



ସରକାରୀ ସ୍ୱୟଂଶାସିତ ମହାବିଦ୍ୟାଳୟ, ରାଉରକେଲା
GOVERNMENT AUTONOMOUS COLLEGE, ROURKELA
Sundargarh, Raghunathpali, Rourkela, Odisha



GOVERNMENT AUTONOMOUS COLLEGE

ENVIRONMENT AUDIT REPORT

2021-2022

PREPARED BY
EHS ALLIANCE SERVICES



Environment Audit Report

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Audit certificate



CERTIFICATE

PRESENTED TO

GOVERNMENT AUTONOMOUS COLLEGE

Raghunathpali, Rourkela, Odisha 769004

Has been assessed by EHS Alliance Services for the comprehensive study of environmental impacts on institutional working framework to fulfill the requirement of

ENVIRONMENT AUDIT

ACADEMIC YEAR 2021-22

The environment legal compliances and initiatives carried out by the institution have been verified on the report submitted and were found to be satisfactory.

The efforts taken by management and faculty towards environment and sustainability are highly appreciated and noteworthy.

SIGNATURE



15.09.2022
DATE OF AUDIT



Acknowledgement

EHS Alliance Services would like to thank the management of Government Autonomous College for assigning this important work of Environment Audit. We appreciate the co-operation to the teams for completion of assessment.

We would also like to thank **Smt. Rameshwari Bhoi (Asst. Professor - Department of Political Science) – Audit Coordinator**, for her continuous support and guidance, without which the completion of the project would not have been possible. We are also thankful to other staff members who were actively involved while collecting the data and conducting field measurements.

We are also thankful to

Dr. Lichita Patro

Asst. Professor - Department of Botany

Dr. Pratap Kumar Swain

Asst. Professor - Department of Chemistry

Mr. C. P. Ranjan

Asst. Professor - Department of Political Science

Last but not the least, we would like to thank **Dr. Bijaya Kumar Behera - Principal** for giving us an opportunity to evaluate the environmental performance of the campus.



Disclaimer

EHS Alliance Services Audit Team has prepared this report for Government Autonomous College based on input data submitted by the representatives of College complemented with the best judgment capacity of the expert team.

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

If you wish to distribute copies of this report external to your organisation, then all pages must be included.

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EHS Alliance staff, agents and accreditation bodies have signed individual confidentiality undertakings and will only receive confidential information on a 'need to know' basis.

Signature

LEAD AUDITOR

Concept and context

In India, the process for environmental audit was first mentioned under the Environment Protection Act, 1986 by the Ministry of Environment of forests on 13th march, 1992. As per this act, every person owning an industry or performing an operation or process needs a legal consent and must submit an environmental report or statement.

The National Assessment and Accreditation Council, New Delhi (NAAC) has made it mandatory from the academic year 2019–20 onwards that all Higher Educational Institutions should submit an annual Green, Environment and Energy Audit Report. Moreover, it is part of Corporate Social Responsibility of the Higher Educational Institutions to ensure that they contribute towards the sustainable environment.

In view of the NAAC circular regarding environment auditing, the College management decided to conduct an external environment assessment study by a competent external professional auditor.

The term ‘Environmental audit’ means differently to different people. Terms like ‘assessment’, ‘survey’ and ‘review’ are also used to describe similar activities. Furthermore, some organizations believe that an ‘environmental audit’ addresses only environmental matters, whereas others use the term to mean an audit of health, safety and environment-related matters. Although there is no universal definition of Environment Audit, many leading companies/institutions follow the basic philosophy and approach summarized by the broad definition adopted by the International Chambers of Commerce (ICC) in its publication of Environmental Auditing (1989).

The ICC defines Environmental Auditing as:

“A management tool comprising a systematic, documented, periodic and objective evaluation of how well environmental organization, management and equipment are performing with the aim of safeguarding the environment and natural resources in its operations/projects.”

This audit focuses on the environment legal compliances and implementation of rules defined by MoEFCC or state pollution control board. The concepts, structure, objectives, methodology, tools of analysis, and objectives of the audit are discussed below.



