

**ST. VINCENT PALLOTTI COLLEGE,
KAPA RAIPUR**
Green cum Environment Audit Report
2017-18



Audit Report Compiled by –

Handwritten signature of Dr. M. L. Naik

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Green cum Environment Audit

Certificate

This is to certify that the **St. Vincent Pallotti College, Raipur** has conducted 'Environment Audit' of session 2017-18 to assess the environment initiative, planning, efforts, activities implemented in the college campus like Plantation, Waste Management, Rain Water Harvesting, Conservation of Energy, Paperless Technology, and various Environment Awareness Activities. This green audit is also aimed to assess impact of green initiatives for maintenance of the campus eco-friendly.

The College has submitted necessary data and credentials for scrutiny. The activities and measures carried out by the college have been verified and were found to be satisfactory. The necessary feedback has been given and recommendations have been made to enhance the environmental efficiencies.



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Preface

Nature is very precious gift for all life forms. Disturbance in the nature causes environmental Problems increasing day by day due to development of urbanization and industrialization on earth. Unplanned utilization of resources planet facing tremendous pressure resulting temperature is increasing. Therefore urgent need to planning to utilization of the resources in sustainable manner to protect nature. Sustainable development is becoming popular in the world for saving the earth. Utilizing resources in judiciously can save the earth's precious resources. Measurement of environmental components is the most effective step to conserve and protect natural resources.

Environmental auditing had begun in the early 1970s with provision of civil lawsuits for non compliance with environmental regulations. Green auditing involves on site visit, collection of samples, performing analyses, and report results to competent authorities. Industry, the corporate world is initiating auditing for saving natural resources. Academic institutions also can contribute to the preservation and conservation of resources within their premises.

In the present write up "Green Audit" report, outline existing scenario of campus. A brief content of this report would help everyone to think about preserving resources, show willingness to learn their importance, adopt steps to minimize resource use and set an example for others to follow the path of green practices to achieve the goal of sustainable development.

We express our deep sense of gratitude to the director of the St. Vincent Pallotti College, Principal of the college for their support in preparation of the report.

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Green cum Environment Audit: 2017-2018

Introduction:

In Present era planet is becoming warmer day by day due to environmental problems creating by human activities for development in terms of rapid urbanization, industrialization and development of science and technology. Quality of air, water and soil is continuously diminishing without recovery. There is urgent need to creating awareness for sustainable utilization of earth's precious resources. Measurement of environmental components is the most effective step to conserve and protect natural resources.

On this background it becomes essential to adopt the system of the Green Campus for the institute which will lead for sustainable development. Now the time has came to adopt new techniques like Green Audit and environmental audit. Green Audit and environmental audit is a process of systematic identification, quantification, recording, reporting and analysis of components of environmental diversity of various establishments. It aims to analyze environmental practices within and outside of the concerned sites, which will have an impact on the eco-friendly environment. **Green audit and environmental audit is assigned to the criteria 7 of NAAC, National Assessment and Accreditation Council which is a self – governing organization of India that declare the institutions as a Grade A, Grade B or Grade C according to the scores assigned at the time of accreditation.** Colleges are also in a unique position as educational institutions to be leaders in pursuing environmentally sustainable Solutions. Green audit can be a useful tool for a college to determine how and where they are using the most energy or water or resources; the college can then consider how to implement changes and make savings. It can also be used to determine the type and volume of waste, which can be used for a recycling project or to improve waste minimization plan. It can create health consciousness and promote environmental awareness, values and ethics. It provides staff and students better understanding of Green impact on campus. Environmental sustainability is becoming very important aspects for any nation. Practices to maintain the sustainable environment should be mandatory subjects for quality education in higher educational institutions. The basic components in green audit are energy conservation, use of renewable sources, rain water harvesting, efforts of carbon neutrality, planting of trees, hazardous waste management and E-waste management. Finally, Green audit is a requirement of NACC assessment to the Colleges and Universities.

ABOUT THE COLLEGE

St. Vincent Pallotti College is established in the year 1995 and administered by Vidya Protsahan Sangh, a charitable Society under article 30(1) of the Constitution of India, primarily meant for Christian minorities. The college is located in Kapa, about 2.5 Km. from Bus stand Pandari, Raipur. Degree courses in Commerce, BBA, Arts, Computer Science, Physical Education, BCA, Post Graduate courses in Commerce, English and PGDCA offered for mobility of the institution. The dedication of the management and the community, combined with excellent infrastructural and teaching facilities help maintain high Standards in curricular and co-curricular spheres of the institution.

