

**GREEN AUDIT REPORT**

**2018-19**

**KATWA COLLEGE**

**(Affiliated to University of Burdwan)**

**Katwa-713130, East Burdwan**



**Prepared By**

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## **INTRODUCTION**

Green auditing is a means of assessing environmental performance (Welford, 2002). It is a systematic, documented, periodic, and objective review by regulated entities of facility operations and practices related to meeting environmental requirements (EPA, 2003). It is otherwise the systematic examination of the interactions between any operation and its surroundings. This includes all emissions to air; land and water; legal constraints; the effects on the neighbouring community; landscape and ecology; the public's perception of the operating company in the local area. Green audit does not stop all compliance with legislation. Nor is it a 'green washing' public relations exercise. Rather it is a total strategic approach to the organisation's activities (CBI, 1990).

1. Audit is a systematic approach.
2. Audit is conducted objectively.
3. Auditor obtains and evaluates evidence.
4. Evidence obtained and evaluated by the auditor concerns assertions about economic actions and events.
5. Auditor ascertains the degree of correspondence between assertions and established criteria.
6. Goal, or objective, of the audit is communicating the results to interested users.

## **ACKNOWLEDGEMENT**

We would like to thank our Principal, Dr. Nirmalendu Sarkar for her consent to conduct this audit. We would like to sincerely thank all the Departments, students, teaching and nonteaching staff for their kind cooperation with us during this survey. We would also like to specially thank the Laboratory Assistants who helped us a lot in furnishing this information.

## **OBJECTIVES OF STUDY**

The main objective of the green audit is to promote the Environment Management and Conservation in the College Campus. The purpose of the audit is to identify, quantify, describe and prioritize framework of Environment Sustainability in compliance with the applicable regulations, policies and standards. The main objectives of carrying out Green Audit are:

- To introduce and aware students to real concerns of environment and its sustainability.

- To secure the environment and cut down the threats posed to human health by analyzing the pattern and extent of resource use on the campus.
- To establish a baseline data to assess future sustainability by avoiding the interruptions in environment that are more difficult to handle and their corrections requires high cost.
- To bring out a status report on environmental compliance.

## **METHODOLOGY**

In order to perform green audit, the methodology included different tools such as preparation of questionnaire, 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 areas to summarise the present status of environment management in the campus:

1. Analysis of Air Quality and Biodiversity
2. Analysis of Water usage
3. Analysis of Energy consumption
4. Analysis of waste generation and disposal

All the data were united and based on these, a report was formulated.

## **REPORT**

### **1. Analysis of Air quality and biodiversity**

In total, based on our data collected, there are ..... plants in the college campus. In this, ..... plants are trees, ..... are plants of average length and ..... are small plants. There are ..... plants in the college Botanical garden. So, ..... plants in our college contribute to the Oxygen supply that we utilize. Being situated in the **semi urban** area, our college is exposed to various atmospheric pollutants from vehicles as well as by other external means. Based on our calculation, the different sources of carbon dioxide emitted to our college are:

- 1.Vehicles
- 2.Refrigerator
- 3.Air conditioners
- 4.Burning
- 5.Water coolers

On the days of data collection, there were .. cars, ....bikes and .....scooters in our campus, which in turn proves us that these vehicles may contribute to high carbon dioxide emission. The power generators also contribute to high carbon dioxide emission. There are ....refrigerators, ..... air conditioners and ..... working water coolers in our campus. **The gas oven present in college canteen and electric heater present in staff room and different department contribute to carbon dioxide emission.** The students, teaching and nonteaching staff and the visitors also contribute to carbon dioxide emission.

## **2. Analysis of Water usage**

Water is used for drinking purpose, canteen, toilets, laboratory and gardening. The college campus possesses many water outlets. During the survey, no loss of water is observed, neither by any leakages, nor by over flow of water from overhead tanks. The data collected from all the departments is examined and verified. On an average the total use of water in the college is 20,000 L/day, which include 5,000 L/day for domestic purposes, 10,000 L/day for gardening and 5,000 L/day for different laboratories.

