GREEN AUDIT 1

Green Audit Report



Anekant Education Society's Jaysingpur College,

Tal-Shirol, Dist-Kolhapur,

Maharashtra

Prepared by
IQAC, Jaysingpur College, Jaysingpur
And
Archana Analytical Services, Kolhapur
2018-2019

Archana Analytical Services

(Consultants for Environment, Health and Safety) UdhyogAdhar Reg. No. MH15D0001832

Ref: AAS/JCJ/GA/2018-19

TO WHOMEVER IT MAY CONSERN

We, Archana Analytical Services, conducted Green Audit 2018-19 for Jaysingpur College,

Jaysingpur, Tal- Shirol, Dist.: Kolhapur, 416101, Maharashtra, India.

This is declared that Green Audit is conducted as per the norms of Ministry of

Environment and Forest, Govt. of India and allied agencies where as applicable. Green Audit

is replication of data given by institution and its actual onsite visit verification.

Signature of authority

Office address

'Sahejanand Appartement' 486/A/2, Jadgadale Colony, Prathibha Nagar, Kolhapur-416008 Contact: 940555340 email:archana.ehs@gmail.com

Preface

World is facing various serious environmental issues, different reports from World Health Organization, IPCC, National and International organizations highlights the environmental issues are most sensitive and widely discussed issues in the world today. From local issues like unsafe drinking water, regional issues like urban smog to global warming to deforestation etc. are the environmental issues that are discussed at global level but true fact is that regional or local activities are responsible to make such issues global. On the background of scenario components involved in higher education institutions like universities, colleges, research institutes are expected to take lead role in environmental conservation and protection. Institutions must play an active role in creating and modeling solution for environmental problems.

Jaysingpur College, Jaysingpur is following different sustainable practices as their vision. As a part of Quality System, college is committed to take lead role and create its own identity in the protection and conservation of environment. College has been following eco-friendly and sustainable practices to manage the available resources. As a part of such voluntary practices and component of Quality System, internal environmental audit is conducted to evaluate the actual scenario on the campus.

Green auditing of college campus is planned systematic assessment of day to day activity with special reference conservation of natural resources, optimum use of available resource and control over waste generation. Green audit assessment will show way to find out the eco-friendly and non-eco-friendly practices on the campus. Objectives of green auditing vary with the operational activities of the organization. In case of our college green audit is a requirement of internal quality management system implemented by Anekant Education Society's Jaysingpur College, Jaysingpur, for the improvement in quality of higher education. Green audit show alternative path for management for non-ecofriendly activities. It also promotes a good environmental management practices and raises the awareness about the environmental conservation and its long-term benefits. College has already implemented conservation practices in vision, which provides chance to explore opportunities for better performance in the future.

As a part of Internal Quality System over the past five years college has fixed goal for conservation of environment and sustainable practices. For the achievement of goal, college accepted various new and advanced technologies which are eco-friendly; such as self-sufficiency in water by rain water harvesting bore well recharge, recycling systems etc. Plantation of local and endemic plant species on campus is big challenge that is accepted by the college. Over the years various green practices helped for number of significant changes, which have helped to increase the green area on the campus.

I am very happy to forward this Green Audit report of Jaysingpur College, Jaysingpur. I hope the report will be helpful to all concerned and will motivate all to change non sustainable practices.

Principal (Dr.) R.R. Kumbhar Jaysingpur College Jaysingpur

Jaysingpur College, Jaysingpur.

Contents

1.0	Introduction	
	1.1	Infrastructure
	1.2	Green audit an overview
	1.3	Need of Green audit
	1.4	Goals of Green audit
	1.5	Objectives of Green audit
2.0		Methodology
	2.1	Survey by Questionnaire
	2.2	On site visit and observations
	2.3	Data analysis and final report preparation.
3.0		Overview of Green audit
	3.1	Green Cover
	3.2	Waste Management
	3.3	Electricity and Energy audit
	3.4	Water Conservation
	3.5	Health and Hygiene
	3.6	Training and Awareness
	3.7	Corporates Social Responsibility
4.0		Summary and Recommendations

