



GOVT. COLLEGE BISHRAMPUR

DIST. SURAJPUR, CHHATTISGARH - 497226

College code: 3503

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Bishrampur, Dist. Surajpur

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CERTIFICATE

This is to certify that Green/Environment Audit at Govt. College Bishrampur, Dist. Surajpur - 497226 was conduct on date

The institue has submitted necessary data and credential for scrutiny. It is found the college is trying its best to reduce pollution and carbon emission. The college also has 100% rain water harvesting system to recharge underground water level.

Date:

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ASEEM KERKETTA

Deptt. of Biotechnology
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CONTENTS

1. Introduction
2. Audit objectives & scope
3. Audit participants
4. Green Audit Findings
 - 4.1. Good daylight Design & Ventilation
 - 4.2. Water Efficiency
 - 4.3. Waste water management
 - 4.4. Indoor air quality
 - 4.5. Solid waste management
 - 4.6. Green Belt
 - 4.7. Green initiatives
 - 4.8. Energy efficiency
5. Green/Environmental audit checklist
6. Recommendations Annexure 1: List of Plants

Introduction

Govt. College Bishrampur, Surajpur was established in 2007-2008. The college has more than 483 students enrolled in various Academics year. It is affiliated to the University of Sant Gahira Guru. It has 09 faculty members and 06 non-teaching & other staff.

The college comprises 3 departments offering 12 undergraduate programmes. The college offers various courses listed below.

Undergraduate Courses

B.com - Programmes

B.A - English

B.A - History

B.A - Hindi

B.A - Political Science

B.A - Economics

B.A - Geography

BSc - Mathematics

BSc – Botany

BSc - Physics

BSc – Chemistry

BSc - Zoology

Objectives and Scope

- The broad aims/benefits of the eco-auditing system would be Environmental education through a systematic environmental management approach.
- Improving environmental standards Benchmarking for environmental protection initiatives
- Sustainable use of natural resources on the campus.
- Financial savings through a reduction in resource use
- Development of ownership, and personal and social responsibility for the College campus and its environment.
- Enhancement of College profile Developing an environmental ethic and value systems in young people.

A) Green Programs (Green Initiatives)

A.1. Good Daylight Design and Ventilation

a) Classrooms, Laboratories, offices, library, seminar hall etc.

Have high ceiling, wide doors and large windows

b) Building is designed in such a way that corridors and classrooms receive ample sunlight. Curtains are provided for laboratory windows to avoid glare. Nature light in the classrooms were about 70-85 lux.

c) Ventilation in classrooms is facilitated by windows and fans. Cross ventilation is facilitated due to large windows on the sides of some classrooms.

4. Green Audit Findings

For Green Audit following major areas (including their sub-sections) were covered and compliance/initiatives under these areas were verified/validated.

- a) Good Daylight Design and ventilation
- b) Water Efficiency
- c) Wastewater Management
- d) Indoor Air Quality
- e) Energy Management
- f) Solid Waste Management
- g) Green Belt
- h) Green Programs (Green Initiatives)

4.1. Good Daylight Design and Ventilation

a) Classrooms, laboratories, offices, library, seminar hall etc. Have high ceiling, wide doors and large windows.

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4.2 Water Efficiency

- a) Major water source for the college is borewell and top water. The college also has one borewell in the campus which is currently used water withdrawal. As informed by college's water management team, daily water consumption for the entire campus when in full operation is 20 KL, which includes 15 KL consumption in the academic area and 05 KL for gardening.
- b) Additionally, 4 tanks of 1000 per ltr capacity each are installed in the campus to provide inlet water to 10-12L day RO system. Water from RO is sent to drinking water.
- c) 2 water coolers fitted with RO purifiers are provided in college building as a source of safe drinking water.
- d) Dry and wet mopping is practiced for floor cleaning. Floors are mopped once a day. College has appointed a third-party contractor.



4.3 Wastewater Management

- a) Wastewater is mainly generated from washing, toilet, flushing, laboratories. Total 4 washrooms are provided in the college building (2 washrooms on each floor).
- b) Currently, sanitary wastewater generated is sent to septic tank.

