

GREEN AUDIT REPORT BELDA COLLEGE 2023-2024



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GREEN AUDIT REPORT, BELDA COLLEGE—2023-24

Executive Summary:

With the rapid urbanization and development at local, regional and global level, several environmental and ecological crises have emerged out. On this context it becomes essential to adopt the system of the Green Campus for the institute which will lead for sustainable development. The purpose of the audit was to ensure that the practices followed in the campus are in accordance with the Green Policy adopted by the institution. The methodology was included: questionnaire, physical inspection of the campus, observation and review of the documentation, interviewing and data analysis, measurements and recommendations. It works on the Water Conservation, Tree Plantation, Waste Management, Paperless Work, Alternative Energy and Mapping of Biodiversity. The specific objectives of the audit were to evaluate the adequacy of the management control framework of environment.

Introduction:

Green Audit can be defined as systematic identification, quantification, recording, reporting and analysis of components of environmental diversity. The 'Green Audit' aims to analyse 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.

Green Audit is a process of systematic identification, quantification, recording, reporting and analysis of components of environmental diversity. It aims to analyze environmental practices inside and outside of the college campus, which will have an impact on the eco-friendly ambience. Green audit is a useful tool for a college to determine how they are using the energy or water and 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. On this background it becomes essential to adopt the system of the Green Campus for the institutes which will lead for sustainable development and at the same time reduce the amount of Co_2 from the environment.

The National Assessment and Accreditation Council (NAAC), New Delhi has made it mandatory that all Higher Educational Institutions should submit an annual Green Audit Report. Moreover, it is part of Corporate Social Responsibility of the Higher Educational Institutions to ensure that they contribute towards the reduction of global warming through Carbon Footprint reduction measures.

About the College:

Belda College, a pioneering institution committed for dissemination of higher education in the district of Paschim Medinipur of West Bengal. The glorious educational history and academic tradition developed by the college has so far attracted students inhabiting a basically agrarian economically disadvantaged region of West Bengal to join the institution for higher education. Since the inception of Belda College, the institution has been tirelessly functioning to realize the vision of its legendary founder secretary, Mr. Kedarnath Das of empowering the socially and economically marginalized classes of a backward district chiefly populated by the tribal, offering them scopes for quality education and helping them achieve excellence in higher education. Although initially the College was affiliated to Calcutta University, subsequently it got affiliated to Vidyasagar University in 1985 and the college also enlisted under UGC 2(f) and 12 (B). Through innovations and adoption of best practices, the institution has been striving hard to meet the demands of quality higher education which in its turn would lead to the empowerment of its student community, extension activities and sustainable socioeconomic growth of the adjoining underdeveloped territory. In its fervor for quality evaluation, the College accredited by NAAC in the Cycle 1 with 'B' level in 2006, in the 2nd Cycle at 'B' level with a CGPA of 2.75 in 2015 and again reaccredited in the 3rd Cycle at 'A+' level with a CGPA of 3.49 in 2023. In the Post-Accreditation period, so many measures have been undertaken to improve quality in every aspect. The College is now prepared for undergoing Cycle 4 of Assessment and Accreditation to get itself reaccredited and serve its stakeholders better.

Since its inception in 1963, the activities of the college have always been fueled by the need to empower the weaker rural community of the adjoining areas through education. The college has been offering General Degree programmes in B.A., B.Sc., B.Com., BCA., BMLT, PG courses in disciplines like English, Bengali, Geography, Physics, Chemistry and Mathematics. Belda College also offers Ph.D. programme on Science from 2022. The college is co-educational, with large student strengths in most courses.

Belda College, being a Multi faculty institution, offers a variety of subjects, which are taught by competent faculty members in a peaceful academic environment, along with providing ample number of educational resources. The vision of Belda College is to transform the institution into a center of excellence in the arena of higher education and contribute to the inclusive development of the country by generating quality human resources in a basically rural and underdeveloped region of West Bengal.

Objectives:

- 1. To document the floral and faunal diversity of the college.
- 2. To estimate the Energy requirements of the college.
- 3. To document the Waste disposal system.
- 4. To document the ambient environmental condition of the college.
- 5. To introduce and aware students to real concerns of environment and its sustainability.
- 6. To bring out a status report on environmental compliance.
- 7. To secure the environment and cut down the threats.

MEMBERS OF THE INTERNAL & EXTERNAL GREEN AUDIT TEAM OF BELDA COLLEGE

the external member of the Green audit team.

