

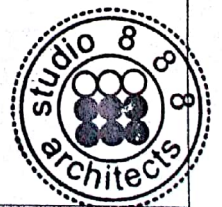
GREEN AUDIT REPORT



(2021-22)

Bharati Vidyapeeth's

**Dr. Patangrao Kadam Mahavidyalaya,
Sangli.**



ACKNOWLEDGEMENT

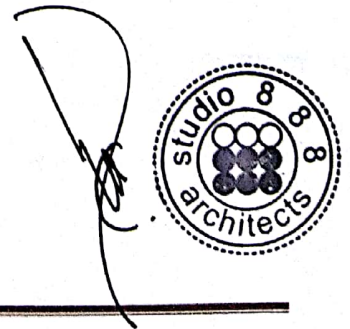
We are grateful to the committee members Of Dr. Patangrao Kadam Mahavidyalaya, sangli to award prestigious project and allow us to step into the new phase of Green Audit in the College Campus. Further we sincerely thank the college staff for providing us necessary facilities and co-operation during the audit. This helped us in making the audit, a success. Further we hope, this will boost the new generation to take care of Environment and propagate these vies for many generation to come.

Abhalmaya Foundation

Introduction

Green audit is defined as an official examination of the effects an organization has on the environment. It is also widely known as **Environmental Audit**. **Green Audit** can be better understood as: Compliance of **Environmental** Laws, **Audit** of Environment Cost and Environment Impact Assessment and Carbon Credit.

In the process systematic identification, quantification, recording, reporting and analysis of the components of environmental diversity is done. The 'Green Audit' aims to analyze environmental practices within and outside the college campus, which will have impact on the eco-friendly ambience. It was initiated with the motive of inspecting the work conducted within the organization whose exercise 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 of carrying out Green Audit.



GREEN AUDIT

The intention of organizing Green Audit is to upgrade the environment condition in and around the institutes, colleges, companies and other organizations. It is carried out with the aid of performing tasks like waste management, energy saving and others to turn into a better environmental friendly institute.

GOALS OF GREEN AUDIT

- The objective of carrying out Green Audit is securing the environment and cut down the threats posed to human health.
- To make sure that rules and regulations are taken care of
- To avoid the interruptions in environment that are more difficult to handle and their correction requires high cost
- To suggest the best protocols for adding to sustainable development



BENEFITS OF GREEN AUDIT

- Would help to prepare plan to project the environment.
- Recognize the cost saving methods through waste minimization and management.
- Point out the prevailing and fourth coming impacts on environment.
- Ensures conformity with the applicable laws.
- Empower the organizations to frame a better environmental performance.
- It portrays a good image of an institution which helps building better relationships with the group of interested parties.
- Promotes the alertness for environmental guidelines and duties.



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Bharati Vidyapeeth's Dr. Patanrao Kadam Mahavidyalaya, sangli Maharashtra is established in the year 1985 as Public Education Institute to provide higher education to build career in the field of Humanities, Science and Commerce. The college of having affiliation with reputed NAAC—B with four main four courses – Bachelor of Arts [B.A], Bachelor of Commerce [B.Com], Bachelor of science [B.Sc], Master of science [M.Sc] (Analytical Chemistry), There are separate laboratories of Microbiology, Physics, Chemistry, Botany, Zoology, Political Science, Statistics/Mathematics, Computer science, Information Technology and Advanced Soft Skill and also have Auditorium with capacity of 500 audience and well equipped gym. The college has rewarded with winner of "SWACHHA SARVEKSHYANA – 2021" most clean College.

The college has also adopted the 'Green Campus' system for environmental conservation and sustainability. There are main three pillars i.e. zero environmental foot print, positive impact on occupant health and performance and 100% graduated demonstrating environmental literacy. The goal is to reduce CO2 emission, energy and water use, while creating atmosphere where students can learn and be healthy. The college administration works on the several facts of 'Green Campus' includes Water Management Tree Plantation Management, Waste Disposal Management, Green management and Mapping of biodiversity.

❖ Objective of the study



Water Management Tree Plantation Management, Waste Disposal Management, Green management and Mapping of biodiversity.