Introduction

Nature is very precious gift for all life forms. Disturbance in the nature causes environmental Problems. These are increasing day by day as a result of development of urbanization and industrialization on earth. Because of unplanned utilization of resources, our planet is facing tremendous pressure results a sharp rise in temperature. Therefore, there is an urgent need to plan the consumption of the resources in sustainable manner in order to conserve natural resources for future generation.

Sustainable development is becoming popular in the world for saving the earth. Utilizing resources in judiciously can save the earth's precious resources. Measurement of environmental components is the most effective step to conserve and protect natural resources.

Environmental auditing had begun in the early 1970s with provision of civil lawsuits for non-compliance with environmental regulations. Environment auditing involves on site visit, collection of samples, performing analyses, and report results to competent authorities.

Industry, the corporate world is initiating auditing for saving natural resources. Academic institutions also can contribute to the preservation and conservation of resources within their premises.

In this "Environment Audit" report would help everyone to think about preserving resources, show willingness to learn their importance, adopt steps to minimize resource use and set an example for others to follow the path of eco-friendly practices to achieve the goal of sustainable development. Effective implementation of environmental auditing helps in minimization of environmental risks at low cost.



Overview of the College

The College started as Rourkela Science College from 16 th August, 1961 and was taken over by Government Odisha on 01-07-1963. With the vertical academic growth of the College was conferred with autonomous status in 2002. In the year 2002 the College was accredited by NACC with Grade-B. The College offer variety of Courses at different levels. Besides Art, Science and Commerce at Higher Secondary and Degree levels the College also offers Master Degree in 17 subjects and M.Phil in 03 subjects i.e. Botany, English and Odia. M.Sc in Computer Science, Maste in Commerce, Degree Courses in Computer Science, Electronics and Tele-Communication(ETC), Mathematics with Computer(MTC), PGDCA, PGDCH come uner Self-finance courses. The College also offers various Degree and P. G. level Courses under Odisha State Open University. The College has been also provided separate Rooms for IGNOU Study Centre. As per the Circular of the Department of Higher Education Government of Odisha the College now stands Bi-furcated in to the Government Autonomous College, Rourkela with effect from Academic Session 2001-2002. Ironically the number of staff both teaching and non-teaching have gone-down after it was Autonomous. There by the Classes are engaged by Guest faculty who are engaged time to time.

The College has not received any UGC grant for last three years. Remuneration for non-teaching is paid from the fee collected from the students, as there is no special grant for the Government for this purpose. This has been a hindrance in achieving our mission of academic excellence to make this premier Institute , a centre of quality learning by training the students to be creative and competitive enough to face the challenges of the new millennium.





