aundh Road, Opposite Spicer College Road, Near Commissionerate of Animal Husbandary,

Aundh, Pune, Maharashtra 411067

Ph No: 020-35000450

Email: eee@mahaurja.com, Web: www.mahaurja.com

ECN/2022-23/CR-43/1709

10th May, 2022

**CERTIFICATE OF REGISTRATION
FOR CLASS 'A'**

We hereby certify that, the firm having following particulars is registered with **MAHARASHTRA ENERGY DEVELOPMENT AGENCY (MEDA)** under given category as "Energy Planner & Energy Auditor" in Maharashtra for Energy Conservation Programme of MEDA.

Name and Address of the firm : M/s Engress Services
Yashshree, 26, Nirmal Bag Society,
Near Muktaganj English School,
Parvati, Pune - 411 009.

Registration Category : *Empanelled Consultant for Energy Conservation Programme for Class 'A'*

Registration Number : *MEDA/ECN/2022-23/Class A/EA-32.*

- Energy Conservation Programme intends to identify areas where wasteful use of energy occurs and to evaluate the scope for Energy Conservation and take concrete steps to achieve the evaluated energy savings.
- MEDA reserves the right to visit at any time without giving prior information to verify quarterly activities performed by the firm and canceling the registration, if the information is found incorrect.
- This empanelment is valid till 09th May, 2024 from the date of registration, to carry out energy audits under the Energy Conservation Programme.
- The Director General, MEDA reserves the right to cancel the registration at any time without assigning any reasons thereof.

General Manager (EC)



ENGRESS SERVICES

Yashashree, 26, Nirmal Bag Society,
Near Mukhtangan English School, Parvati, Pune 411 009
Tel: 09890444795 Email: engress123@gmail.com

Ref: ES/RMD/21-22/01

Date: 15/6/2022

CERTIFICATE

This is to certify that we have conducted Energy Audit at Ramkrushna Mahavidyalaya Darapur, Tal: Daryapur, Dist. Amravati in the year 2021-22.

The College has adopted Energy Efficient Practices:

- Usage of Energy Efficient LED Fittings
- Usage of Energy Efficient BEE STAR Rated equipment
- Maximum usage of Day Lighting

We appreciate the support of Management, involvement of faculty members and students in the process of Energy Conservation & making the campus Green.

For Engress Services,

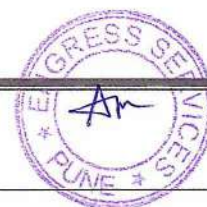


A Y Mehendale,
Certified Energy Auditor
EA-8192



INDEX

Sr. No	Particulars	Page No
I	Acknowledgement	5
II	Executive Summary	6
III	Abbreviations	7
1	Introduction	8
2	Study of Connected Load	9
3	Study of Present Energy Consumption	11
4	Carbon Foot printing	13
5	Study of Usage of Alternate Energy	15
6	Study of Usage of LED Lighting	16



ACKNOWLEDGEMENT

We at Engress Services, Pune, express our sincere gratitude to the management of Ramkrushna Mahavidyalaya, Darapur, Tal: Daryapur Dist. Amravati for awarding us the assignment of Energy Audit of their Darapur campus for the Year: 2021-22.

We are thankful to all staff members for helping us during the field study.



EXECUTIVE SUMMARY

1. **Ramkrushna Mahavidyalaya Darapur, Tal: Daryapur, Dist. Amravati** consumes Energy in forms, namely Electrical Energy used for various gadgets & office equipment.

2. Present Energy Consumption & CO₂ Emissions:

No	Parameter/ Value	Energy Consumed, kWh	CO ₂ Emissions, MT
1	Total	282	0.25
2	Maximum	40	0.04
3	Minimum	22	0.02
4	Average	24	0.02

3. The various projects already implemented for Energy Conservation:

- Usage of Energy Efficient BEE STAR Rated Equipment
- Usage of LED Lighting
- Maximum usage of Day Lighting

4. Usage of Alternate Energy:

- The College has yet to install Roof Top Solar PV Plant. Hence the percentage of Total Energy Demand met by Alternate Energy works out to be nil percent.

5. Study of Usage of LED Lighting:

- The Total Lighting Load is **1.15 kW**
- The Total LED Lighting Load is **0.89 kW**
- Percentage of LED Lighting to Total Lighting Load is **77 %**

6. Assumption:

1. **1 kWh** of Electrical Energy releases **0.9 Kg of CO₂** into atmosphere

7. Reference:

- For CO₂ Emissions: www.tatapower.com

ABBREVIATIONS

SDGCT	:	Shri. Dadasaheb Charitable Trust
RMD	:	Ramkrushna Mahavidyalaya Darapur
A C	:	Air Conditioner
MSEDCL	:	Maharashtra State Distribution Company Limited
MEDA	:	Maharashtra Energy Development Agency
MT	:	Metric Ton
kWh	:	kilo-Watt Hour
LPD	:	Liters per Day
LED	:	Light Emitting Diode
CFL	:	Compact Fluorescent Light
FTL	:	Fluorescent Tube Light
W	:	Watt
LPG	:	Liquefied Petroleum Gas



CHAPTER-I INTRODUCTION

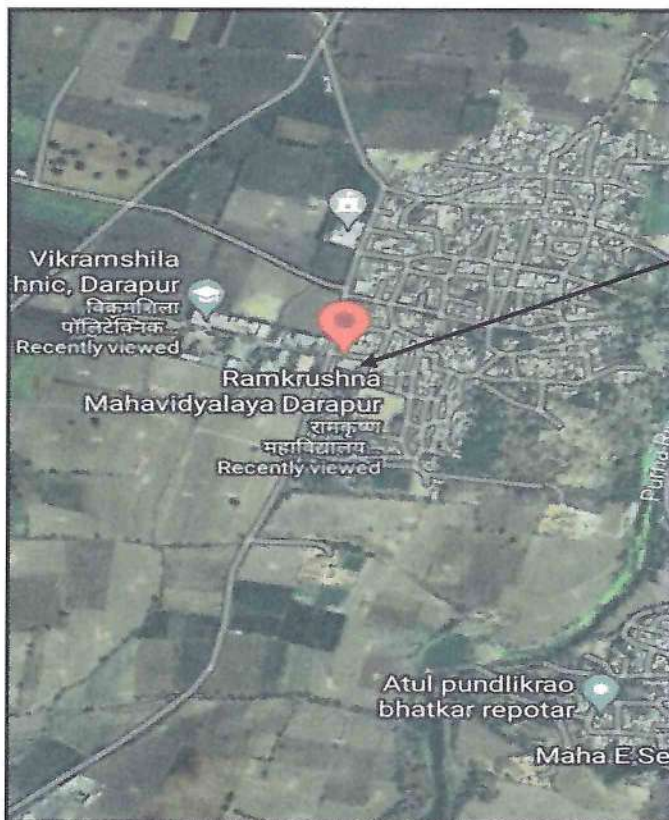
Objectives:

1. To study the connected load
2. To study the present Energy Consumption
3. To Study the present CO₂ emissions
4. To study usage of Renewable Energy
5. To study usage of LEDs

1.2 General Details of College: Table No:1

No	Head	Particulars
1	Name of Institution	Ramkrushna Mahavidyalaya, Darapur
2	Address	Darapur, Tal: Daryapur Dist. Amravati 444814
3	Year of Establishment	2000
4	Affiliation	Sant Gadge Baba Amravati University, Amravati

1.3 Google Earth Image:



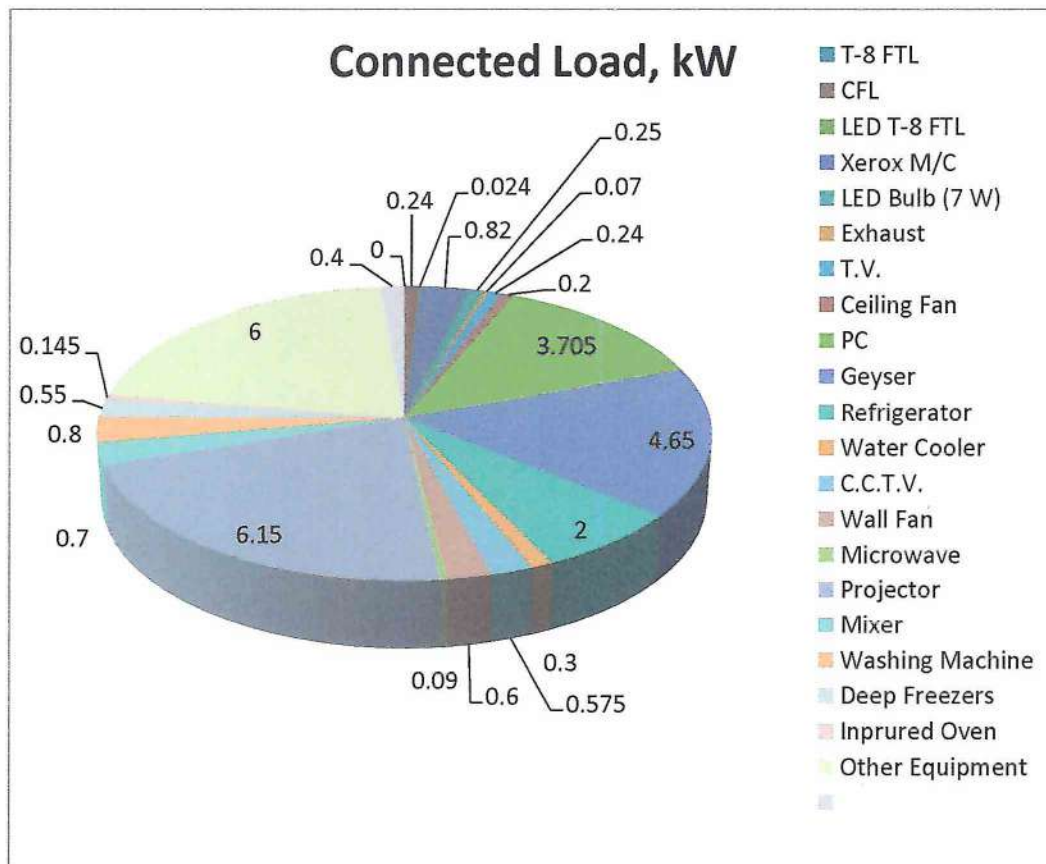
CHAPTER-II STUDY OF CONNECTED LOAD

In this chapter, we present the details of various Electrical loads as under

Table No-2: Equipment wise Connected Load:

No	Equipment	Qty	Load, W/Unit	Load, kW
1	T-8 FTL	6	40	0.24
2	CFL	1	24	0.024
3	LED T-8 FTL	41	20	0.82
4	Xerox M/C	1	250	0.25
5	LED Bulb (7 W)	10	7	0.07
6	Exhaust	4	60	0.24
7	T.V.	1	200	0.2
8	Ceiling Fan	57	65	3.705
9	PC	31	150	4.65
10	Geyser	1	2000	2
11	Refrigerator	1	300	0.3
12	Water Cooler	1	575	0.575
13	C.C.T.V.	5	120	0.6
14	Wall Fan	2	45	0.09
15	Microwave	3	2050	6.15
16	Projector	2	350	0.7
17	Mixer	5	160	0.8
18	Washing Machine	1	550	0.55
19	Deep Freezers	1	145	0.145
20	Oven	2	3000	6
21	Other Equipment	2	200	0.4
22	Total			29

Chart No-1: Connected Load:



CHAPTER-III STUDY OF PRESENT ENERGY CONSUMPTION

In this chapter, we present the analysis of last year Electricity Bills

Table No 3: Electrical Energy Consumption- 2021-22:

No	Month	Energy Consumed, kWh
1	Apr-21	22
2	May-21	22
3	Jun-21	22
4	Jul-21	22
5	Aug-21	22
6	Sep-21	22
7	Oct-21	22
8	Nov-21	22
9	Dec-21	22
10	Jan-22	22
11	Feb-22	22
12	Mar-22	40
13	Total	282
14	Maximum	40
15	Minimum	22
16	Average	24

Chart No 2: To study the variation of Monthly Electrical Energy Consumption:

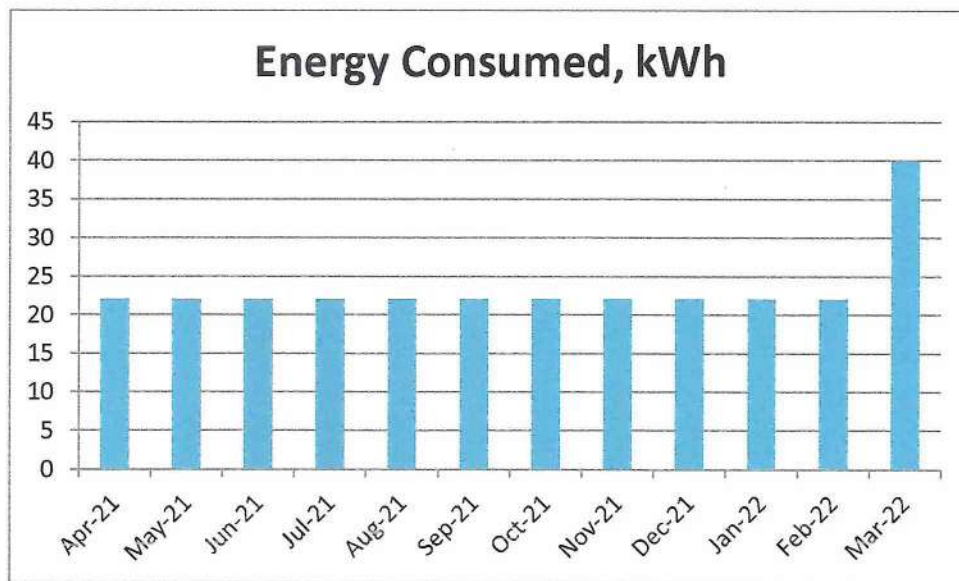


Table No 4: Important Parameters:

No	Parameter/ Value	Energy Consumed, kWh
1	Total	282
2	Maximum	40
3	Minimum	22
4	Average	24



CHAPTER-IV CARBON FOOTPRINTING

A Carbon Foot print is defined as the Total Greenhouse Gas emissions (CO₂ emissions), emitted due to various activities.

In this we compute the emissions of Carbon-Di-Oxide, by usage of the various form of Electrical Energy used by the College for performing its day to day activities

Basis for computation of CO₂ Emissions:

The basis of Calculation for CO₂ emissions due to Electrical Energy is as under

- 1 kWh of Electrical Energy releases 0.9 Kg of CO₂ into atmosphere

Based on the above Data we compute the CO₂ emissions which are being released in to the atmosphere by the College due to its Day to Day operations.

We herewith furnish the details of various forms of Energy consumption as under

Table No 5: Month wise Consumption of Electrical Energy & CO₂ Emissions:

No	Month	Energy Consumed, kWh	CO2 Emissions, MT
1	Apr-21	22	0.02
2	May-21	22	0.02
3	Jun-21	22	0.02
4	Jul-21	22	0.02
5	Aug-21	22	0.02
6	Sep-21	22	0.02
7	Oct-21	22	0.02
8	Nov-21	22	0.02
9	Dec-21	22	0.02
10	Jan-22	22	0.02
11	Feb-22	22	0.02
12	Mar-22	40	0.04
13	Total	282	0.25
14	Maximum	40	0.04
15	Minimum	22	0.02
16	Average	24	0.02

Chart No 3: Month wise CO₂ Emissions:

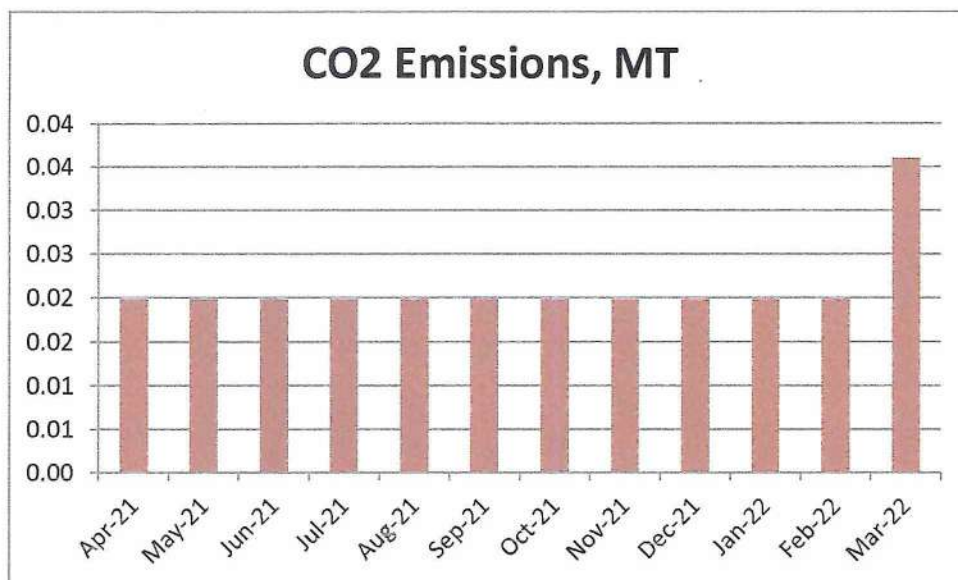


Table No 6: Important Parameters:

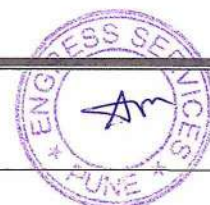
No	Parameter/ Value	Energy Consumed, kWh	CO ₂ Emissions, MT
1	Total	282	0.25
2	Maximum	40	0.04
3	Minimum	22	0.02
4	Average	24	0.02

CHAPTER-V

STUDY OF USAGE OF ALTERNATE ENERGY

The College has yet to install Roof Top Solar PV Plant. The percentage of usage of Alternate Energy to Annual Energy Demand works out to be Nil.