❖ Objective of the study

The main objective of the Green Audit is to promote the environment Management and Conservation in the College Campus. The purpose is to identify, quantify, describe and prioritize framework of environmental 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 bring out a status report on environmental compliance.

❖ Assessment Methodology

In order to collect factual data the assessment team has interacted with concerned management personnel and visited different areas of the institution namely common classrooms, utility area, auditorium, gymkhana, office, staff rooms, library, electric room (meter room), water storage under storage and overhead, toilets, kitchen and canteen, waste storage area, drainage system landscape ground, and parking, to ensure comprehensive coverage the assessment has been categorized into broad modules to facilitate a structured evaluation. The modules are as follows:

Waste management	Tree Plantation Management
Energy Conservation	Transportation Management
Water Management	Green and Biodiversity Management

The assessment observations are supported by few photographs which have been captured during the visit.

Dr. Patangrao Kadam Mahavidyalaya expresses its commitment to sustainability in many ways; it has taken a number of positive steps to reduce its environmental impact. There are always areas in which improvements can be made. This report serves to highlight Dr. Patangrao Kadam Mahavidyalaya's many accomplishments and to make recommendations for improve the college's environmental sustainability. The college strives to maintain eco friendly atmosphere on the campus. To maintain eco-friendly ambience various programs are followed on campus.



➤ **Waste Management:**

Observation:

- All the floors contain common environment friendly bins for general waste (plastic bottles, card, cans, and paper).
- E Museum : College is creating E-Museum, where e-waste is managed ,and damaged part of computers, appliances, machinery , etc are used to educate students about internal parts of devices.
- There are separate bins for dry waste and wet waste garbage.
- College has implemented a 'reducing waste' awareness scheme, which includes; reusing single-sided waste paper as notepads, creating a separate tray in the printing for single-sides used waste paper, when printing drafts and encouraging the use of overhead projectors at internal meetings instead of printouts, photocopiers are set to duplex printing.
- College is counseling and encouraging students to thinking more carefully about the wastes they're producing.
- Utilization of environmentally sustainable materials is done effectively.
- Promotion of the plastic awareness program to reduce use of plastics on campus is being done by putting up signage and boards.
- Using of plastic is banned in the campus area. If caught any student then there is penalty on that.
- There is a pit dug in the land available. All decomposable chemical waste is filled in that and pit is closed again.
- Vermi-compost plant is provided; all garbage is dump in this pit. It utilized for trees as fertilizer.

Recommendation:

- More awareness programs amongst students and faculty, other staff, service providers etc. need to be organized for minimizing solid waste disposal.
- Proper storage and safer disposal of waste, efficient and proper waste treatment, effective waste conservation and increasing resource recovery from waste should be done adequately.
- Vermi -compost plant needs to get clean up. Only garbage is dumped in plant but there is no activated worm and slurry present.



