



# GREEN AUDIT REPORT

2022-23



*Prepared by*

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**Conducted by**

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## CONTEXT

The National Assessment and Accreditation Council, New Delhi (NAAC) has made it mandatory from the academic year 2019-20 onwards that all Higher Educational Institutions should submit an annual Green, Environment and Energy Audit Report. Green Audit is assigned to the Criteria 7 of NAAC. The green audit aims to examine environmental practices within and outside the College campus, which impact directly or indirectly on the atmosphere. Green audit can be defined as systematic identification, quantification, recording, reporting and analysis of components of College/college environment. It was initiated with the intention of reviewing the efforts within the institutions whose exercises can cause risk to the health of inhabitants and the environment. Through the green audit, a direction as how to improve the structure of environment and inclusion of several factors that can protect the environment can be commenced. This audit focuses on the Green Campus, Waste Management, Water Management, Air Pollution, Energy Management & Carbon Footprint etc. being implemented by the institution. The concepts, structure, objectives, methodology, tools of analysis, objectives of the audit are discussed below.

## Role of Educational Institutions in India

Educational institutions are playing important role in a nation's growth and development which starts from maintenance of green campus without harming the environment. A clean and healthy environment in an Organization determine effective learning and provides a conducive learning environment to the students. Educational institutions are asked both Central and State Governments to give eco-friendly atmosphere to the stakeholders. In addition, all the Educational institutions are asked to save the environment for future generations and to solve the environmental problems such as recycling of solid wastes and wastewaters, plastics usage, napkin disposal water consumption, water harvesting and storage mechanisms, etc. through Environmental Education. 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 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.

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## KARANJIA (AUTONOMOUS) COLLEGE – A BRIEF PROFILE

In July-1964 Karanjia 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 11<sup>th</sup> 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 RUSA and UGC Grants the college situated in a remote, hilly & tribal area, is poised for yet another metamorphosis this time corporeal nature. With the financial assistance of Rs. 5.97 crore by World Bank Project under OHEPEE, the college has been able to cater to the needs of classrooms of the college. A two storied Academic Block for degree students have been operational. To provide accommodation Govt. in SC & St dept. has sanctioned two 120 bedded hostels; one for the boys & one for the girls amounting five crore which is another achievement of this college. To hold Seminar, Conference and workshops Govt. in the H.E. Dept. has sanctioned an amount of Rs. 3000000/- ( Rupees Thirty Lakh Only ) for conference hall which is about to be operational soon .

### Objectives and benefits of Green Audit:

If Green Audit is enforced in an effective way then there are many advantages that could be adopted from it.

- Green Audit could help to shield the environment
- Recognize the cost saving methods through waste minimizing and managing strategies
- Point out prevailing and forthcoming complications
- Authenticate conformity with the implemented laws Empower the organizations to frame a better environmental performance
- It portrays a good image of a company which helps building better relationships with the group of stakeholders
- Enhance the alertness for environmental guidelines and duties

  
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## Methodology

Methodology adopted to conduct Green Audit of the institution included onsite visit, focus group discussion, survey of office buildings and laboratories, carbon foot print, survey of fire safety measures, waste disposal and survey of Green Flora Cover in the campus. Student volunteers from different streams were involved to collect data. Tabulated data were analysed for necessary conclusion.

## College Building Survey

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

Arts: 336	Science : 208	Commerce: 64	Total: 608
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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	

### 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	Twice
Admin. Block	02	Twice
Academic Block	04 and 01 for OPH	Twice
Arts Block	02	Twice

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

Name of block	Fire extinguisher/s installed/ not installed	No. of extinguisher /s installed	Year of installation	Year of next renewal	Remarks
Science Block	Installed	05	2021	2022	Purchased under College development fund, shall be installed soon
Admin. Block	Installed	05	2021	2022	
Academic Block	Installed	19	2021	2022	
Arts Block	Installed	01	2021	2022	
Hostels	Installed	05	2021	2022	

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

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

5. **(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	33 kg	18kg
Liquid	55liters	nil
Any other	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	2021
COMPUTER SCIENCE	01	02 in each lab	Nil	Yes	2021
PHYSICS	02	01 in each lab	01 in one lab	Yes	2021
BOTANY	02	01 in each lab	01 in one lab	Yes	2021
ZOOLOGY	01	01 in each lab	01 in one lab	Yes	2021

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)	18kg	8liters	Nil	Internal points	manual
Hostels	63kg	165liters	Nil	Concealed drains and waste bins	Not done
Buildings	54kg	87liters	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.

