



GREEN AUDIT REPORT



2023-24



Prepared by

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CONTEXT

Green Audit can be defined as systematic identification, quantification, recording, reporting and analysis of components of environmental diversity. The 'Green Audit' aims to analyze environmental practices within and outside 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. 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 by carrying out Green Audit. It is well known that educational institutions consume resources like water, electricity; Forest products and generates wastes like many industries. Establishment and operating of educational institute are not covered by any of the environmental laws in India. As a result, the importance of making the educational institute operate with self-consciousness in the utility of resources inside the campus is least understood. Eco campus is a concept implemented in many educational institutes across the globe to make them sustainable because of their mass consumption of resources and creation of waste. Waste minimization plans inside the educational institute for solid and wastewater is now mandatory to maintain the cleanliness inside the campus. To find out the environmental performance of the educational institutions and to analyze the possible solutions for converting the educational campus as eco-campus the conduction of Green Auditing of institution is essential.

Need and Role of Educational Institutions in India

Need for green audit As environmental sustainability is becoming an increasingly important issue for the nation, the role of higher educational institutions in relation to environmental sustainability is more prevalent. In this context, it becomes imperative to adopt the system of the Green Campus for the Institutes which will lead to sustainable development. Besides, it also reduces a sizable amount of atmospheric carbon dioxide from the environment. Green Audit is assigned to the Criteria 7 of NAAC, National Assessment and Accreditation Council which is a self-governing organization of India that accredits the institution according to the scores assigned at the time of accreditation. NAAC has made it mandatory that all Higher Educational Institutions should submit an annual Green Audit Report. Moreover, it is part of Social Responsibility of the Higher Educational Institutions to ensure that they contribute towards the reduction of global warming through Carbon Footprint reduction measures.

Implementing Swachh Bharath Abhiyan Scheme launched by the Indian Government by the Educational institutions plays a major role in terms of a neat and clean environment to tribal, rural and urban people across the country, besides, the regular and conventional activities carried out by NSS, NCC, Nature club, Eco club, Science club, Fine Arts club, Flora

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and Fauna club, You Red cross unit, etc. Seminar, Conference, Workshop, training and awareness programmes on Biodiversity conservation education, environmental awareness programmes, etc. may be conducted periodically.

KARANJIA (AUTONOMOUS) COLLEGE - A BRIEF PROFILE

Karanjia Autonomous College is located at the outskirts of the meandering Deo river which tumbles down majestically from the foothills of the Similipal forests. The woodland grace of the Similipal National Park with its rare flora and fauna has attracted the tourists for sightseeing and the researchers for exploring the untapped areas of History, Anthropology, Culture and Literature. On the other side, the unique Khiching Temple stands vibrant with history. The stones of the temple depict art and poetry of ancient Orissa. In close vicinity to National Highway 6, Karanjia is well connected with Baripada, Keonjhar, Jajpur, Bhadrak, Tata, Calcutta, and Bhubaneswar by road.

The teachers, students, guardians and well-wishers keep on striving to make this old institution an advanced centre of study and research in the state. The immortal lines from the Poem of Robert Frost inspire the young generation to leave the foot prints of success for the posterity

In July-1964 Karanjia Autonomous College was established. Initially the college was affiliated to the Utkal University, Vanivihar, Bhubaneswar but with the change of education pattern, +2 stream of the college got affiliated to CHSE Odisha with effect from 1983-84 session. On 11th July 1999 the degree wing of the college got affiliated to the North Odisha University (Now MSCB University), Takatpur, Baripada, Mayurbhanj.

Achievement of NAAC accreditation and autonomous status speak in volumes its endeavor to touch the climax point of excellence with the recent influx of PM-USHA and UGC Grants the college situated in a remote, hilly & tribal area, is poised for yet another metamorphosis this time corporeal nature. The college was accredited with 'B' grade in third cycle with 2.42 CGPA in the year 2024.

Objectives of the 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 make students aware of 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 require 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.