The following are the internal members of the Green Audit Team.

SI. No.	Name	Designation
1	Dr. Chandrasekhar Hajra.	Principal, Convener & Chairperson.
2	Dr. Rakhi Dey Sharma	IQAC Coordinator, Asst. Prof., Dept. of Physiology, Belda College.
3	Dr. Sumit Giri	IQAC Member, Dept. of Zoology, Belda College.
4	Dr. Subrata Jana	Asst. Prof., Dept. of Geography, Belda College.

SI. No.	Name	Designation
5	Dr. Subhajit Paul	Asst. Prof., Dept. of Botany, Belda College.
6	Dr. Arnab Ghosh	Asst. Prof. Dept. of Physics, Belda College.
7	Dr. Milan Shyamal	Asst. Prof. Department of Chemistry, Belda College.

External academic audit team members

Sl. No.	Name	Designation
1.	Dr. Sudipta Kumar Ghorai	Associate Professor. Dept. of
		Zoology, Egra SSB College,
		Purba Medinipur.
2.	Dr. Arjun Patra	Associate Professor & HOD.
		Dept. of Botany, P.K. College,
		Contai, Purba Medinipur.

The methodology adopted to conduct the Green Audit of the Institution had the following components.

a) The Pre-Audit Stage:

In the pre-audit stage, meetings provided opportunities to discuss the feasibility of such an audit. It also provided the team with basic data required to start the process, prior to the onsite inspection by the team. The audit procedure and audit plan was handed over at this meeting and discussed in advance of the audit itself. The Audit team was also approved at this meeting. The audit protocol and audit plan were handed over at this meeting and discussed in advance of the audit itself.

2023-2024

The Management of the college showed commitment towards the green audit and its outcome, during the preaudit meeting. They were ready to encourage all green activities were willing to formulate policies based on green auditing report.

b) The Audit Stage:

The Audit Stage covering the following areas during Green Audit Process:

Onsite Visit:

The Green Audit Assessment Team started the audit at the Institution on 02.05.2024 which was completed in 3 days. This audit also was done for the last four years respectively. Greenhouse gas emissions and carbon footprint reduction through adoption of green energy and energy-efficient measures were assessed. The key focus was on assessing the status of the green cover of the Institution.

Group Discussion:

The target group included the Eco- Club members, staff members and student. The discussion was focused on identifying the idea and awareness towards environmental issues at the institutional. The discussion revolved around three key questions:

- 1. Do they consider themselves eco-conscious?
- 2. Do they consider the Institution to be eco-friendly?
- 3. What do they think are the issues that need to be given top priority?

Office/Building Survey:

Information on office-based environmental impacts like built-up area, utility bills, energy-saving devices and IT equipment was collected. This information was added to the carbon footprint data, generating a clear picture of the Institution's annual greenhouse gas emissions.

Data collected from the following sources to calculate carbon footprint emission and reduction. The floristic richness of the campus – total number of plants, trees, shrubs – was estimated. The impact of alternate green energy production and consumption to reduce fossil fuel-based energy was assessed, e.g. the number of CFL, LED, tube lights and electronic chokes was counted.

c) The Post Audit Stage:

The post-audit stage ensures formulation of Draft findings and sent to management. Since the audit is done internally, it was important to ensure management approval for the draft. After getting draft approval, the audit team went for final report formulation.

AUDIT FRAMEWORK AND DETAILED FINDINGS:

The following audit framework is used for conducting Green Audit in 2023-24. The framework also lists the findings and observations for every criterion.

Control Objective	Control(S)	Audit Observation
WATER	Repair sources of water leakage,	Regular checking and maintenance of
MANAGEMENT	such as dripping taps.	pipelines are done to control water
		wastage.
	Minimize wastage of water and use	Yes, the college has aqua guard filters
	of electricity during water filtration	installed in collage corridors, canteen
	process, if used, such as Aqua guard	and also in all the departments.
	filter.	
	Use an efficient and hygienic water	The institute has 14,500 Lit water
	storage mechanism to minimize the	storage capacities to ensure water use.
	loss of water during storage.	The details are given in Annexure 1.
		Moreover, the water of the tanks is
		released and cleaned at regular
		intervals i.e. in each 15 days to
		maintain water hygiene of the tank.
	Encourage to decrease excess water	Regarding nominal use of water in the
	usage.	college placards are set up in the
		visible point of the college premise.
	Rainwater Harvesting	A 10-sq.ft. area receives 1 litre of
		water if the rainfall is 1 mm. The
		average rainfall per year is 1,200 mm

