



GREEN AUDIT REPORT

(2022-2023)

OF

WOMEN'S COLLEGE, RAYAGADA

GAUTAM NAGAR, RAYAGADA, DIST-RAYAGADA, PIN-765001, ODISHA

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ACKNOWLEDGEMENT

The green audit conducted by the Women's College, Rayagada is an internal audit that aims towards looking after a healthy environment. The initiative is taken up to foster the concept of environmental sustainability.

Sincere thanks to all for providing us necessary amenities and co-operation during the audit that helped in making the audit, a success.

THE AUDIT TEAM:

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IQAC Coordinator

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EXECUTIVE SUMMERY

In accordance with the Green Campus Evaluation Plan, as suggested by the Internal Quality Assessment Cell (IQAC) of the college, Women's College, Rayagada planned for conducting a green audit of the college in January 2023. After the field work and other formalities, the report was finally sent for approval to the authority (Principal and IQAC) in March 2023.

The purpose of the audit was to make sure that the practices followed in the campus are healthy and environment friendly. With this in mind, the specific objectives of the audit were to evaluate the degree to which the Departments are in compliance with the applicable regulations, policies and standards and to ensure that the development of the college aims at sustainable development and green campus.

The methodology used included physical inspection of the campus and review of the relevant documentation.

STATEMENT OF ASSURANCE

This audit is been conducted for the first time in the college. The audit procedure tried to meet the terms of International Standards of Internal Auditing.

In our decision, sufficient and appropriate audit procedures were completed and evidence gathered to support the precision 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.

OBJECTIVE

Green Audit can be defined as systematic identification, quantification, recording, reporting and analysis of components of the environment and environmental diversity. The "Green Audit" aims to analyze environmental practices within and outside (not in our purview) the college campus, which will have an impact on the eco-friendly ambience. It was initiated with the motive of inspecting the work conducted within the organizations whose exercises can cause risk to the health of inhabitants and the environment. Later on, it is implemented as a measure to enhance a healthy environment to almost all the organizations. Through Green Audit, one gets a direction as how to improve the condition of environment and there are various factors that have determined the growth of carrying out Green Audit. Green audit is assigned to the criteria 7 of NAAC, National Assessment and Accreditation Council which is a self-governing organization of India which declares the institutions as Grade A, B or C according to the scores assigned during the accreditation.

The present Audit is conducted in view of assessing all necessary environmental components of Women's College, Rayagada.

OBJECTIVE OF THE STUDY

The main objective of the green audit is to promote the Environment Management and Conservation of the college campus. The purpose of the audit is to maintain Sustainability of the environment in compliance with the applicable regulations, policies and standards. The main objectives of the audit are:-

1. To create a green campus.
2. To introduce and aware the students to real concerns of environment and its sustainability.

3. More efficient resource management
4. To enable waste management through reduction of waste generation, solid- waste and water recycling.
5. To create a plastic free campus.
6. Recognize the cost saving methods through waste minimizing and managing point out the prevailing and forthcoming complications.
7. Imparting environmental education through systematic environmental management approach and Benchmarking for environmental protection.
8. Curriculum enhancement through practical experience.
9. Financial savings through a reduction in resource use.
10. To bring out a status report on environment compliance.

METHODOLOGY

The Green Audit taken up by the had been divided into two stages:

The Audit Stage:

The Audit Stage encompasses the field works performed. Looking after the unique | structure, location and ambiance of the college, the Green Audit Team focused on Material Issues pertaining to college which have the highest influence on the Green Attributes of the College. The Audit stage also focused on the Methodology adopted. Various approaches are adopted for transparent evaluation of the topics and increase readability for independent reader.

The Post Audit Stage:

The post-audit stage ensured formulation of findings and then sent to college authority's response. Since the audit is done internally, it was important to ensure authority's approval. After getting approval, the audit team went for final report formulation. ' The study mainly covered the following areas to summarize the present status of environment management in the campus:

- Water management
- Energy conservation
- Waste management
- E-waste management
- Green area management
- Carbon footprint

OBSERVATIONS AND RECOMMENDATIONS

A. WATER USE

This indicator shows water sources, water consumption of the college as well as hostel inside the college campus. This parameter of audit is an onsite survey and | assessment to determine the water use and hence to improve the efficiency of water use.

a. Observation

This study observed that, the main source of water in college and hostel is Municipal Water Supply System. The water is mainly used for drinking purposes, toilets and gardening. The supply water is mainly stored in overhead tanks located on the top of the college building, & hostel building. During survey it is found ' that water loss is found from college building as well as hostel buildings as overflow from storage tanks as some of the ball cocks are not functioning. It is also found that some of the taps are leaking and for that some of the water is also being wasted. The college has taken initiation for installing rainwater harvesting where the water will be used for gardening.