It is recommended to install Roof Top Solar PV Plant.



CHAPTER-VI**STUDY OF USAGE OF LED LIGHTING**

In this Chapter, we present the study of LEDs in the campus.

Table No 7: Computation of % of LED Lighting Load to Total Lighting Load:

No	Particulars	Value	Unit
1	No of T-8 FTL fittings	6	Nos
2	Load/per Fitting	40	W/Unit
3	Total Load of T-8 Fittings	0.24	kW
4	No of CFL fittings	1	Nos
5	Load/per Fitting	24	W/Unit
6	Total Load of CFL Fittings	0.024	kW
7	No of 20 W LED fittings	41	Nos
8	Load/per Fitting	20	W/Unit
9	Total Load of 20 W LED Fittings	0.82	kW
10	No of 07 W LED fittings	10	Nos
11	Load/per Fitting	7	W/Unit
12	Total Load of 70 W LED Fittings	0.07	kW
13	Total LED Lighting Load =9+12	0.89	kW
14	Total Lighting Load = 3+6+9+12	1.15	kW
15	% of Total Lighting met by LED =13*100/14	77	%

ENVIRONMENTAL AUDIT REPORT
of
**Ramkrushna Mahavidyalaya Darapur, Tq. Daryapur Dist.
Amravati 444814**



Year: 2021-22

Prepared by

ENGRESS SERVICES

Yashashree, 26, Nirmal Bag Society,
Near Mukangan English School, Parvati, Pune 411009
Phone: 09890444795, Email: engress123@gmail.com



MAHARASHTRA ENERGY DEVELOPMENT AGENCY

Maharashtra Energy Development Agency
(Government of Maharashtra Institution)
Aundh Road, Opposite Spicer College Road, Near Commissionerate of Animal Husbandary,
Aundh, Pune, Maharashtra 411067
Ph No: 020-35006450
Email: ee@mahamda.com, Web: www.mahamda.com

ECN/2022-23/CR-43/1709 10th May, 2022

**CERTIFICATE OF REGISTRATION
FOR CLASS 'A'**


We hereby certify that, the firm having following particulars is registered with **MAHARASHTRA ENERGY DEVELOPMENT AGENCY (MEDA)** under given category as "Energy Planner & Energy Auditor" in Maharashtra for Energy Conservation Programme of MEDA.

Name and Address of the firm : M's Engress Services
Yashshree, 26, Nirmal Bag Society,
Near Moktanag English School,
Parvati, Pune - 411 009.

Registration Category : *Empowered Consultant for Energy Conservation Programme for Class 'A'*

Registration Number : *MEDA/ECN/2022-23/Class A/EA-32.*

- Energy Conservation Programme intends to identify areas where wasteful use of energy occurs and to evaluate the scope for Energy Conservation and take concrete steps to achieve the evaluated energy savings.
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General Manager (EC)

 **GEM Certificate** 

ASSOCHAM hereby certifies that
Mr. A Y Mehendale

has successfully passed the
Green and Eco-friendly Movement Certified Professional Test (GEM CP)
with
"Excellent Performance"
on
06 June, 2022

He/she is now eligible to execute the GEM Sustainability Certification Projects.
ASSOCHAM feels proud to award the GEM Certified Professional title to him/her.

 **Pankaj R. Dharkar**
Chairman, GEM

GEM CP 22/786

 **Deepak Sood**
Secretary General, ASSOCHAM

ENGRESS SERVICES

Yashashree, 26, Nirmal Bag Society,
Near Mukhtangan English School, Parvati, Pune 411 009
Tel: 09890444795 Email: engress123@gmail.com

Ref: ES/TMA/21-22/03

Date: 15/06/2022

CERTIFICATE

This is to certify that we have conducted Environmental Audit at Ramkrushna Mahavidyalaya Darapur, Tq. Daryapur Dist. Amravati in the year 2021-22.

The College has adopted following Environment Friendly Initiatives:

- Usage of Energy Efficient LED Fittings
- Maximum Usage of Day Lighting
- Usage of BEE STAR Rated Energy Efficient Equipment
- Segregation of Waste at Source
- Bio Composting Pit for conversion of Organic Waste
- Implementation of Rain Water Management Project
- Tree Plantation in the campus
- Creation of Awareness by Display of Posters on Energy Conservation

We appreciate the support of Management, involvement of faculty members and students in the process of Energy Conservation & making the campus Green.

For Engress Services,



A Y Mehendale,

Certified Energy Auditor EA-8192

ASSOCHAM GEM Certified Professional: GEM: 22/788



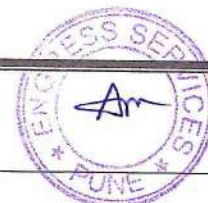
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ACKNOWLEDGEMENT

We at Engress Services, Pune, express our sincere gratitude to the management of Ramkrushna Mahavidyalaya Darapur, Tq. Daryapur Dist. Amravati for awarding us the assignment of Environmental Audit of their Darapur (Tq. Daryapur Dist. Amravati) campus for the Year: 2021-22.

We are thankful to all staff members for helping us during the field measurements.



EXECUTIVE SUMMARY

1. Ramkrushna Mahavidyalaya Darapur, Tq. Daryapur Dist. Amravati consumes various resources for day to day operations, namely: Air, Water, Electrical Energy.

2. Pollution/Waste Generated due to College Activities:

- Air pollution: Mainly CO₂ on account of Electricity & LPG Consumption
- Solid Waste: Bio degradable Kitchen Waste, Garden Waste
- Liquid Waste: Human liquid waste

3. Present Energy Consumption & CO₂ Emissions:

No	Parameter/ Value	Energy Consumed, kWh	CO ₂ Emissions, MT
1	Total	282	0.25
2	Maximum	40	0.04
3	Minimum	22	0.02
4	Average	24	0.02

4. The various projects already implemented for Environmental Conservation:

- Usage of Energy Efficient BEE STAR Rated Equipment
- Usage of Energy Efficient LED Light Fittings
- Implementation of Bio Composting pit for disposal of Bio degradable waste
- Implementation of Rain Water Management Project

5. Usage of Renewable Energy:

The College has yet to install Roof Top Solar PV Plant. It is recommended to install Roof Top Solar PV Plant.

6. Indoor Air Quality Parameters:

No	Parameter/Range	AQI	PM-2.5	PM-10
1	Maximum	99	67	78
2	Minimum	90	59	63

7. Study of Indoor Comfort Parameters:

No	Parameter/ Range	Temperature, °C	Humidity, %	Lux Level	Noise Level Range, dB
1	Maximum	32.4	35.6	198	49
2	Minimum	29	33.9	90	40

8. Waste Management:

8.1 Segregation of Waste at Source:

The Waste is segregated at source. There are Waste Collection Bins for Dry & Wet Waste.

8.2 Organic Waste Management:

For conversion of Organic Waste, the College has installed a Bio composting Pit, wherein, the bio-degradable waste is composted & is used in the Garden.

8.3 E Waste Management:

It is recommended to dispose of the E Waste through Authorized Agency.

9. Rain Water Management:

The College has installed Rain Water Management project, wherein the rain water falling on the terrace is collected through pipes and is used to increase underground water table.

10. Environment Friendly Initiatives:

- Tree Plantation in the campus.
- Creation of Awareness on Energy Conservation by Display of Posters

11. Assumption:

- 1 kWh of Electrical Energy releases 0.9 Kg of CO₂ into atmosphere.

12. References:

- For CO₂ Emission computation: www.tatapower.com
- For Various Indoor Air Parameters: www.ishrae.com
- For AQI & Water Quality Standards: www.cpcb.com

ABBREVIATIONS

SDGCT	: Shri. Dadasaheb Charitable Trust
RMD	: Ramkrushna Mahavidyalaya Darapur
MSEDCL	: Maharashtra State Distribution Company Limited
MEDA	: Maharashtra Energy Development Agency
MT	: Metric Ton
kWh	: kilo-Watt Hour
LPD	: Liters per Day
LED	: Light Emitting Diode
AQI	: Air Quality Index
PM	: Particulate Matter
CPCB	: Central Pollution Control Board
ISHRAE	: The Indian Society of Heating & Refrigerating & Air Conditioning Engineers
LPG	: Liquefied Petroleum Gas



CHAPTER-I

INTRODUCTION

1.1 Important Definitions:

1.1.1 Environment: Definition as per environment Protection Act: 1986

Environment includes water, air and land and the inter-relationship which exists among and between Water, Air, Land and Human beings, other living creatures, plants microorganism and property

1.1.2. Environmental Audit: Definition:

An audit which aims at verification and validation to ensure that various environmental laws are compiled with and adequate care has been taken towards environmental protection and preservation

According to UNEP, 1990, "Environmental audit can be defined as a management tool comprising systematic, documented and periodic evaluation of how well environmental organization management and equipment are performing with an aim of helping to regularize the environment"

1.1.3. Environmental Pollutant: means any solid, liquid and gaseous substance present in the concentration as may be, or tend to be, injurious to Environment.

1.1.4. Relevant Environmental Laws in India: Table No-1:

1927	The Indian Forest Act
1972	The Wildlife Protection Act
1974	The Water (Prevention and Control of Pollution) Act
1977	The Water (Prevention & Control of Pollution) Cess Act
1980	The Forest (Conservation) Act
1981	The Air (Prevention and Control of Pollution) Act
1986	The Environment Protection Act
1991	The Public Liability Insurance Act
2002	The Biological Diversity Act
2010	The National Green Tribunal Act

1.1.5. Some Important Environmental Rules in India: Table No-2:

1989	Hazardous Waste (Management and Handling) Rules
1989	Manufacture, Storage and Import of Hazardous Chemical Rules
2000	Municipal Solid Waste (Management and Handling) Rules
1998	The Biomedical Waste (Management and Handling) Rules
1999	The Environment (Siting for Industrial Projects) Rules
2000	Noise Pollution (Regulation and Control) Rules
2000	Ozone Depleting Substances (Regulation and Control) Rules
2011	E-waste (Management and Handling) Rules



2011	National Green Tribunal (Practices and Procedure) Rules
2011	Plastic Waste (Management and Handling) Rules

1.1.6 National Environmental Plans & Policy Documents: Table No-3:

1.	National Forest Policy, 1988
2.	National Water Policy, 2002
3.	National Environment Policy or NEP (2006)
4.	National Conservation Strategy and Policy Statement on Environment and Development, 1992
5.	Policy Statement for Abatement of Pollution (1992)
6.	National Action Plan on Climate Change
7.	Vision Statement on Environment and Human Health
8.	Technology Vision 2030 (The Energy Research Institute)
9.	Addressing Energy Security and Climate Change (MoEF and Bureau of Energy Efficiency)
10.	The Road to Copenhagen; India's Position on Climate Change Issues (MoEF)

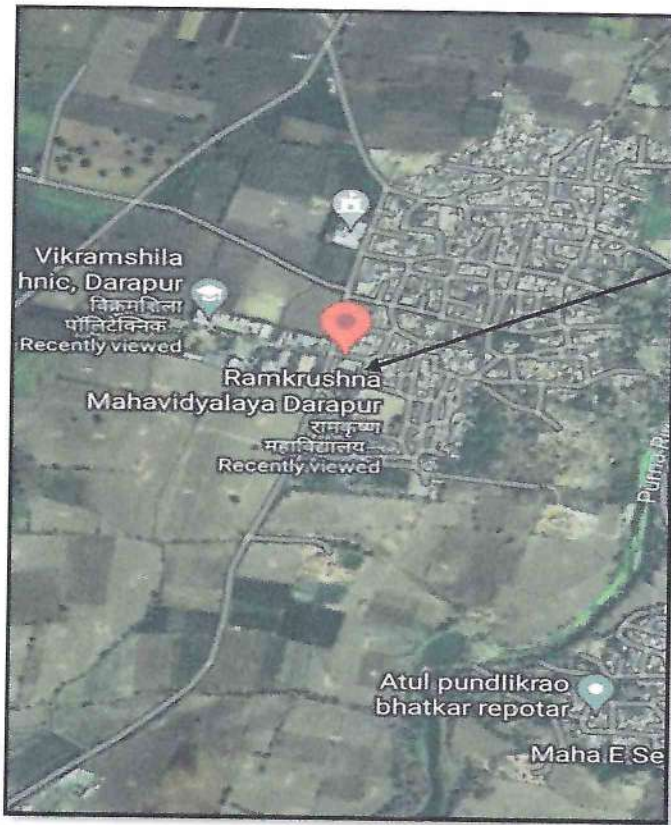
1.2 Objectives:

1. To study Resource Consumption & CO₂ Emission
2. To study CO₂ Emission Reduction
3. To study Indoor Air Quality Parameters
4. To study Indoor Comfort Parameters
5. To study Waste Management Practices
6. To Study Rain Water Management
7. To Study Eco Friendly Initiatives

1.3 Table No 4: General Details of College:

No	Head	Particulars
1	Name of Institution	Ramkrushna Mahavidyalaya Darapur
2	Address	Darapur, Tq. Daryapur Dist. Amravati 444814
3	Year of Establishment	2000
4	Affiliation	Sant Gadge Baba Amravati University, Amravati

1.4 Google Earth Image:



College
Campus

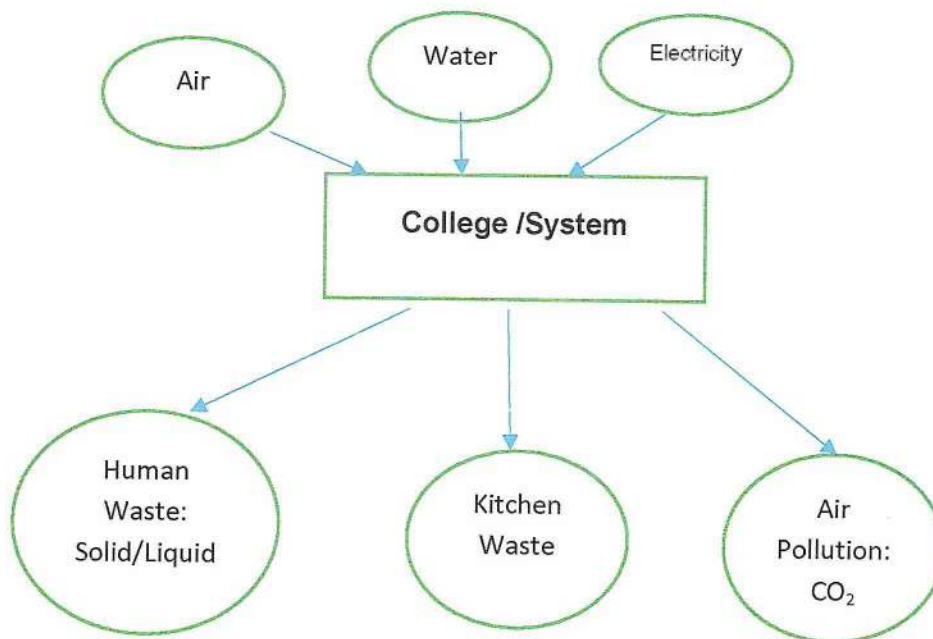
CHAPTER-II

STUDY OF RESOURCE CONSUMPTION & CO₂ EMISSION

The Institute consumes following basic/derived Resources:

1. Air
2. Water
3. Electrical Energy

We try to draw a schematic diagram for the College System & Environment as under.



