

Archana Analytical Services

(Consultants for Environment, Health and Safety)

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To,

Whomever it may concern.

It is to certify that we Archana Analytical Service, Kolhapur conducted "Green Audit" of R. B. Madkholkar Mahavidyalaya, Chandgad with following members.

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Green Audit Report
Khedut Shikshan Manda's,
R. B. Madkholkar Mahavidyalaya, Chandgad
Tal- Chandgad Dist-Kolhapur
Maharashtra



Prepared by
NAAC Cell
R. B. Madkholkar Mahavidyalaya, Chandgad.
And
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FOREWORD...

World is facing various serious environmental issues, different reports from World Health Organization, IPCC, various 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.

R. B. Madkholkar Mahavidyalaya, Chandgad is following different sustainable practices as their vision. As a part of Social responsibility, 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 Quality management 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 to 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 varies with the operational activities of the organization. In case of our college green audit is an internal requirement of Quality management System. Green audit shoes 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 Quality management 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 roof top rain water harvesting systems, plantation of local and endemic plant species on campus. 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 R. B. Madkholkar Mahavidyalaya, Chandgad. I must congratulate NAAC cell and his team for efforts taken for the completion of such type of report. I hope the report will be helpful to all concerned and will motivate all to change non sustainable practices.

Prin. (Dr.) P.R. Patil

Principal R. B. Madkholkar Mahavidyalaya, Chandgad

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INTRODUCTION

R. B. Madkholkar Mahavidyalaya, Chandgad is an educational institute imparting education in rural area in jurisdiction of Shivaji University, Kolhapur. This institute is run by Khedut Shikshan Mandal, Kalkundri which renders quality education to poor and downtrodden masses. This college is established in 1997 with Arts, Science and Commerce faculties in the initial stage and later on with B. Sc.Computer. Previously it was known as Arts , Commers and Science college , Chandgad. College was then named after the pioneer of this institute R. B. Madkholar well known educational reformer. It was inaugurated on 1st August 1998 by Bharmu Anna Patil MLA of Chandgad Tahashil. Campus is covering an area of 5 acres, with 11 under graduate departments on campus. Apart from the regular courses, this institute has also the facility of distance education of Shivaji University, Kolhapur. It also runs a centre of Yashwantrao Chavan Maharashtra Open University, Nashik. The college has UGC recognition of 2f and 12b. It also facilitates to the students who want to make their career in Sports Services. College has conducted different activities such as Tree plantation, Save water, Save environment, Workshop on Water and Soil analysis, Workshop on Medicinal plants, Gram swachyata, Health awareness programmes , Stop plastic use etc. in and out of campus from last 2 years.

1.1 Infrastructure

The college located at east side of Chandghad town approxmeatly 0.5 km from central bus stand towards Naganwadi, They have their independent infrastructure. The college is situated on a plot of land measuring 5 acres of land. The Master Plan of the College campus indicates the existing buildings. It has 3 separate buildings. Totally, there are 12 classrooms,5 Laboratories and administrative office. 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 13319 no of books including novels, magazines, reference books, text books. It has a reading room where magazines and news papers are available. The College inculcates civic responsibilities among the students through N.S.S.,Nature club activities provide awareness for environment and pollution free living. Students do participate in all such activities. Strategic planning and technologies are used by the institution for efficient running, particularly in resource mobilization.

The college houses

Library-----

Classrooms

Administrative Office

Computer Lab

Gymnasium

Parking Facility

Auditorium

Seminar Hall

1.2 Green audit an overview:

Educational Institutes are playing a key role in continues development of human resources worldwide through teaching and research. Educational institutes 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.

“Green audit is a tool to highlight general practices accepted and implemented by organization in term of its impact on environment”. Green audit also focus 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 mark and highlight 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, economical 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 warming, 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 hurdels.
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:

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

METHODOLOGY

This is the first attempt to conduct Green Audit of R. B. Madkholkar Mahavidyalaya, Chandgad. 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 concern departments.

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 questionnaires were 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.

All the questionnaires comprises of group of modules. Questionnaires were prepared in such a view that it will be easy to extract the general information of the concerned department, which broadly includes name of the department, total number of students and employees, visitors of the department, average working days and office timings etc. Another part of the questionnaires 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 questionnaires shows possibilities of loss of resources like water, energy due to improper maintains.

2.2 Onsite visit and observations:

R. B. Madkholkar Mahavidyalaya, Chandgad campus has vast built up area comprising of various departments, administrative building, Library, Class rooms, sports complex. 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 live questioners, 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 Tables were calculated. Interpretation of the overall outcomes are included in Final report.

OVERVIEW OF GREEN AUDIT

Audit Criteria

- 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

3.1 Green Cover

The college continuously conducts tree plantation drives as a mission through their, NSS, 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 at village Mirvel which is 35 km away from college campus. 10 acre Space has been allocated for developing a medicinal plant garden. The college premises

indicates the awareness level on floral biodiversity among the staff and students of the college. NSS and Nature Club are self funded for this initiative. To create awareness about traditional plants two days state level seminar was arranged by Dept. of Botany under funding University Grant Commission. Different workshops were arranged which includes Biodiversity awareness, Environmental awareness, Banana Plant tissue culture etc.