		in the district. Hence, the total volume of water received on the 1,00,000 sq.ft. area of the terrace (1,200 mm \times 1,00,000 sq.ft.) = 12,00,00, 000 litres per year. If this is converted into metric tonnes, it is 1,20, 000 metric tonnes. Management is planning to setup another two more-rainwater harvesting Tank.
	Install water recycling mechanism.	Yet, no such mechanism is adopted.
ENERGY MANAGEMENT	Appreciate that it is preferable to purchase electricity from a company that invests in new sources of renewable and carbon-neutral electricity	The college does not have any choice other than WBSEB for electric supply. The college also has 02 eco- friendly generators for the supply of emergency electricity to save our ecosystem. The details are given in <i>Annexure 2</i> .
	Look into the possibility of on-site micro-generation of renewable electricity.	44 solar panels, each measuring 4×3 ft, were installed on the terrace of the college building where light intensity is very high. The 44 panels produce electricity to the tune of $12kw \times 300$ days = 3600kw, which is equivalent to 3600 units of electricity per year.
	Give preference to the most energy efficient and environmentally sound appliances available, this includes	The college is using a few CFL and more LED lights as much as practicable. Institute purchases "Star

energy-saving light bulbs,	Rated" electrical appliances (Refer to
refrigerator, A.C machine, water	Annexure 3) such as refrigerator, A.C
cooler, monitors, printers, xerox	machine, water cooler etc., to
machine etc.	minimize the energy consumption and
	maintain carbon neutrality of the
	environment. Institute has proposed to
	replace most of the resistance
	regulator, CRT monitors and DOT
	matrix printers by electronic
	regulators, LCD monitors and DeskJet
	/Laser printers, respectively. Institute
	has already installed 140 computers
	with LCD & LED monitors (i.e. 100%
	of CRT monitors are replaced by
	LCD/ LED monitors). Moreover, four
	Xerox machines that are operated on
	low power consumption are installed.
	The details of electrical appliance i.e.
	AC, Freeze, and Water Cooler are
	given in Annexure 3 (Table no 3, 4,
	& 5).
Encourage staff, students and	Yes, the college has put several
conference guests to save energy	posters and reminder notes in
through visible reminders,	classrooms and other relevant places
incentives and information to	to turn off electric appliances when
increase awareness. This	not in use.
particularly concerns turning off	
electrical appliances when not in use	
Monitor and understand the	The college tries to put the main
importance of different sources of	switch off when there is no need of
college energy consumption.	electricity. Moreover, at SIT and

	Ensures that all electronic and electrical equipments, such as	Conference hall at basement, automatic switches are installed that control the switches (i.e. ON/OFF) of the light depending on the occupancy level in the hall. It is practiced.
	not in use and is generally configured in power saving mode when such option is available	
GREEN CAMPUS	Establish a Garden in the campus	Collage has 1192 (726 Full Grown and 466 Semi-Grown) trees covering all the sides of the Institute boundary and existing number of shrubby plants are 3530 (Approx) in 2023-2024
	Encourage the faculties and students to plant trees in the garden.	academic year.The college celebrates "BanaMahotsab", an annual tree plantationprogram in the campus where studentsand teachers plant trees in the campus.
	Minimize the use of fertilizers and pesticides in college grounds, opting for the use of vermicompost produced on site wherever possible.	Moderate amounts of bio-fertilizers are used in the college.
	Ensure that all cleaning products used by college staff have a minimal detrimental impact on the environment, i.e. are biodegradable and non-toxic	Negligible amounts of washing liquids are used in the college and all the toilet cleaners are eco-friendly.

	Dispose the glassware waste and	It is to be noted that there is no
	chemical waste generated from the	harmful waste water / Nontoxic
	laboratories in a scientific manner.	chemicals from chemistry lab is
		emitted during the experimentation.
		Most of the waste generated is water-
		soluble and ultimately disposed
		through normal sewage system,
		diluted largely so biomagnifications is
		negligent. However, the ceramic
		materials like Glass which are broken
		during the experimentation are stored
		in a bucked and are sold to vendors
		for recycling.
WASTE	Make full use of all recycling	No, the college does not have any
MANAGEMENT	facilities from student's canteen and	such recycling device to carry on the
	private suppliers, including glass,	procedure. However, glass, cans,
	cans, white coloured and brown	white coloured and brown paper,
	paper, batteries, print cartridges,	batteries, print cartridges, cardboard
	cardboard and furniture.	and furniture are sold to vendors for
		recycling.
	Recycle or safely dispose of dry	All dry wastes (naper metal glass
	wastes, computers and electrical	other dry waste e-waste etc) are
	appliances.	separated in different bins in the
		college and resell to the local vendor
		Moreover a few outdated computers
		are gifted to local schools.
	Provide sufficient, accessible and	The college has set up 66 (Sixty-Six)
	well-publicized collection points for	separate bins to ensure proper
	recyclable waste, with responsibility	segregation and collection of the
	for recycling clearly allocated.	various wastes. Those are (a)