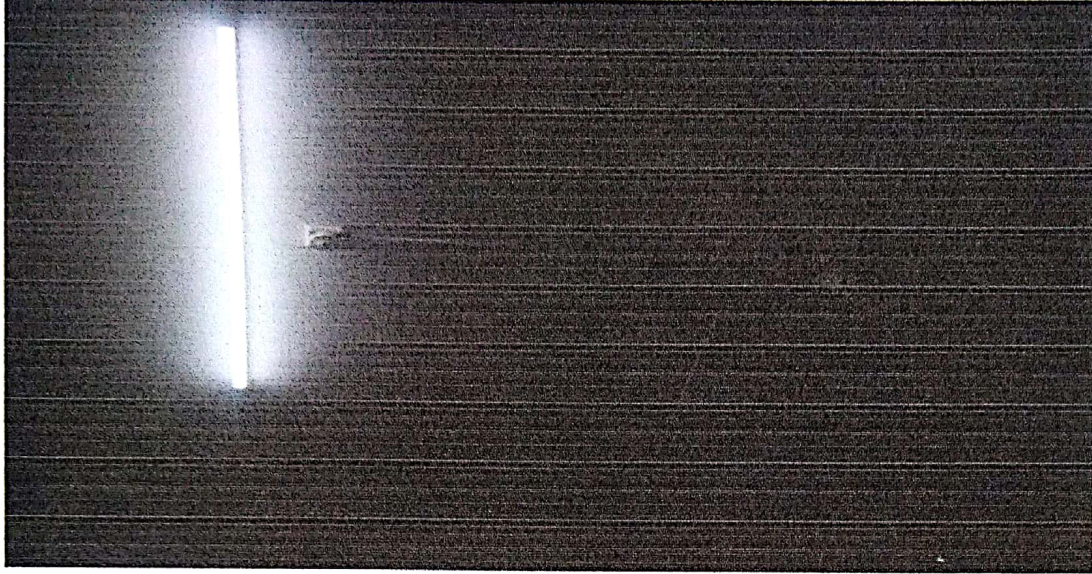


➤ Energy Management:



Observation:

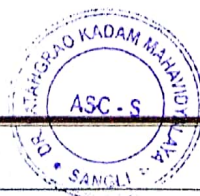
- Florescent bulbs are replaced with LED bulbs at some places.

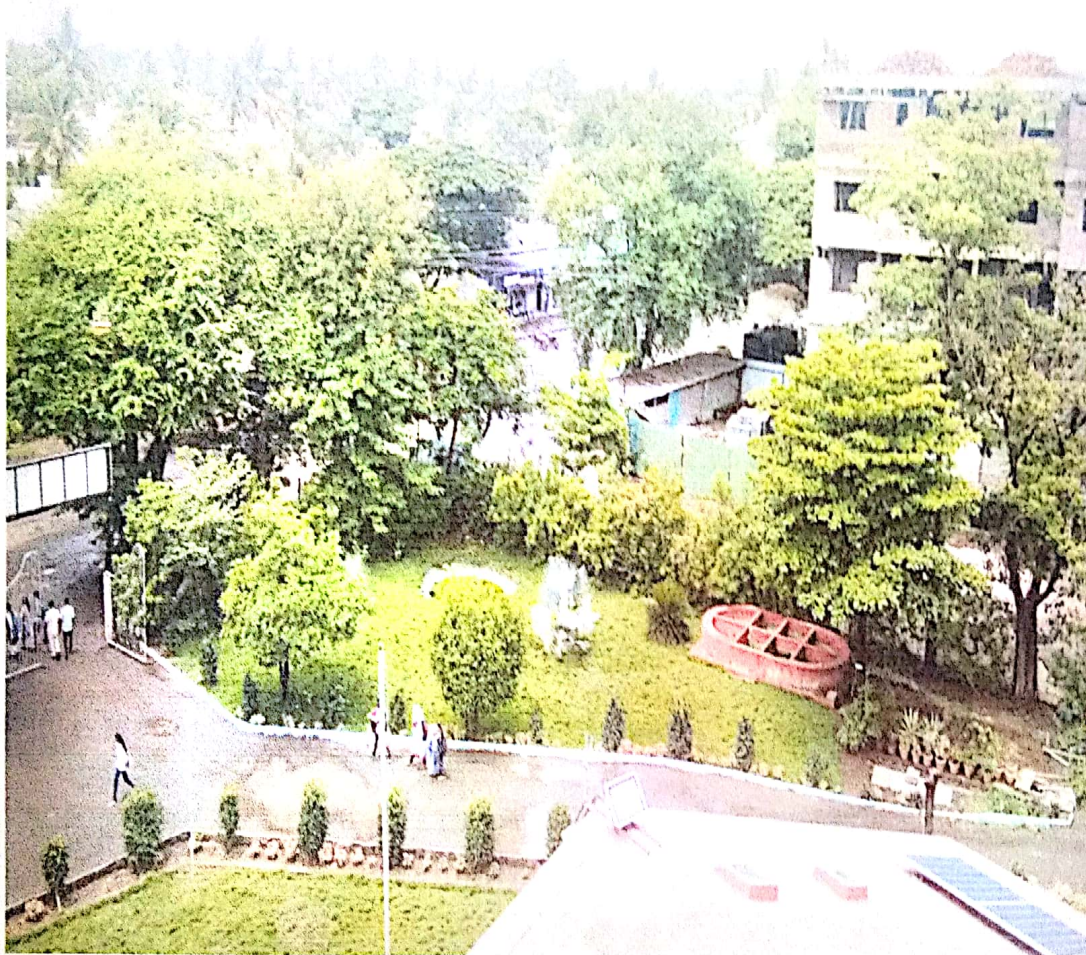


- Utilization of natural light when possible and electricity is appropriately used (avoiding its misuse).