Total Campus Area & College Building Spread Area

Campus Area	-----	17199m ²
Built up Area	-----	1773m ²
Tree Canopy	-----	5400m ²
Free Space	-----	10000m ²

Campus Infrastructure:

Seminar Halls The College boasts of a multi-facility, ventilated auditorium with a seating capacity of 300 chairs and parking space make it a converging point of academic and cultural activities.

Conference Rooms: There is one air conditioned conference room aimed at providing space for the policy making bodies of the college.

Library: The college library is fully computerized and digitalized with Catalogue facility and has a collection of over 14500 books, 154 encyclopedias and a subscription of about 31 periodicals and journals. Internet browsing is also available. Total seating capacity of the library is 64.

Computer Labs: There are two well-equipped computer labs associated with the Departments of Management, Computer Application.

Student Support Facilities every department of the college has a departmental library which supplies books to the students. College office and library has photocopiers and multi-equipment open gym has been installed in the campus.

Canteen: The college canteen caters to the nutritional needs of the staff and students at subsidized rates. The canteen functions from 9am. To 2pm.

Hostel : The girl students are provided neat and safe residential accommodation at two well-equipped convent hostels in the vicinity of the college.

Sports and Games facilities: The College has a Basket Ball Court, Volley Ball Court, Shuttle Badminton Court, Football Field, Fitness Centre, Table Tennis, Cricket Pitch etc.

Objective of Auditing:

A clean and healthy environment aids effective learning and provides a conducive learning environment. There are various efforts around the world to address environmental education issues. Green Audit is the most efficient and ecological way to manage environmental problems. The aim of this is to help the institution to set examples of environment friendly initiatives for the community, and to educate the young learners. : The green audit is very important task in present environment for self assessment of any institution, reflects the role of the institution in utilization and managing sustainable management of available natural resources. The green audit team audited green attributes of the college to evaluate practices carrying out to manage green campus towards resources utilization.

The main objectives of carrying out Audit of the college campus are:

- To observe organizational level efforts about land use for various purposes.
- To record and document tree species and faunal diversity in the college premises.
- To check water samples for the quality drinking water
- To observe Pollution effect (air, water and noise) in the college premises.
- To study soil quality of the college campus.
- To record E-waste disposal and management.
- To document the quality of recycled waste water for gardening.
- To document the solid Waste disposal system
- To document the ambient environmental condition of.

METHODOLOGY

The purpose of the green cum environment audit of College is to ensure that the practices followed in the campus are in accordance with the Green Policy adopted at the institution. The methodology include the preparation physical inspection of the campus, observation and review of the documentation green audit parameters, questioners, interviewing with students and key persons and data analysis, measurements and recommendations.

Constitution of Green Audit Team:

Fr. Shanti Prakash Panna :	Director
Dr. Kuldeep Dubey :	Principal
Dr. G. Padma Gouri:	Vice Principal
Fr. Julius Xess :	Management Representative
Mr. Pramod Dubey:	Member Secretary
Mrs. Bani Saha:	Faculty Member
Mrs. Yashswee Lonkar :	Faculty Member

Pre-Audit Stage: Audit team members were decided and constituted audit team. A pre-audit meeting organized by the college during October 2017. Purposes of the meeting were preparation and find the scope to conduct Green Audit of the college. In the meeting Audit protocol and audit plan were decided. The audit team focused on different indicators of environmental impacts.

Following broad resource management practices were decided in pre audit meeting:

- Auditing for Water Management
- Auditing for Energy Management
- Auditing for waste Management
- Auditing for green campus Management

Audit Stage: Green audit was conducted with the help of expert with involving different student groups, teaching, non-teaching staff and with the assistance from the management. The green audit was carried out thoroughly followed by the keen observations i.e. different facilities (Lights, Taps, Toilets, Fridges) available and their utilization in the college. During the audit Staff and students were interviewed to get details of usage of the resources available in the college. Data collection was taken in different sections such as Energy, Waste, Greening, pollution and water usage. College records and documents were verified to clarify the data received through survey and discussions. The whole process was completed four months from February to May 2018.

Audit Observations

During the first phase of the audit following observations and recommendation were made

- Environmental awareness inadequate among the students, environmental educations programs should be strengthened.
- Gardens inside the college campus are found well maintained.
- Programme on green initiatives have to be increased. Campus is found plastic free.
- Rain water harvesting systems is found very good water resource management in the campus.
- Use of notice boards and signs are inadequate to reduce overexploitation.
- To educated and awareness among the staff and students of the college one Eco- Club should be made.
- It was found quality of water is safe to drink for all, it should be maintained.
- Display boards against the misuse of water use are lacking.
- The communication process for awareness in relation to energy saving is found inadequate.
- Assessment of electrical load calculation is required by the college.