	biodegradable (b) non-bio degradable
	(c) hazarders. The responsibility of
	recyclable waste is however still not
	taken up.
Make specific arrangements for	The college organized several seminar
events, such as community events,	and community program by the
seminars and conferences in order to	departments to ensure both
both arise consciousness among	consciousness and awareness among
students and others and also to	students and community members.
minimize the waste produced and	Moreover, faculty members are sent
maximize what is recycled/reused.	to various Seminars related to
	environmental awareness. The details
	are given in <i>Annexure 4</i> .
Dispose all waste, whether solid or	Yes, the college is disposing the all
otherwise, in a scientific manner	wastes, whether solid or otherwise, in
and ensure that it is not released	a scientific manner and ensure that it
directly to the environment.	is not released directly to the
	environment.
To recycle and reuse of kitchen	Kitchen wastes and garden wastes
wastes (from canteen and hostels)	commonly are recycled to form
and garden waste.	nutrient rich quality organic manure
	for agricultural purpose.
Ensure use of eco-friendly transport	About 90% of the students and
option.	teaching and non-teaching staffs of
	the college use public transport as the
	main mode of transport.
Promote environmental awareness	Compulsory Environment & Ecology
as a part of course work in various	paper of 100 marks in the University
curricular areas, independent	Syllabus for all the students of all
research projects, and community	streams to develop Environmental
service.	Awareness.

		The institute also celebrates
		PARISHKARA (Based on Swachh
		Bharat Abhiyan). The detail is given
		in Annexure 4.
CARBON FOOTPRINT	Reduce the rate at which the	College does not directly or indirectly
	College contributes to the depletion	participate in depletion and
	and degradation of natural resources	degradation of natural resources.
	Create awareness of environmental	Seminars and awareness programmes
	sustainability and takes actions to	are conducted periodically on nature
	ensure environmental sustainability.	and natural resources. The detail is
		given in Annexure 4.
	Conduct environmental	Yes, the college places several posters
	awareness posters and seminars as	and placards in the campus to ensure
	a part of the programme.	that environmental awareness is
		conducted. Also, seminars are
		organized on environmental theme in
		the college.
	Carbon footprint or emissions of the	Calculating carbon footprint or the
	campus.	carbon emissions to determine how
		carbon emissions to determine now
		best to approach minimizing impact
		on global warming.

Floral diversity:

There are 78 families, 94 genera and 132 species of trees, shrubs, herbs (including potted plants) and climbers in the campus.

- I. 62 species of trees
- II. 31 species of shrubs
- III. 22 species of herbs

IV. 17 species of climbers (including creepers)

Sl No.	Particulars of flora	Number		
Ι	Full-grown trees (above 10 years),726			
II	Semi-grown trees (below 10 years) 466			
III	IIIBushy Plants (including floriculture plants)3530			
IV	Lawn	97,539 sq. ft		