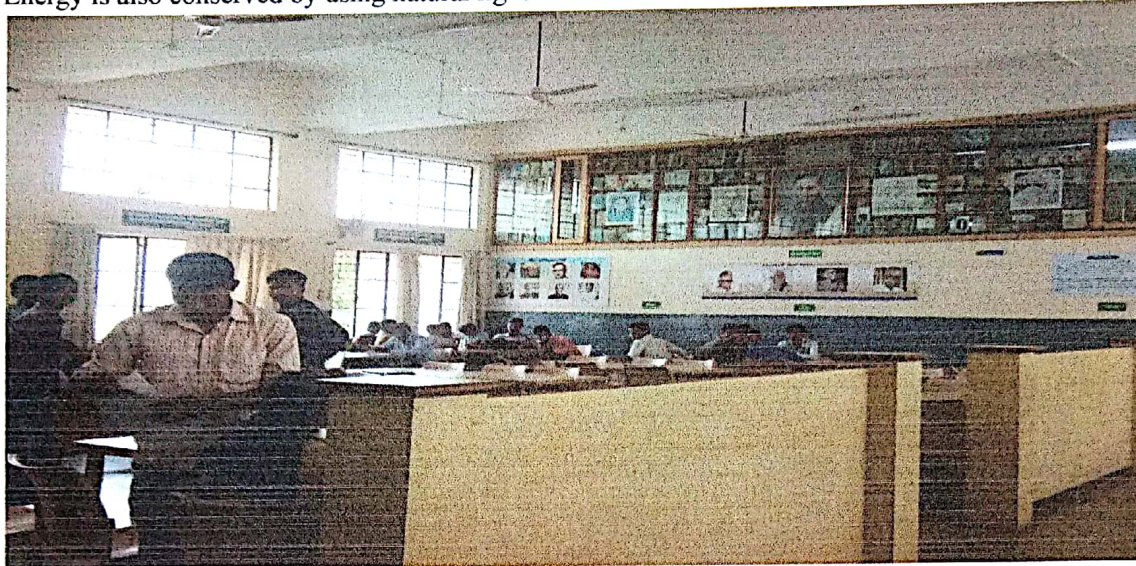


- Turning of the appliances is done when not required and thus the misuse of electricity is controlled.
- College uses generator during shortage /cut offs of light.
- The college has a canopy of trees and a plant that the environment carbon dioxide frees and to maintain health of all the inmates.