Now we compute the Generation of CO₂ on account of consumption of Electrical Energy is as under. The basis of Calculation for CO₂ emissions due to Electrical Energy is as under

- 1 Unit (kWh) of Electrical Energy releases 0.9 Kg of CO₂ into atmosphere

Table No 5: Electrical Energy Consumption & CO₂ Emission: 2021-22:

No	Month	Energy Consumed, kWh	CO ₂ Emissions, MT
1	Apr-21	22	0.02
2	May-21	22	0.02
3	Jun-21	22	0.02
4	Jul-21	22	0.02
5	Aug-21	22	0.02
6	Sep-21	22	0.02
7	Oct-21	22	0.02

8	Nov-21	22	0.02
9	Dec-21	22	0.02
10	Jan-22	22	0.02
11	Feb-22	22	0.02
12	Mar-22	40	0.04
13	Total	282	0.25
14	Maximum	40	0.04
15	Minimum	22	0.02
16	Average	24	0.02

Chart No 2: To study the CO₂ Emission:

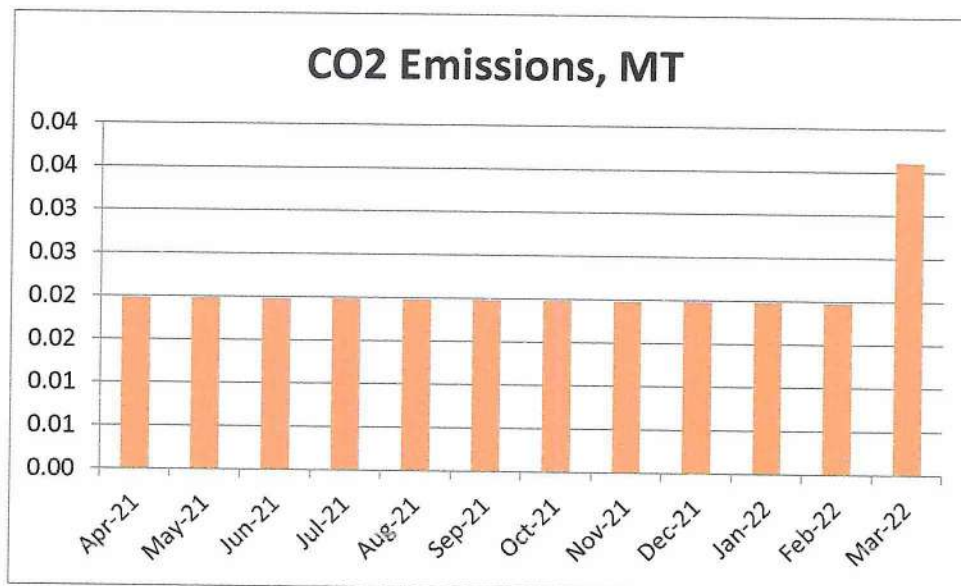


Table No 6: Variation in Important Parameters:

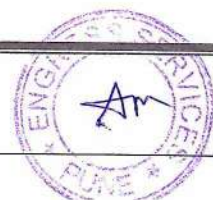
No	Parameter/ Value	Energy Consumed, kWh	CO ₂ Emissions, MT
1	Total	282	0.25
2	Maximum	40	0.04
3	Minimum	22	0.02
4	Average	24	0.02

CHAPTER-III

STUDY OF CO₂ EMISSION REDUCTION

The College has yet to install Roof Top Solar PV Plant.

It is recommended to install Solar PV Plant.



CHAPTER IV

STUDY OF INDOOR AIR QUALITY

4.1 Importance of Air Quality:

Air: The common name given to the atmospheric gases used in breathing and photosynthesis.

By volume, Dry Air contains 78.09% Nitrogen, 20.95% Oxygen, 0.93% Argon, 0.039% carbon dioxide, and small amounts of other gases.

On average, a person inhales about **14,000 liters** of air every day. Therefore, poor air quality may affect the quality of life now and for future generations by affecting the health, the environment, the economy and the city's livability.

Rapid urbanization and industrialization has added other elements/compounds to the pure air and thus caused the increase in pollution. In order to prevent, control and abate air pollution, the Air (Prevention and Control of Pollution) Act was enacted in 1981.

Air quality is a measure of the suitability of air for breathing by people, plants and animals.

According to Section 2(b) of Air (Prevention and control of pollution) Act, 1981 'air pollution' has been defined as **'the presence in the atmosphere of any air pollutant.'**

As per Section 2(a) of Air (Prevention and control of pollution) Act, 1981 'air pollutant' has been defined as **'any solid, liquid or gaseous substance [(including noise)] present in the atmosphere in such concentration as may be or tend to be injurious to human beings or other living creatures or plants or property or environment**

4.2 Air Quality Index:

An **Air Quality Index (AQI)** is a number used by government agencies to measure the **air pollution** levels and communicate it to the population. As the AQI increases, it means that a large percentage of the population will experience severe adverse health effects. The measurement of the AQI requires an **air monitor** and an **air pollutant** concentration over a specified **averaging period**.

We present herewith following important Parameters.

1. AQI- Air Quality Index
2. PM 2.5- Particulate Matter of Size 2.5
3. PM 2.5- Particulate Matter of Size 2.5

Table No 7: Indoor Air Quality Parameters:

No	Location	AQI	PM-2.5	PM-10
1	Examination Section	99	67	72
2	Seminar Hall	98	66	71

3	Geography Lab	95	65	69
4	NSS Office	97	66	78
5	IQAC Cell	94	67	72
6	Home Science	93	64	69
7	Library	90	60	72
8	Class Room-BA I	97	67	77
9	Computer Centre	92	59	64
10	Admin Office	90	60	69
11	Class Room-BA II	91	64	63
	Maximum	99	67	78
	Minimum	90	59	63



CHAPTER V

STUDY OF INDOOR COMFORT CONDITION

In this Chapter, we present the various Indoor Comfort Parameters measured during the Audit.

The Parameters include:

1. Temperature
2. Humidity
3. Lux Level
4. Noise Level.

Table No 8: Study of Indoor Comfort Parameters:

No	Location	Temperature, °C	Humidity, %	Lux Level	Noise Level, dB
1	Examination Section	32	35	150	42
2	Seminar Hall	32.1	35.1	171	43
3	Geography Lab	32.3	34.9	169	45
4	NSS Office	32.4	35	119	47
5	IQAC Cell	31.9	35.3	125	41
6	Home Science	32	34.8	110	40
7	Library	31	35	99	45
8	Class Room-BA I	32.1	35.6	167	47
9	Computer Centre	29	34.8	90	49
10	Admin Office	29.8	34	115	42
11	Class Room-BA II	29.7	33.9	198	40
	Maximum	32.4	35.6	198	49
	Minimum	29	33.9	90	40

CHAPTER VI STUDY OF WASTE MANAGEMENT

6.1 Segregation of Waste at Source:

The Waste is segregated at source. There are separate Bins for collection of Dry & Wet Waste.

Photograph of Separate Waste Collection Bins for Dry & Wet Waste:



6.2 Organic Waste Management:

For conversion of Organic Waste, the College has already installed a Bio composting Pit, wherein, the bio-degradable waste is composted & is used in the Garden.

Photograph of Bio Composting Arrangement:



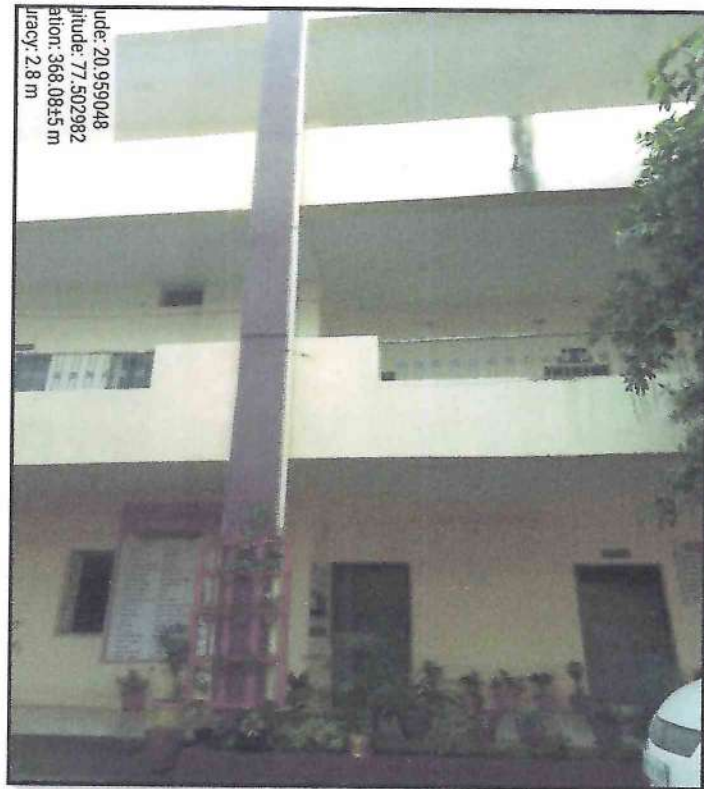
6.3 E Waste Management:

It is recommended to dispose of the E Waste through Authorized Agency.

CHAPTER VII STUDY OF RAIN WATER MANAGEMENT

The College has installed Rain Water Management project, wherein the rain water falling on the terrace is collected through pipe and is used to increase underground water table.

Photograph of Rain Water Management Pipe:



CHAPTER-VIII

STUDY OF ENVIRONMENT FRIENDLY INITIATIVES

8.1 Internal Tree Plantation:

The College has well maintained Lawn and Tree Plantation.

Photograph of Lawn/Tree plantation in the campus:



8.2 Creation of Awareness on Resource Conservation:

The College has displayed Posters on Conservation of Resources like Energy, Water.

Photograph of Posters on Energy & Water Conservation:



ANNEXURE-I:VARIOUS AIR QUALITY, WATER QUALITY, NOISE & INDOOR COMFORT STANDARDS:

1. Category Wise Air Quality Index Values & Concentration of PM 2.5 & PM10:

No	Category	AQI Value	Concentration Range, PM 2.5	Concentration Range, PM 10
1	Good	0 to 50	0 to 30	0 to 50
2	Satisfactory	51 to 100	31 to 60	51 to 100
3	Moderately Polluted	101 to 200	61 to 90	101 to 250
4	Poor	201 to 300	91 to 120	251 to 350
5	Very Poor	301 to 400	121 to 250	351 to 430
6	Severe	401 to 500	250 +	430 +

2. Recommended Water Quality Standards:

No	Designated Best Use	Criteria
1	Drinking Water Source without conventional Treatment but after disinfection	pH between 6.5 to 8.5 Dissolved Oxygen 6 mg/l or more
2	Drinking water source after conventional treatment and disinfection	pH between 6 to 9 Dissolved Oxygen 4 mg/l or more
3	Outdoor Bathing (Organized)	pH between 6.5 to 8.5 Dissolved Oxygen 5 mg/l or more
4	Controlled Waste Disposal	pH between 6 to 8.5

3. Recommended Noise Level Standards:

No	Location	Noise Level dB
1	Auditoriums	20-25
2	Outdoor Playground	55
3	Occupied Class Room	40-45
4	Un occupied Class Room	35
5	Apartment, Homes	35-40
6	Offices	45-50
7	Libraries	35-40
8	Restaurants	50-55

4. Thermal Comfort Conditions: For Non-conditioned Buildings:

No	Parameter	Value
1	Temperature	Less Than 33°C
2	Humidity	Less Than 70%

GREEN AUDIT REPORT
of
RAMKRUSHNA MAHAVIDYALAYA DARAPUR,
Tal: Daryapur, Dist. Amravati 444 814



Year: 2021-22

Prepared by

ENGRESS SERVICES

Yashashree, 26, Nirmal Bag Society,
Near Muktangon English School, Parvati, Pune 411009
Phone: 09890444795, Email: engress123@gmail.com



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with
"Excellent Performance"
on
06 June, 2022

*He/she is now eligible to execute the GEM Sustainability Certification Projects,
ASSOCHAM feels proud to award the GEM Certified Professional title to him/her.*

 **Pankaj R. Dharkar**
Chairman, GEM **GEM CP 22/788** 
Deepak Sood
Secretary General, ASSOCHAM



ENGRESS SERVICES

Yashashree, 26, Nirmal Bag Society,
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Tel: 09890444795 Email: engress123@gmail.com

Ref: ES/RMD/21-22/02

Date: 15/06/2022

CERTIFICATE

This is to certify that we have conducted Green Audit at Ramkrushna Mahavidyalaya Darapur, Tq. Daryapur Dist. Amravati in the year 2021-22.

The College has adopted following Green Initiatives:

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- Maximum Usage of Day Lighting
- Usage of BEE STAR Rated Energy Efficient Equipment
- Segregation of Waste at Source
- Bio Composting Pit for conversion of Organic Waste
- Implementation of Rain Water Management Project
- Good Internal Road
- Tree Plantation in the campus
- Provision of Ramp for Divyangajan
- Creation of Awareness by Display of Poster on Energy Conservation

We appreciate the support of Management, involvement of faculty members and students in the process of Energy Conservation & making the campus Green.

For Engress Services,



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ASSOCHAM GEM Certified Professional: GEM: 22/788



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ACKNOWLEDGEMENT

We at Engress Services, Pune, express our sincere gratitude to the management of Ramkrushna Mahavidyalaya Darapur, Tq. Daryapur Dist. Amravati for awarding us the assignment of Green Audit of their Darapur campus for the Year: 2021-22.

We are thankful to all staff members for helping us during the field study.



EXECUTIVE SUMMARY

1. Ramkrushna Mahavidyalaya Darapur, Tq. Daryapur Dist. Amravati consumes Energy in two forms, namely LPG used for Cooking and Electrical Energy used for various gadgets & office equipment

2. Present Energy Consumption & CO₂ Emissions:

No	Parameter/ Value	Energy Consumed, kWh	CO ₂ Emissions, MT
1	Total	282	0.25
2	Maximum	40	0.04
3	Minimum	22	0.02
4	Average	24	0.02

3. Initiatives for Energy Conservation:

- Usage of Energy Efficient LED Fittings
- Usage of BEE STAR Rated Equipment
- Maximum usage of Day Lighting

4. Usage of Renewable Energy:

The College has yet to install Roof Top Solar PV Plant. It is recommended to install Roof Top Solar PV Plant.

5. Waste Management:

5.1 Segregation of Waste at Source:

The Waste is segregated at source. There are Waste Collection Bins for Dry & Wet Waste.

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For conversion of Organic Waste, the College has already installed a Bio composting Pit, wherein, the bio-degradable waste is composted & is used in the Garden.

5.3 E Waste Management:

It is recommended to dispose of the E Waste through Authorized Agency.

6. Rain Water Management:

The College has installed Rain Water Management project, wherein the rain water falling on the terrace is collected through pipe and is used to increase underground water table.

7. Green & Sustainable Initiatives:

- Good Internal Road.
- Tree Plantation in the campus.

- Provision of Ramp for Divyangajan
- Creation of Awareness on Energy Conservation by Display of Poster.

8. Assumption:

- 1 kWh of Electrical Energy releases 0.9 Kg of CO₂ into atmosphere.