1. Plants in Belda College Campus.

Serial	Name	Family	Habit	Habitat	Duration
No.					
1.	Cordyline terminalis	Asparagaceae	Herb	Terrestrial	Perennial
2.	Dieffenbachia jupiter	Araceae	Herb	Terrestrial	Perennial
3.	Heliconia sp	Heliconiaceae	Herb	Terrestrial	Perennial
4.	Punica granatum	Lythraceae	Shrub	Terrestrial	Perennial
5.	Duranta repens	Verbenaceae	Shrub	Terrestrial	Perennial
6.	Dracaena sp.	Asparagaceae	Shrub	Terrestrial	Perennial
7.	Euphorbia mili	Euphorbiaceae	Shrub	Terrestrial	Perennial
8.	Codiaeum variegatum Elite	Euphorbiaceae	Shrub	Terrestrial	Perennial
9.	Codiaeum variegatum Glory	Euphorbiaceae	Shrub	Terrestrial	Perennial
10.	Codiaeum variegatum Gold Dust	Euphorbiaceae	Shrub	Terrestrial	Perennial
11.	Codiaeum variegatum Gold Star	Euphorbiaceae	Shrub	Terrestrial	Perennial
12.	Codiaeum variegatum Punctatum aureum	Euphorbiaceae	Shrub	Terrestrial	Perennial
13.	Codiaeum variegatum Sanderi	Euphorbiaceae	Shrub	Terrestrial	Perennial
14.	Dracaena marginata tricolor	Asparagaceae	Shrub	Terrestrial	Perennial
15.	Mussaenda erythrophylla	Rubiaceae	Shrub	Terrestrial	Perennial
16.	Alstonia scholaris	Apocynaceae	Tree	Terrestrial	Perennial
17.	Tectona grandis	Verbenaceae	Tree	Terrestrial	Perennial
18.	Neolamarckia cadamba	Rubiaceae	Tree	Terrestrial	Perennial

19.	Acacia auriculiformis	Mimosaceae	Tree	Terrestrial	Perennial
20.	Swetenia mahogoni	Meliaceae	Tree	Terrestrial	Perennial
21.	Annona squamosa	Annonaceae	Tree	Terrestrial	Perennial
22.	Aegle marmelos	Rutaceae	Tree	Terrestrial	Perennial
23.	Swetenia macrophylla	Meliaceae	Tree	Terrestrial	Perennial
24.	Bridelia retusa	Euphorbiaceae	Tree	Terrestrial	Perennial
25.	Polyalthia longifolia	Annonaceae	Tree	Terrestrial	Perennial
26.	Ficus religiosa	Moraceae	Tree	Terrestrial	Perennial
27.	Anacardium occidentale	Anacardiaceae	Tree	Terrestrial	Perennial
28.	Cocos nucifera	Arecaceae	Tree	Terrestrial	Perennial
29.	Azadirachta indica	Meliaceae	Tree	Terrestrial	Perennial
30.	Tabernemontana coronaria	Apocynaceae	Tree	Terrestrial	Perennial
31.	Mangifera indica	Anacardiaceae	Tree	Terrestrial	Perennial
32.	Tamarindus indica	Fabaceae	Tree	Terrestrial	Perennial
33.	Dalbergia lanceolaria	Fabaceae	Tree	Terrestrial	Perennial
34.	Eucalyptus tereticornis	Myrtaceae	Tree	Terrestrial	Perennial
35.	Emblica officinalis	Euphorbiaceae	Tree	Terrestrial	Perennial
36.	Ziziphus zuzuba	Rhamnaceae	Tree	Terrestrial	Perennial
37.	Litchi chinensis	Sapindaceae	Tree	Terrestrial	Perennial
38.	Madhuca indica	Sapotaceae	Tree	Terrestrial	Perennial
39.	Mimusops elengi	Sapotaceae	Tree	Terrestrial	Perennial
40.	Psidium guajava	Myrtaceae	Tree	Terrestrial	Perennial
41.	Citrus medica	Rutaceae	Tree	Terrestrial	Perennial
42.	Monilcara zapota	Sapotaceae	Tree	Terrestrial	Perennial
43.	Ficus hispida	Moraceae	Tree	Terrestrial	Perennial
44.	Streblus asper	Moraceae	Tree	Terrestrial	Perennial
45.	Artocarpus heterophyllus	Moraceae	Tree	Terrestrial	Perennial
46.	Ailanthus excelsa	Simaroubaceae	Tree	Terrestrial	Perennial
47.	Dypsis lutescens	Arecaceae	Tree	Terrestrial	Perennial