Onsite Visit Field visit was conducted by the Green Audit Team. The key focus of the visit was on assessing the status of the green cover of the Institution, their waste management practices and energy conservation strategies etc. The sample collection (water, air and soil) was carried out during the visits. The water samples from bore water were taken and air samples from different places of the campus were collected. The sample collection, preservation, and analysis were done in the scientific manner as prescribed by the standard procedures. The Focus Group discussions were held with staff members and the management focusing various aspects of Green Audit. The discussion was focused on identifying the attitudes and awareness towards environmental issues at the institutional and local level. Energy and waste management With the help of Teaching, Non-teaching staff, students, Administrative officer, Building Management Engineer and electrical Supervisor, the audit team has assessed the energy consumption pattern and waste generation, disposal and treatment facilities of the college. The monitoring was conducted with a detailed questionnaire survey method

The study covered the following areas to summaries the present status of environment management in the campus:

- **Water management**
- **Energy conservation**
- **Waste management**

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- E-waste management
- Green area management

College Building Survey

1. Total No. of student intake capacity (stream wise).

Arts: 960	Science: 576	Commerce: 192	Total: 1728
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2. Name of the Block/building with type and nos. of room/s.

Name of block	No. of Class room	No. of store room/s	No. of library room/s	No. of staff room/s	No. of boys Common room/s	No. of girl Common room/s	Any other room/s
Science Block	07	04	Nil	04	Nil	Nil	01 dark room in physics department
Admin. Block	Nil	01	01	01	01	01	01 strong room, 02 controller of examination room
Academic Block	15	Nil	Nil	01	01	01	01 computer lab
Arts Block	04	01	Nil	01	Nil	Nil	
Commerce Block	05	01	01	01	NIL	NIL	

3. Total No. of Lavatories (Block wise).

Name of block	No. of Lavatories	No. of times the laboratories are cleaned each day.
Science Block	04	Once
Admin. Block	02	Once
Academic Block	04 and 01 for OPH	Once
Arts Block	02	Once
Commerce Block	02	Once

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4. No. of fire extinguisher installed (Block wise).

Name Of block	Fire extinguisher/ installed/ not installed	No.of extinguisher /sinstalled	Year of installation	Year of Next renewal	Remarks
Science Block	Installed	05	2024	2025	Purchased under College development fund
Admin. Block	Installed	05	2024	2025	
Academic Block	Installed	19	2024	2025	
Arts Block	Installed	01	2024	2025	
Commerce Block	Installed	02	2024	2025	
Hostels	Installed	05	2024	2025	

The fire extinguisher units have been purchased from College development fund and installed.

Whether fire escape routes/stare available in all building: **Yes**

(i) Waste disposal per week (For bio-degradable and non-biodegradable waste) approx. Quantity of solid, liquid or any other wastes generated per week (in kg./Ltr.).

Type of waste	Bio-degradable (Approximate quantity in kg/ltr. Per week)	Non-biodegradable (Approximate quantity in kg/ltr. Per week)
Solid	35 kg	20kg
Liquid	45 liters	nil
Anyother	Nil	Nil

(ii) **Method of separation of biodegradable and non-biodegradable wastes:** Manual.

(iii) Adequate number of coloured bins are kept in all parts of building and the Civic Body regularly cleans the bins. The wastes from toilets are discharged to main drains through underground covered channels.




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6. Survey of practical Departments:

Name of the Department	No. of Labs	No. of doors in each Lab	No. Of fire extinguishers in each Lab	Whether fitted with Extinguishers	Year Of installation of fire Extinguishers
CHEMISTRY	02	01 in each lab	01 in one lab	Yes	2024
COMPUTER SCIENCE	01	02 in each lab	Nil	Yes	2024
PHYSICS	02	01 in each lab	01 in one lab	Yes	2024
BOTANY	02	01 in each lab	01 in one lab	Yes	2024
ZOOLOGY	01	01 in each lab	01 in one lab	Yes	2024

All the science laboratories are modernized and fitted with fire extinguishers with proper garbage disposition system.

7. Survey of waste generation:



Category	Solid waste per week	Liquid Waste Per week	Hazardous waste/ week	Point Of disposal	Separation Of Biodegradable and Non-biodegradable
Science labs(08)	22kg	12 liters	Nil	Internal points	manual
Hostels	60kg	175liters	Nil	Concealed Drains And Waste bins	Not done
Buildings	44kg	76 liters	Nil	Concealed Channels and waste bins	Not done

Solid wastes are disposed in coloured bins installed at various locations and in hostels which are regularly collected by NAC for disposal. During the audit it is observed that most of the solid wastes in college campus as well as in hostels are waste papers and polythene carry bags.



Energy Conservation Steps:

The college has undertaken several steps for energy conservation. All the power consuming tungsten electric lamps are removed Fluorescent tube lamps and CFL lamps are used.

"Switch off drills" are practiced in the rooms by both staff and students. Air conditioners are set to optimum temperatures to minimize power consumption.