9. Reference:

- For CO₂ Emissions: www.tatapower.com



ABBREVIATIONS

SDGCT	:	Shri. Dadasaheb Charitable, Trust
RMD	:	Ramkrushna Mahavidyalaya Darapur
A C	:	Air Conditioner
MSEDCL	:	Maharashtra State Distribution Company Limited
MEDA	:	Maharashtra Energy Development Agency
MT	:	Metric Ton
kWh	:	kilo-Watt Hour
LPD	:	Liters per Day
LED	:	Light Emitting Diode
CFL	:	Compact Fluorescent Light
FTL	:	Fluorescent Tube Light
W	:	Watt



CHAPTER-I INTRODUCTION

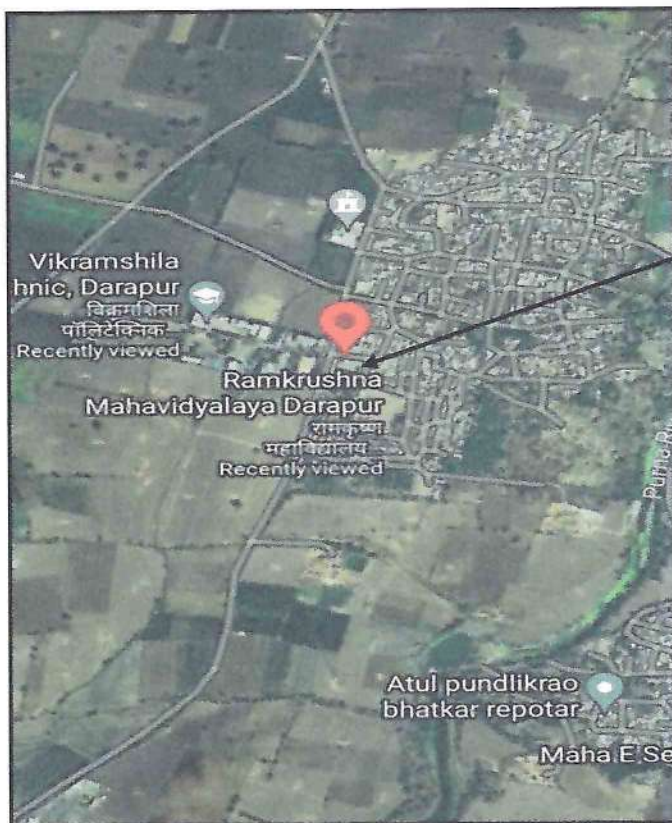
1.1 Objectives:

1. To study present Energy Consumption
2. To compute CO₂ emissions
3. To study usage of Renewable Energy
4. To study Waste Management Practices
5. To study Green & Sustainable Initiatives

1.2 General Details of College: Table No 1:

No	Head	Particulars
1	Name of Institution	Ramkrushna Mahavidyalaya Darapur
2	Address	Darapur, Tq. Daryapur Dist. Amravati 444814
3	Year of Establishment	2000
4	Affiliation	Sant Gadge Baba Amravati University, Amravati

1.3 Google Earth Image:



College
Campus

CHAPTER-II STUDY OF PRESENT ENERGY CONSUMPTION

In this chapter, we present the analysis of last year Electricity Bills

Table No. 2: Electrical Energy Consumption- 2021-22:

No	Month	Energy Consumed, kWh
1	Apr-21	22
2	May-21	22
3	Jun-21	22
4	Jul-21	22
5	Aug-21	22
6	Sep-21	22
7	Oct-21	22
8	Nov-21	22
9	Dec-21	22
10	Jan-22	22
11	Feb-22	22
12	Mar-22	40
13	Total	282
14	Maximum	40
15	Minimum	22
16	Average	24

Chart No: 1: To study the variation of Monthly Energy Consumption:

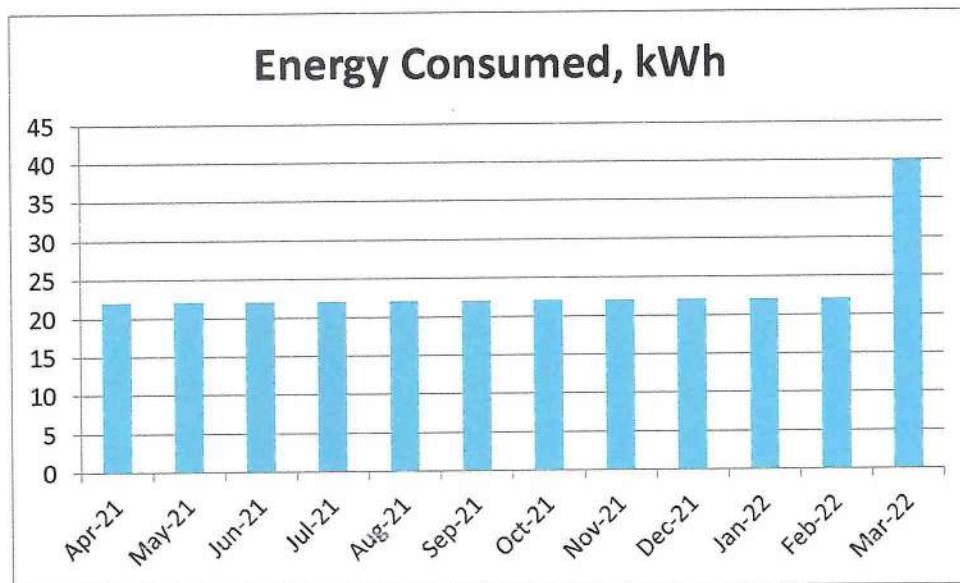


Table No 3: Important Parameters:

No	Parameter/ Value	Energy Consumed, kWh
1	Total	282
2	Maximum	40
3	Minimum	22
4	Average	24



CHAPTER-III STUDY OF CARBON FOOTPRINTING

A Carbon Foot print is defined as the Total Greenhouse Gas emissions (CO₂ emissions), emitted due to various activities.

In this we compute the emissions of Carbon-Di-Oxide, by usage of the various form of Electrical Energy used by the College for performing its day to day activities

Basis for computation of CO₂ Emissions:

The basis of Calculation for CO₂ emissions due to Electrical Energy is as under

- 1 Unit (kWh) of Electrical Energy releases 0.9 Kg of CO₂ into atmosphere

Based on the above Data we compute the CO₂ emissions which are being released in to the atmosphere by the College due to its Day to Day operations.

We herewith furnish the details of various forms of Energy consumption as under

Table No 4: Month wise Consumption of Electrical Energy & CO₂ Emissions:

No	Month	Energy Consumed, kWh	CO2 Emissions, MT
1	Apr-21	22	0.02
2	May-21	22	0.02
3	Jun-21	22	0.02
4	Jul-21	22	0.02
5	Aug-21	22	0.02
6	Sep-21	22	0.02
7	Oct-21	22	0.02
8	Nov-21	22	0.02
9	Dec-21	22	0.02
10	Jan-22	22	0.02
11	Feb-22	22	0.02
12	Mar-22	40	0.04
13	Total	282	0.25
14	Maximum	40	0.04
15	Minimum	22	0.02
16	Average	24	0.02

Chart No 2: Representation of Month wise CO₂ emissions:

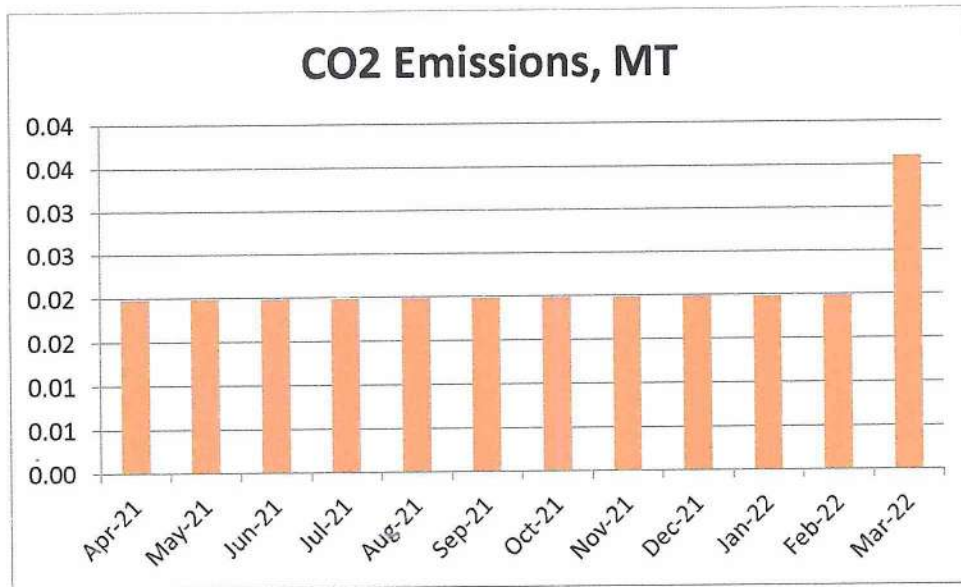


Table No 5: Important Parameters:

No	Parameter/ Value	Energy Consumed, kWh	CO ₂ Emissions, MT
1	Total	282	0.25
2	Maximum	40	0.04
3	Minimum	22	0.02
4	Average	24	0.02

CHAPTER-IV

STUDY OF USAGE OF RENEWABLE ENERGY

The College has yet to install Roof Top Solar PV Plant.

It is recommended to install Solar PV Plant.



CHAPTER V STUDY OF WASTE MANAGEMENT

5.1 Segregation of Waste at Source:

The Waste is segregated at source. There are separate Bins for collection of Dry & Wet Waste.

Photograph of Separate Waste Collection Bins:



5.2 Organic Waste Management:

For conversion of Organic Waste, the College has already installed a Bio composting Pit, wherein, the bio-degradable waste is composted & is used in the Garden.

Photograph of Bio Composting Arrangement:



5.3 E Waste Management:

It is recommended to dispose of the E Waste through Authorized Agency.

CHAPTER-VI STUDY OF RAIN WATER MANAGEMENT

The College has installed Rain Water Management project, wherein the rain water falling on the terrace is collected through pipe and is used to increase underground water table.

Photograph of Rain Water Management Pipe:



CHAPTER-VII

STUDY OF GREEN PRACTICES

7.1 Pedestrian Friendly Roads:

The College has well defined pedestrian foot paths as to facilitate the easy movement of the students within the campus.

Photograph of Road within campus:



7.2 Green Landscaping with Trees and Plants:

The College has beautiful maintained Garden.

Photograph of Lawn and Tree plantation in the campus:



7.3 Provision of Ramp for Divyangajan:

The College has constructed Ramp for easy movement of Divyanga students.

Photograph of Ramp:



7.4 Creation of Awareness on Resource Conservation:

The College has displayed Posters on Energy Conservation.

Photograph of Posters on Energy Conservation:



ANNEXURE:

DETAILS OF TREES IN THE CAMPUS

1. List of Trees:

No.	Common Name of Tree
1	Codiaeun
2	Dypsis lutescene
3	Ficus macrocarpa
4	Tamarix gallica
5	Plumeria rubra
6	Allium tuberosum
7	Acacia farnesiana
8	Bryophyllum punnatum
9	Jatropha integerrima
10	Ficus religiosa
11	Syzygium cumini
12	Punica granatum
13	Thevetia peruviana
14	Polyalthiya longifolia
15	Terminalia catappa
16	Aloe vera
17	Lawsonia inermis
18	Caesalpinia decapetala
19	Calatropis giganeta
20	Costus spiralis
21	Asperagus officinalis
22	Ocimum tenuiflorum
23	Livistona chineisis
24	Acalypha wikesiana
25	Cupressus semperviens
26	Agapanthus praecox
27	Yucca aloifolia
28	Dianthus barbatus
29	Metrosideros excels
30	Lxora coccinea
31	Hubiscus rosa-sinensis
32	Leucophyllum candidum
33	Gladiolus communis
34	Rosa sp.
35	Alstonia scholaris
36	Jacaranda mimosofolia



GREEN AUDIT REPORT
of
RAMKRUSHNA MAHAVIDYALAYA
Darapur, Taluka: Daryapur, Dist. Amravati 444814



Year: 2022-23

Prepared by:

ENGRESS SERVICES

Yashashree, 26, Nirmal Bag Society
Near Muktagan English School, Parvati, Pune 411009
Phone: 09890444795 Email: engress123@gmail.com



ENGRESS SERVICES

Yashashree, 26, Nirmal Bag Society, Near Muktangan English School,
Parvati, Pune 411 009 Tel: 09890444795 Email: engress123@gmail.com
MEDA Registration No: ECN/2022-23/CR-43/1709
ISO: 9001-2015 Certified (Cert No: 23EQKC13),
ISO: 14001-2015 Certified (Cert No: 23EEKW20)

GREEN AUDIT CERTIFICATE

Certificate No: ES/RMV/22-23/02

Date: 01/07/2023

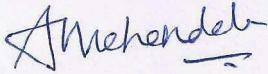
This is to certify that we have conducted Green Audit at Ramkrushna Mahavidyalaya Darapur, Tq. Daryapur Dist. Amravati in the Year 2022-23.

The College has adopted following Green & Sustainable Practices:

- Usage of Energy Efficient LED Fittings
- Usage of Energy Efficient BEE STAR Rated equipment
- Maximum usage of Day Lighting
- Segregation of Waste at source
- Implementation of Rain Water Management Project
- Good Internal Road
- Internal Tree Plantation
- Provision of Ramp for Divyangajan
- Creation of awareness about Water Conservation by Display of Posters

We appreciate the support of Management, involvement of faculty members and students in the process of Energy Conservation & making the campus Green.

For Engress Services,

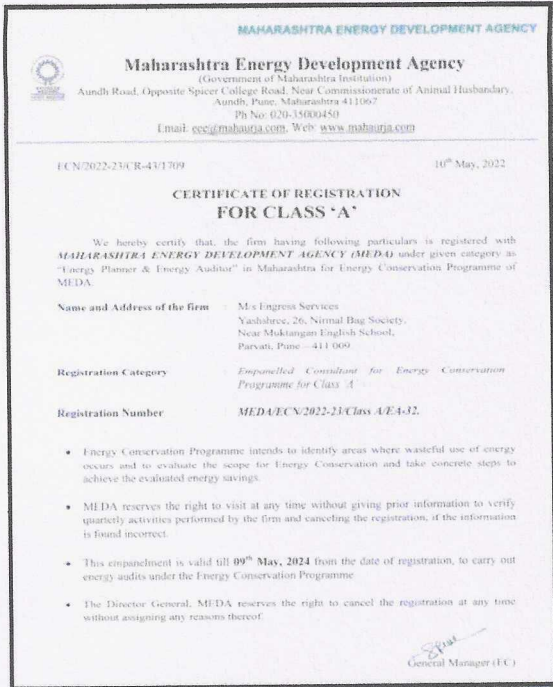


A Y Mehendale,

B E- Mech, M Tech-Energy, Certified Energy Auditor, EA-8192
ASSOCHAM GEM Certified Professional: GEM: 22/788



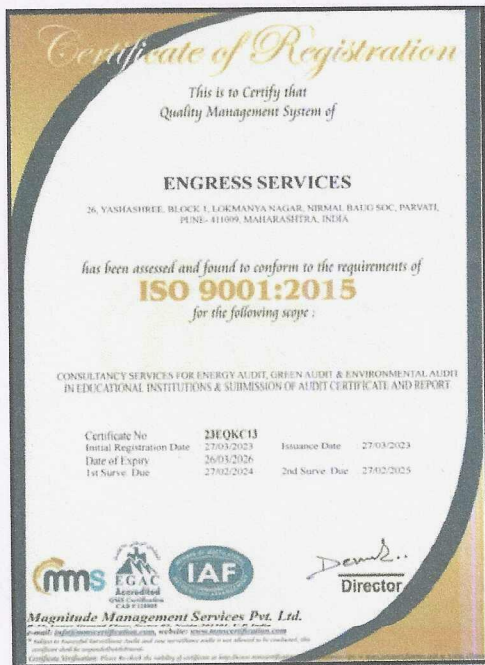
REGISTRATION CERTIFICATES



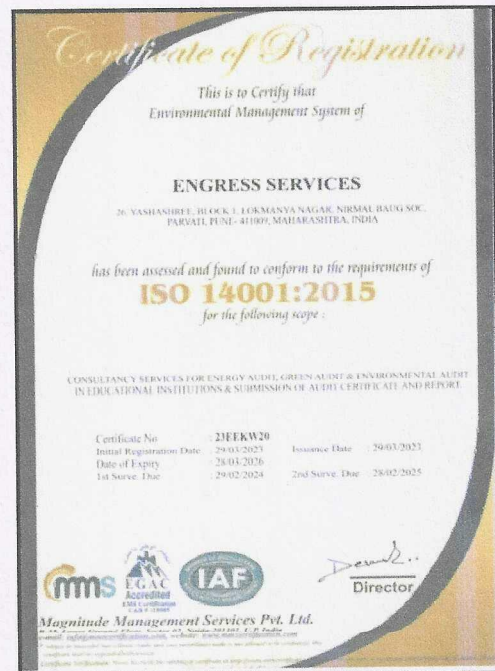
MEDA REGISTRATION CERTIFICATE



ASSOCHAM GEM CP CERTIFICATE



ISO: 9001-2015 Certificate



ISO: 14001-2015 Certificate



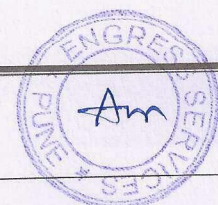
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ACKNOWLEDGEMENT

We Engress Services, Pune, express our sincere gratitude to the management of Ramkrushna Mahavidyalaya Darapur, Tq. Daryapur Dist. Amravati for awarding us the assignment of Green Audit of their Darapur (Tq. Daryapur) Campus for the Year: 2022-23.

We are thankful to all the staff members for helping us during the field study.



EXECUTIVE SUMMARY

1. Ramkrushna Mahavidyalaya, Amravati, consumes Energy in the form of **Electrical Energy**; used for various Electrical Equipment.

2. Present Energy Consumption & CO₂ Emission:

No	Particulars	Value	Unit
1	Annual Energy Consumed	4160	kWh
2	Annual CO ₂ Emissions	3.74	MT

3. Renewable Energy Usage:

- The College has yet to install Roof Top Solar PV Plant

4. Waste Management:

No	Head	Particulars
1	Solid Waste	Segregation of Waste at source
2	E Waste	Recommended to dispose of through Authorized Agency

5. Rain Water Harvesting:

The College has installed Pipes from the terrace and the Rain water falling on the terrace is used to increase the Underground Water Table.