Serial	Name	Family	Habit	Habitat	Duration
No.					
1.	Wedelia trilobata	Asteraceae	Herb	Terrestrial	Annual
2.	Centella asiatica	Apiaceae	Herb	Terrestrial	Annual
3.	Colocasia esculenta	Araceae	Herb	Terrestrial	Perennial
4.	Curcuma longa	Zingiberaceae	Herb	Terrestrial	Perennial
5.	Alocacia indica	Araceae	Herb	Terrestrial	Perennial
6.	Costus speciosus	Costaceae	Herb	Terrestrial	Perennial
7.	Aloe vera	Asphodelaceae	Herb	Terrestrial	Perennial
8.	Desmodium gyrans	Fabaceae	Herb	Terrestrial	Annual
9.	Cyperus rotundus	Cyperaceae	Herb	Aquatic	Annual
10.	Hygrophila spinosa	Acanthaceae	Herb	Aquatic	Annual
11.	Cymbopogon	Poaceae	Herb	Terrestrial	Perennial
	citrates				
12.	Aerva lanata	Amaranthaceae	Herb	Terrestrial	Annual
13.	Capsicum frutescens	Solanacea	Herb	Terrestrial	Annual
14.	Barleria lupulina	Acanthaceae	Herb	Terrestrial	Annual
15.	Bryophgyllum	Crassulaceae	Herb	Terrestrial	Perennial
	calycinum				
16.	Andrographis	Acanthaceae	Herb	Terrestrial	Annual
	paniculata				
17.	Ocimum sanctum	Lamiaceae	Herb	Terrestrial	Annual
18.	Bacopa monnieri	Scrophulariaceae	Herb	Aquatic	Annual
19.	Clitoria ternatea	Fabaceae	Herb-	Terrestrial	Perennial
			Climber		
20.	Paederia foetida	Rubiaceae	Herb-	Terrestrial	Perennial
			Climber		-
21.	Asparagus	Liliaceae	Herb-	Terrestrial	Perennial
	racemosus	T T 1	Climber		D 11
22.	Cissus quadrangula	Vitaceae	Herb-	Terrestrial	Perennial
•	TT • 1 • 1•		Climber		D 11
23.	Hemidesmus indicus	Asclepiadaceae	Herb-	Terrestrial	Perennial
24	T	0 1 1		T (1	D 1
24.	Ipomoea batatus	Convolvulaceae	Herb-	Terrestrial	Perennial
25	D'	D'	Limber	Transa atula 1	Denensial
25.	Piper nigrum	Piperaceae	Hero-	Terrestrial	Perennial
26	C	Agalamiadagaga	Ulark	Tomo strial	Devenuial
20.	Gymnema sylvestre	Asciepiadaceae	Hero-	rerrestriai	Perenmai
27	Onig anglig in diag	Combratagaga	Liono	Tomostrial	Domonnial
<u>21.</u> 28	Quisquaiis inaica	Solanaceae	Lialla	Terrestrial	Perennial
<u>20.</u>	A aghunh a higgei da	Furborbiagaa	Shrub	Terrestrial	Perennial
<u>29.</u> <u>30</u>	Acaiypna nispiaa	Euphorbiaceae	Shrub	Terrestrial	Perennial
50.	Juiropiia	Euphorbiaceae	SILUU	renestrial	reiemilai
	gossypijona			1	

2. Plants in Belda College Medicinal Plant Garden

31.	Hibiscus rosa-	Malvaceae	Shrub	Terrestrial	Perennial
	sinensis				
32.	Adhatoda vasica	Acanthaceae	Shrub	Terrestrial	Perennial
33.	Solanum torvum	Solanacea	Shrub	Terrestrial	Annual
34.	Murraya koenigii	Rutaceae	Shrub	Terrestrial	Perennial
35.	Ixora coccinea	Rubiaceae	Shrub	Terrestrial	Perennial
36.	Justicia gendarussa	Acanthaceae	Shrub	Terrestrial	Perennial
37.	Terminalia bellerica	Combretaceae	Tree	Terrestrial	Perennial
38.	Emblica officinalis	Euphorbiaceae	Tree	Terrestrial	Perennial
39.	Santalum album	Santalaceae	Tree	Terrestrial	Perennial
40.	Cinnamommum	Lauraceae	Tree	Terrestrial	Perennial
	tamala				
41.	Diospyros	Ebenaceae	Tree	Terrestrial	Perennial
	malabarica				
42.	Pterocarpus	Fabaceae	Tree	Terrestrial	Perennial
	marsupium				
43.	Thuja orientalis	Cupressaceae	Tree	Terrestrial	Perennial
44.	Dypsis lutescens	Arecaceae	Tree	Terrestrial	Perennial
45.	Cinnamommum	Myrtaceae	Tree	Terrestrial	Perennial
	zeylanicum				
46.	Euphorbia tirucali	Euphorbiaceae	Tree	Terrestrial	Perennial
47.	Michelia champaca	Magnoliaceae	Tree	Terrestrial	Perennial
48.	Pimenta dioica	Myrtaceae	Tree	Terrestrial	Perennial
49.	Pinus roxburghii	Pinaceae	Tree	Terrestrial	Perennial
50.	Terminalia chebula	Combretaceae	Tree	Terrestrial	Perennial