- Solid waste management systems should be started.
- Waste bins of different waste in the class rooms, corridors and campus were inadequate.
- Proper composting system should be planned.
- Very good green campus maintained by the college it should be maintained.
- Display Boards to all plants identified are lacking
- Medicinal plant garden and kitchen garden can established in the campus to use of waste water.
- There is found pollution free campus it should be maintained.
- Adopt an environmental policy for the college.

Action Taken Report

St. Vincent Pallotti College is a higher education institution that remain to strict moral and ethical principles in striving towards excellence. To maintain quality of education with the increasing life skills among the students is objectives of this institution. With respect to sustainable development goals the college management adopted an environmental policy for the college. All the recommendations to maintain eco-friendly green campus was followed by the college management are very much appreciating.

Green Campus (Available Flora and Fauna): Campus is found richness of floral and faunal diversity.

List of available plants in the College campus

1. Trees

S.No	Botanical name	Vernacular Name	Family
1	<i>Acacia melanoxylon</i>	Australian babool	Leguminosae
2	<i>Acacia biglandolosa</i>		Leguminosae
3	<i>Aegle marmelos</i>	Bel	Rutaceae

4	<i>Ailanthus excelsa</i>	Maha neem	Simaroubaceae
5	<i>Albizia lebbek</i>	Shiris	Leguminosae
6	<i>Albizia procera</i>	Shiris	Leguminosae
7	<i>Alstonia scholaris</i>	Chhatim	Apocynaceae
8	<i>Anthocephalus cadamba</i>	Kadamb	Rubiaceae
9	<i>Azadirachta indica</i>	Neem	Meliaceae
10	<i>Annona squamosa</i>	Sitaphal	Annonaceae
11	<i>Bauhinia purpurea</i>	Kachnar	Leguminosae
12	<i>Bombax malabaricum</i>	Semal	Bombaceae
13	<i>Cassia fistula</i>	Amaltas	Leguminosae
14	<i>Caesalpinia pulcherrima</i>	Krishnachura	Leguminosae
15	<i>Calotropis gigantean</i>	Madar	Asclepiadaceae
16	<i>Carica papaya</i>	Papita	Caricaceae
17	<i>Dalbergia sissoo</i>	Shisham	Leguminosae
18	<i>Delonix regia</i>	Gulmohar	Leguminosae
19	<i>Eucalyptus lanceolatus</i>	Nilgiri	Myrtaceae
20	<i>Ficus benghalensis</i>	Bargad	Moraceae
21	<i>Ficus religiosa</i>	Peepal	Moraceae
22	<i>Ficus virens</i>	Gasti	Moraceae
23	<i>Lagerstroemia speciosa</i>	Jharul	Lythraceae
24	<i>Lawsonia inermis</i>	Mehandi	Lythraceae
25	<i>Mangifera indica</i>	Aam	Anacardiaceae

26	<i>Millingtonia hortensis</i>	Neemchameli	Bignoniaceae
27	<i>Nyctanthes arbor-tristis</i>	Parijat	Oleaceae
28	<i>Peltophorum ferrugineum</i>	Copper pod	Leguminosae
29	<i>Pithecelobium dulce</i>	Gangaimli	Leguminosae
30	<i>Polyalthea longifolia</i>	Druping Ashok	Leguminosae
31	<i>Pongamia pinnata</i>	Karanj	Leguminosae
32	<i>Phyllanthus emblica</i>	Amla	Euphorbiaceae
33	<i>Psidium guajava</i>	Amrud	Myrtaceae
34	<i>Sapindus trifoliatus</i>	Reetha	Sapindaceae
35	<i>Samaruba gloca</i>	Laxmitru	Samarubaceae
36	<i>Spathoda companalata</i>	Jaimangal	Bignoniaceae
37	<i>Sterculia foietida</i>		Sterculiaceae
38	<i>Syzygium jambolena</i>	Jamun	Myrtaceae
39	<i>Tamarindus indica</i>	Imli	Leguminosae
40	<i>Tecoma stans</i>	Tecoma	Bignoniaceae

2. Herbs & Shrubs:

S.No	Botanical name	CommonName	Family
1.	<i>Acalypha ciliate</i>		Euphorbiaceae
2.	<i>Acalypha wilkesiana</i>		Euphorbiaceae
3.	<i>Acalypha indica</i>		Euphorbiaceae