In the new buildings and also in most parts of the old buildings maximum use of day light is made possible in all the class rooms and departments.

Regular defrosting of refrigerators is done and also the refrigerators are set to optimum temperature to minimize power consumption.

15 no. of Solar light with pole are installed in the college campus during 2023-24 financial year.

The proposal for installation of 20KW solar system in Academic Block and a medium size solar panel installation in Botany department has been placed in governing meeting, which will be installed very soon.

Water Use and consumption:

A water audit is an on-site survey and assessment to determine the water use and hence to improve the efficiency of its use and method of recycling and re use of polluted water.

Observations

The study observed that the Water tanker supply system, Tube well, NAC connection and rain water harvesting is major sources of water in college and in both the hostels. Water is used for drinking purpose, laboratory use, construction work, toilets and gardening. During the survey, minimum loss of water is observed, by any leakages or by over flow of water from overhead tanks. On an average the total use of water in the college is 8,000 L/day, which include 6,330L/day for domestic, gardening purposes and 1500L/day for drinking purpose and 170L/day loss of water. Rain water harvesting unit is installed in the department of Botany, Physics and at academic building. In campus small scale/medium scale/ large scale reuse and recycle of water system is necessary to minimize wastage of water and use of electricity.

Survey of College Flora:

The college campus is situated in the lap of Similipal biosphere reserve so diversified flora and fauna are present in the college campus. Campus developmental programme is going on throughout the year so much priority is given to the campus beautification. Since

then several plantations programmes have been undertaken on regular basis but it will take time to restore the green cover of the campus. A detailed survey of ground flora and canopy has been done but only the list of tree varieties is considered for Green Audit.

Green House and Vermicompost Unit

A green house is constructed at the department of Botany for conservation of RET species, orchids, seed ball preparation, plant propagation, biofertilizer production and for research purpose. Similarly a vermicompost unit is constructed at department zoology.

Observation and awareness programme

World Environment Day, World Biodiversity Day, World Earth Day, Forest Conservation and Prevention of Forest Fire awareness programme, plantation drive were conducted by the N.S.S. wing and Eco-club of College. Seed balls are prepared by the student of Botany department. Conservation of

LIST OF PLANT SPECIES PRESENT IN COLLEGE CAMPUS

Common Name (1)	Botanical Name (2)	Family (3)
Amba(O), Aam(H) Mango(E)	<i>Mangifera indica</i> L.	Anacardiaceae
Amrutabhandha(O), Papita(H), Papaya(E)	<i>Carica papaya</i> L.	Caricaceae
Arakha(O), Akada(H)	<i>Calotropis procera</i> (Ait), R.Br.	Asclepiadaceae
Sacred lotus (E), Padma (O)	<i>Nelumbo nucifera</i> Gaertn.	Nymphaeaceae
Chir pine(E), Chirapine (O)	<i>Pinus roxburghii</i> Sarng	Pinaceae
Champa(O), Champak(E)	<i>Michelia champaca</i> L.	Magnoliaceae
Babul(O), Acacia(E)	<i>Acacia nilotica</i> Willd	Mimosaceae
Kharakhari(O)	<i>Clerodendron indicum</i> (L.) Kuntz.	Verbenaceae
Sala(O), sal tree(E)	<i>Shorea robusta</i> Gaertn.	Dipterocarpaceae
Shishu(O), Sissoo(E)	<i>Dalbergia sissoo</i> Roxb	Fabaceae
Chatiana(O)	<i>Alstonia scholaris</i> (L.) R. Br.	Apocynaceae
Sena, Lendi, Sidha(O)	<i>Lagerstroemia palviflora</i> R.Br.	Lythraceae
Bela(O), Bael Tree(E)	<i>Aegle marmelos</i> (L)	Rutaceae
Bhursunga(O), Curry leaf(E)	<i>Murraya koenigii</i> (L) Spreng	Rutaceae
Katha Rangani(O), Jungle flameoxora (E)	<i>Ixoracoccinea</i> L.	Rubiaceae
Chakunda(O), Nagro Cottee(E)	<i>Cassia occidentalis</i> L.	Caesalpiniaceae
Chakunda(O), Sicklepod(E)	<i>Cassia tora</i> L.	Caesalpiniaceae
Aparajita(O,H), Butterfly Pea(E)	<i>Clitoria ternatea</i> L.	Fabaceae