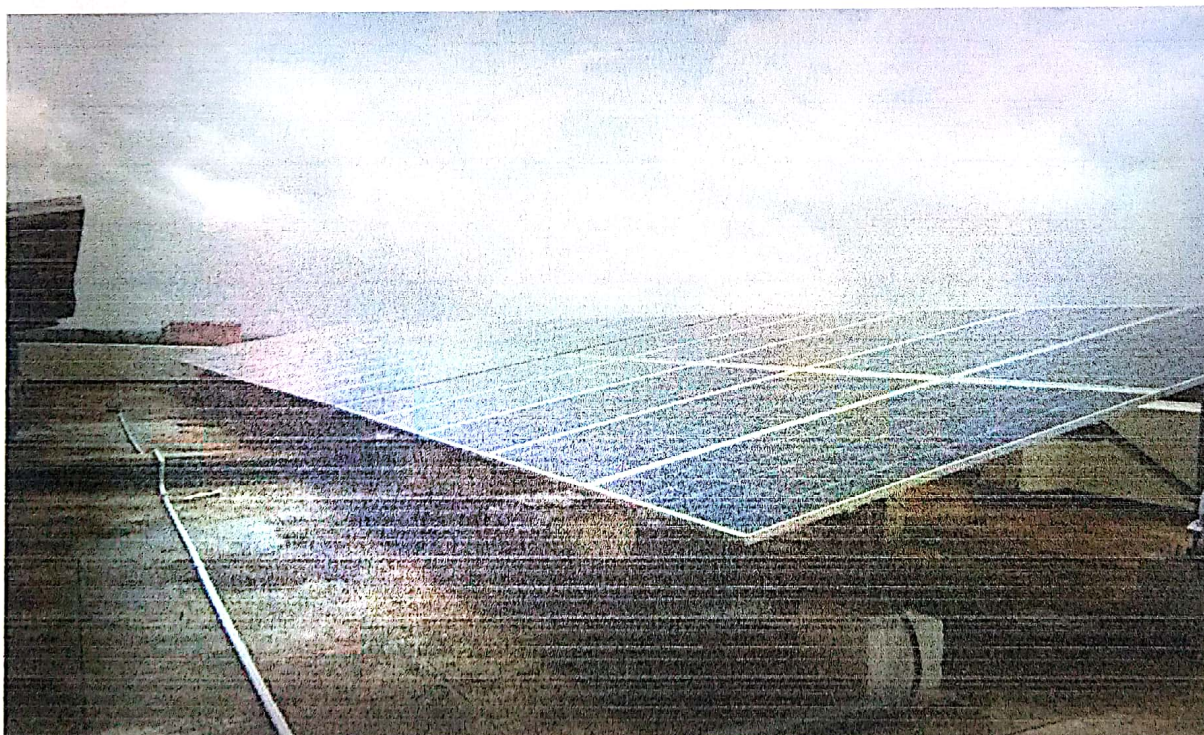




- Energy is also conserved by using natural light in the classrooms.



- Purchases and developments to minimize energy use.
- Installation of solar panels is done properly.





Recommendation:

- High energy consuming incandescent lights and fluorescent lights may be replaced by less energy consuming LED lights where it is still not installed
- LEDs are the latest and most efficient lighting option which is available in the market. Their electricity consumption is 50% less than that of CFLs and fluorescent lamps for the same amount of light. LEDs also are long lasting with a life of about 10-25 years and their performance remains the same throughout their lifetime.
- Adoption of purchasing policy that specifies low or no VOCs. Volatile Organic Compounds are compounds that easily become vapors or gases.
- Cigarette and secondhand smoke contain VOCs. It is dangerous for human health so it need to prohibit in college campus.