4.4. Indoor Air Quality

Indoor Air Quality (IAQ) refers to the air within & around buildings and structures, it relates to the health and comfort of building occupants. Common indoor pollutants are listed as below:

- Carbon monoxide - Source of carbon monoxide are incomplete combustion of fossil fuels.
 - Volatile organic compounds (VOCs) - VOCs are emitted by paints and lacquers, paint strippers, pesticides, office equipment such as copiers and printers, correction fluids and carbonless copy paper, graphics and craft materials including glues and adhesives, permanent markers and photographic solutions etc.
 - Carbon dioxide - Due to human respiration
 - Particulate matter - Due to construction and maintenance activities, vehicular pollution
 - Nitrogen Oxides - Due to vehicular pollution
- a) Science laboratories and liquefied petroleum gas (LPG), a clean fuel.

b) In classrooms, the mode of ventilation is natural draft (through windows) and is enhanced by fans. Large windows and cross ventilation are observed in corridors.

c) green belts have been set up in the campus area

4.5. Solid Waste Management

For the solid waste disposal many awareness and cleanliness drives have been carried out by NSS volunteers (under the Swachh Bharat Mission Campaign) in the campus. As a result, our campus becomes litter free. Dustbins for collection of waste are placed at certain places and rooms. Waste from the college is collected to a large waste container place outside the building in the campus from where waste is collected by the municipal workers for disposal and treatment.



4.6. Green Belt

- a) The college campus has 1 Botanical Garden. Each student planted a medicinal plant in the garden. The botanical garden has different sections in which specific types of plants are planted concerning their medicinal importance. The college has 30 varieties of plants, 10 trees, shrubs, and 30 potted ones. A list of a few plants present on the campus is given in Annexure 1. Plantation improves aesthetics and helps as a buffer in reducing noise levels and maintaining the temperature of the area.
- b) As per the findings of the internal green audit conducted by college, large trees include gooler (ficus racemose), Ashok (Saraca asoca), Mango (Mangifera indica), Bael (Aegle marmelos), Gulmohar (Delonix regia), Neem (Azadirachta indica) etc. Few trees were identified and confirmed during the virtual tour.
- c) The college has indoor plants in the building. Indoor plants have an aesthetic appearance as well as health benefits.
- d) All the plants in the college campus have been given a QR code,





4.7. Green Initiatives

Due to minimum consideration for environment & sustainability, the world is facing problems of ozone depletion, climate change, water scarcity, and sustainable resource management. The college organizes guest lectures on environmental conservation, biodiversity, etc. every year.

College has demonstrated consistent commitment towards nature and the environment for the last 5 years. These National Service Scheme (NSS) of the college undertakes projects for environment, rural development, education awareness, healthcare etc. NSS organizes various activities like cleanliness drives, tree plantation, seminars, and workshops to increase awareness and sensitivity among students and faculty.



4.8. Energy efficiency (Electricity)

a) Common electricity meter is provided for the entire campus. Electricity is provided by Chhattisgarh State Power Distribution Company Limited. The areas of major consumption of electricity are:

S N	NAME OF APPLIANCES	CAPACITY OF APPLIANCE IN WATTS	CONNECTED QTY	QTY IN SERVICE	TOTAL WATTS(W)	Hrs/day	WH
1	Ceiling fans	60	128	128	7680	2	15360
2	Tube Lights	25	120	120	3000	2	6000
3	Cooler	250	3	3	450	2	900
4	Water Cooler	100	3	3	300	4	1200
5	Exhaust Fan	50	7	7	350	1	350
6	Computer	80	14	14	1120	4	4480
7	Printer	600	4	4	2400	1.5	3600
8	Water Pump	600	1	1	600	1	600
9	Sound system	50	1	1	50	0.5	25
10	Photocopy machine	800	2	2	1600	3	4800
11	LED bulb	9	79	79	711	2	1422
12	invertor	400	1	1	400	2	800
13	Induction	600	1	1	600	1	600
14	CCTV camera	5	32	32	160	24	3840
15	Venting machine	200	3	3	600	0.5	300
16	Disposes machine	200	2	2	400	0.5	200
17	Projector	50	2	2	100	1	100
18	Slide projector	50	1	0	0	0	0
19	QR CODE scanner	1	1	1	1	1	1
						Total(wh)	44578
						Total(kwh)	44.578

b) Conventional tube lights. LEDs & fans are installed in classrooms, laboratories and library. For efficient energy consumption and saving on electric bill. College has initiated the process of replacing incandescent bulbs and tube lights with LEDs.

c) All computers have LED screens; computers are shut down by turning off the main switch when not in use.