INTRODUCTION

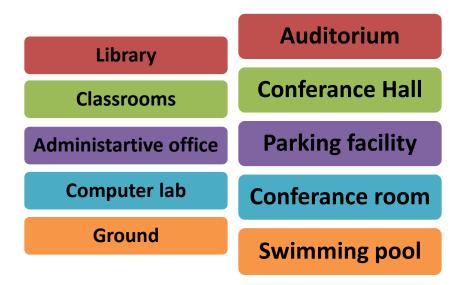
The foundation stone of Jaysingpur College, Jaysingpur was first established by Anekant Education Society in way back 1964, is starting with the Jain philosophical concept 'Siddhiranekantat' and with the blessings of Saint Late Samantbhadra Maharaj. Jaysingpur College, Jaysingpur becomes a ray of hope in rural area to get higher education. It was indeed laudable to think of providing higher education facility to rural students as there was a dearth of higher education within a radius of 40 kilometers. Thus, the segment of society which stood deprived of higher education till 1961 found a ray of bright future and hope from the academic point of view. In order to ascertain the aim of the establishment of the college, there is a need to have a look at the name of the society viz., 'Anekantwad' (multi-dimensionless) 'Siddhiranekantat' which finds a place in the motto of the college. The aim of education in this institution is to enrich the quality of matter i.e. the body matter of the individual so that the soul 'within' helps him to become a good 'Siddha' who will be an asset to the society. The college is affiliated to Shivaji University, Kolhapur. It attained its recognition from the University Grants Commission under 2f in March 1982 and 12 B, June 2007. The state government has granted 'Minority' status since August 2007 to till date Anekant Educational Society and its institutions. The college has received a grant of Rs. 99.5 lakh under DST-FIST scheme for Department of Science and Technology, New Delhi.

At the advent of information and technology, the institution has kept a pace with active approach by setting-up a well-equipped computer lab and a resource center, teaching as well as non-teaching staff is well-versed in their practices.

1.1 Infrastructure

The college located at north side of Jaysingpur town approximately 1.0 km from central bus stand towards Shirol, college has independent infrastructure. The college is situated on a plot of land measuring 25 acres. The Master Plan of the college campus indicates the existing buildings. It has 9 separate buildings or structures. Totally, there are 32 classrooms,10 Laboratories, 02 hostels, including principal bungalow (1) and administrative office (3). All the classrooms are equipped with standard furniture and fixtures. All the buildings have adequate basic amenities on each floor including drinking water. The college library is full with 540060 numbers of books including novels, magazines, reference books, text books etc. It has a reading room where magazines and newspapers are available in local language as well as in English. The college inculcates civic responsibilities among the students through N.S.S,

NCC. The college has N.C.C. units for boys and girls. College runs competitive cell for competitive exams like MPSC, UPSC, Banking etc. Nature club activities provide awareness for environment and pollution free living. Students participate in all such activities. Strategic planning and technologies are used by the institution for efficient running, particularly in resource mobilization.



1.2 Green audit an overview:

Educational institutes are playing a key role in continuous development of human resources worldwide through teaching and research. Educational institute conducts various activities with aim to percolate the knowledge among the different levels of society. Likewise educational institutes also try to give issues related environmental conservation and pollution control. Various types of evolutionary methods are used to identify the environment concerning problem. It includes Environmental Impact Assessment (EIA), Social Impact Assessment (SIA), Carbon Footprint Mapping, Green audit etc. This study provides an introduction to the subject of green auditing and management. It starts by making you aware of the concepts on which environmental auditing is based. These include introducing the relationship between organizations and the environment within which they operate, and the problems this can cause; public awareness; sustainable development; and environmental management. The unit then goes on to define environmental auditing and introduces the key words associated with the subject. A brief history of environmental auditing is also provided. The last part of this unit looks at the main reasons why organizations undertake environmental audits. Each of the reasons is discussed in turn, and the objectives and benefits of environmental auditing are analyzed. The unit also introduces the concept of environmental management systems (EMSs) and how auditing fits within them.

"Green audit is a tool to highlight general practices accepted and implemented by organization in terms of its impact on environment". Green audit also focuses on adverse practices which are cause and responsible for harm to environment. Green audit shows strength and weakness of organization towards protection and conservation of environment. It also marks and highlights the non-accepted practices of natural resources utilization. Green audit shows the path to continuously run healthy practices, new innovative system for optimum utilization of resource and minimization of waste generation. It helps for protection and conservation of environment, natural resources and lead institution sustainable campus in social, economic and environmental views.