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## 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 minimise 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 minimise power consumption.

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 6,330 L/day for domestic, gardening purposes and 1500 L/day for drinking purpose and 170L/day loss of water. Rain water harvesting unit is installed in the department of Botany. 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

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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.

### LIST OF PLANT SPECIES PRESENT IN COLLEGE CAMPUS

Common Name	Botanical Name	Family
(1)	(2)	(3)
Amba (O), Aam (H) Mango (E)	<i>Mangifera indica</i> L.	Anacardiaceae
Amrutabhanda (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> Sarg	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 flame ixora (E)	<i>Ixora coccinea</i> L.	Rubiaceae
Chakunda (O), Nagro Cottee (E)	<i>Cassia occidentalis</i> L.	Caesalpiniaceae
Chakunda (O), Sickle pod (E)	<i>Cassia tora</i> L.	Caesalpiniaceae
Aparajita (O,H), Butterfly Pea (E)	<i>Clitoria ternatea</i> L.	Fabaceae
Tagara (O)	<i>Tebernaemontana divericata</i> R. Br.	Apocynaceae
Debadaru (O), Ashoka (H)	<i>Polyalthia longifolia</i> (sonn.)Thwaites	Annonaceae
Dimiri (O), Kat Gulasia (H)	<i>Ficus hispida</i> L.f.	Moraceae
Kala tulasi (O) , Holy Basil (E)	<i>Ocimum sanctum</i> L.	Lamiaceae
Gheekuanri (O), Gheekunvar (H)	<i>Aloe vera</i> (L) Burm.f.	Liliaceae
Kadali(O), Banana(E)	<i>Musa paradisiaca</i> L.	Musaceae

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Kadamba (O,H))	<i>Neolamarkia cadamba</i> (Roxb.) Bosser	Rubiaceae
Kagazaphula (O)	<i>Bougainvillea spectabilis</i> willd.	Nyctaginaceae (cultivated)
Karanja (O), Karanj (H), Indian beech (E)	<i>Pongamia pinnata</i> (L.) Pierre	Fabaceae
Kaniyar (O), Yellow Olender (E)	<i>Cascabela thevetia</i> (L.) Lippold	Apocyanaceae
Karabira (O), Indian oleander(E)	<i>Nerium oleander</i> L.	Apocyanaceae
Krushna chuda (O) peacock flower(E)	<i>Delonix regia</i> (Boj.ex Hook.) Raf	Caesalpiniaceae
Madhumalati (O), Rangoon Crepper (E)	<i>Quisqualis indica</i> L.	Combretaceae
Mandara (O), China Rose (E)	<i>Hibiscus rosa-sinensis</i> L.	Malvaceae
Nagphani (O,H) Prickly pear (E)	<i>Opuntia vulgaris</i> Mill.	Cactaceae
Nimba(O), Neem tree (E)	<i>Azadirachta indica</i> A. Juss.	Meliaceae
Panasa (O), Katahal (H), Jackfruit tree (E)	<i>Artocarpus heterophyllus</i> Lam.	Moraceae
Rangani (O) 4 O' clock plant (E)	<i>Mirabilis jalapa</i> L.	Nyctaginaceae
Sadabihari (O), Sadabahar (H), Periwinkle (E)	<i>Cartharanthus roseus</i> (L.) Don.	Apocyanaceae

### CONCLUSION:

The objective of organizing Green Audit is to upgrade the environmental condition in and around the college campus. It is carried out with the aid of performing tasks like waste management, energy saving and others to turn into a better environment friendly institution.

The base line data prepared for the college will be a useful tool for campus greening, resource management, planning future projects and a document for implementation of sustainable development of the college.

Facilities which are available in the college are listed below.

1. Seminars/symposia is organizing amongst students and staff relating to environmental pollution, different pollution acts and waste management.
2. Plantation programme inside the college campus, hostel campus and around the playground is taken up by the members of Eco club at regular intervals.
3. Vermi composting and green house facilities are available in the college campus.
4. The energy consuming old ceiling fans shall be phase wise replaced by less energy consuming ceiling fans.

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