

# ENVIRONMENT AUDIT REPORT - 2021



**St. Claret College, Bengaluru.**



## Acknowledgement

We would like to acknowledge and give our warmest thanks to the committee members of St. Claret College for their support and for providing us necessary facilities and co-operation during the audit process. This helped us in making the audit a success.

We hope this would help St. Claret with their future endeavors and help them achieve all their environmental aspirations and vision.

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28<sup>th</sup> December 2021

## CERTIFICATE

This is to certify that **St. Claret College, Bangalore** has conducted detailed Environmental Green Audit of their campus and has submitted necessary data and credentials for scrutiny. The activities and measures carried out by the college have been verified based on the report submitted and was found to be satisfactory. The efforts taken by the faculty and students towards environment and sustainability is highly appreciated and commendable.

Director

  
Vanalok Private Ltd  


Green Audit conducted by



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## Executive Summary

Nature encompasses fascinating inhabitants like microorganisms, plants, animals, insects, etc., who have as much right to live as we do. People all over the world see nature differently. With the climatic conditions going haywire all over the world, there is a need for resilient infrastructure, actions and a strong mindset for driving lifestyle change. Students being future citizens of the world can drive change and strive for a better existence and this would be possible only if educational institutions impart values and space for them to grow. They have also the ability to influence their families and the general public more effectively than even a learned motivator.

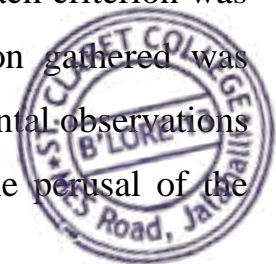
Teachers play an undeniable role in imparting knowledge to the students. Hence, teachers are in a position to facilitate knowledge and promote the learners to achieve better awareness about what is happening in and around them. Teachers as professionals and influential individuals, supported by the management of institutions, can play an important role in shaping up students' attitudes through training and parading them - to be the role models in their communities. Educational Institutions thus can offer an ideal service in moulding the young minds in their impressionable age, towards promoting the health of nature, understanding the underlying causes of climate change and its impacts, and the conditions required to be maintained for sustaining life on earth.

Green Audit is, therefore to make the entire college and the society understand through the trained students, how heavy is their carbon footprint, and help search for remediation and make their campuses and living surroundings as green as one can make it'. It is also in search of newer ways to climb up the ladder through continuous efforts for the most sustainable ways of thriving. The result of such



an exercise would help their parents and other visitors to the campus in appreciating their responsible behaviour and admire the novel ways in which the campus team has strived to achieve their “shade of green”. A green audit can also be a useful tool for a college to know how and where they are using the most energy, water or other resources. The college can thus plan for the needed changes and ensure savings. It can also be used to improvise their waste minimization strategy. Green auditing and the implementation of mitigation measures will be a win-win situation for the college, the learners and the planet. It can also create health consciousness and promote awareness of the environment, ethics and values.

Eco-campus is a concept often used by educational institutions around the world to make campuses more sustainable by reducing wastages and enabling their safe disposal into the environment. Waste minimization plans for academic institutions are now mandatory to ensure that the campus is cleaned regularly. As an eco-campus, performing a green audit of the university is critical. The green auditing of St. Claret’s College in Bengaluru allows the assessment of lifestyle, actions, and their impact on the environment. The audit was primarily focused on greening factors such as energy consumption in terms of electricity, water management, waste management, and green spaces management. A series of methods were used to obtain information about the green practices of the college. A set of questions were formulated, reports and documents were verified and a series of interviews were conducted with people in charge of each criterion was done to ensure the accuracy of information. The information gathered was organized, tallied, and analyzed. Finally, a report on environmental observations and recommendations for improvement were listed out for the perusal of the management.



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## 1. Introduction

Green audits help analyse local environmental practices both inside and outside the university premises that influence the atmosphere of the campus. Therefore, ‘Green Audits’ can be defined as a systematic, identification, quantification, recording, reporting and analysis of components that constitute a university environment. Through such audits, the current status, scope for improvement, and recommendations for improvement can be made available which would further improve the structure of the environment and enhance the efficiency and atmosphere of the campus. A green audit also serves as a means to identify opportunities for sustainable development practices, enhance environmental quality, improve health, hygiene and safety, reduce liabilities and save money and achieve values of virtue.

Green audits are assigned to criteria 7 of the National Assessment and Accreditation Council, which is a self-governing organization that provides various institutions with grades based on their criteria for accreditation. This accreditation provides a college with an opportunity to present itself as an esteemed institution without impeccable values, infrastructural advantage and endless opportunities it could provide its students.