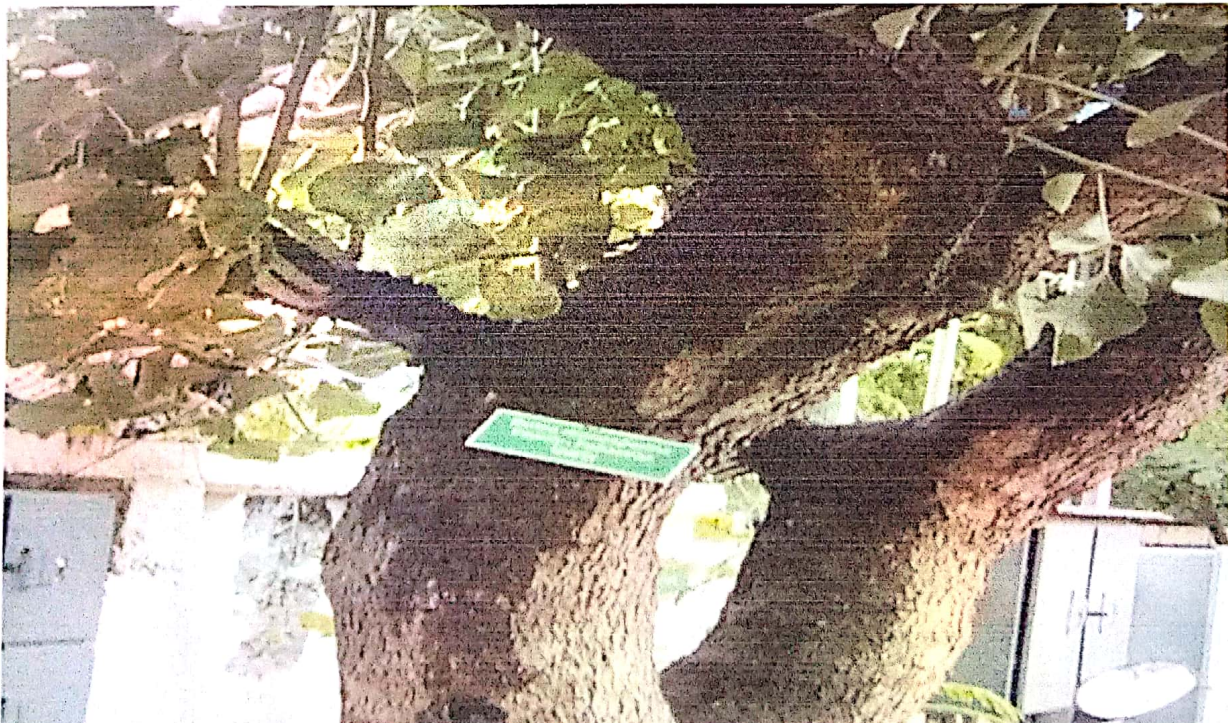
➤ **Tree Plantation Management:**

Observation:

- The organization takes initiative for plantation program by involving students to offset the GHG emission.
- College has a quite large amount of landscape area under plantation which includes a beautiful flowering garden at the entrance, which enhances the aesthetic façade look and warmly welcomes the public.
- Carbon dioxide neutrality is maintained in the campus by developing greenery.
- The internal greenery is well maintained by placing pots in the premises.
- Use of sustainable and environmental friendly methods for plantation is adopted and the compost manure is provided for the plantations.
- Utilization of the natural landscaping and increasing diversity in tree plantation is done
- College campus having numerous trees, plants etc. of more than 36 variety like Ashoka , pipal .
- There are some plantation of trees is mainly fruits like mango, badam, Jamun, gauava, Coconut ,Tamarind etc. which attract birds.
- Along with this some medicinal plants like Neem, alovera, tulsi, eucalyptus are planted.
- Harvesting procedures, preservation and protection against soil erosion, sedimentation, fire, pests and diseases are conducted frequently.
- College implements 'Integrated Pest Management Program' to reduce use of harmful chemicals.
- Utilization of much landscaping waste (grass clippings, leaves, branches) is done to divert from the landfill.







Recommendations:



Recommendations:

- College can put some manmade nests to attract some birds and can put some ducts, Indian myna, greater coucal and other birds which may help them to maintain the ecological balance and the reservoir zone.

➤ **Water Management:**

Observation:

- College has a sufficient storage of water as have underground and overhead tanks.



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- A water purification system is installed on each floor in the building which provides cooled, purified water from the mains systems.
- Utilization of native plants that do not require additional irrigation.
- Washing waste water from canteen and kitchens is suitably controlled and used for watering of plants while the solid waste is used for composting.
- College has beautiful roof top of which a small area is used for rain water. College has implemented rain water harvesting and water is carried and utilized throughout the year in the chemistry department (also other departments has access to use the rain water) on the practical's in the laboratory.
- Identification and stoppages of leakages in pipelines is done regularly thus ensuring proper repairs and maintenance. Float valve operated auto shut off switch may be installed for pump sets used for overhead tank filling.

Recommendation:

- Installation of water recycling mechanism, such as solid immobilized Bio Filters may be done.
- Biofiltration is a pollution control technique using a bioreactor containing living material to capture and biologically degrade pollutants. Common uses include processing waste water, capturing harmful chemicals or silt from surface runoff, and microbotic oxidation of contaminants in air.
- Consider carrying out meter reading on a regular basis (e.g. bi-monthly) in order to monitor water usage and set a baseline from which further reductions can be measured.

➤ Transport Management:

Observation:

- College minimizes the unsustainable transport and promotes green public transport than private transport.
- Use of public transport services, bicycle and pedestrian routes is adopted and used by maximum students.
- Preferred parking land spaces for four wheelers, two wheelers and bicycle stand is provide for faculty and students.
- Adoption of methods to reduce air pollution and noise intensity levels is done by planting large amount of trees in the surrounding areas around the campus.