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. The college has maintained books on identification of flora and fauna. Records of such surveys on floral & faunal biodiversity are maintained and were available during the audit.

Nature club activity by zoology department 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 clear the intention towards development of Green Belt

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 a project on identification of fauna which includes , birds, reptiles etc. in campus was undertaken and list of faunal biodiversity is listed.

Conservation of Traditionally used medicinal plants

University Grant Commission has allotted one Career oriented course for this College, named as 'Conversion and cultivation of medicinal plants' which has been run by Department of Botany. Course is successfully running from 2013-2014. Every year 10-12 students are admitted to same course. Basically this course focus on uses of local traditional plants on every day activity. The college premises indicates the awareness level on floral biodiversity among the staff and students of the college. Till today Rs. 10 lakh fund received from University Grant Commission

Plantation with villagers at different villages

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

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 are 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. Most of the departments including office, library are major contributing in the paper waste generation. Followed by paper. Plastic is secondary contributing solid waste generated in

large quantity in the campus. Office staff are using one side papers for printing and writing. Biodegradable waste generated in campus is mostly from canteen. 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. Very few departments are categorizing the plastic and sending it for recycling. Metal scraps and waste is segregated separately and sent for recycling yearly. It was observed that e-wastes were collected but due for disposal with recycler. Wastes such as electronic peripherals and paper wastes are stored and later collected by the peon.

3.3 Electricity and Energy Audit

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

The NAAC Cell conducted an Energy Audit as a part of green .Prime aim of audit was to find a way of energy conservation. College use solar energy as conventional energy source. Laboratory are covered under use of solar energy. It is documented that Placards 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 nonworking hours are put to off. Different awareness programmers were conducted for peons, staff and students. The college initiated to install CFL and LED bulbs in the college campus the initiative could be strengthened with help of a 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 in to 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 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. 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 & staff members and having periodic check on leaks. There were 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 practices.

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 wing. For a good hygiene practices college run following activities.

Sanitary napkin vending machine

College have separate ladies room with accommodation capacity 50 personals. For the purpose of good hygiene practice sanitary napkin vending machine is installed and for purpose of disposal of the same separate bins are kept in ladies room and toilets .

Yoga Camp - College has celebrated International Yoga day on 21st June from last 3 years. Day was celebrated under the able guidance of well known yoga instructor Dr. P.L.Bhadvankar. College students, Teaching and non teaching faculty are beneficiary of this activity.

Yoga Camp Details

Sr. No.	Date	Name of instructor
01	21/06/2017	Dr. P.L.Bhadvankar
02	21/06/2016	Dr. P.L.Bhadvankar
03	21/06/2015	Dr. P.L.Bhadvankar
04		
05		

Illumination and ventilation

College buildings are more spacious and class room and all other rooms are good ventilated. Natural illumination and ventilation is too good. There is no need of artificial ventilation and illumination.

Sanitation drive

College conducts sanitation drive, which motivated student and staff about the cleanliness practices and give them exposure for the voluntary work.

Awareness campaign on Cancer, Tuber Coulasis ,AIDS,

As a part of health and hygiene practices college arranges different awareness camping on different diseases. As a routine activity Awareness campaign on **Cancer, Tuber Coulasis ,AIDS**, were arranged.

3.6 Training and Awareness.

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

3.7 Corporates Social Responsibility

College does not work as a typical educational institution. key aim of college is to percolate the knowledge at the lower line of the society without any expectation. Now a days it is called as Corporate social responsibility but same is the vision of KSM from their establishment and it is achieved locally via different educational institutions. By following ways college reaches to society or mass.

Plantation with villagers

College has started a unique movement of plantation, motivational approach 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.

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

1. College takes efforts for solid waste management by proper methods.
2. Recycling and reuse practice is followed strongly.
3. Electricity consumption is more and non controllable at some departments.
4. Use of CFC and CFL lamps is minimum and is to be encouraged.
5. Toilets and bathrooms are consuming more water.
6. Watershed management program is not implemented on campus.
7. There should be well adequate water filtration system.
8. E-waste segregation, handling and disposal should be done properly.
9. Good housekeeping is maintained throughout the premises.
10. Visual signage boards for generating awareness about conservation of water and electricity are found to be displayed.
11. Drinking water is currently is tested for the water parameters according to prescribed standards

Recommendations

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

1. Vision Misson and Goal to be prepared with all the recommendations and current practice carried by institution.
2. The college should develop internal procedures to ensure its compliances with environmental issues.
3. Leakages and corrosion of pipes, overhead takes be maintained timely and promptly.
4. The college should improve its monitoring and reporting system for of water usage, electricity consumption etc.
5. The college should develop a segregation protocol for the segregation of different type of solid waste.
6. To achieve the target of reduction in electricity and water consumption, there should be proper documented management programs to achieve the same.
7. College should arrange special drive to check of PUC and should be made mandatory for students who use and park personal vehicles in the college premises.