For water purification, electronic systems i.e. Aqua guards have to be installed to avoid water loss.

b. Recommendation

Ensure that all cleaning products used in college, hostel f the college should be of biodegradable in nature which has less detrimental effect on the | aquatic environment.

- Gardens should be watered with dripping water system/ sprinklers to minimize water loss.
- Fixation of ball cock in the water tanks should be done to reduce/ stop the loss of water as overflow.
- Leaking taps are to be repaired/ replaced with new one as and when necessary.
- Electronics sensors should be fixed in the lavatory to reduce over use/wastage of water.

B. ENERGY USE AND CONSERVATION

The main source of energy in college & hostel inside the college campus is electricity only. The total electricity supply to college & hostel is done by TPSODL, Odisha. This parameter shows the energy consumption and utilization which is an important aspect of campus sustainability.

a. Observation

In winter the main use of electricity is for lighting purpose, running of computers, photocopiers and other scientific instruments. In summers in addition to the above the

use of fans, air conditioners, and water coolers the consumption of electricity increases. The entire campus along with the college building is equipped with LED lamps, CFL Bulbs and LED Tube lights except at a few locations. The college has installed solar street Lights to save energy. The college and the hostels have no Photovoltaic Cell panels installed. All the computers, photocopiers machines are set to automatic power saving mode when not in use to reduce the energy consumption. All the teachers, staff and students are advised to switch off the fans and lights when not in use especially after a lecture is completed. The college has many numbers of Invertors fitted in different sections e.g. Principal's office, SAMS, Teachers Common Room, Examination Section, College Office and Accounts Section so that short time electrical failure will not affect the day to day activity.

b. Recommendations

- Photovoltaic cell should be installed on the roof of the college building as well as on the hostel building to reduce the intake of electricity from grid.
- 5 star rated electrical & electronic appliances are to be installed to reduce energy consumption.

C. WASTE MANAGEMENT

This indicator shows the waste production and disposal which include plastic, paper, food which are either bio-degradable or non-biodegradable. Municipal solid waste has a number of adverse effects on the environment which are well known to all and no need of | elaboration. Waste can be divided in two categories: General waste and Hazardous waste. General waste includes those wastes which are generally throw away from Office, Hostel and classrooms of the campus e.g. paper, plastic, glass and left out food.

a. Observations

In the office and all most all the departments single sided papers reused for writing and rough work. Now with the availability of both side printing facility, all most all the documents are printed both side. In office and departments the important official paper are kept for future reference. In the college very less plastic waste is generated. With the initiative of "Plastic Free Campus", the plastic carry bag and Plastic cups for tea and liquid beverages are not allowed to bring into the campus, hence in the college the generation of plastic waste also reduced. So the plastic waste is neither categorized at point source nor sent for recycling. Metal waste and wooden waste are stored and are auctioned from time to time to scrap agents. Very few glass bottles are reused in the laboratories. ' The food waste from hostels &canteen are thrown away as their quantity is very less. Incinerators are being used to burn sanitary napkins.

c. Recommendations

- Reduce the absolute amount of waste generation by a process of reuse.

- Paperless office system should be introduced, all the notification, communication to staff and students should be made by college website, e-mail, whatsapp and other suitable social media.
- No use of plastic where ever possible.
- Make full use of recycling facility of City Municipality and other third parties for glass, plastic, can and other recyclable waste.

D. E-WASTE MANAGEMENT

E- waste or Electronic waste is a term for electronic products that have become unwanted, non-working or obsolete, and have essentially reached the end of their useful life. Because technology advances at such a high rate, many electronic devices become “trash” after a few short years of use. In fact, whole categories of old electronic items contribute to e-waste. Solving the e- waste problem starts with education, and habit changes as a result of knowledge. Most people are trained to recycle a newspaper, bottles, and cans. Almost anything electronic in nature can be recycled properly with effort. Obsolete electronic devices are rapidly filling the landfills of the globe.

a. Observations

E-waste generated in the college and campus is very low. The cartridges used in laser printer are refilled outside of the college. The e-waste and defective items of the college ' and departments are stored and disposed as per Government Norms. College administration has instructed all the departments along with office for proper handling of e- - waste and safe disposal.

b. Recommendations

- Recycle and safe disposal of all obsolete electronics items to be done as per local guidelines.
- Use of reusable resources and containers to be practiced to avoid unnecessary packing material dumping.
- Use of recycled and refurbished goods whenever possible.