3. Plants in Belda College 'Kusum Kanan' Garden (Fountain)

Sl	Name	Family	Habit	Habitat	Duration
No.					
1.	Caladium bicolor	Araceae	Herb	Terrestrial	Perennial
2.	Ixora coccinea	Rubiaceae	Shrub	Terrestrial	Perennial
3.	Agave americana	Asparagaceae	Shrub	Terrestrial	Perennial
4.	Duranta repens	Verbenaceae	Shrub	Terrestrial	Perennial
5.	Hibiscus rosa	Malvaceae	Shrub	Terrestrial	Perennial
6	sinensis	F 1 1'	<u> </u>	T (1)	D 1
6.	Euphorbia milii	Euphorbiaceae	Shrub	Terrestrial	Perennial
7.	Rosa sp.	Rosaceae	Shrub	Terrestrial	Perennial
8.	Adenium sp.	Apocynaceae	Shrub	Terrestrial	Perennial
9.	Juniperus sp.	Cupressaceae	Tree	Terrestrial	Perennial
10.	Cycas revolute	Cycadaceae	Tree	Terrestrial	Perennial
11.	Thuja orientalis	Cupressaceae	Tree	Terrestrial	Perennial
12.	Dypsis lutescens	Arecaceae	Tree	Terrestrial	Perennial
13.	Oreodoxa regia	Arecaceae	Tree	Terrestrial	Perennial
14.	Aurocaria heterophylla	Araucariaceae	Tree	Terrestrial	Perennial

15.	Murraya paniculata	Rutaceae	Tree	Terrestrial	Perennial
16.	Carica papaya	Caricaceae	Tree	Terrestrial	Perennial
17.	Tabernemontana	Apocynaceae	Tree	Terrestrial	Perennial
	coronaria				

4. Plants in Belda College 'Malancha' Garden (near main gate)

Sl No.	Name	Family	Habit	Habitat	Duration
1.	Allamunda	Apocynaceae	Climber	Terrestrial	Perennial
	cathartica				
2.	Adenium sp.	Apocynaceae	Shrub	Terrestrial	Perennial
3.	Gardenia sp.	Rubiaceae	Shrub	Terrestrial	Perennial
4.	Gardenia sp.	Rubiaceae	Shrub	Terrestrial	Perennial
5.	Nerium odorum	Apocynaceae	Tree	Terrestrial	Perennial
6.	Plumeria rubra	Apocynaceae	Tree	Terrestrial	Perennial
7.	Ziziphus Zuzuba	Rhamnaceae	Tree	Terrestrial	Perennial
8.	Ixora arborea	Rubiaceae	Tree	Terrestrial	Perennial
9.	Lagerstroemia indica	Lythraceae	Tree	Terrestrial	Perennial
10.	Calliandra emarginata	Fabaceae	Tree	Terrestrial	Perennial
11.	Campsis	Bignoniaceae	Woody	Terrestrial	Perennial
	radicans		Climber		
12.	Aganosma	Apocynaceae	Woody	Terrestrial	Perennial
	caryophyllata		climber		

Faunal Diversity:

Belda College has wide variety of fauna which are support its rich biodiversity. The college campus is the feeding and breeding ground of the many animals. Different types of earth worm, insects (moths, butterfly, wasp, and bees), amphibia, reptilia, birds and mammals are found here and there in the college campus. There is one big, one medium and one small size pond are present under the college premises. In those ponds there have many indigenous fresh water fishes which are culture, also categorized as ornamental fishes.

Fau	Faunal Diversity			
Phy	Phylum: Annelida			
Loca	al Name	Scientific Name		
1	Kecho	Pheretimaposthuma		
2	Joke	Hirudinariasp		
Phy	lum: Arthropoda			
1	Prajapati	Papiliosp		
2	Moth	<i>Galleria</i> sp		
3	Moumachi	Apissp		
4	Jonaki	Lampyrisnoctiluca		
5	Arsola	Periplanetaamericana		
6	Vimrul	Vespa orientalis		