4.	<i>Achyranthes aspera</i>	Chirchitta	Amaranthaceae
5.	<i>Ageratum conyzoides</i>		Asteraceae
6.	<i>Andrographis echinoides</i>		Acanthaceae
7.	<i>Antigonon leptopus</i>		Polygonaceae
8.	<i>Anisochilus carnosus</i>		Labiatae
9.	<i>Alysicarpus longifolius</i>		Leguminosae
10.	<i>Alysicarpus vaginalis</i>		Leguminosae
11.	<i>Alysicarpus monolifer</i>		Leguminosae
12.	<i>Alternanthera sessilis</i>		Amaranthaceae
13.	<i>Aerva lanata</i>		Amaranthaceae
14.	<i>Argemone mexicana</i>	Pili Kateri	Papaveraceae
15.	<i>Amaranthus sps.</i>		Amaranthaceae
16.	<i>Barleria prionitis</i>	Kesraiya	Acanthaceae
17.	<i>Blumea lacera</i>	Kukurmutta	Compositae
18.	<i>Boerhaavia diffusa</i>	Punamava	Nyctaginaceae
19.	<i>Borreria stricta</i>		Rubiaceae
20.	<i>Borreria articularis</i>		Rubiaceae
21.	<i>Calotropis procera</i>	AAk	Asclepiadaceae
22.	<i>Calotropis gigantean</i>	Aak	Asclepiadaceae
23.	<i>Canna indica</i>	Vaijanti	Cannaceae
24.	<i>Cassia tora</i>	Charota	Leguminosae
25.	<i>Cassia occidentalis</i>		Leguminosae
26.	<i>Celosia argentea</i>		Amaranthaceae
27.	<i>Cleome viscosa</i>	Hurhur	Capparidaceae
28.	<i>Colleus sps.</i>		Labiatae

29.	<i>Commelina benghalensis</i>		Commelinaceae
30.	<i>Crotalaria prostrata</i>		Leguminosae
31.	<i>Croton sparsiflorum</i>		Euphorbiaceae
32.	<i>Cyanotis cristata</i>		Commelinaceae
33.	<i>Cyperus rotundus</i>	Nagar Ghans	Cyperaceae
34.	<i>Convolvulus</i> sp.		Convolvulaceae
35.	<i>Desmodium triflorum</i>		Leguminosae
36.	<i>Dracena</i> sp.		Liliaceae
37.	<i>Echinops echinatus</i>		Compositae
38.	<i>Eclipta alba</i>		Compositae
39.	<i>Euphorbia cythophora</i>		Euphorbiaceae
40.	<i>Euphorbia geniculata</i>		Euphorbiaceae
41.	<i>Euphorbia hirta</i>	Dudhi	Euphorbiaceae
42.	<i>Euphorbia microphylla</i>		Euphorbiaceae
43.	<i>Euphorbia tirucalli</i>		Euphorbiaceae
44.	<i>Evolvulus alsinoides</i>		Convolvulaceae
45.	<i>Hemelia patens</i> sp.		Rubiaceae
46.	<i>Gomphrena celosioides</i>		Amarantaceae
47.	<i>Heliotropium indicum</i>	Hanthi Sood	Boraginaceae
48.	<i>Hyptis suaveolens</i>		Labiatae
49.	<i>Indigofera linifolia</i>		Leguminosae
50.	<i>Ipomoea pes-tigridis</i>		Convolvulaceae
51.	<i>Justicia simplex</i>		Acanthaceae
52.	<i>Kyllinga triceps</i>		Cyperaceae
53.	<i>Kyllinga biceps</i>		Cyperaceae

54.	<i>Lagascea mollis</i>		Compositae
55.	<i>Lantana camara</i>		Verbenaceae
56.	<i>Launaea nudicaulis</i>		Asteraceae
57.	<i>Leptotea interrupta</i>		
58.	<i>Leucas aspera</i>	Gumi	Lamiaceae
59.	<i>Merremia emarginata</i>		Convolvulaceae
60.	<i>Mirabilis jalapa</i>	4oclock	Nyctaginaceae
61.	<i>Mollugo stricta</i>		Molluginaceae
62.	<i>Martynia diandra</i>		Pedaliaceae
63.	<i>Mimosa pudica</i>	Chuimui	Mimosaceae
64.	<i>Murraya paniculata</i>	Madhukamini	Rutaceae
65.	<i>Ocimum americanum</i>	Memri	Lamiaceae
66.	<i>Ocimum sanctum</i>	Tulsi	Lamiaceae
67.	<i>Oldenlandia corymbosa</i>		Rubiaceae
68.	<i>Oxalis corniculata</i>	Khatti buti	Oxalidaceae
69.	<i>Parthenium hysterophorus</i>	Gajar ghas	Compositae
70.	<i>Peristrophe bicalyculata</i>		Acanthaceae
71.	<i>Phyllanthus niruri</i>	Bhui amla	Euphorbiaceae
72.	<i>Psorelea corlyfolia</i>	Ghumachi	Papilionaceae
73.	<i>Quisqualis indica</i>	Madhumalti	Combretaceae
74.	<i>Rungia repens</i>		Acanthaceae
75.	<i>Ruellia prostrata</i>		Acanthaceae
76.	<i>Ruellia tuberosa</i>		Acanthaceae
77.	<i>Russelia coccinea</i>		Sarphulariaceae
78.	<i>Rhynchosia minima</i>		Leguminosae