1.3 Need of Green auditing:

Green auditing is the process of assessment of practices accepted by institution in view of whether they are ecofriendly and sustainable or not. Traditionally, Indian culture teaches good and efficient users of natural resources. But over the period of time uncontrolled excess use of resources like energy, water, chemicals are become threat to the environment and society also. Now, it is necessary to check whether our accepted practices are consuming more than required resources? Whether we are handling waste carefully? Where we have control over the use of natural resources. Green audit shows all such practices and gives an well direction to optimizes the use of natural resource. In the era of global warning, climate change, pollution and resource depletion it is necessary to verify the accepted practices and convert it in to green and clean one. Green audit provides an approach for it. It also increases overall awareness among the stack holders of institution towards an environmental conservation and green practices to be accepted.

1.4 Goals of Green audit:

College has conducted green audit with following goals

- 1) Baseline data collection of environmental parameters and measures over the environmental issue before they become problem.
- 2) Find out strength and weakness in green practices.
- 3) Conduct a survey to collect base line ground reality about green practices.
- 4) Find out the hurdles in green practice, and suggest solution over the hurdles.
- 5) Check out the facility of different types of waste management.
- 6) Increase environmental awareness throughout campus with training.

1.5 Objectives of Green audit:

- To collect the baseline information over the current practices which impact on environment.
- To find out significant environmental issues.
- Setup goal, vision and mission for environmental conservation and sustainable practices in campus.

METHODOLOGY

This is the first attempt to conduct Green Audit of Jaysingpur College Jaysingpur. First target was to collect the base line data concern about the green practises. The present report is based on onsite visits, personal observations and questionnaires survey tools. Primarily, based on data requirement, different type of questionnaires were prepared. Questionnaires were provided to all concern asked them to fill the same. The generated data is subsequently gathered and used for further analysis. From the outcome of the overall study, a final report is prepared. Before the survey all the required secondary data were collected from college.

2.1 Survey by Questionnaire:

Baseline data for green audit report preparation was collected by questionnaire survey method. Questionnaires were prepared based on the guidelines, rules, acts and formats prepared by Ministry of Environment and Forest, New Delhi, Central Pollution Control Board and other statutory organizations. Green audit report of Shivaji University, Kolhapur is used as format for the report preparation. Most of the guidelines and formats based on broad aspects and some of the issues or formats were not applicable for educational institutions. In fact questionnaire was prepared, using these guidelines and formats, combinations, modifications and restructuring them, sets of questionnaires were prepared as solid waste, energy, water, hazardous waste, and e-waste.

Whole questionnaire comprises of group of modules. Questionnaire was prepared in such a view that it will be easy to extract the general information of the college, which broadly includes total number of students and employees, visitors, average working days and office timings etc. Another part of the questionnaire extract the present consumption of resources like water, energy, or the handling of solid and hazardous waste. Maintaining records of the handling of solid and hazardous waste is much important in green audit. Last part of the questionnaire shows possibilities of loss of resources like water, energy due to improper maintains.

2.2 Onsite visit and observations:

Jaysingpur college campus has vast built up area comprising of various departments, administrative building, library, class rooms, staff quarters, hostels, sports complex etc. All these amenities have different kind of infrastructure as per their requirement. All these buildings were visited by the surveyors. Presents conditions were checked by specific check list. Personal observations were made during the onsite visit.

2.3 Data analysis and final report preparation:

Required primary and secondary data were collected by different ways like questionnaire, check list etc. Collected data were crossed checked during the personal onsite visit. In case of green audit, the filled questionnaires of the survey from each group, were tabulated in excels spreadsheets. The tabulated data is then used for further analysis. SPSS software is used to find out the frequency distribution and results in percentile format. For better understanding of the results and to avoid complications, averages and percentages of the values in the Tables were calculated. Interpretation of the overall outcomes are included in Final report.