MISSION & VISION

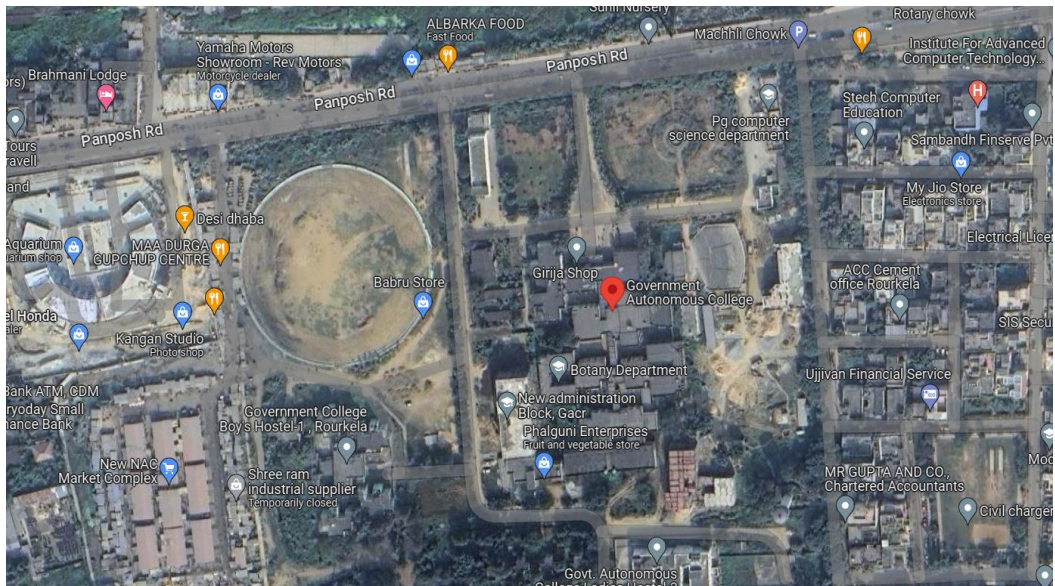
MISSION

To achieve Academic Excellence by giving impetus and adapting to measures for Enhancing Effective Quality Sustenance and Progression on all key facets of Education. Providing a Dynamic and Conducive Environment for all in order to Inculcate, Infuse, Imbibe, Equip and Disseminate Value Oriented Learning, Creativity, Innovation, Societal Consciousness to achieve Sustainable Livelihood.

VISION

To achieve Academic Excellence by giving impetus and adapting to measures for Enhancing Effective Quality Sustenance and Progression on all key facets of Education. Providing a Dynamic and Conducive Environment for all in order to Inculcate, Infuse, Imbibe, Equip and Disseminate Value Oriented Learning, Creativity, Innovation, Societal Consciousness to achieve Sustainable Livelihood.

Geo Location
Geo Coordinates from Google maps:
22.2263719, 84.8062211





Audit Participants

On behalf of the College

Name	Designation
<i>Dr. Bijaya Kumar Behera</i>	<i>Principal</i>
<i>Smt. Rameshwari Bhoi</i>	<i>Asst. Professor - Department of Political Science</i>
<i>Mr. Choudhury Pardosh Ranjan</i>	<i>Asst. Professor - Department of Political Science (IQAC Coordinator)</i>
<i>Dr. Smruti Snigdha Mishra</i>	<i>Asst. Professor - Department of Chemistry</i>
<i>Mr. Sameer Saurava Prusty</i>	<i>Asst. Professor - Department of Zoology</i>
<i>Dr. Pratap Kumar Swain</i>	<i>Asst. Professor - Department of Chemistry</i>
<i>Dr. Bishwanath Parija</i>	<i>Asst. Professor - Department of Physics</i>
<i>Dr. Parbhudutta Mohanty</i>	<i>Asst. Professor - Department of Computer Science</i>
<i>Dr. Niranjana Sahu</i>	<i>Asst. Professor - Department of Physics</i>
<i>Dr. Lichita Patro</i>	<i>Asst. Professor - Department of Botany</i>
<i>Mr. Prashant Kumar Sethi</i>	<i>Asst. Professor - Department of Botany</i>
<i>Dr. Abeg Jaiswal</i>	<i>Asst. Professor - Department of Statistics</i>
<i>Mr. C. P. Ranjan</i>	<i>Asst. Professor - Department of Political Science</i>
<i>Dr. Sasmita Sasmal</i>	<i>Asst. Professor - Department of Chemistry</i>
<i>Ms. Usharani Sethi</i>	<i>Asst. Professor - Department of Commerce</i>

On behalf of EHS Alliance Services

Name	Position	Qualifications
<i>Dr. Uday Pratap</i>	<i>Lead-Auditor</i>	<i>Ph.D. , PDIS, QCI – WASH, Lead Auditor ISO 14001:2015</i>
<i>Ms. Pooja Kaushik</i>	<i>Co-Auditor</i>	<i>M.Sc, Field Expert</i>