6. Green & Sustainable Practices:

- Maintenance of good Internal Road
- Tree Plantation in the campus.
- Provision of Ramp for Divyangajan
- Creation of awareness on Water Conservation Display of Posters

7. Assumption:

- 1 kWh of Electrical Energy releases 0.9 Kg of CO₂ into atmosphere

8. Reference:

- For CO₂ Emissions: www.tatapower.com
-

ABBREVIATIONS

BEE	Bureau of Energy Efficiency
kWh	Kilo Watt Hour
LPD	Liters Per Day
Kg	Kilo Gram
MT	Metric Ton
CO ₂	Carbon Di Oxide
Qty	Quantity

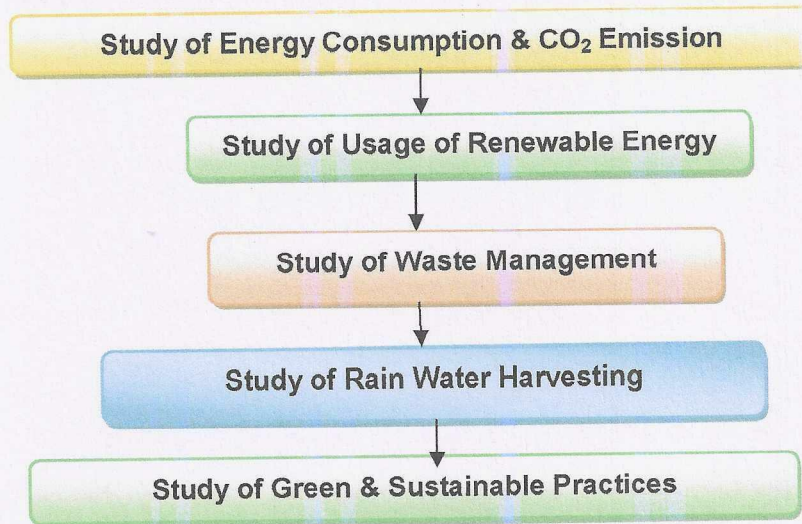


CHAPTER-I INTRODUCTION

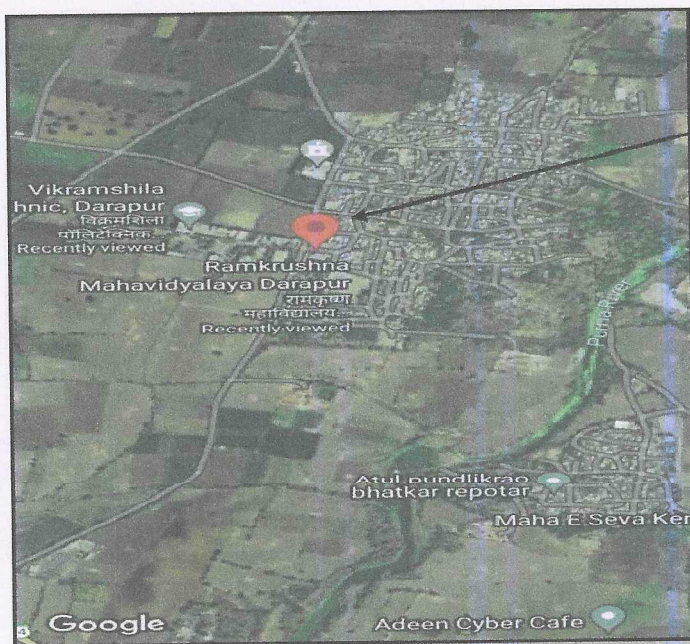
1.1 Introduction:

A Green Audit is conducted at Ramkrushna Mahavidyalaya Darapur, Tq. Daryapur Dist. Amravati.

1.2 Audit Procedural Steps:



1.3 College Location Image:



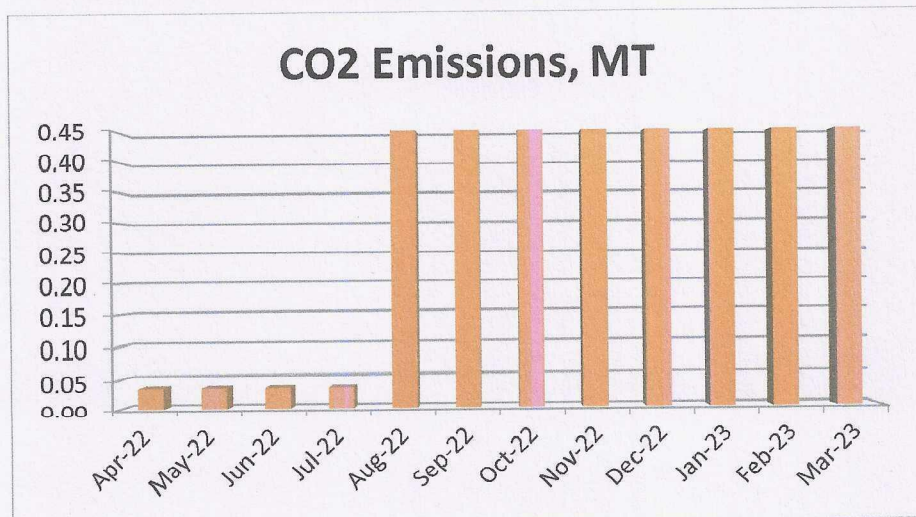
CHAPTER-II STUDY OF ENERGY CONSUMPTION & CO₂ EMISSION

A Carbon Foot print is defined as the Total Greenhouse Gas emissions, emitted due to various activities. Basis for computation of CO₂ Emissions: 1 kWh of Electrical Energy releases 0.9 Kg of CO₂ into atmosphere.

Table No1: Month wise Energy Consumption & CO₂ Emissions:

No	Month	Energy Consumed, kWh	CO ₂ Emissions, MT
1	Apr-22	40	0.04
2	May-22	40	0.04
3	Jun-22	40	0.04
4	Jul-22	40	0.04
5	Aug-22	500	0.45
6	Sep-22	500	0.45
7	Oct-22	500	0.45
8	Nov-22	500	0.45
9	Dec-22	500	0.45
10	Jan-23	500	0.45
11	Feb-23	500	0.45
12	Mar-23	500	0.45
13	Total	4160	3.74
14	Maximum	500	0.45
15	Minimum	40	0.04
16	Average	347	0.31

Chart No 1: Month wise CO₂ Emissions:



CHAPTER III

STUDY OF USAGE OF RENEWABLE ENERGY

The College has yet to install Roof Top Solar PV Plant.



CHAPTER IV STUDY OF WASTE MANAGEMENT

4.1 Segregation of Waste at Source:

The Waste is segregated at source. Waste collection Bins are placed at strategic locations.
Photograph of Waste Collection Bins:



4.2 E Waste Management:

It is recommended to dispose of the E Waste through Authorized Agency

CHAPTER V STUDY OF RAIN WATER MANAGEMENT

The College has installed Pipes from the terrace and the Rain water falling on the terrace is used to increase the Underground Water Table.

Photograph of Rain Water Carrying Pipe:



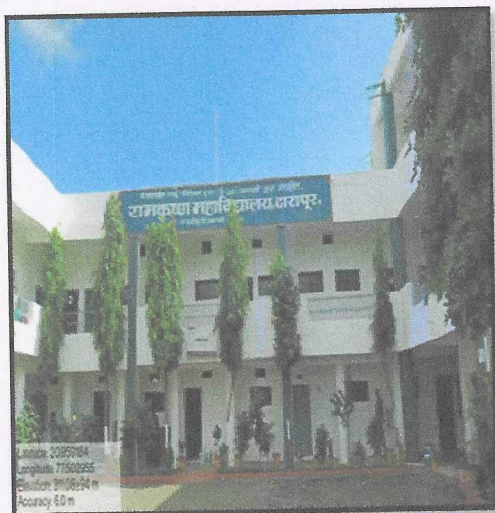
Rain Water
Collecting Pipe

CHAPTER VI STUDY OF GREEN & SUSTAINABLE PRACTICES

6.1 Pedestrian Friendly Road & Internal Tree Plantation:

The College has well maintained internal road to facilitate the easy movement of the students within the campus. The College has well maintained Plantation in the campus.

Photograph of Internal Road & Tree plantation:



6.2 Provision of Ramp for Divyangajan:

For easy movement of Divyangajan, the College has made provision of Ramp.

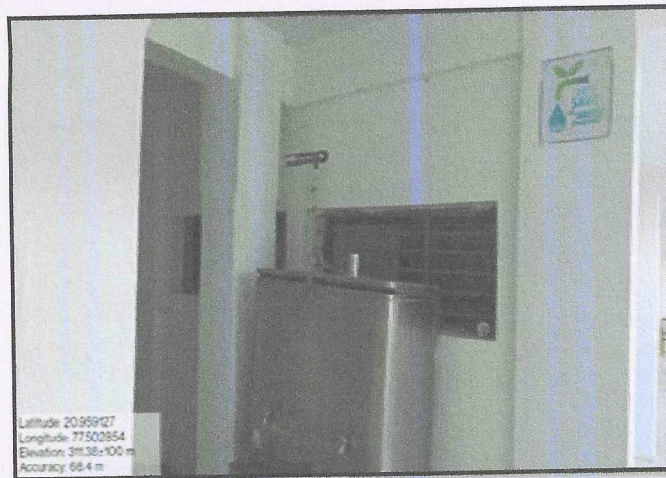
Photograph of Ramp:



6.3 Creation of Awareness about Water Conservation:

The College has displayed posters emphasizing on importance of Water Conservation.

Photograph of Poster on Water Conservation:



ANNEXURE-1:
LIST OF TREES IN THE CAMPUS:

List of Trees in the Campus:

No.	Common Name of Tree
1	Saracaasoca
2	Suptarni
3	Azadirachtaindica
4	Benjamin Fakes
5	Annonasquamosa
6	Bougainvillea
7	Gilistariya
8	Vachellianilotica
9	Coconut
10	Thuja
11	Gulab
12	Terminaliacatappa
13	Elshotziaciliata
14	Agave
15	PileaMicrophyliya
16	Money Plant
17	Euphorbia mili Des Moul
18	ChamaeropsHinmilis
19	Jaswand
20	Lili
21	Peepal
22	Alovevera
23	Hazel
24	Champa
25	Tulip
26	Delonixregia
27	Banyan
28	Bael
29	Mimusopselengi
30	Euphorbia Trigona

GREEN AUDIT REPORT

RAMKRUSHNA MAHAVIDYALAYA DARAPUR,

Tq. Daryapur Dist. Amravati 444814



Year: 2023-24


Prepared by:

ENGRESS SERVICES

Yashashree, 26, Nirmal Bag Society
Near Mukhtangan English School, Parvati, Pune 411009
Phone: 09890444795 Email: engress123@gmail.com



Registration Certificates: UDYAM, MEDA, ASSOCHAM GEM-CP, ISO: 9001 & 14001:


 भारत सरकार
 Government of India
 सूक्ष्म, लघु एवं मध्यम उद्यम मंत्रालय
 Ministry of Micro, Small and Medium Enterprises

UDYAM REGISTRATION CERTIFICATE

UDYAM REGISTRATION NUMBER: UDYAM-MH-26-0135636

NAME OF ENTERPRISE: ENGRESS SERVICES

SNo.	Classification Year	Enterprise Type	Classification Date
1	2023-24	Micro	03/02/2024
2	2022-23	Micro	26/06/2022
3	2021-22	Micro	27/07/2021

TYPE OF ENTERPRISE: SERVICES

MAJOR ACTIVITY: SERVICES

SOCIAL CATEGORY OF ENTREPRENEUR: GENERAL

NAME OF UNIT(S):

S.No.	Name of Unit(s)
1	Engress Services

Flat/Door/Block No.	26	Name of Premises/ Building	Yashashree
Village/Town	Pune	Block	1
Road/Street/Lane	Lokmanya Nagar, Nirmal Baug Soc.	City	Pune
State	MAHARASHTRA	District	PUNE, Pin 411069
Mobile	8767447244	Email:	engress123@gmail.com

OFFICIAL ADDRESS OF ENTERPRISE

DATE OF INCORPORATION / REGISTRATION OF ENTERPRISE: 13/04/2021

DATE OF COMMENCEMENT OF PRODUCTION/BUSINESS: 13/04/2021

S.No.	NIC 2 Digit	NIC 4 Digit	NIC 5 Digit	Activity
1	70 - Activities of head offices; management consultancy activities	7020 - Management consultancy activities	70200 - Management consultancy activities	Services

NATIONAL INDUSTRY CLASSIFICATION CODE(S)

DATE OF UDYAM REGISTRATION: 27/07/2021




 MAHARASHTRA ENERGY DEVELOPMENT AGENCY
 Maharashtra Energy Development Agency
 (Government of Maharashtra Institution)
 Aundh Road, Opposite Spicer College Road, Near Commissionerate of Animal Husbandary,
 Aundh, Pune, Maharashtra 411067
 Ph No: 020-35000450
 Email: ee@maharaja.com, Web: www.maharaja.com

ECN/2022-23/CR-43/1709 10th May, 2022

CERTIFICATE OF REGISTRATION FOR CLASS 'A'

We hereby certify that, the firm having following particulars is registered with MAHARASHTRA ENERGY DEVELOPMENT AGENCY (MEDA) under given category as "Energy Planner & Energy Auditor" in Maharashtra for Energy Conservation Programme of MEDA.

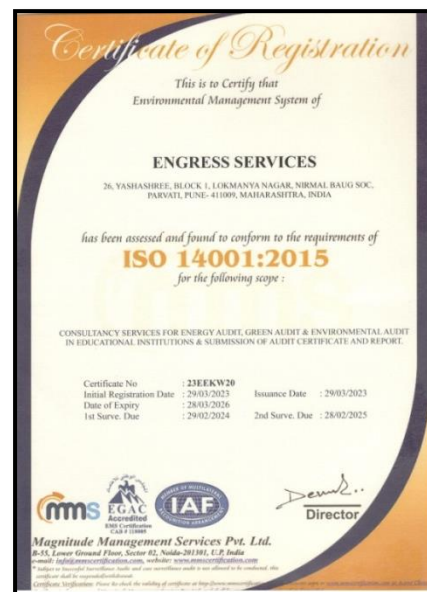
Name and Address of the firm : M/s Engress Services
Yashashree, 26, Nirmal Bag Society,
Near Mukhtangan English School,
Parvati, Pune - 411 009.

Registration Category : Empanelled Consultant for Energy Conservation Programme for Class 'A'

Registration Number : MEDA/ECN/2022-23/Class A/E-A-32.

- Energy Conservation Programme intends to identify areas where wasteful use of energy occurs and to evaluate the scope for Energy Conservation and take concrete steps to achieve the evaluated energy savings.
- MEDA reserves the right to visit at any time without giving prior information to verify quarterly activities performed by the firm and canceling the registration, if the information is found incorrect.
- This empanelment is valid till 09th May, 2024 from the date of registration, to carry out energy audits under the Energy Conservation Programme
- The Director General, MEDA reserves the right to cancel the registration at any time without assigning any reasons thereof.


 General Manager (EC)



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We are thankful to all the staff members for helping us during the field study.

EXECUTIVE SUMMARY

1. Ramkrushna Mahavidyalaya, Darapur consumes Energy in the form of **Electrical Energy**; used for various Electrical Equipment.

2. Present Energy Consumption & CO₂ Emission:

No	Particulars	Value	Unit
1	Annual Energy Consumed	6360	kWh
2	Annual CO ₂ Emissions	5.91	MT

3. Usage of Renewable Energy:

- The College has yet to install Roof Top Solar PV Plant

4. Waste Management:

No	Head	Particulars
1	Solid Waste	Segregation of Waste at source
2	Organic Waste	Provision of Bio Composting Pit
3	E Waste	Provision of Separate E Waste Collection Bin

5. Rain Water Management:

The College has installed Pipes from the terrace and the Rain water falling on the terrace is used to increase the Underground Water Table.