79.	<i>Scoparia dulcis</i>	Vishnujadi	Scrophulariaceae
80.	<i>Sida acuta</i>		Malvaceae
81.	<i>Sida cordifolia</i>	Atibala	Malvaceae
82.	<i>Sonchus arvensis</i>		Compositae
83.	<i>Solanum nigrum</i>	Makoi	Solanaceae
84.	<i>Solanum xanthocarpum</i>	Bhaskatia	Solanaceae
85.	<i>Tridax procumbens</i>		Compositae
86.	<i>Trichodesma zeylanicum</i>		Boraginaceae
87.	<i>Trichosanthes palmate</i>		Cucurbitaceae
88.	<i>Vandellia bracteata</i>		Scrophulariaceae
89.	<i>Verbena Sps.</i>		Verbenaceae
90.	<i>Vernonia cinerea</i>		Compositae
91.	<i>Xanthium strumarium</i>	Gokhru	Compositae
92.	<i>Zornia gibbosa</i>		Leguminosae
93.	<i>Tinospora cordifolia</i>	Giloi	Menispermaceae
94.	<i>Commelina paludosa</i>		Commelinaceae
95.	<i>Commelina suffruticosa</i>		Commelinaceae

3. Grasses

S.No.	Botanical Name	Family Name
1.	<i>Bulbostylis barbata</i>	Cyperaceae
2.	<i>Cyperus alopecuroides</i>	Cyperaceae
3.	<i>Cyperus brevifolius</i>	Cyperaceae
4.	<i>Cyperus castaneus</i>	Cyperaceae

5.	<i>Cyprus compressus</i>	Cypreceacea
6.	<i>Cyprus corymbosus</i>	Cypreceacea
7.	<i>Cyprus cuspidatus</i>	Cypreceacea
8.	<i>Cyprus distans</i>	Cypreceacea
9.	<i>Cyprus iria</i>	Cypreceacea
10.	<i>Cyperus kyllingia</i>	Cypreceacea
11.	<i>Cyprus pilosus</i>	Cypreceacea
12.	<i>Scirpus articulatus</i>	Cypreceacea
13.	<i>Scirpus squarrosus</i>	Cypreceacea
14.	<i>Alloteropsi cimicina</i>	Poaceae
15.	<i>Bothriochola pertusa</i>	Poaceae
16.	<i>Echinochloes colonum</i>	Poaceae
17.	<i>Oplismenus burmanni</i>	Poaceae

Faunal Diversity of the Campus:

The faunal diversity consists of both invertebrates and vertebrates. Invertebrates have occupied every ecological niche. Vertebrates depend on invertebrates for food. It is very essential to record their existence for balance of nature. Presence of vertebrates and invertebrates were simply noted by sighting. The faunal diversity sighted and observed at different time interval is depicted in

S.No.	Common Name	Scientific Name
1.	Birds	Acridotheres tristis (Common myna); Pycnonotus cafer (Redvented Bulbul), Dicrurus Macrocerus (Black Drongo), Sparrow (Passeridae Spp.) House Crow(Corvus Splendens)

2.	Butterflies	Hasora chromus; Hasora taminatus; Hasora vitta; Badamia exclamationis; Burara jaina; Hasora badra; Suastus gremius.
3.	Insects	Onitis, Phalops, Chironitis, Gymnopleurus Parvus,
4.	Spiders	Artema Atlanta; Hersilia savignyi; leucauge decorate; Nephila pilipes
5.	Reptile	Wall Lizard(Hemidactylus Frenatus), Calotes Versicolor
6.	Amphibia	Tree Frog (Polypedates Maculatus), Indian Toad (Duttaphrynus Melanostictus)
7.	Mammals	Bat(Chiroptera Spp.), Squirrel (Funambulus)

College Campus View



Eco friendly Green Campus



Rain water Harvesting Unit established in College campus





Rain water harvesting system

Plastic free Green and clean Campus





Using Separate Dustbins for Bio-Degradable and Non-Bio degradable waste



Composting Unit inside the College Campus

A handwritten signature in black ink, located to the right of the caption.