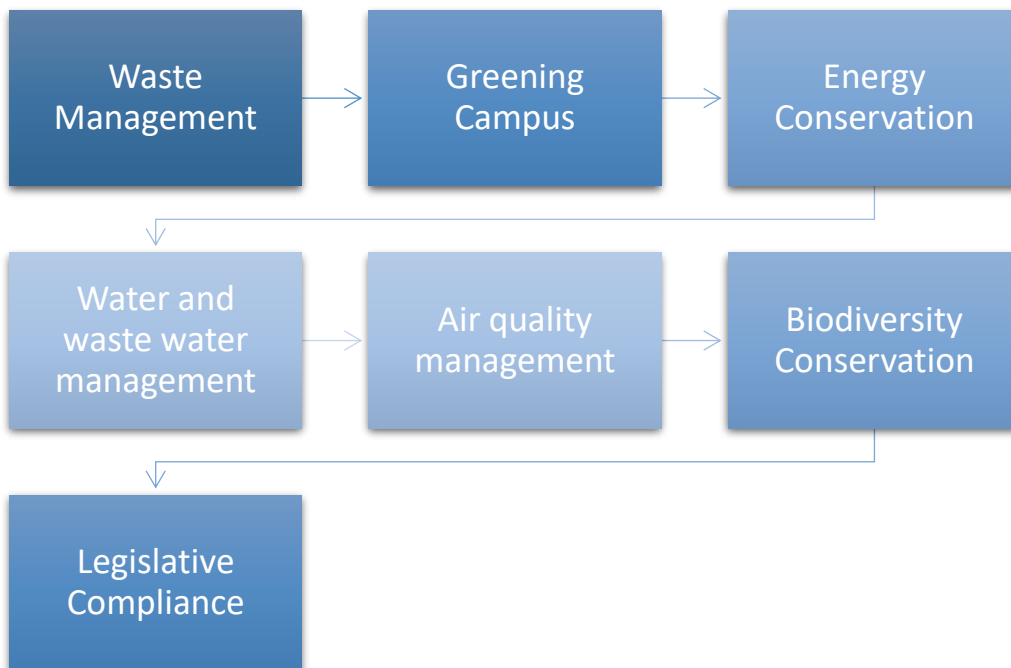


Executive Summary

The environment audit is a snapshot in time, in which one assesses campus performance in complying with applicable environmental laws and regulations. Though a helpful benchmark, the audit almost immediately becomes outdated unless there is some mechanism in place to continue the effort of monitoring environmental compliance. Our approach to promoting a Green Campus to inculcate sustainable value systems among the students, so that they carry the learning and practice them in their future endeavors. This will ensure that Sustainability and Environmental practices get embedded in all the institutions and organizations in the country.

A Green Campus is a place where environmentally friendly practices and education combine to promote sustainability in the campus which ultimately offers an institution the opportunity to take the lead in redefining its environmental culture and developing new paradigms by creating sustainable solutions to the environmental, social, and economic needs of the mankind.

This is the very first environmental audit of the College for doing their bit towards environmental protection and environmental awareness at local and global front. The audit criterion is environmental cognizance, waste minimization and management, biodiversity conservation, water conservation, energy conservation, and environmental legislative compliance by the campus. A questionnaire is used during the audit. This audit report contains observations and recommendations for the improvement of environmental consciousness.





Waste Management

TYPES OF WASTE ON COLLEGE CAMPUS

To create effective waste management plans, College first need to know the types of waste they produce. Below, we have compiled a list of various kinds of waste commonly generated on institutional campus:

1. **Food Waste** - College campus generates food waste. The average mess and canteen generates approximately 20 kg of food waste a day. The reasons for food waste on an educational campus may be over purchasing food to ensure a sufficient supply and then throwing it away, especially in canteen/cafeteria where plentiful stores are essential. And in the cafeteria, students may pile food onto their ample trays, find it unappealing once they sit down and dutifully scrape it into the garbage. Immediate attention is given to the food waste minimization techniques.
2. **Recyclable Paper, Cardboard, Plastic, Glass and Cans** -Campus tends to produce vast quantities of these recyclables. Even in the digital age, many students, professors and staff members still prefer handwritten notes and end up with piles of unwanted paper once their courses and projects are complete. The snacks so essential for socializing tend to come in recyclable plastic, glass or aluminium containers. And shipments of necessary items throughout the year are likely to arrive in recyclable plastic and cardboard packaging. The same is sold/auctioned to the scrap vendors time to time.
3. **Student Clothes and Housewares** - As we have mentioned above, many students find it more convenient to throw away their clothes and dorm furnishings at the end of the year than donate or recycle them.
4. **E – Waste - Student and facility electronics often form a large portion of a campus’s waste** — As campus continually upgrade their computing facilities and office computers to keep up with the latest technology, the old computers have to go somewhere. Same is the case with old printers, phones, copy machines and other electronics that receive upgrades over the years. Discarded student electronics often become part of a College’s waste stream as well. Students may throw away old phones, TVs, tablets, laptops and printers, along with cords and other accessories. Recycling is a much more eco-friendly option — the metals in old electronics often have a high reuse value. College has tie-up with external authorised agency details mentioned in legislation compliances.
5. **Maintenance Waste** - In the maintenance department, spent paints, solvents, adhesives and lubricants all form potentially hazardous waste. Because they are difficult to recycle, spent incandescent light bulbs usually become landfill waste. Spent fluorescent light bulbs, which contain small amounts of mercury, typically require special handling because of the environmental and health risks they pose.