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Tagara (O)	<i>Tebernaemontanadiveric ata</i> R. Br.	Apocynaceae
Debadaru(O),Ashoka(H)	<i>Polyalthialongifolia</i> (sonn.)Thwaites	Annonaceae
Dimiri(O),KatGulasia(H)	<i>Ficushispida</i> L.f.	Moraceae
Kala tulasi (O) , Holy Basil (E)	<i>Ocimum sanctum</i> L.	Lamiaceae
Gheekuanri(O),Gheekunvar(H)	<i>Aloevera(L)</i> Burm.f.	Liliaceae
Kadali(O),Banana(E)	<i>Musa 10aradisiacal.</i>	Musaceae
Kadamba(O,H))	<i>Neolamarkiacada mba</i> (Roxb.)Bossier	Rubiaceae
Kagazaphula(O)	<i>Bougainvillea spectabilis</i> willd.	Nyctaginaceae (cultivated)
Karanja(O),Karanj(H),Indi an beech(E)	<i>Pongamiapinnata</i> (L.) Pierre	Fabaceae
Kaniyar(O),YellowOlender(E)	<i>Cascabelathevetia</i> (L.)L ippold	Apocyanaceae
Karabira(O),Indianoleander (E)	<i>Neriumoleander</i> L.	Apocyanaceae
Krushnachuda(O)peacockfl ower(E)	<i>Delonixregia</i> (Boj. ex Hook.)Raf	Caesalpiniaaceae
Madhumalati(O),RangoonCr epper(E)	<i>Quisqualisindica</i> L.	Combretaceae
Mandara(O),ChinaRose(E)	<i>Hibiscusrosa- sinensis</i> L.	Malvaceae
Nagphani(O,H)Pricklypear(E)	<i>Opuntiaavlugaris</i> Mill.	Cactaceae
Nimba(O),Neemtree(E)	<i>Azadirachtaindica</i> A. Juss.	Meliaceae
Panasa (O),Katahal (H), Jackfruittree(E)	<i>Artocarpus heterophyllus</i> Lam.	Moraceae
Rangani(O)4O'clockplant(E)	<i>Mirabilisjalapa</i> L.	Nyctaginaceae
Sadabihari(O),Sadabahar(H) ,Periwinkle(E)	<i>Cartharthusroseus</i> (L.)Don.	Apocyanaceae
Malanga(O)	<i>Vanda tessellate</i> (Roxb.)Don.	Orchidaceae
Gua(O)	<i>Areca catechu</i> L.	Arecaceae
Ashok (O)	<i>Saraca asoca de Willd.</i>	Caesalpinaceace
Flame Lily	<i>Gloriosa superba</i>	Colchicaceae



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CONCLUSION:

Considering the fact that the institution is predominantly an undergraduate as well as post graduate college, there is significant environmental awareness both by faculties and students and initiatives taken by them are substantial. The 25 installation of solar panels, paperless work system, composting and besides, environmental awareness course initiated by the administration shows how the campus is going to be a green. Few recommendations are added to curb the menace of waste management using eco-friendly and scientific techniques. As part of green audit of campus, we carried out the environmental monitoring of campus where includes Illumination, Noise level, Ventilation and Indoor Air quality of the class room. It was observed that Illumination and Ventilation is adequate considering natural light and air velocity present. Noise level in the campus is well within the limit Canteen water was also analyzed and found to be potable. Efforts for Carbon Neutrality College is having its own vehicles and regular maintenance has been carried out for these vehicles which are support to low down the

Carbon Neutrality.

- Institute has separate parking zone for vehicles.
- Dead leaves of tree are decomposed and used as organic fertilizer.
- Green Treasure Day and Pollution Free Day were initiated in 2023-24 to spread awareness about Green India.
- Planting a variety of trees has contributed to carbon neutrality on the campus.

This may lead to the prosperous future in context of Green Campus and thus sustainable environment and community development.

Worthy Notes:

Participation in Institutional Social Responsibility (ISR) and Extension activities:

- Swachha Bharat Abhiyan
- Avoid Tobacco Campaign
- Tree Plantation Programme of Govt. of Odisha Environmental awareness programme
- Celebration of Ozone day, Geography day, etc. every year
- Organic Waste management
- No vehicle day

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a. College building (Academic block)

b. Students engaged in garden preparation at Botany Department

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- a. Newly constructed green house at department of Botany
- b. Prakruti bandhan utsav celebrated at college campus
- c. Field visit to vermicompost unit at forest department

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f. Science project submitted by final year student
 g. Seed ball preparation

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