E. GREEN AREA

Green area includes all the flora and fauna that are available in the college campus. It mainly includes the plants that are found in the area for greenery and sustainability. The college is situated in the lap of nature with surrounding mountains though JK Paper Plant is not too far. So air pollution in shape of dust, toxic gas is a common factor for the entire town. For that maintenance of green area and green belt is very much necessary for the college. All plant and animal species - including humans - are linked together in a complex web of life; we depend upon biodiversity for our survival. Biodiversity is the key to healthy ecosystems and ultimately a healthy planet. It keeps the air and water clean, regulates our climate and provides us food, shelter, clothing, medicine and other useful products. Each part within this complex web diminishes a little when one part weakens or disappears. | The trees work hard to keep the air we breathe clean and healthy. They are like sponges. | Their leaves take in much of the poisonous unwanted carbon dioxide

in the air, and replace it with the oxygen we need for healthy living. This system of absorbing gases on which all plants rely for their food is called photosynthesis. In this process, the plants with the help of | sunlight, water, minerals and the green material called Chlorophyll within the leaves change the carbon-dioxide into food for themselves. When doing this they release oxygen into the | air which is vital for all life on earth. At night when there is no sunlight the plant no longer makes food, so it does not release the same amount of oxygen. One is often told not to sleep with plants in one's room, as they will use up all the oxygen. However, at night although photosynthesis does take place the plants also rest, so that little oxygen is absorbed from the air and very little harm can be done to the sleeper.

The roots of trees dig deep into the earth and hold it together so that the rain and wind cannot wash or blow it away. This is very important as the earth has only a very thin layer | (seldom more than one foot) of fertile soil covering it. If this is washed, blown or worn away leaving rock or sand on which no plants can grow then the earth would become a desert. The removal of this top-soil is called soil erosion. Scientists, all over the world are trying to find ways to prevent soil erosion. One of the most important ways is creating by planting more trees. Trees send up water vapour into the atmosphere through their leaves. When this vapour meets the cool air above it turns into drops of water which then fall as rain. They give us beauty, colour and greenery. This is something which we often forget and fail to appreciate. They are the homes of many birds, animals and insects. Each of these is important in maintaining the balance of nature. Trees give us food, and juice to drink. Ropes, medicines, wood, paper, and so many other things we use in our daily life, or which are necessary for our health, are made from trees.

a. Observations

College campus is located in the middle of many trees. Hostels are also surrounded with many trees. College NSS team is doing their best to plant more trees. The college is taking several steps for the beautification of the college.

b. Recommendations

- More plantations should be done every year in the month of July and August to increase the plant diversity. |
- Promote environmental awareness as a part of course work.
- Emphasis should be given for indoor plantation which can increase the aesthetic value of the college.
- More pots should be placed in the college corridor with bonsai plantation.
- Different areas of the college campus may be divided among different departments for plantation which will create a bond between the students and nature.
- Plantation of medicinal plants should be done.

F. CARBON FOOTPRINT

A carbon footprint is defined as the total amount of greenhouse gases produced to directly and indirectly support human activities, usually expressed in equivalent tons of carbon dioxide. 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 & diesel). The most common greenhouse gases are carbon dioxide, water vapour, 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. An important aspect of doing an audit is to be able to measure our impact so that we can determine better ways to manage the impact. In addition to the water, waste, energy and biodiversity audits we can also determine what our carbon footprint is, based on the amount of carbon emissions created. One aspect is to consider the distance and method traveled between your home and college every day.

a. Observations

During audit it is observed that about 35 percent students are using bicycle for their day-to-day activity. The students who are staying in hostel are coming to college by foot which comprises about 10 percent of the total students. From the day scholar student's 10 percent students are using public transport system and the rest 45 percent student using their own vehicle for transport activity. Near about all the staff members are using their own vehicles for transportation, which include two wheelers and four wheelers. Some one or two percent staff members are using bicycle or public transport system to travel between college and home every day. To ensure less carbon dioxide emission the college has taken a new initiative by implementing **"NO VEHICLE once a week."**

b. Recommendations

Students should be encouraged to use bicycle and public transport system as per their convenience to reduce green house gas emission by burning petrol.

CONCLUSION

Considering the above facts the institution is running with higher Secondary & undergraduate courses. So introduction of environmental awareness among the students is very much essential. Besides environmental awareness the college authority should take | initiative to make the campus green. To make the campus green and eco friendly few recommendations are added here for waste management, plantation of trees with the help | of eco-friendly and scientific technique. As a part of green audit of the campus, the team carried out the environmental monitoring of the college building as well as college campus which includes illumination, Noise Level, ' ventilation and indoor air quality of the class room. The noise level in the campus is also within the prescribed limit i.e. below 50 dB at day time.