6. **Furniture** - Furniture waste on a college campus has a couple different sources. The campus itself may also get rid of old furniture as it modernizes its classrooms, cafeterias, computer labs and study spaces. Annually sold to junk dealer.
7. **Books/Magazines/Newspapers** - Books accounted for solid waste generation and College often generate tons of textbook waste. As courses upgrade to new editions, they may end up throwing their newly obsolete textbooks into the garbage if donation programs cannot use them. Students of GOVERNMENT AUTONOMOUS COLLEGE donates their text books and notes to junior students, or else are auctioned to reseller.
8. **C & D Waste** - Expansion of college campus building and renovation works result significant amount of construction and demolition waste that should be either used for back filling or disposed off through authorised dumping site by CPCB/SPCB.
9. **Solid Waste** - The College is managing solid waste by providing it to the MCD.

Energy Conservation

1. **List ten ways that you use energy in your institute. (Electricity, LPG, firewood, others). Using this list, try to think of ways that you could use less energy every day.**

- *Using Energy efficient appliances*
- *Switching off the electrical equipment when not in use*
- *Use of Air conditioners at optimum temperatures as per the utilization schedule*
- *LED lights*

2. **Are there any energy-saving methods employed in your institute? If yes, please specify. If no, suggest some**

Yes, Government Autonomous College has adopted energy-saving techniques

- *LEDs installed*
- *Use of Air conditioners at optimum temperatures as per the class timetable*
- *Carpooling*



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3. How many CFL/LED bulbs have your institute installed?

Government Autonomous College has replaced almost 60% of the conventional bulbs and tube lights with LED Lights.

4. Do you run “switch off” drills at the institute?

Yes

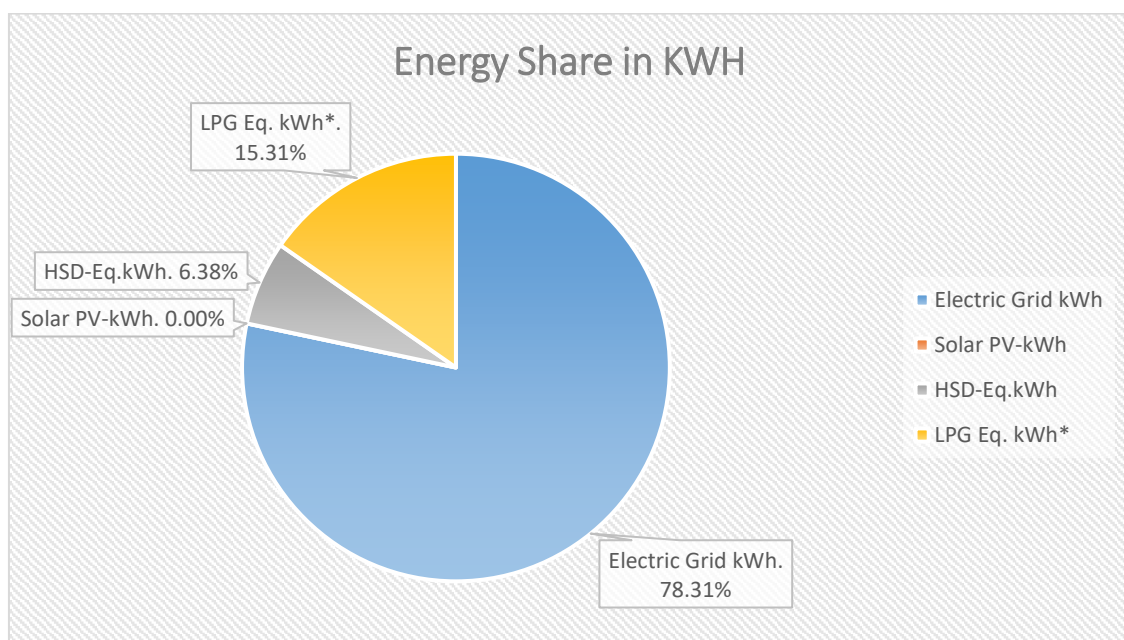
5. Are your computers and other equipment put in power-saving mode?