6. Green & Sustainable Practices:

- Good Internal Road
- Tree Plantation Carbon Sequestration in these Grown Trees.
- Provision of Ramp for Divyangjan
- Creation of awareness on Plastic Free Campus by Display of Posters

7. Assumption:

1. **1 kWh** of Electrical Energy releases **0.93 Kg of CO₂** into atmosphere

8. Reference:

- For CO₂ Emissions: www.ccd.gujarat.gov.in

ABBREVIATIONS

SDGCTA	Shri. Dadasaheb Gavai Charitable Trust, Amravati
RMD	Ramkrushna Mahavidyalaya Darapur
BEE	Bureau of Energy Efficiency
kWh	Kilo Watt Hour
LPD	Liters Per Day
Kg	Kilo Gram
MT	Metric Ton
CO ₂	Carbon Di Oxide
Qty	Quantity

CHAPTER-I INTRODUCTION

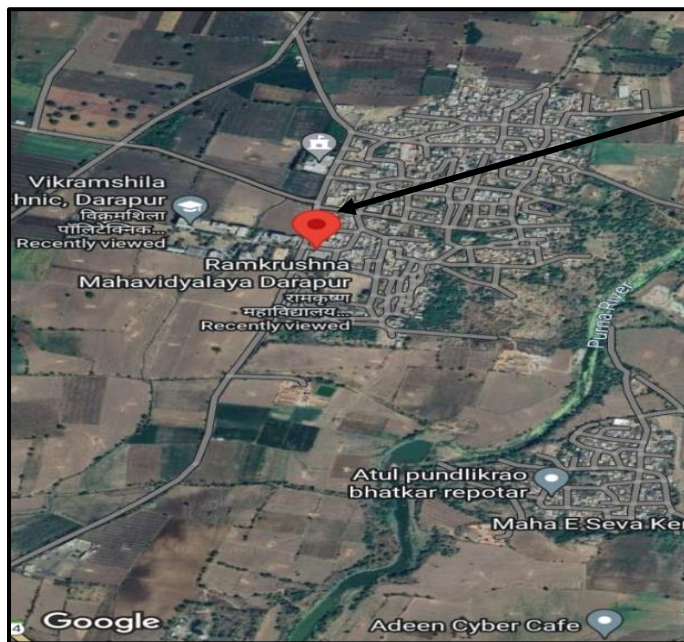
1.1 Introduction:

A Green Audit is conducted at Shri. Dadasaheb Gavai Charitable Trust, Ramkrushna Mahavidyalaya Darapur, Tq. Daryapur Dist. Amravati.

1.2 Key Study Points:

No	Particulars
1	Study of Present Energy Consumption & CO ₂ Emission
2	Study of Usage of Renewable Energy
3	Study of Waste Management Practices
4	Study of Rain Water Management
5	Study of Green & Sustainable Initiatives

1.3 College Location Image:



CHAPTER-II

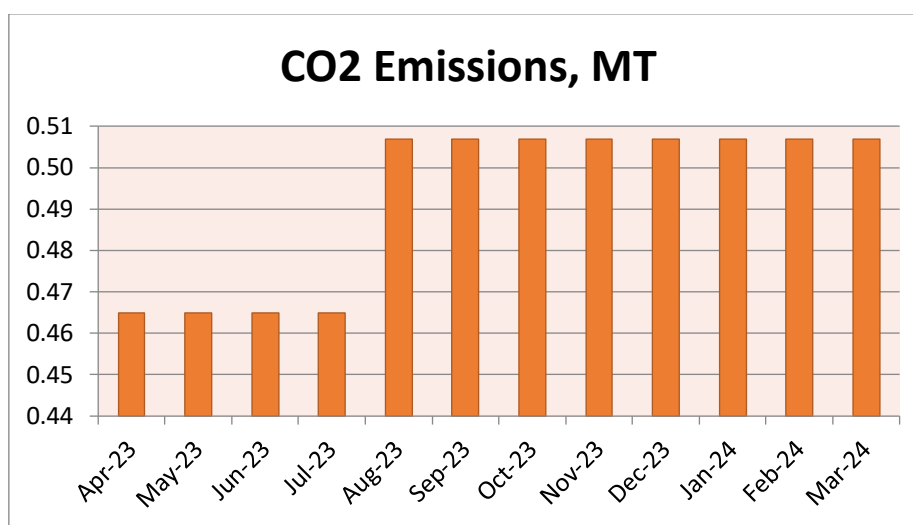
STUDY OF ENERGY CONSUMPTION & CO₂ EMISSION

A Carbon Foot print is defined as the Total Greenhouse Gas emissions, emitted due to various activities. **Basis for computation of CO₂ Emissions: 1 kWh of Electrical Energy releases 0.93 Kg of CO₂ into atmosphere.**

Table No 1: Month wise Energy Consumption & CO₂ Emissions:

No	Month	Energy Consumed, kWh	CO ₂ Emissions, MT
1	Apr-23	500	0.47
2	May-23	500	0.47
3	Jun-23	500	0.47
4	Jul-23	500	0.47
5	Aug-23	545	0.51
6	Sep-23	545	0.51
7	Oct-23	545	0.51
8	Nov-23	545	0.51
9	Dec-23	545	0.51
10	Jan-24	545	0.51
11	Feb-24	545	0.51
12	Mar-24	545	0.51
13	Total	6360	5.91
14	Maximum	545	0.51
15	Minimum	500	0.47
16	Average	530.00	0.49

Chart No 1: Month wise CO₂ Emissions:



CHAPTER III




STUDY OF USAGE OF RENEWABLE ENERGY

The College has yet to install Roof Top Solar PV Plant

CHAPTER IV STUDY OF WASTE MANAGEMENT

In this Chapter, we present the Waste Management Practices, followed by the College.

Details of Waste Management Practices:

No	Head	Observation	Photograph
1	Solid Waste	Segregation of Waste at Source: Provision of Waste Collection Bins	<p>Waste Collection Bin:</p>  <p>Latitude: 20.957972 Longitude: 77.489697 Elevation: 1286.5552 m Accuracy: 15.0 m</p>
2	Organic Waste	Provision of Bio Composting Bed	<p>Bio Composting Pit:</p>  <p>Latitude: 20.95923 Longitude: 77.52365 Elevation: 146.3942 m Accuracy: 9.9 m</p>
3	E Waste	Provision of Dedicated E Waste Collection Bin	<p>E Waste Collection Bin:</p>  <p>Latitude: 20.959106 Longitude: 77.50288 Elevation: 313.08210 m Accuracy: 11.4 m</p>

CHAPTER-V STUDY OF RAIN WATER MANAGEMENT

The College has installed Pipes from the terrace and the Rain water falling on the terrace is used to increase the Underground Water Table.

Photograph of Rain water Collecting Pipe:

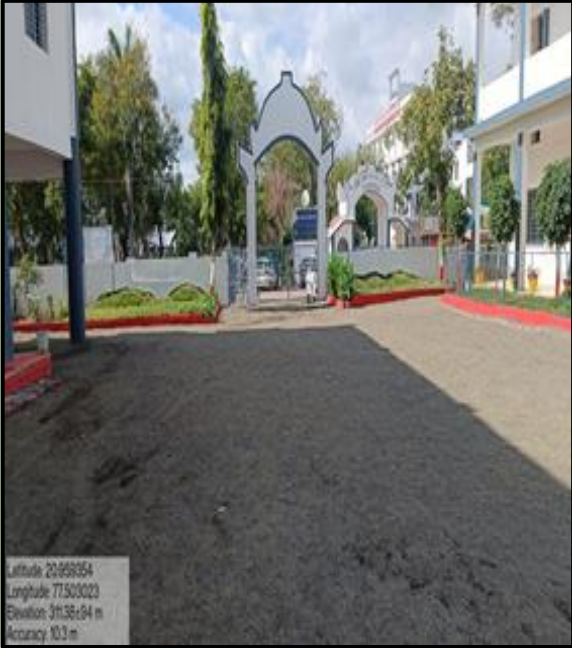



Rain Water
Collecting Pipe

CHAPTER-VI STUDY OF GREEN & SUSTAINABLE PRACTICES

In this Chapter, we present the Green & Sustainable Practices followed by the College.

Green & Sustainable Practices:

No	Head	Observation	Photograph
1	Easy Movement of Stake Holders	Provision of Good Internal Road within the Campus	<p>Internal Road:</p>  <p>Latitude: 20.866854 Longitude: 77.503023 Elevation: 311.36±04 m Accuracy: 10.3 m</p>
2	Tree Plantation	Internal Tree Plantation in the Campus	<p>Internal Tree Plantation:</p>  <p>Latitude: 20.860184 Longitude: 77.502955 Elevation: 311.08±04 m Accuracy: 6.0 m</p>

<p>3</p>	<p>Facilities for Divyangajan</p>	<p>Provision of Ramp for Divyangajan</p>	<p>Ramp for Divyangajan:</p>  <p>Latitude: 20.960432 Longitude: 77.503508 Elevation: 318.58±100 m Accuracy: 11.1 m</p>
<p>4</p>	<p>Creation of Awareness among Stake Holders</p>	<p>Display of Poster No Plastic Campus</p>	<p>Poster on No Plastic Campus:</p> 

ANNEXURE-1: LIST OF TREES & PLANTS IN THE CAMPUS:

Common Trees in the Campus:

No.	Common Name of Tree
1	Saraca asoca
2	Suptparni
3	Azadirachta indica
4	Benjamin Fakes
5	Annona squamosa
6	Bougainvillea
7	Gilistariya
8	Vachellia nilotica
9	Coconut
10	Thuja
11	Gulab
12	Terminalia catappa
13	Elshotzia ciliata
14	Agave
15	Pilea Microphyliya
16	Money Plant
17	Euphorbia mili Des Moul
18	Chamaerops Hinmilis
19	Jaswand
20	Lili
21	Peepal
22	Alove vera
23	Hazel
24	Champa
25	Tulip
26	Delonix regia
27	Banyan
28	Bael
29	Mimusops elengi
30	Euphorbia Trigona

ENVIRONMENTAL AUDIT REPORT

of

RAMKRUSHNA MAHAVIDYALAYA

Darapur, Taluka: Daryapur, Dist. Amravati 444814



Year: 2022-23

Prepared by:

ENGRESS SERVICES

Yashashree, 26, Nirmal Bag Society
Near Mukhtangan English School, Parvati, Pune 411009
Phone: 09890444795 Email: engress123@gmail.com



ENGRESS SERVICES

Yashashree, 26, Nirmal Bag Society, Near Mukhtangan English School,
Parvati, Pune 411 009 Tel: 09890444795 Email:
MEDA Registration No: ECN/2022-23/CR-43/1709
ISO: 9001-2015 Certified (Cert No: 23EQKC13),
ISO: 14001-2015 Certified (Cert No: 23EEKW20)

ENVIRONMENTAL AUDIT CERTIFICATE

Certificate No: ES/RMV/22-23/03

Date: 01/07/2023

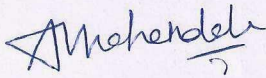
This is to certify that we have conducted Environmental Audit at Ramkrushna Mahavidyalaya, Darapur, Taluka: Daryapur Dist. Amravati in the Academic year 2022-23.

The College has adopted following Environment Friendly Practices:

- Usage of Energy Efficient LED Fittings
- Segregation of Waste at source
- Provision of Sanitary Waste incinerator for disposal of Sanitary Waste
- Implementation of Rain Water Management Project
- Tree Plantation in the campus
- Creation of Awareness on Water Conservation by Display of Posters

We appreciate the support of Management, involvement of faculty members and students in the process of Energy Conservation & making the campus Eco Friendly.

For Engress Services,

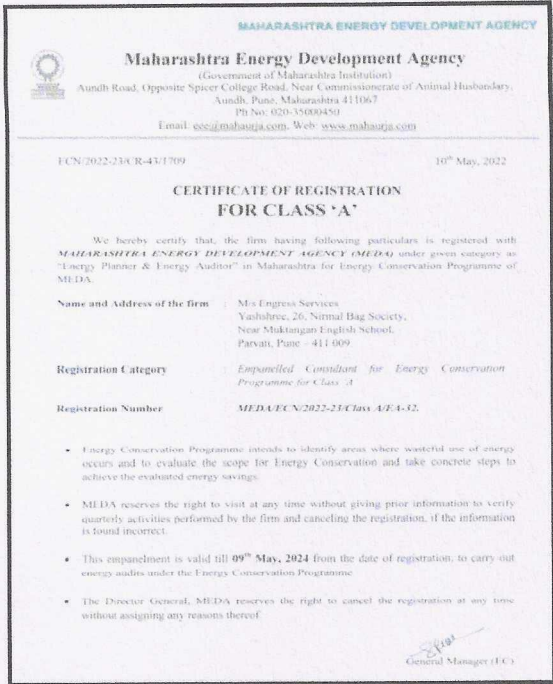


A Y Mehendale,

B E- Mech, M Tech-Energy, Certified Energy Auditor, EA-8192
ASSOCHAM GEM Certified Professional: GEM: 22/788



REGISTRATION CERTIFICATES



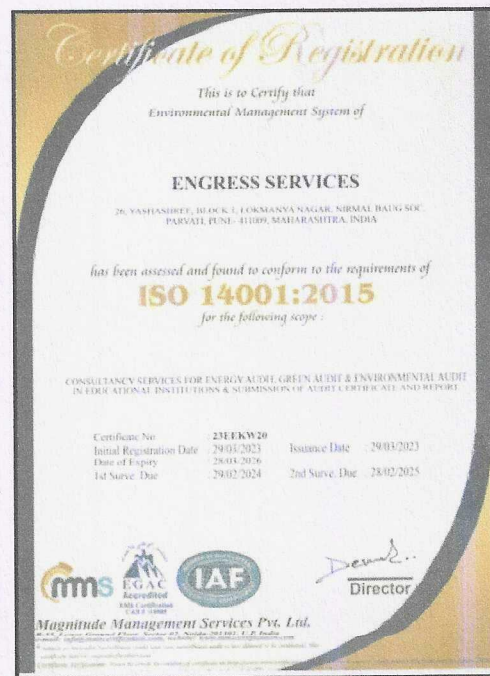
MEDA REGISTRATION CERTIFICATE



ASSOCHAM GEM CP CERTIFICATE



ISO: 9001-2015 CERTIFICATE



ISO: 14001-2015 CERTIFICATE



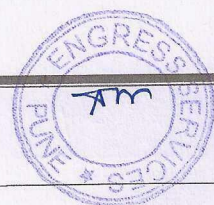
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4	Study of Indoor Air Quality	14
5	Study of Indoor Comfort Condition Parameters	15
6	Study of Waste Management	16
7	Study of Rain water Management	17
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	Annexure	
I	Indoor Air Quality, Noise, & Indoor Comfort Standards	19

ACKNOWLEDGEMENT

We Engress Services, Pune, express our sincere gratitude to the management of Ramkrushna Mahavidyalaya Darapur, Tq. Daryapur Dist. Amravati, for awarding us the assignment of Environmental Audit of their Darapur Campus for the Year: 2022-23.

We are thankful to all the staff members for helping us during the field study.



EXECUTIVE SUMMARY

1. Ramkrushna Mahavidyalaya Darapur, Tq. Daryapur Dist. Amravati consumes Energy in the form of **Electrical Energy**; used for various Electrical Equipment.

2. Pollution due to College Activities:

- **Air pollution:**Mainly CO₂ on account of Electricity Consumption
- **Solid Waste:**Bio degradable Garden Waste, Paper & Plastic Waste
- **Liquid Waste:**Human liquid waste

3. Present Energy Consumption & CO₂ Emission:

No	Particulars	Value	Unit
1	Annual Energy Consumed	4160	kWh
2	Annual CO ₂ Emissions	3.74	MT

4. Renewable Energy Usage:

- The College has yet to install Roof Top Solar PV Plant

5. Indoor Air Quality Parameters:

No	Parameter/Value	AQI	PM-2.5	PM-10
1	Maximum	93	62	70
2	Minimum	90	55	61

6. Indoor Comfort Conditions:

No	Parameter/Value	Temperature, °C	Humidity, %	Lux Level	Noise Level, dB
1	Maximum	32.2	69	183	45
2	Minimum	31	59	136	40

7. Waste Management:

No	Head	Particulars
1	Solid Waste	Segregation of Waste at source
2	E Waste	Recommended to dispose of through Authorized Agency

8. Rain Water Harvesting:

The College has installed Pipes from the terrace and the Rain water falling on the terrace is used to increase the Underground Water Table.