- Every month of 3rd Saturday is reserve for 'NO VEHICLE DAY', and it is followed by teacher staff and students.

Recommendation:

- Encouraging the awareness and usage of sustainable transportation technology.
- Encouraging the use of bicycle for those who were residential nearby college.

➤ **Green management:**

Observation:

- College minimizes the use of all cleaning products and chemical pollutants.
- Avoids the use of pesticides wherever possible.
- Limited use of private vehicles wherever possible.
- College encourages the use of environmentally friendly materials.
- Promotes the information regarding the nature, natural resources, wildlife for the conservation of biodiversity.
- Plantation pollution and conserving recourses and creating awareness of environmental issues and responsibilities.
- Colleges in managing and improving environmental performance and helping to increase efficiency (e.g. cutting waste and energy use).



Recommendation:

- Implementation of a green cleaning program using non-toxic products. for example
- Minimizing the ozone depleting substances.

➤ **Biodiversity Management:**

Observation:

- Examining and determining whether biodiversity enhancement is achieved at regular intervals is done.
- College is taking steps to increase the variety of substrate depths and vegetation types which tend to have spider, beetle, and bird diversity.
- Grasses and herbaceous plants produce numerous seed heads that provides invaluable energy sources for migratory birds.

Recommendation:

- Adding bird's boxes, bat box, and trap nests for bees as desired can create a unique and rare habitats.
- Implementing programs to promote awareness, training and proper maintenance of green building design and biodiversity.

Plant list:

Sr. No.	Scientific Name	Family	Local Name
HERB			
1	<i>Aloe vera</i> (L.) Burm.f.	Asphodilaceae	कोरपड
2	<i>Caralluma adscendens</i> (Roxb.) R.Br.	Asclepiadaceae	िशंगोळी
3	<i>Hymenocallis littoralis</i> (Jacq.)Salisb	Amaryliaceae	
4	<i>Ocimum tenuiflorum</i> L.	Lamiaceae	तुळस
5	<i>Pandanus amaryllifolius</i> Roxb.	Asparagaceae	के वडा
CLIMBERS			
6	<i>Asparagus racemosus</i> Willd	Asparagaceae	शतावरी
7	<i>Combretum indicum</i> (L.)DeFilipps	Combretaceae	मधूमालती
8	<i>Dioscorea alata</i> L.	Dioscoreaceae	डुकरकंद
9	<i>Epipremnum aureum</i> (Linden & Andre)G.S.Bunting	Araceae	पैसाचे झाड
10	<i>Tinospora cordifolia</i> (Thunb.)Miers	Menispermaceae	गुळवेल
SHRUB			
11	<i>Acalypha wilkesiana</i> Mull.Arg.	Euphorbiaceae	