OVERVIEW OF GREEN AUDIT

Audit Criteria

- 3.1Green Cover
- 3.2 Waste Management
- 3.3 Electricity and Energy Audit
- 3.4 Water Conservation
- 3.5 Health and Hygiene
- 3.6 Training and Awareness
- 3.7 Corporates Social Responsibility

3.1 Green Cover

The college continuously conducts tree plantation drives as a mission through their, NSS, NCC and Nature Club. The plantation movement is conducted three times during the year i.e. before the arrival of monsoon, during monsoon and post monsoon. College has developed a medicinal plant garden known as Nakshtra Garden with their own funds. One part of same garden specially devoted to medicinal plant. The college premises indicates the awareness level on floral biodiversity among the staff and students of the college. NSS and NCC receive funds from the Government whereas Nature Club areself-funded for this initiative.





Counting of trees and shrubs in the college premises was done by Student volunteers. A project on identification of plants in campus was undertaken with the help of Department of Botany. Total trees planted in the year 2018-19 are 556 and it is well documented.

Zoology Department conducts various activities through Salim Ali Nature club is continuously trying to highlight the issues concern about environmental conservation and protection. Various field visits are organised to get aware about the local biodiversity. Apart from this, nature club organizes time to time trips and nature treks to places of ecological

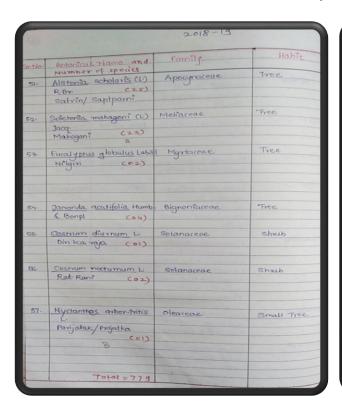
importance for students who are interested. Following activities clears the intention towards development of Green Belt

The college has maintained books on identification of flora and fauna. Volunteers from zoology department have maintained PANPOI for the birds in the campus; however, these efforts may be further improved by display of information. College students are also encouraged for bird watching within the campus. Records of such surveys on floral and faunal biodiversity are maintained and were available during the audit.



List of Flora and fauna

With the help of Department of Botany a project on identification of plants in campus was undertaken and list of floral biodiversity is listed. Likewise with the help of Department of Zoology project on identification of fauna which includes, birds, reptiles etc. in campus was undertaken and list of faunal biodiversity is listed.



		pecial=130 +0l=166	9
अवाही ना न	Importance.	Color of Flower	phenology.
स्वच्तप्-नी	used in medicines	Greetish white	August.
अंडाणी नी	Wood is used from timber. Wed as avenue tree.	· Red & White	March to Octor
<u> निल्ली</u>	Planted as avenue tree wood is used in purps of the Night of to extracted from this plant	yellowich cohite	February to Ma
मिलमोहोर	Grown as civenue tree in gardens.	Blue or pink	Maych to October
विन का जाना	flowers are fragrant at day time. Used as ornamental plant.	White	Throughout - year.
रासरावी	Planted in gendences conformental plant. Flowers are fragmant at night time.	Pale green	October to Nevember March.
पारिजासक	Flowers fragrant used to pray get It is as lo used in reany ayunvalle medicines. The flowers are get doon at easly movining which looks bedulful.	white with oxorge red tube	June to January

Jaysingpur College Jaysingpur

Department of Zoology

Biodiversity Register Year 2018-19

S.	Zoological Name	Local Name	
No			
01	Copsychus saularis	Oriental magpie Robin	
02	Eudynamys scolopaceus	Indian Koel	
03	Corvus spiendens	House Crow	
04	Vanellus malabaricus	Yellow Wattled Lapwing	

Drip and sprinkler irrigation system

As a part of water conservation technique college installed drip and sprinkler system for watering the plant.



Plantation with villagers at different villages

College has started a unique movement of plantation, motivational approached are developed in local people to plant more and more tree. As a part of this movement villagers from surrounding villages are motivated to plant a tree in front of their house and nourish the same.



Drinking water system for birds and animals

As a part of conservation of biodiversity college have make separate drinking water system for birds and animals. Specific water bowels are placed at typical location considering the less human interferes. This practise shows very good results and bird and animal count is increased because of availability of water and secure place.