Yes, Government Autonomous College put the equipment on power-saving mode

6. Does your machinery (TV, AC, Computer, weighing balance, printers, etc.) run on standby modes most of the time? If yes, how many hours?

Yes

Energy Share	kWh	Percentage (%)
Electric Grid kWh	234725.15	78.31%
Solar PV-kWh	0.00	0.00%
HSD-Eq.kWh	19125.20	6.38%
LPG Eq. kWh	45886.52	15.31%
Total -kWh	299736.87	100%





Water and Wastewater Management

1. List uses of water in your institute

Basic use of water in campus:

Drinking – 59.02 KL/month

Gardening – 509.90 Kl/month

Kitchen and Toilets – 454.66 KL/month

Others – 151.14 KL/month

Hostel – 1876.50 KL/Month

Total = 3051.21 KL/Month

2 How does your institute store water? Are there any water saving techniques followed in your institute?

College stores water in underground and overhead tanks.

Saving Techniques

Avoid overflow of water-controlled valves are provided in water supply system.

Close supervision for water supply system.

3. Locate the point of entry of water and point of exit of waste water in your institute. (Entry and Exit)

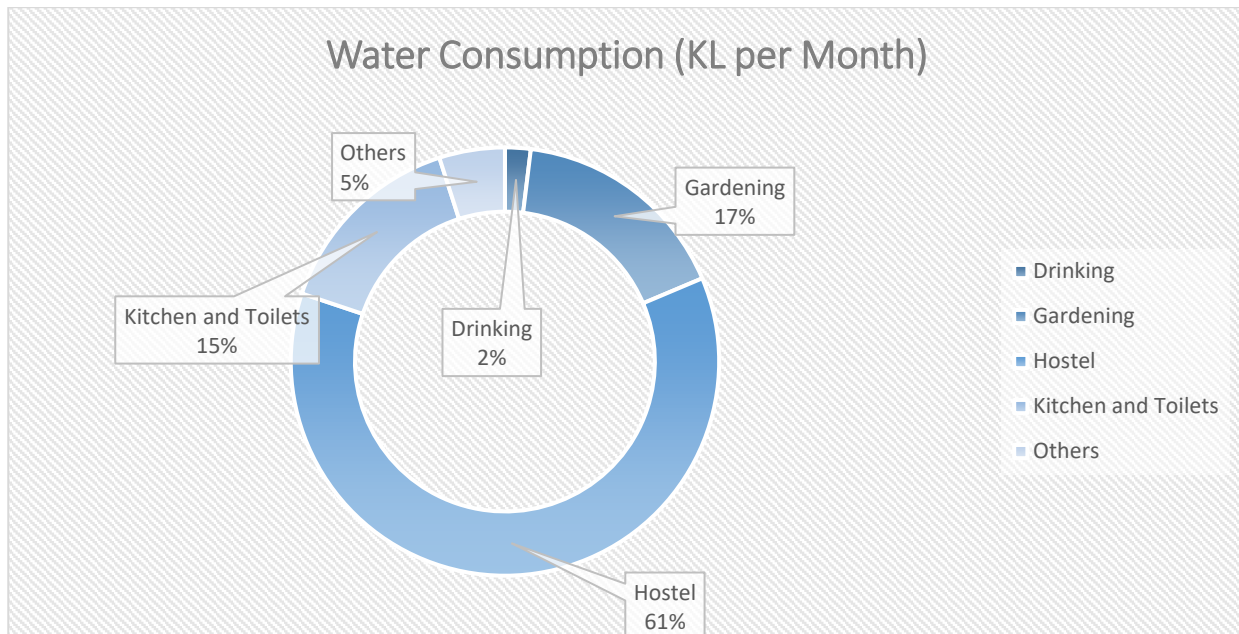
Entry - Water comes from Municipal Corporation and Borewell.