9. Environment Friendly Initiatives:

- Tree Plantation in the campus.
- Creation of awareness on Water Conservation Display of Posters

10. Assumption:

- 1 kWh of Electrical Energy releases 0.9 Kg of CO₂ into atmosphere

11. Reference:

- For CO₂ Emissions: www.tatapower.com
- For Various Indoor Air Parameters: www.ishrae.com
- For AQI Quality Standards: www.cpcb.com

ABBREVIATIONS

Kg	:	Kilo Gram
MSEDCL	:	Maharashtra State Distribution Company Limited
MT	:	Metric Ton
kWh	:	kilo-Watt Hour
LPD	:	Liters per Day
LED	:	Light Emitting Diode
AQI	:	Air Quality Index
PM-2.5	:	Particulate Matter of Size 2.5 Micron
PM-10	:	Particulate Matter of Size 10 Micron
CPCB	:	Central Pollution Control Board
ISHRAE	:	The Indian Society of Heating & Refrigerating & Air Conditioning Engineers

CHAPTER-I INTRODUCTION

1. Important Definitions:

1.1. Environment: Definition as per environment Protection Act: 1986

Environment includes water, air and land and the inter-relationship which exists among and between Water, Air, Land and Human beings, other living creatures, plants microorganism and property

1.2. Environmental Audit: Definition:

An audit which aims at verification and validation to ensure that various environmental laws are compiled with and adequate care has been taken towards environmental protection and preservation

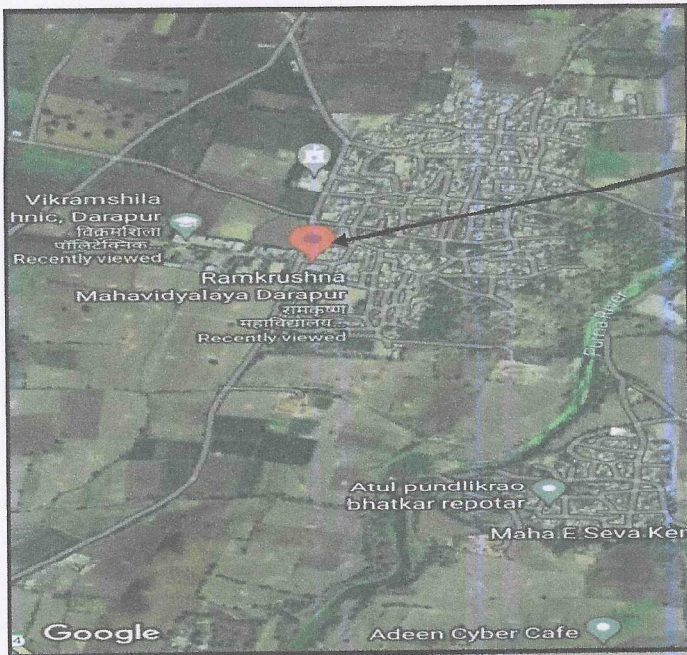
According to UNEP, 1990, "Environmental audit can be defined as a management tool comprising systematic, documented and periodic evaluation of how well environmental organization management and equipment are performing with an aim of helping to regularize the environment"

1.3. Environmental Pollutant: means any solid, liquid and gaseous substance present in the concentration as may be, or tend to be, injurious to Environment.

1.4 Audit Procedural Steps:



1.5 Google Earth Image:



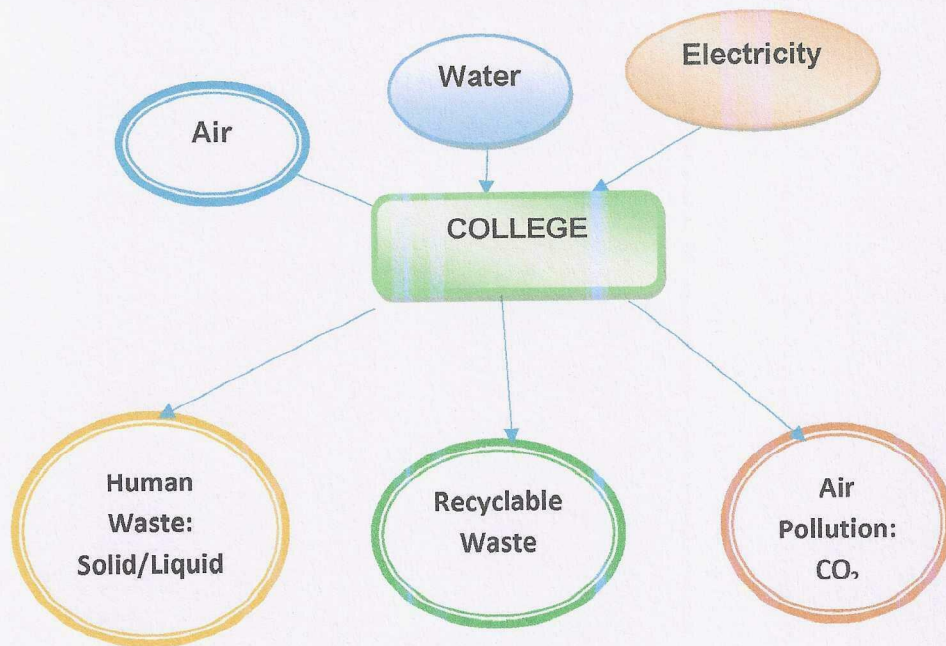
College
Campus

CHAPTER-II STUDY OF RESOURCE CONSUMPTION & CO₂ EMISSION

The College consumes following basic/derived Resources:

1. Air
2. Water
3. Electrical Energy

We try to draw a schematic diagram for the College System & Environment as under.
Chart No 1: Representation of College as System & Study of Resources & Waste



Now we compute the Generation of CO₂ on account of consumption of Electrical Energy. The basis of Calculation for CO₂ emissions due to Electrical Energy is as under.

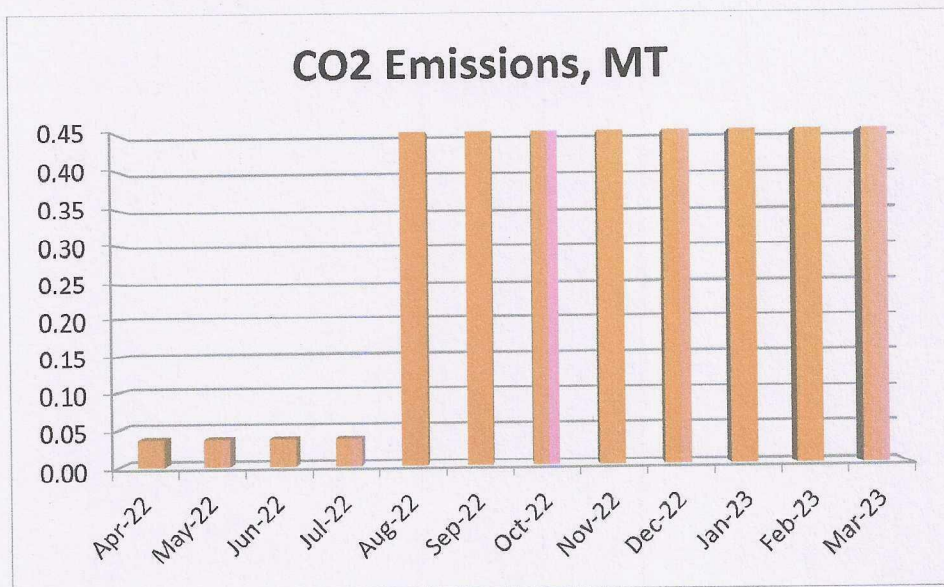
- 1 kWh of Electrical Energy releases 0.9 Kg of CO₂ into atmosphere

Table No 1: Study of Purchase of Energy & CO₂ Emissions: 22-23:

No	Month	Energy Consumed, kWh	CO ₂ Emissions, MT
1	Apr-22	40	0.04
2	May-22	40	0.04
3	Jun-22	40	0.04
4	Jul-22	40	0.04
5	Aug-22	500	0.45

6	Sep-22	500	0.45
7	Oct-22	500	0.45
8	Nov-22	500	0.45
9	Dec-22	500	0.45
10	Jan-23	500	0.45
11	Feb-23	500	0.45
12	Mar-23	500	0.45
13	Total	4160	3.74
14	Maximum	500	0.45
15	Minimum	40	0.04
16	Average	347	0.31

Chart No 2: Month wise CO₂Emissions:



CHAPTER III

STUDY OF USAGE OF RENEWABLE ENERGY

The College has yet to install Roof Top Solar PV Plant.



CHAPTER IV STUDY OF INDOOR AIR QUALITY

4.1 Importance of Air Quality:

Air: The common name given to the atmospheric gases used in breathing and photosynthesis.

By volume, Dry Air contains 78.09% Nitrogen, 20.95% Oxygen, 0.93% Argon, 0.039% carbon dioxide, and small amounts of other gases.

On average, a person inhales about **14,000 liters** of air every day. Therefore, poor air quality may affect the quality of life now and for future generations by affecting the health, the environment, the economy and the city's livability.

Air quality is a measure of the suitability of air for breathing by people, plants and animals.

4.2 Air Quality Index:

An **Air Quality Index (AQI)** is a number used by government agencies to measure the **air pollution** levels and communicate it to the population. As the AQI increases, it means that a large percentage of the population will experience severe adverse health effects.

We present herewith following important Parameters.

1. AQI- Air Quality Index
2. PM-2.5- Particulate Matter of Size 2.5 micron
3. PM-10- Particulate Matter of Size 10micron

Table No 2: Indoor Air Quality Parameters:

No	Location	AQI	PM-2.5	PM-10
	Ground Floor			
1	Library	90	60	70
2	Computer Centre	92	55	64
3	Admin Office	90	60	69
4	Class Room-BA II	91	61	61
	First Floor			
5	Examination Section	89	62	70
6	Seminar Hall	93	60	68
7	Geography Lab	91	61	69
8	NSS Office	92	62	70
	Maximum	93	62	70
	Minimum	90	55	61

CHAPTER V STUDY OF INDOOR COMFORT CONDITION PARAMETERS

In this Chapter, we present the various Indoor Comfort Parameters measured during the Audit. The Parameters include:

1. Temperature
2. Humidity
3. Lux Level
4. Noise Level.

Table No 3: Study of Indoor Comfort Condition Parameters:

No	Location	Temperature, °C	Humidity, %	Lux Level	Noise Level, dB
	Ground Floor				
1	Library	32.2	65	183	45
2	Computer Centre	31	69	162	42
3	Admin Office	32.2	65	189	41.9
4	Class Room-BA II	32	66	145	45
	First Floor				
5	Examination Section	31	64	136	44.2
6	Seminar Hall	32.2	65	136	43.9
7	Geography Lab	32.2	64	132	42
8	Admin Office	32.2	59	155	40
	Maximum	32.2	69	183	45
	Minimum	31	59	136	40

CHAPTER VI STUDY OF WASTE MANAGEMENT

6.1 Segregation of Waste at Source:

The College has good housekeeping practices. The Waste is segregated at source. Waste collection Bins are placed at strategic locations.

Photograph of Waste Collection Bins:



6.2 E Waste Management:

It is recommended to dispose of the E Waste through Authorized Agency

CHAPTER-VII STUDY OF RAIN WATER MANAGEMENT

The College has installed Pipes from the terrace and the Rain water falling on the terrace is used to increase the Underground Water Table.

Photograph of Rain Water Carrying Pipe:



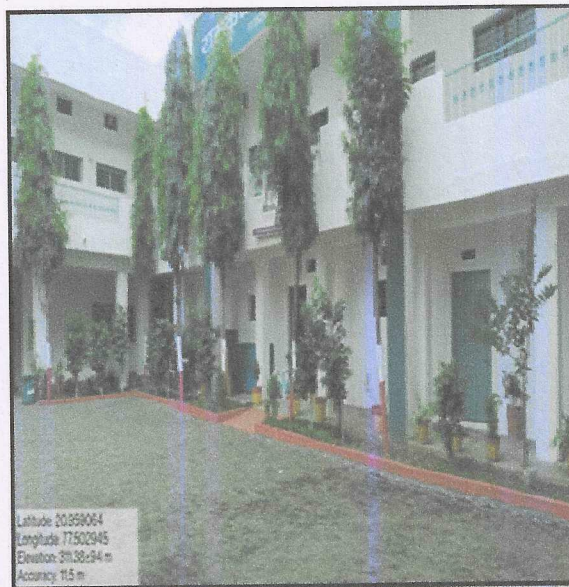
Rain Water
Collecting Pipe

CHAPTER-VIII STUDY OF ECO FRIENDLY INITIATIVES

8.1 Internal Tree Plantation:

The College has Tree Plantation in the campus.

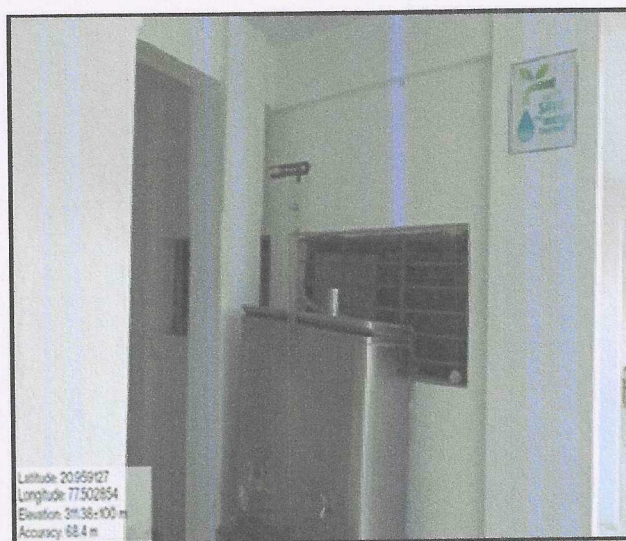
Photograph of Tree plantation:



8.2 Creation of Awareness about Water Conservation:

The College has displayed posters emphasizing on importance of Water Conservation.

Photograph of Poster on Water Conservation:



ANNEXURE-I: VARIOUS AIR QUALITY, NOISE & COMFORT STANDARDS:

1. Category Wise Air Quality Index Values & Concentration of PM 2.5 & PM10:

No	Category	AQI Value	Concentration Range, PM 2.5	Concentration Range, PM 10
1	Good	0 to 50	0 to 30	0 to 50
2	Satisfactory	51 to 100	31 to 60	51 to 100
3	Moderately Polluted	101 to 200	61 to 90	101 to 250
4	Poor	201 to 300	91 to 120	251 to 350
5	Very Poor	301 to 400	121 to 250	351 to 430
6	Severe	401 to 500	250 +	430 +

2. Recommended Noise Level Standards:

No	Location	Noise Level dB
1	Auditoriums	20-25
2	Outdoor Playground	55
3	Occupied Class Room	40-45
4	Un occupied Class Room	35
5	Apartment, Homes	35-40
6	Offices	45-50
7	Libraries	35-40
8	Restaurants	50-55

3. Thermal Comfort Conditions: For Non-conditioned Buildings:

No	Parameter	Value
1	Temperature	Less Than 33°C
2	Humidity	Less Than 70%

ENVIRONMENTAL AUDIT REPORT

RAMKRUSHNA MAHAVIDYALAYA DARAPUR,
Tq. Daryapur Dist. Amravati 444814



Year: 2023-24


Prepared by:

ENGRESS SERVICES

Yashashree, 26, Nirmal Bag Society
Near Muktagan English School, Parvati, Pune 411009
Phone: 09890444795 Email: engress123@gmail.com



Registration Certificates: UDYAM, MEDA, ASSOCHAM GEM-CP, ISO: 9001 & 14001:


 भारत सरकार
 Government of India
 सूक्ष्म, लघु एवं मध्यम उद्यम मंत्रालय
 Ministry of Micro, Small and Medium Enterprises

UDYAM REGISTRATION CERTIFICATE

UDYAM REGISTRATION NUMBER: UDYAM-MH-26-0135636

NAME OF ENTERPRISE: ENGRESS SERVICES

SNo.	Classification Year	Enterprise Type	Classification Date
1	2023-24	Micro	03/02/2024
2	2022-23	Micro	26/06/2022
3	2021-22	Micro	27/07/2021

TYPE OF ENTERPRISE: SERVICES

MAJOR ACTIVITY: SERVICES

SOCIAL CATEGORY OF ENTREPRENEUR: GENERAL

NAME OF UNIT(S):

S.No.	Name of Unit(s)
1	Engress Services

OFFICIAL ADDRESS OF ENTERPRISE:

Flat/Door/Block No.	26	Name of Premises/ Building	Yashashree
Village/Town	Pune	Block	1
Road/Street/Lane	Lokmanya Nagar, Nirmal Baug Soc	City	Pune
State	MAHARASHTRA	District	PUNE, Pin 411069
Mobile	8767447244	Email:	engress123@gmail.com

DATE OF INCORPORATION / REGISTRATION OF ENTERPRISE: 13/04/2021

DATE OF COMMENCEMENT OF PRODUCTION/BUSINESS: 13/04/2021

S.No.	NIC 2 Digit	NIC 4 Digit	NIC 5 Digit	Activity
1	70 - Activities of head offices; management consultancy activities	7020 - Management consultancy activities	70200 - Management consultancy activities	Services

NATIONAL INDUSTRY CLASSIFICATION CODE(S):

DATE OF UDYAM REGISTRATION: 27/07/2021



MAHARASHTRA ENERGY DEVELOPMENT AGENCY
Maharashtra Energy Development Agency
 (Government of Maharashtra Institution)
 Aundh Road, Opposite Spiccer College Road, Near Commissionerate of Animal Husbandary,
 Aundh, Pune, Maharashtra 411067
 Ph No: 020-35000450
 Email: ee@maharaja.com, Web: www.maharaja.com

ECN/2022-23/CR-43/1709 10th May, 2022

CERTIFICATE OF REGISTRATION FOR CLASS 'A'

We hereby certify that, the firm having following particulars is registered with MAHARASHTRA ENERGY DEVELOPMENT AGENCY (MEDA) under given category as "Energy Planner & Energy Auditor" in Maharashtra for Energy Conservation Programme of MEDA.