### **1.1. Need for Environmental Audits:**

Environmental audits help analyse and determine good institutional practices; whether they are eco-friendly or sustainable. With the world constantly changing, development, unfortunately, results in large-scale utilization of natural resources. Now natural resources are not just used for the supply of products. Energy, water are all basic commodities that are used generously by all. With the threat of depleting resources looming over our heads, it is imperative to determine how much we use and where we waste resources to ensure efficient usage. Green audits provide opportunities to determine the same and help the organization to reflect, improve and expand their processes and shift to clean green resource utilization. Apart from this, it helps instil consciousness among people as part of the institution towards the environment and sustainable resource utilization.

### **1.2. Goals of Environmental Auditing:**

- a) Identification of strengths and weaknesses in green practices.
- b) Analyse and suggest solutions for problems identified.
- c) Identify and assess environmental risk.
- d) Motivate staff for optimal sustainable use of available resources.
- e) Increase environmental awareness throughout the campus.
- f) Collect baseline data of environmental parameters and prepare plans for issues before they become problems.





### **1.3. Objectives of Environment Audit:**

- a) Analyse current practices and determine their impact on the environment.
- b) Identify and analyse significant environmental issues.
- c) Continuous assessment for better environmental performance.
- d) Establish and implement a green culture on the campus and sensitize the faculty and students.

### **1.4. Benefits to Educational Institutions:**

- a) Improve the environment within and outside the campus premises.
- b) Help recognize cost-effective green strategies like waste minimization, energy conservation, water replenishment etc.
- c) Empower people linked to the organization to move towards conscious environmental thinking and practice.
- d) It helps improve the image and builds a positive impression of the institution for its green and clean approach.

## **2. Scope of Environment Audits**

The benefits of good auditing practices are the following:

- a) Environmental education through systems thinking and environmental management system approach.
- b) Benchmarking for environmental protection initiatives.
- c) Financial savings through efficient resource use.
- d) Enrichment of curriculum through hands-on experiences.
- e) Enhancement of college profile and improving environmental standards.
- f) Strengthening the environmental ethics and value systems in young people.



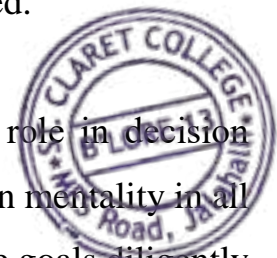
- g) Developments of ownership, social and personal responsibility for the campus and its surrounding environment.

### **3. About the College**

St. Claret College is situated in the Jalahalli Village area in Bengaluru city. The college is a catholic undergraduate institution established by Claretian Missionaries of the Bangalore Province. Founded in 2005, it is affiliated with Bangalore University. The college provides quality education offering undergraduate programmes in Arts and Commerce. Computer education is integrated into the UG curriculum thereby providing additional benefits to management studies. The college has also initiated post-graduate programmes recently providing opportunities for higher education for the student community.

The St. Claret Group of Institutions is spread over an area of 12 acres located amidst a pristine environment. The UG & PG College covers an area of 4 acres and is considered for the present study. The college is a three-storey facility with a terrace area of 315 sq. mt. It has amenities like an auditorium, seminar and conference halls, and a library facility with over 15000 books for perusal. Apart from academic requirements, there are facilities for extra-curricular interests like sports and athletics. There is a canteen on the premises that provides food at nominal rates and a sitting area facing the garden. The garden occupies an area of 1171 sq. m. and is well maintained.

With the ‘Green Campus’ vision playing an important role in decision making, the college has taken steps to adopt a green and clean mentality in all areas of functioning. The management strives to uphold three goals diligently namely – environmental literacy and awareness, health and safety of



occupants and good environmental footprint. Four major parameters have been considered by the institution namely Energy, Water, Waste and Green Initiatives that promote their ‘Green Campus’ vision. The teaching and non-teaching staff along with the students are active participants in activities that drive their vision, to name a few: tree plantation drives, waste management, paperless work, maintaining a garden on the terrace, medicinal gardens, water conservation and managing biodiversity within the premises of the campus.

The institution has mindfully provided sufficient space for all the essential requirements of the student, such as bicycle parking, proper roads, a sitting area, well-maintained washrooms, clean filtered drinking water, good playgrounds and well-managed green space. The corridors are clean with provisions for dustbins and lights wherever necessary are present.