12	<i>Agave angustifolia</i> Haw.		
13	<i>Annona squamosa</i> L.	Asparagaceae	घायपत
14	<i>Bougainvillea spectabilis</i> Willd.	Annonaceae	सिताफळ
15	<i>Cycas revoluta</i> Thunb.	Nyctaginaceae	
16	<i>Cordia sebestena</i> L.	Cycadaceae	सायकस
17	<i>Dracaena reflexa</i> Lam.	Boraginaceae	
18	<i>Euphorbia milli</i> Des Moul	Asparagaceae	
19	<i>Hibiscus rosa-sinensis</i> L.	Euphorbiaceae	
20	<i>Ixora coccinea</i> L.	Malvaceae	जाशदी
21	<i>Jatropha integerrima</i> Jacq.	Rubiaceae	
22	<i>Justicia adhatoda</i> L.	Euphorbiaceae	
23	<i>Microsorium scolopendria</i> (Burm.f.)Copel.	Acanthaceae	अडूळसा
24	<i>Nerium oleander</i> L.	Polypodiaceae	
25	<i>Pandanus tectorius</i> Parkinson ex Du Roi	Apocynaceae	कशेर
26	<i>Pisonia umbellifera</i> (J.R. Forst. & G. Forst.)Seem	Asparagaceae	केवडा
27	<i>Plumeria alba</i> L.	Nyctaginaceae	
28	<i>Tecoma stans</i> (L.) Juss. Ex Kunth	Apocynaceae	चाफा
29	<i>Withania somnifera</i> (L.) Dunal	Bignoniaceae	
		Solanaceae	अण्णांधा
TREE			
30	<i>Azadirachta indica</i> Juss.	Meliaceae	नीम
31	<i>Alstonia scholaris</i> (L.)R.Br.	Apocynaceae	सवणपर्णी
32	<i>Areca catechu</i> L.	Arecaceae	सुपारी
33	<i>Bismarckia nobilis</i> Hildebr.& H. Wendl	Palmaceae	
34	<i>Bauhinia purpurea</i> L.	Caesalpiniaceae	कांचन
35	<i>Bauhinia variegata</i> (L.)Benth	Caesalpiniaceae	
36	<i>Butea monosperma</i> (Lam.)Taub.	Fabaceae	पळस
37	<i>Brownea ariza</i> Benth.	Caesalpiniaceae	
38	<i>Cassia fistula</i> L.	Caesalpiniaceae	बहावा
39	<i>Cocos nucifera</i> L.	Arecaceae	नारळ
40	<i>Delonix regia</i> (Boj.ex Hook.)Raf.	Caesalpiniaceae	गुलमोहर
41	<i>Ficus benjamina</i> L.	Moraceae	नांदख
42	<i>Ficus religiosa</i> L.	Moraceae	पिंपळ
43	<i>Lagerstroemia speciosa</i> (L.)Pers.	Lythraceae	ताम्रण
44	<i>Mangifera indica</i> L.	Anacardiaceae	आंबा
45	<i>Millingtonia hortensis</i> L.f.	Bignoniaceae	
46	<i>Mimusops elengi</i> L.	Sapotaceae	बकुळ
47	<i>Callistemon citrinus</i> (Curtis)Skeels	Myrtaceae	बोटलक्ष्म
48	<i>Melia azedarach</i> L.	Meliaceae	बकाम नीम
49	<i>Muntingia calabura</i> L.	Muntingiaceae	बईचेरी
50	<i>Murraya koenigii</i> (L.)Sprengel	Rutaceae	कडीपत्ता



51	<i>Neolamarckia cadamba</i> (Roxb.)	Rubiaceae	कदंब
52	<i>Nyctanthes arbor-tristis</i> L.	Oleaceae	पारिजातक
53	<i>Peltophorum pterocarpum</i> (DC.) Baker ex. Heyne	Caesalpiniaceae	
54	<i>Phyllanthus emblica</i> L.	Euphorbiaceae	आवळा
55	<i>Podocarpus macrophyllus</i> (Thunb.) Sweet	Podocarpaceae	
56	<i>Polyalthia longifolia</i>	Annonaceae	अशोक
57	<i>Psidium guajava</i> L.	Myrtaceae	पेपुस
58	<i>Samanea saman</i> (Jacq.) Merr	Mimosaceae	पजरावृक्ष
59	<i>Saraca asoca</i> (Roxb.) Willd	Caesalpiniaceae	सिता अशोक
60	<i>Senna siamea</i> (L.) Irwin et Barneby	Caesalpiniaceae	काशीद
61	<i>Spathodea campanulata</i> P. Beauv.	Bignoniaceae	पिचकारी
62	<i>Syzygium cumini</i> (L.) Skeels	Myrtaceae	
63	<i>Tabebuia rosea</i> DC.	Bignoniaceae	
64	<i>Tamarindus indica</i> L.	Caesalpiniaceae	चिंच
65	<i>Terminalia arjuna</i> (Roxb.) Wight & Arn.	Combretaceae	अर्जुन
66	<i>Terminalia catappa</i> L.	Combretaceae	बदाम
67	<i>Couropita guianensis</i> Aubl.	Lecythidaceae	कैलासपती

➤ **Conclusion:**

The audit team suggests that there are always places where improvement can be made. The audit team suggests you to make changes in the college premises as per our recommendations. The audit team is thankful for your guidance.

Prepared by; Er Pooja R. Pailwan.

Certified by; Ar. Pramod Chaugule.