3.2 Waste Management

Solid waste management is a burning issue in current days. The rate of generation of solid waste is very high, management technology is too adequate. Unscientific handling of solid waste is also a burning issue which can create threats to public health and environment. It is necessary to manage the solid waste properly to reduce the load on waste management system. The purpose of this audit is to find out current management practice of solid waste generation in the campus. Paper waste is a major solid waste generated in the campus Biodegradable waste generated in campus is mostly from canteen, hostels. Glass waste is less contributing but it takes part in solid waste generation.



Glass waste generated from laboratory mainly in the form of bottles, many times bottles are reuse for storing of other chemicals. Other glass waste is thrown with solid waste. The college have well established protocol to recycling and reuse of resources such as paper in the form of annual sale of stored newspapers and waste papers to scrap dealer.

As a part of biodegradable and biohazard waste management college has to work more on different systems and develop unique facility accessible to all.

3.3 Electricity and Energy Audit

Major energy sources utilized include Solar Energy, electricity and LPG. Major use of the energy is at office, hostel, laboratories, library canteen and class rooms for lighting, transportation, cooking and laboratory work. Electricity is supplied to the campus by Maharashtra State Electricity Board. There is no provision of generating electricity on site.

The IQAC Cell conducted an Energy Audit as a part of green audit. Prime aim of audit was to find a way of energy conservation. College use solar energy as conventional energy source in women hostel. It is documented that play cards and posters are displayed near electricity supply and rooms however it was nowhere to be seen during the walk through. The peon switched off all power supply in non-lecture hours and was confirmed during the site walk through visit. Lab In charge of all laboratories conveyed that electricity during non-working hours are put to be off. Different awareness programs were conducted for peons, staff and students. The college initiated to install LED bulbs in the college campus, the initiative could be strengthened with help of an action plan. The college targets to reduce electricity out of total electricity consumed in college as per the documents. This may be supported by maintaining proper relevant records and benchmarking the present consumption.

3.4 Water Conservation

For the purpose of water audit an on-site walk through survey and assessment was conducted to determine the efficiency of water use and to develop recommendations for improving water use efficiency. Overall agenda of conducting a water audit is to identify opportunities to make water use more efficient. Water audit includes tracking, assessing and validating all components of flow from distribution system into the consumer's properties. On the other hand, water audit of a campus review direction and quantity of water used for domestic, laboratory, drinking, gardening, sanitary and landscaping processes.

•

Drinking water are provided on assessable place in the campus. Drinking water is currently not being tested for the water parameters according to prescribed BIS standards for drinking water. Toilets were checked for leakages and spillage. These toilets were checked at random and found to be maintained in leakages and spillage free. Although it is highly appreciated that the college has initiated Rain Water Harvesting on site. The NSS and Nature club conducts water conservation drives inside the campus and also at public places. College incited to reduce water consumption by raising awareness in students and staff members and having periodic check on leaks. There were no displays of signage or message for Good Practices in the College premises for Water Conservation. It is needed for the continuous highlight of the issue. The college incited to recycle and reuse the wash water of wash basin for gardening purposes as a future plan. The college also planning for the rain water harvesting system as a conservation practice.

College become flood relief shelter.

In 2018-19, the Jaysingpur College becomes a shelter for flood-affected peoples. Due to the efforts taken by all of the staff and teachers, it becomes an idol for other colleges. Especially the efforts are taken by NCC and NSS students in an area affected by flood near the college and also to the regions of Kerala which is flood affected.

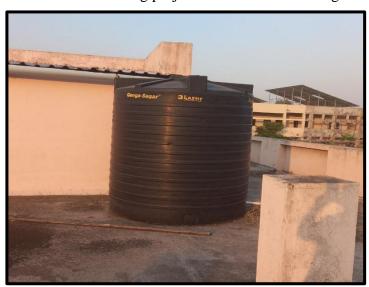






Rain water harvesting details with harvesting capacity.

Taking into account the importance of water and decreases in available sources college has implemented small rain water harvesting project but must think of large-scale project.