## **3. Analysis of Energy consumption and costs**

The college is well equipped with electricity supply. Each department possess computers, printers, fans, plug points, tube lights, bulbs, etc. In addition to these equipment, our college also has-

1. Pathological microscope
2. **A distillation unit**
3. Photoelectric colorimeter
4. **U V Transluminator**
5. **Autoclaves**
6. An exhaust fan
7. A laminar air flow
8. A hot plate
9. An incubator
10. **A Stand fan**

11. A hot air oven

12. 2 centrifuge

13. 7 filters

14. 7 telephones

15. An induction

16. A mike

17. A bell

18. Electric heater

19. Electric kettle

20. Weighing Machine, etc.

#### **4. Analysis of Waste generation and disposal**

Wastes cannot be avoided in any environment. Wastes can be classified as Biodegradable and Non biodegradable wastes. Biodegradable wastes include food wastes; which can be easily decomposed by the bacteria in soil. But nonbiodegradable wastes are those which cannot be degraded by any organism and remain as such for many years. Much amount of waste is generated from the college campus.

1. CANTEEN – The food waste generated from the canteen is collected and given to dogs. Plastic waste is generally less generated from the canteen. The plastic waste generated is send to waste collecting van of katwa municipality.

2. LIBRARY - The most generated waste is paper waste. It is sold to vendor for recycling.

3. STORE- Not much waste is generated. But the paper waste is sold to vendor for recycling.  
and plastic covers are burned .

4. OFFICE- Paper waste generated are recycled and reused.

5. GARDEN-Plastic and paper waste is comparatively less.

6. BATHROOM-The wastes are collected and send to waste collecting van of katwa municipality.

7. CLASSROOMS-Paper Wastes are collected in the waste basket and recycled.

8 LABORATORY-The broken glass wastes and the useless instruments are disposed for recycling after thorough washing.

9. COLLEGE PREMISES-Plastic waste generated is usually less. But paper waste is generated in a larger amount.

## **OBSERVATIONS**

1. On analyzing the air quality, we could assess that there are many pollutants in our environment (either in micro quantities or macro quantities), from the vehicles of the road. The burning of wastes, especially plastic waste, also causes emission of poisonous gases into the atmosphere. But, there are many plants in our campus that purify the polluted air and supply enough oxygen for us.

2. Likewise, there are sufficient water outlets for the students and water coolers for the departments. But it is essential to check whether all these are working or not and whether the taps are leaking or not.

3. Energy consumption is yet another component that is to be taken care of. A few numbers of fans and tube lights are not working. An autoclave and a cooler are also not working.

4. Waste generated is mostly burned inside the ring near dog kennel. Organic waste is sometimes put in biogas plant and sometimes fed to pigs. Fortunately, the nonteaching staff of the college is available to clean the college.

## **SUGGESTIONS**

### **a. Air Quality**

- More plants need to be planted. More of shade trees to be planted inside the college campus.
- Plastic wastes should not be burned that leads to pollution.
- Celebrate every year 5th June as 'Environment Day' and plant trees on this day to make the campus more Green.

### **b. Water usage**

- Need of monitoring, controlling overflow is essential and periodically supervision drills should be arranged. In campus small scale/medium scale/ large scale reuse and recycle of water system is necessary.

- Minimize wastage of water and use of electricity during water filtration process, if used, such as RO filtration process and ensure that the equipment's used for such usage are regularly serviced and the wastage of water is not below the industry average for such equipment's used in similar capacity.
- Ensure that all cleaning products used by college staff have a minimal detrimental impact on the environment, i.e. are biodegradable and non-toxic, even where this exceeds the Control of Substances Hazardous to Health (COSHH) regulations.

### **c. Energy Consumption**

- Energy consumption could be reduced.
- Unnecessary lights and fans could be switched off. During daylight, lights can be switched off.
- Energy conserving methods like usage of LED and CFL bulbs can be appreciated..

### **d. Waste disposal**

- Reduce the absolute amount of waste that it produces from college staff offices.
- Make full use of all recycling facilities provided by City Municipality and private suppliers, including glass, cans, white, coloured and brown paper, plastic bottles, batteries, print cartridges, cardboard and furniture.
- Provide sufficient, accessible and well-publicized collection points for recyclable waste, with responsibility for recycling clearly allocated.
- Single sided papers to be used for writing and photocopy.
- Important and confidential papers after their validity to be sent for pulping.

## **CONCLUSION**

The **environmental awareness and production committee** has suggested improve greenery up to 50% by plantation like trees, medicinal plants, herbal and Tulsi in the campus, plantation of water harvesting plants it has also suggested to make the campus air pollution free zone.