*Figure 1: Bicycle Stand in the premises.*



*Figure 2: Canteen in the premises*



*Figure 3: Sitting area for Relaxation*



*Figure 4: Well Maintained Corridors*



*Figure 5: Spacious Library*



*Figure 6: Conference Hall*



*Figure 7: Computer Labs for Student perusal*





Figure 8: State of the art Gym facilities



Figure 9: Aviary on the campus



## 4. Observations and Recommendations

### 4.1 Water:

Water is an important resource that is depleting at a rate faster than what can be recovered. All beings depend on water for their survival. Although the earth is covered by water majorly, freshwater that is used for drinking purposes is very limited. Hence, it is very important to use water judiciously and make arrangements to collect and preserve water whenever possible for replenishment of the water table. This indicator addresses water consumption, water sources, irrigation, stormwater, appliances and fixtures. A water audit is an on-site assessment and surveys to determine the practices and efficiency of usage.

#### a) Observation:

The major source of water supply is the bore well in the college premises. On average 2-3 pumps are operated to fill the overhead tanks (4 nos.) with a total capacity of 20,000 L. Apart from the overhead tanks on the terrace, two tanks of 10000 L each is specially assigned for emergency fire situations. This water is replaced every month and is used to water the lawns. Water is majorly used in washrooms, canteen, drinking purpose and gardening purposes. On average, the total annual consumption of water in the college is 96,000 k L with approximately 10000 L/ day used for domestic purposes and gardening.





Since the college does not have any life sciences as a part of the curriculum wastages in laboratories and other needs are eliminated. During the survey, no wastages were observed.

**Rainwater Harvesting Practices:**

Rainwater harvesting is considered as one of the green methods used to store freshwater and recharge the water table for future use. The college has installed rainwater harvesting units that are utilized generously. All the water collected is directed to the underground tanks during shortages thereby lessening the dependence on groundwater, especially during the monsoon seasons. Apart from recharging of the water table, rainwater harvesting improves the soil quality and the capacity to release nutrients into the soil. It improves the humus levels in the soil and also prevents varying degrees of soil erosion cause due to rampant flow of water. The storage capacity of these units come up to 30,000 L. The gardens are watered using the stored water from harvested sumps. The open grounds also provide means for water percolation as they are not barren due to the grass on the gardens.

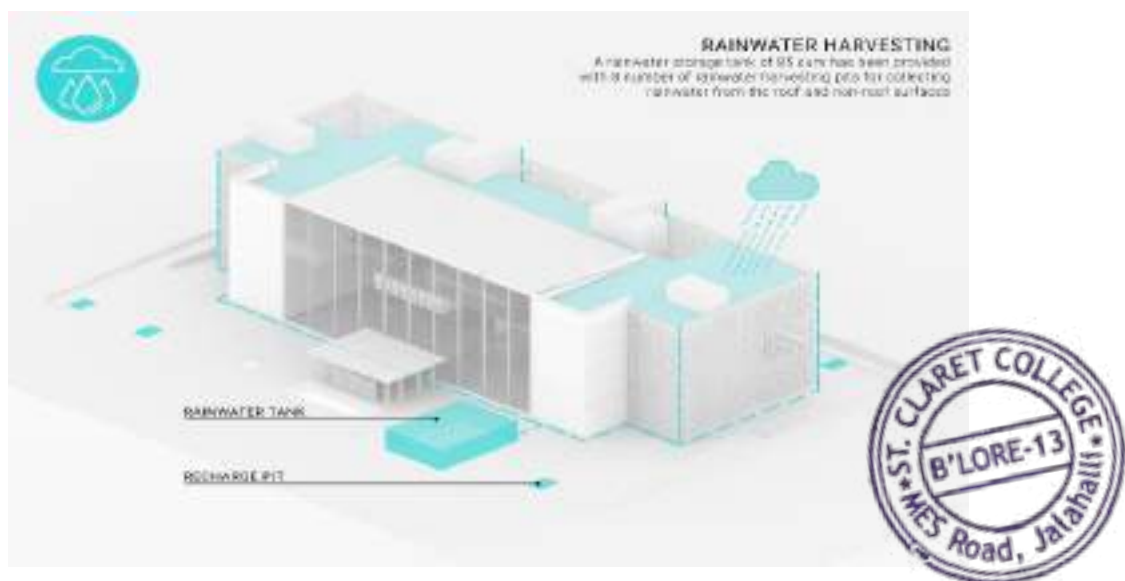


Figure 10: Mechanism of Rainwater Harvesting



Figure 11: Syntax tanks for Fire Safety Systems



Figure 12: Water Percolation Pit



Figure 13: Underground Storage Tank for Rainwater



Figure 14. Sign boards kept to create awareness on Water Conservation



Figure 15: Storage Tank for Rainwater



**b) Recommendations:**

- Need for systems to control overflow of water while filling up overhead tanks and underground tanks.
- Minimizing wastages by reducing, reusing and recycling wherever possible.
- Installation of aerators in all taps to reduce wastage and consumption. Automated taps could also help reduce usage.
- Fix leaky faucets and flushes regularly.
- Ensure all disinfectant products used are eco-friendly and do not cause major harm to the environment.
- Installing a compact Sewage Treatment Plant (STP) in the college premises would provide for opportunities to treat grey water and use them for campus gardens and cleaning purposes.