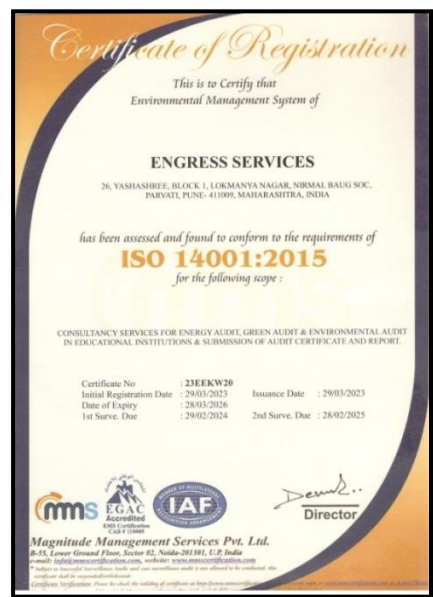
Name and Address of the firm : M/s Engress Services
Yashashree, 26, Nirmal Bag Society,
Near Mukhtangan English School,
Parvati, Pune - 411 009.

Registration Category : Empanelled Consultant for Energy Conservation Programme for Class 'A'

Registration Number : MEDA/ECN/2022-23/Class A/EA-32.

- Energy Conservation Programme intends to identify areas where wasteful use of energy occurs and to evaluate the scope for Energy Conservation and take concrete steps to achieve the evaluated energy savings.
- MEDA reserves the right to visit at any time without giving prior information to verify quarterly activities performed by the firm and canceling the registration, if the information is found incorrect.
- This empanelment is valid till 09th May, 2024 from the date of registration, to carry out energy audits under the Energy Conservation Programme
- The Director General, MEDA reserves the right to cancel the registration at any time without assigning any reasons thereof.


 General Manager (EC)



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5	Study of Indoor Lux & Noise Parameters	13
6	Study of Rain Water Management	14
7	Study of Waste Management	15
8	Study of Eco-Friendly Practices	16

ACKNOWLEDGEMENT

We Engress Services, Pune, express our sincere gratitude to the management of Ramkrushna Mahavidyalaya Darapur, Tq. Daryapur Dist. Amravati for awarding us the assignment of Environmental Audit of their Darapur (Tq. Daryapur Dist. Amravati) Campus for the Year: 2023-24.

We are thankful to all the staff members for helping us during the field study.

EXECUTIVE SUMMARY

1. **Ramkrushna Mahavidyalaya, Darapur** consumes Energy in the form of **Electrical Energy**; used for various Electrical Equipment.

2. Pollution due to College Activities:

- **Air pollution:** Mainly CO₂ on account of Electricity Consumption
- **Solid Waste:** Bio degradable Garden Waste, Paper & Plastic Waste
- **Liquid Waste:** Human liquid waste

3. Present Energy Consumption & CO₂ Emission:

No	Particulars	Value	Unit
1	Annual Energy Consumed	6360	kWh
2	Annual CO ₂ Emissions	5.91	MT

4. Usage of Renewable Energy:

- The College has yet to install Roof Top Solar PV Plant

5. Indoor Air Quality Parameters:

No	Parameter/Value	AQI	PM-2.5	PM-10
1	Maximum	31	20	24
2	Minimum	29	17	21

6. Indoor Lux & Noise Parameters:

No	Parameter/Value	Lux Level	Noise Level, dB
1	Maximum	241	47
2	Minimum	216	41.2

7. Waste Management:

No	Head	Particulars
1	Solid Waste	Segregation of Waste at source
2	Organic Waste	Provision of Bio Composting Pit
3	E Waste	Provision of Separate E Waste Collection Bin

8. Rain Water Management:

The College has installed Pipes from the terrace and the Rain water falling on the terrace is used to increase the Underground Water Table

9. Environment Friendly Initiatives:

- Tree Plantation in the campus.
- Creation of awareness on Plastic Free Campus by Display of Posters

10. Assumption:

1. **1 kWh** of Electrical Energy releases **0.93 Kg of CO₂** into atmosphere

11. References:

- For CO₂ Emissions: www.ccd.gujarat.gov.in
- For Various Indoor Air Parameters: www.ishrae.com
- For AQI Quality Standards: www.cpcb.com

ABBREVIATIONS

SDGCTA	:	Shri. Dadasaheb Gavai Charitable Trust, Amravati
RMD	:	Ramkrushna Mahavidyalaya Darapur
Kg	:	Kilo Gram
MSEDCL	:	Maharashtra State Distribution Company Limited
MT	:	Metric Ton
kWh	:	kilo-Watt Hour
LPD	:	Liters per Day
LED	:	Light Emitting Diode
AQI	:	Air Quality Index
PM-2.5	:	Particulate Matter of Size 2.5 Micron
PM-10	:	Particulate Matter of Size 10 Micron
CPCB	:	Central Pollution Control Board
ISHRAE	:	The Indian Society of Heating & Refrigerating & Air Conditioning Engineers

CHAPTER-I INTRODUCTION

1. Important Definitions:

1.1.1 Environment: Definition as per environment Protection Act: 1986

Environment includes water, air and land and the inter-relationship which exists among and between Water, Air, Land and Human beings, other living creatures, plants microorganism and property

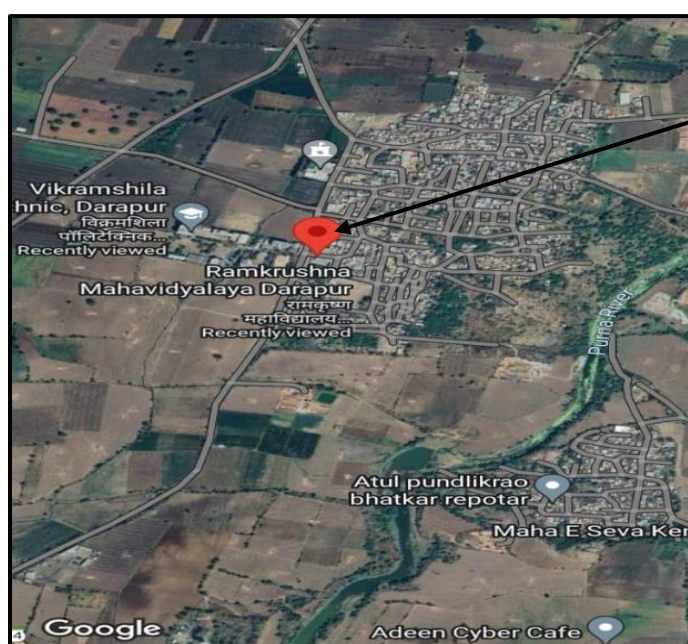
1.1.2 Environmental Audit: Definition:

According to UNEP, 1990, "Environmental audit can be defined as a management tool comprising systematic, documented and periodic evaluation of how well environmental organization management and equipment are performing with an aim of helping to regularize the environment

1.3 Key Study Points:

No	Particulars
1	Study of Present Resource Consumption & CO ₂ Emission
2	Study of Usage of Renewable Energy
3	Study of Indoor Air Quality
4	Study of Indoor Lux & Noise Level
5	Study of Water Management
6	Study of Waste Management Practices
7	Study of Environment Friendly Practices

1.4 College Location Image:



College
Campus

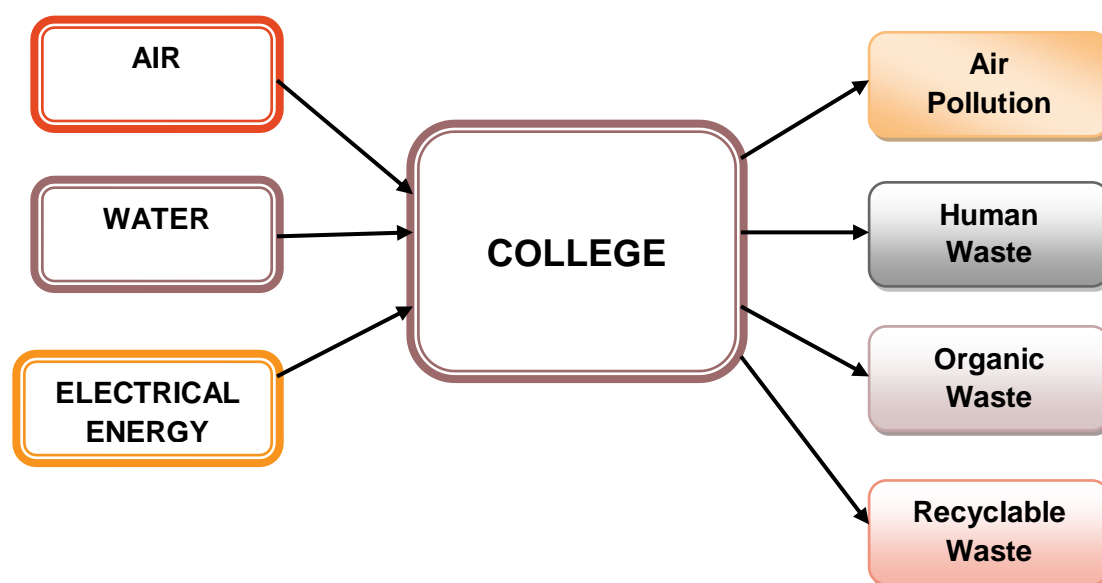
CHAPTER-II STUDY OF RESOURCE CONSUMPTION & CO₂ EMISSION

The College consumes following basic/derived Resources:

1. Air
2. Water
3. Electrical Energy

We try to draw a schematic diagram for the College System & Environment as under.

Chart No 1: Representation of Resource Requirement & Waste of a College:



Now we compute the Generation of CO₂ on account of consumption of Electrical Energy. The basis of Calculation for CO₂ emissions due to Electrical Energy is as under.

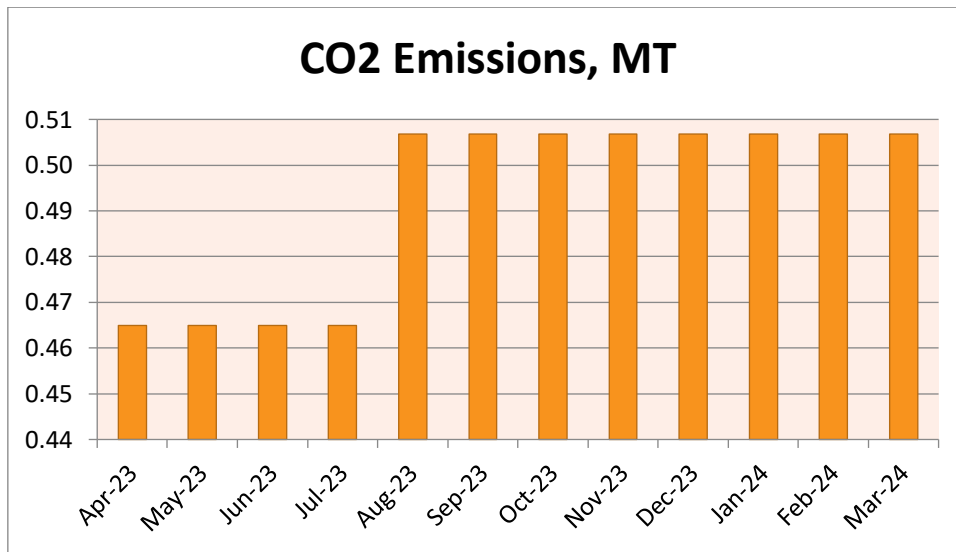
- **1 kWh** of Electrical Energy releases **0.93 Kg of CO₂** into atmosphere

Table No 1: Study of Purchase of Energy & CO₂ Emissions: 23-24:

No	Month	Energy Consumed, kWh	CO ₂ Emissions, MT
1	Apr-23	500	0.47
2	May-23	500	0.47
3	Jun-23	500	0.47
4	Jul-23	500	0.47
5	Aug-23	545	0.51
6	Sep-23	545	0.51
7	Oct-23	545	0.51
8	Nov-23	545	0.51

9	Dec-23	545	0.51
10	Jan-24	545	0.51
11	Feb-24	545	0.51
12	Mar-24	545	0.51
13	Total	6360	5.91
14	Maximum	545	0.51
15	Minimum	500	0.47
16	Average	530.00	0.49

Chart No 2: Month wise CO₂ Emissions:



CHAPTER III

STUDY OF USAGE OF RENEWABLE ENERGY

The College has yet to install Roof Top Solar PV Plant

CHAPTER IV STUDY OF INDOOR AIR QUALITY

1. Air: The common name given to the atmospheric gases used in breathing and photosynthesis.

2. Air quality is a measure of the suitability of air for breathing by people, plants and animals.

3. Air Quality Index: Air Quality Index (AQI) is a number used by government agencies to measure the **Air Pollution** levels and communicate it to the population.

In this Chapter, we present three important Parameters: **AQI**- Air Quality Index, **PM-2.5**- Particulate Matter of Size 2.5 micron and **PM-10**- Particulate Matter of Size 10 micron

Table No 2: Indoor Air Quality Parameters:

No	Location	AQI	PM2.5	PM10
1	Class Room-1	30	18	22
2	Office	31	19	24
3	Library	29	17	23
4	Class Room-2	30	19	21
5	IQAC Room	31	20	24
	Maximum	31	20	24
	Minimum	29	17	21

Table No 3: Air Quality Index Values & Concentration of PM 2.5 & PM10: (By CPCB):

No	Category	AQI Value	Concentration Range, PM 2.5	Concentration Range, PM 10
1	Good	0 to 50	0 to 30	0 to 50
2	Satisfactory	51 to 100	31 to 60	51 to 100
3	Moderately Polluted	101 to 200	61 to 90	101 to 250
4	Poor	201 to 300	91 to 120	251 to 350
5	Very Poor	301 to 400	121 to 250	351 to 430
6	Severe	401 to 500	250 +	430 +

Conclusion:

From the above measured values, we conclude that the observed values of AQI, PM-2.5 & PM-10 are in the **Satisfactory Range**, as per the guidelines given by Central Pollution Control Board.

CHAPTER V STUDY OF INDOOR LUX & NOISE PARAMETERS

In this Chapter, we present the various Indoor Comfort Parameters measured during the Audit. The Parameters include: **Lux Level and Noise Level.**

Table No 4: Study of Indoor Lux Level and Noise Level Parameters:

No	Location	Lux Level,	Noise Level, dB
1	Class Room-1	241	43.6
2	Office	219	41.2
3	Library	226	42
4	Class Room-2	216	45.6
5	IQAC Room	232	47
	Maximum	241	47
	Minimum	216	41.2

Recommended Lux & Noise Level: As per BEE & ISHRAE Guidelines:

A) Noise Level Reference:		
No	Location	Noise Level Range, dB
1	Offices	45-50
2	Occupied Class Room	40-45
3	Libraries	35-40
B) Reference Lux Level, Lumens:		
1	For Class Rooms	200 Plus
2	For Reading Rooms	200 Plus

Conclusion:

From the above measured values, we conclude that:

- The Noise Level is within the prescribed Limit
- The Lux Level at various locations is Okay

CHAPTER VI STUDY OF RAIN WATER MANAGEMENT

The College has installed Pipes from the terrace and the Rain water falling on the terrace is used to increase the Underground Water Table

Photograph of Rain water Collecting Pipe:






Rain Water
Collecting Pipe

CHAPTER-VII STUDY OF WASTE MANAGEMENT

In this Chapter, we present the Waste Management Practices, followed by the College.


Details of Waste Management Practices:

No	Head	Observation	Photograph
1	Solid Waste	Segregation of Waste at Source: Provision of Waste Collection Bins	<p>Waste Collection Bin:</p>  <p>Latitude: 20.957972 Longitude: 77.689697 Elevation: 1286.55152 m Accuracy: 15.0 m</p>
2	Organic Waste	Provision of Bio Composting Bed	<p>Bio Composting Pit:</p>  <p>Latitude: 20.959233 Longitude: 77.532846 Elevation: 346.3942 m Accuracy: 9.0 m</p>
3	E Waste	Provision of Dedicated E Waste Collection Bin	<p>E Waste Collection Bin:</p>  <p>Latitude: 20.959706 Longitude: 77.53288 Elevation: 313.08100 m Accuracy: 11.6 m</p>

CHAPTER-VIII STUDY OF ECO-FRIENDLY PRACTICES

In this Chapter, we present the Eco-Friendly Practices, followed by the College.

Details of Eco-Friendly Practices:

No	Head	Observation	Photograph
1	Tree Plantation	Internal Tree Plantation in the Campus	<p>Internal Tree Plantation:</p> 
2	Creation of Awareness among Stake Holders	Display of Poster No Plastic Campus	<p>Poster on No Plastic Campus:</p> 