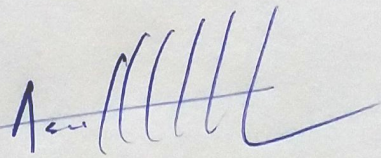
d) Common switches are provided for some tube-lights & fans. To avoid wastage of energy due to common area illumination, it is recommended to have separate switches.

e) Tube- lights and fans are switched off by students and staff when not in use

Annexure 1: List of Plants

Sl.No.	Plant Name	Botanical Name	Family
1.	Tulsi	Ocimum Sanctum	Labiata
2.	Neem	Turnalia Cnebula	Cambretacene
3.	Aloevera	Aloevera	Liliaceae
4.	Mahua	Madhuca indica	Sepotaceae
5.	Khajoor	Phoenix Sylvestris	Palmeceae
6.	Lily	Lillium bulviferum	Liliacase
7.	Genda	Tagetes erecta	Asteraceae
8.	Dahila	Dahlia pinnata	Asteraceae
9.	Ashok	Saraca indica	Casalpinoidac
10.	Amrud	Psidium guyaya	Myrtaceae
11.	Bel	Aegle Mormelos	Rutaceae
12.	Areca palm	Dypsis lutescens	Palmae
13.	Mango	Mangifera indica	Anacar dinceae
14.	Gudhal	Hibiscus Rosa sinensis	Malvaceae
15.	Shake Plant	Dracaena trifasciata	As paragaceae
16.	Sada bohar	Catharanthus roseus	Apocynaceae
17.	Ber	Zizypu jujube	Rhamnaceae
18.	Cycas	Cycas ciricinales	Cycadaceae
19.	Khamhar	Gmelina arborea	Verbenaceae
20.	Christmas tree	Araucaria hetrophylla	Araucariaceae
21.	Money Plant	Epipremnum aureum	Araceae
22.	Bougainvillea	Bougainvillea glabra	Nyctaginaceae
23.	Pathar Chatta	Bryophyllum pinnata	Crassulaceae
24.	Rose	Genus Rosa	Rosaceae
25.	Spider plant	Chlorophytum Comosum	Asparagaceae
26.	Cactus	Caryophyllales	Cactaceae
27.	Thuja	Arboneitae	Cupressaceae
28.	Dracaena	Dracaena	Asparagaceae
29.	Caladium bulbs	caladium bicolor	aroideae
30.	purslane	portulaca oleracea	portulacaceae
31.	bougainvillea	bougainvillea	nyctaginaceae

Sl.No.	Plant Name	Botanical Name	Family
32.	mogra	jashminum sambac	oleaceae
33.	canary pygmy plam	phoenix roebelenii	arecuaceae
34.	crepe jasmine	tabernaemontana divaricata	apocynaceae
35.	dracaena fragrans	dracaena jragraus	asparagaceae
36.	caladium rospberry	caladium hortulanum	araceae
37.	ming arailias	polyscias	araliaceae
38.	dwarf umbrella tree	schefflera arboricola	araliaceae
39.	scarlet sage	salvia	lamiaceae
40.	dumb canes	dieffenbachia	araceae
41.	pentalinon luteum	neriandra suberectus	apocynaceae
42.	kalanchoe plant	kalanchoe blossfeldiana	crassalaceae
43.	madagascar periwinkle	catharanthus roseus	apocynaceae
44.	crotons	cadiaeu veriegatum	euphorbiaceae
45.	plumeria pudica	plumeria pudica	apocynaceae
46.	purslane	portulaca oleracea	portulacaceae
47.	jamun tree	syzygium cumini	myrtaceae
48.	treiadica	triadica sebifera	euphorbiaceae
49.	jungle jelebi	pithecellobium dulce	fabaceae
50.	karanj tree	milletta pinnate	fabaceae
51.	khamhar	gmelina arborea	verbenaceae
Total number of plants			51

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