## **4.2 Waste Management:**

Solid waste can be categorized into three types namely: Biodegradable, Non-Biodegradable and Hazardous Waste. In an institutional setting, the only hazardous waste generated is E-waste and Sanitary Waste. Biodegradable or Wet waste is mainly leftover food components, canteen waste etc., while non-biodegradable includes recyclable waste like plastics, tin, bottles, papers etc. E-waste majorly contains harmful chemicals and metals that could cause harm to the handlers or even cause harmful gas emissions in case it is burnt in landfills. Such waste needs to be collected and given special treatment. Thus, minimization of solid waste is an essential win on the road to sustainability. This indicator addresses the waste collection and disposal mechanisms.

### **a) Observation**

The total waste collected on the campus is around 81 tons for the year 2020-21. Waste segregation seems to be taking place at the source itself. There were provisions for dustbins with clear demarcations for wet waste and dry waste in every place possible. Since the college does not provide life science curriculums the only laboratory waste is in the form of E-waste (Computers, printers and other tech). All single-sided papers are reused wherever possible. All the segregated waste are sent to the respective vendors. Wet waste is sent to BBMP collectors, dry waste to recycling units and E-Waste to the respective collector who would safely dispose of the waste components after extraction of required materials.

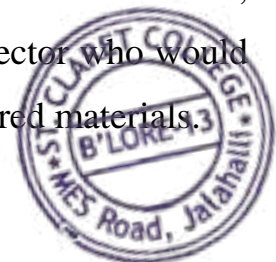


Figure 16: Labelled Dust Bins in the Premises





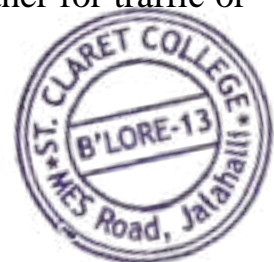


**b) Recommendations:**

- Have proper sanitary waste disposal mechanisms on site like an incinerator for safe disposal. Having sanitary pad machines could also benefit the students on campus.
- Apply concepts of Reduce, Reuse, Recycle and Refurbish wherever possible.
- Install proper composting units in the form of pits to take care of wet waste in the premises itself. This could be done involving students and the compost could be used for the trees and plants on the campus.
- Training and campaigns in cloth bag making for students and staff will reduce the usage of throw away plastic carry bags.
- Leaf litter from the campus can be effectively used for aerobic/vermicomposting so that the composted material can also be used as good manure.

**4.3 Overall Observation about the College**

The campus is well maintained and regularly cleaned. The washrooms are accessible to all students and are in good conditions. The classrooms are well lit with ample ventilation. There are clear demarcations for footpaths in the campus. And sign boards wherever necessary are present either for traffic or for general awareness of the people.



## 5. Summary

An audit of natural resources is an important tool for ensuring that natural resources are being used in an eco-friendly and sustainable manner. Green auditing is the process of determining whether institutional practices are environmentally friendly and sustainable. It is a continuous process of identification, monitoring and discussion. There is scope for further improvement, particularly concerning waste, energy and water management. The college in recent years consider the environmental impacts of most of its actions and makes a concerted effort to act in an environmentally responsible manner. Even though the college does perform fairly well, the recommendations in this report highlight many ways in which the college can work to improve its actions and become a more sustainable institution.



Figure 17: Good Environmental Practices for Sustainable Development



## 6. Corollary

From the Environment audit, the following conclusions can be made:

- ❖ Water management consists majorly of the rainwater harvesting systems that bring in a good amount of water that is used for gardening purposes. More thought could be put into rainwater recharge pits that could replenish the water tables.
- ❖ Food waste or wet waste, in general, can be turned into compost that can be used as enrichment for the green on the campus. This would help them institution lessen its dependence on the local authorities for disposal.
- ❖ E-waste is segregated, handled and disposed of properly in an eco-friendly and responsible manner.
- ❖ Reduction in the use of one-time-use plastics like bottles, cups, folders, pens and other decorations could help reduce the plastic waste menace on the campus.
- ❖ Wear masks signage were seen on the campus.