Exit- From Canteen, Toilets, Hostel and bathrooms through covered drainage which is connected to sewer



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4. Write down ways that could reduce the amount of water used in your institute

Basic ways:

- Close the taps after usage
- Water Conservation awareness for new students
- Maintenance and monitoring of valves in supply system to avoid overflow, leakage and spillage

5. Does your institute harvest rainwater?

No

6. Is there any water recycling System?

No



Environment Audit Report

Air Quality Management

1. Are the Rooms in Campus Well Ventilated?

Yes, as per National Building Code, guidelines

2. Window Floor ratio of the Rooms?

Very Good, ample daylight utilization because of big windows.

3. What is the ownership of the vehicles used by your campus?

Government Autonomous College doesn't own any vehicle

4. Provide details of college-owned vehicles?

<i>Details of college-owned vehicles</i>	<i>Buses</i>	<i>Cars</i>	<i>Vans</i>	<i>Other</i>	<i>Total</i>
<i>No. of vehicles</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>

5. PUC done?

NA

6. Specify the type of fuel used by your campus's vehicles

NA

8. Air Quality Monitoring Program (If, Any)

No monitoring is being done



Environment Legislative Compliance

1. Are you aware of any environmental Laws Pertaining to different aspects of environmental management?

Yes

2. Does your institute have any rules to protect the environment? List possible Rules you could include.

Yes, the eco club of Government Autonomous College is conscious about the environment protection and takes proper measures in terms of awareness campaigns, activities, webinar, seminars, etc.

3. Does Environmental Ambient Air Quality Monitoring conducted by the Institute?

No

4. Does Environmental Water and Waste water Quality monitoring conducted by the Institute?

No

5. Does stack monitoring of DG sets conducted by the Institute?

No

6. Is any warning notice, letter issued by state government bodies?

No

7. Does any Hazardous waste generated by the Institute?

No



General Information

1. Does your institute have any rules to protect the environment? List possible rules you could include.

Yes, the Government Autonomous College eco club carries out various programs for environmental protection periodically on the campus.

2. Are students and faculties aware of environmental cleanliness ways? If Yes Explain

Yes, the college organizes various activities for environmental cleanliness

- *Reduce CO₂ footprints by opting energy-saving methods and using public commutes.*
- *Recycling of waste products*
- *Avoid single-use plastic*
- *Less use of paper*

3. Does Important Days Like World Environment Day, Earth Day, and Ozone Day etc. eminent in Campus?

Yes, World Environment Day, Ozone Day, Earth Day, and more are celebrated by campus. Furthermore, Government Autonomous College organizes different activities like Donation drives, plantation drives and many more.

4. Does the Institute participate in the National and Local Environmental Protection Movement?

No

5. Does the Institute have any Recognition or certification for environment friendliness?

No

7. Does the Institution conduct a green or environmental audit of its campus?

This is the first external audit carried out by the College.

8. Has the institution been audited /accredited by any other agency such as NABL, NABET, TQPM, NAAC etc.?

Yes, the College is accredited as an NAAC grade B-rated college



Best Practices

- The institution has functional compost machines for organic solid waste management.
- There is a ban on single-use plastic and plastic crockery on the campus.
- The college has a separate storeroom for the safe storage of electronic waste. After a certain interval of time college disposes of the E-waste to concerned agencies through the auction process.
- The college has a rainwater storage system.
- Personal Vehicles (Students) are not allowed in the campus