3.5 Health and Hygiene

The college incited to promotes Swachh Bharat Abhiyaan by maintaining cleanliness on campus. It is well concentrated on housekeep. Toilets were checked for hygiene, leakages and spillage. These toilets were checked at random and found to be maintained in hygienic condition also students were found to be satisfied with hygiene level. It is documented that Sweeper cleans the floor and toilets regularly. Swachh Bharat Abhiyaan are promoted by the NSS and NCC wing. For a good hygiene practices college run following activities.

Yoga Camp

Yoga camp on occasion of International yoga day was celebrated dated on 21 June 2018. The yoga camp was beneficial to all students and teachers participants. Ghadge sir, who work as instructor for the yoga cam



Campus as oxygen park

By covering maximum area under green cover i.e. under plantation college has been oxygen park for the human as well as birds and plants also. College campus works as an oxygen park because campus it provides good, fresh and non-contaminated air. Considering the conditions local people enjoying the campus ride at morning and evening time.



Illumination and ventilation

College building is more specious all the class rooms and all other rooms are good ventilated. Natural illumination and ventilation is too good. There is no need of artificial ventilation and illumination. The photograph of library hall and porch was attached as model photo





Sanitation drive

College conducts sanitation drive, which motivated student and staff about the cleanliness practices and give them exposure for the voluntary work. The new infrastructure was added to present structure in line of thinking of motivation of habits of health and hygiene.



3.6 Training and Awareness.

The college runs nature club which conducts street plays on various environmental issues. NSS and NCC wings actively participate to promote Swachh Bharat Abhiyaan, and awareness rally. The college organizes the lectures of experts, rally on the issue of environment and social responsibilities timely.



3.7 Corporates Social Responsibility

College does not work as a typical educational institution. Since it is a part of Anekant Education Society key aim of college is to percolate the knowledge at the lower line of the society without any expectation. As college situated in a rural area, most of the community around the college belong to farmers. College conducts seminars on use of pesticides for the farming. Now a days it is called as Corporates social responsibility but same is the vision of Anekant Education Society from their establishment and it is achieved locally via different educational institutions. By following ways college reaches to society or mass.

Earn and learn scheme

It helps to students to become self-dependent. Earn and learns scheme run by college gives work to needy student which gives them chance to earn money while learning. Scheme is very fruitful and helpful to those students, which are unable to join education due to economic conditions.

Plantation with villagers

College has started a unique movement of plantation and the motivational approach is developed in local peoples to plant more and more trees. As a part of this movement villagers from surrounding villages are motivated to plant a tree in front of their house and nourish the same. Basically, primary school of Anekant Education Society is involved in this activity.



Consultancy in soil and water quality monitoring

College provides consultancy services in the field of soil and water quality monitoring. It is paid service and available to all personals. This service is availed by many required personals.



Summary and Audit findings

- College must take efforts for solid waste management by proper methods.
- Organic and biodegradable (non-hazardous) waste should be composted via Vermicomposting.
- ➤ Electricity consumption is more and non-controllable.
- Use of LED lamps is minimum.
- Toilets and bathrooms are consuming more water particularly at hostels
- There should be well adequate water filtration and Water treatment plants system.
- ➤ Good housekeeping is maintained throughout the premises.
- Visual signage boards for generating awareness about conservation of water and electricity are not found to be displayed.
- > Drinking water is currently not being tested for the water parameters according to prescribed BI standards.

Recommendations

Following are some of the key recommendation for improving campus environment.

- ♣ Vision Mission and Goal to be prepared with all the recommendations and current practice carried by institution.
- The college should develop internal procedures to ensure its compliances with environmental issues.
- Leakages and corrosion of pipes, overhead tanks be maintained timely and promptly.
- The college should improve its monitoring and reporting system for water usage, electricity consumption etc.
- The college should develop a segregation protocol for the segregation of different type of solid waste.
- To achieve the target of reduction in electricity and water consumption, there should be proper documented management programs to achieve the same.
- The use of LED bulbs and tubes is found to be minimum and need to increased.

Committee for green Audit

Sr. No	Name	Designation
1	Dr. Vikas Jadhav	Green Auditor
2	Dr. Sandip. R. Sabale	IQAC Coordinator
3	Dr. Vandana Devkar	Cri. VII Coordinator
4	Dr. Suraj D. Umdale	Member
5	Dr. Rohant S Dhabbe	Member