Recommendations

- Provide a sanitary waste disposal facility as per the CPCB guidelines for the management of sanitary waste (as per Solid Waste Management Rules, 2016). Installation of an Incinerator is recommended in campus
- Green building guidelines with ECBC compliance should be adopted for future expansion projects of the College.
- Environmental Monitoring i.e. (Ambient Air Quality monitoring, Stack Monitoring of DG sets, and Water monitoring need to be conducted by the State Pollution Control Committee, approved laboratory) should be conducted periodically.
- Agreement with third-party authorized vendors should be done for different types of waste management, such as paper recycling, e-waste, BMW, Plastic waste, etc.
- Eco-friendly parameters should be included in the purchase of articles and goods for the campus.
- The college should run Conservation awareness campaigns like online sessions and webinars for students and staff.



Conclusion

This audit involved extensive consultation with all the campus team, interactions with key personnel on a wide range of issues related to Environmental aspects. Government Autonomous College has an eco-club for sustainable use of resources.

The audit has identified some observations for making the campus premise more environmental friendly. The recommendations are also mentioned with observations for the college campus team to initiate actions. The audit team opines that the overall site is well maintained from an environmental perspective. Few things that are important to initiate urgently are waste management plan and agreement with third party authorised vendors for waste management.

References

- **The Environment [Protection] Act – 1986 (Amended 1991) & Rules-1986 (Amended 2010)**
- **The Petroleum Act: 1934 – The Petroleum Rules: 2002**
- **The Central Motor Vehicle Act: 1988 (Amended 2011) and The Central Motor Vehicle Rules:1989 (Amended in 2005)**
- **Energy Conservation Act 2010.**
- **The Water [Prevention & Control Of Pollution] Act – 1974 (Amended 1988) & the Water (Prevention & Control of Pollution) Rules – 1975**
- **The Air [Prevention & Control Of Pollution] Act – 1981 (Amended 1987) The Air (Prevention & Control of Pollution) Rules – 1982**
- **The Gas Cylinders Rules – 2016 (Replaces the Gas Cylinder Rules – 1981**
- **E-waste management rules 2016**
- **Electrical Act 2003 (Amended 2001) / Rules 1956 (Amended 2006)**
- **The Hazardous Waste (Management and Handling and Trans-boundary Movement) Rules, 2008 (Amended 2016)**
- **The Noise Pollution Regulation & Control rules, 2000 (Amended 2010)**
- **The Batteries (Management and Handling) rules, 2001 (Amended 2010)**
- **Relevant Indian Standard Code practices**



Environment Audit Report

Annexure Photographs



Well ventilated Campus



Well maintained Campus



Classrooms



Well equipped labs



Plantation drive



Plantation by Students and Faculty

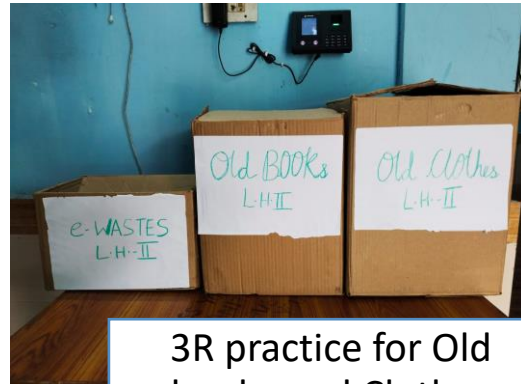


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Rainwater storage tanks



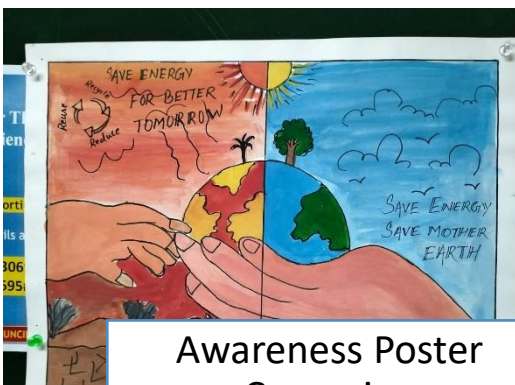
3R practice for Old books and Clothes



Nursery



Biodiversity Conservation



Awareness Poster Campaign



Colour coded Dustbins

***** **END OF THE REPORT** *****