7	I alninra	Oecophyllasmaraadina
8	Kakrabicha	Buthussp
9	Tetulbicha	Scolopendrasp
10	Kenno	Julussp
11	Pangapal	Schistoceragregaria
12	Anopilis masa	Anopheles sp
13	Culex masa	Culexsp
14	Ades masa	Aedessp
15	Gubrepoka	Coprislunaris
16	Pharing	Orthetrumsp
17	Wepoka	<i>Odontotermessp</i>
18	Machi	Muskadomestica
19	Makarsa	Nephilasp
Phyl	um: Mollusca	
20	Sthalsamuk	Acatinafulica
21	Jalsamuk	Pilaglobosa
22	Gugli	Bellamyabengalensis
23	Jhinuk	Lamellidensmarginalis
24	Kath joke	Limaxsp
Fres	h water fishes	
1	Ruimach	Labeorohita
2	Katlamach	Catlacatla
3	Mrigelmach	Cirrhinusmrigala
4	Bata mach	Labeobata
5	Kalbose	Labeocalbasu
6	Silver carp	Hypophthalmichthysmolitrix
7	Grass carp	Ctenopharyngodonidella
8	Cyprinuscarpio	Cyprinuscarpio
9	Balkurmach	Glossogobiusgiuris
10	Magurmach	Clariasbatrachus
11	Singimach	Heteropneustesfossilis
12	Latamach	Channapunctatus
13	Chang mach	Channagachua
14	Sholmach	Channastriata
15	Koi mach	Anabasatestudineus
16	Phaloimach	Notopterusnotopterus
17	Tilapia	Oreochromismossambicus
18	Pabdamach	Ompokpabda
19	Phutimach	Puntiusticto
20	Mourlamach	Amblypharyngodonmola
21	Techoka or Bostam	Aplocheiluspanchax
	pona	
22	Kholsamach	Colisasp
23	Pankalmach	Mastacembelussp
24	Dhariamach	Esomusdanricus

25	Chandamach	Chandasp
26	Tangra	Mystussp
Class	: Amphibia	
1	Kuno bang	Duttaphrynusmelanostictus
2	Sona bang	Ranatigrina
Class	: Reptilia	
1	Loudaga	Ahaetullanasutas
2	Jaldhora	Xenochriphispiscator
3	Matiali sap	Elachistodonwestermanni
4	Jamna sap	Ptyasmucosus
5	Godi sap	Varanussp
6	Keute	Najasp
7	Tiktiki	Hemidactylusflaviviridis
8	Girgiti	Calottes versicolor
9	Kachhap	Tryonixsp
Class	: Aves	
1	Charaipakhi	Passer domesticus
2	Tuntuni	Orthotomussp
3	Satbhaya	Turdoideseaudatus
4	Doyel	Copsychussaularis
5	Bulbul	Pycnonotussp
6	Kak	Corvussplendens
7	Shalik	Acridotherestristris
8	Phinge	Dicrurousadsimilis
9	Kajalpakhi	Laniuscristatus
10	Kat thokra	Dinopiumbenga
11	Baspati	Meropsorientalis
12	Chotomachranga	Alcedoatthis
13	Sadabookmachranga	Halcyon sp
14	Lakhsmipancha	Tyto alba
15	Kuturepancha	Athenebrama
16	Kokil	Eudynamysscolopacea
17	Tia	Pisttaculasp
18	Gughu	Streptopeliachinensis
19	Paira	Columba livia
20	Dahuk	Amaurornisphooniurus
21	Bak	Ardeolagrayii
Class	: Mammalia	
1	Katbirali	Funambuluspennantii
2	Neul	Herpestesedwardsii
3	Mechobiral	Prionailurusviverrinus
4	Katas	Felischaus
5	Khaksial	Vulpesbengalensis
6	Honuman	Semnopithecus entellus
7	Chucha	Suncusmurinus

8	Indur	Bandicotabengalensis
9	Nenhtiindur	Musmusculus
10	Badhur	Pteropussp
11	Chamchika	Pipistrellus tenuis

Calculation of carbon absorption by flora:

Carbon absorption capacity of one full-grown tree = 6.8 kg CO_2 .

1. Therefore, the carbon absorption capacity of 726 full-grown trees in the campus of the Institution $(726 \times 6.8 \text{ kg CO}_2) = 4936.8 \text{ kg or } 4.93 \text{ tonnes of CO}_2$.

2. The carbon absorption capacity of 464 semi-grown trees is 50% of that of fullgrown trees. Hence, the carbon absorption $(466 \times 3.4 \text{ kg CO}_2) = 1584.4 \text{ kg or } 1.58 \text{ tonnes of CO}_2$.

3. There are 3530 bushy plants of various species being raised in the gardens of the Institution. Carbon absorption of bush plants varies widely according to the species. Certain bushes absorb as high as 49,000 g CO₂ per plant, whereas some others absorb as low as 150 g CO₂ per plant. The per-plant carbon absorption was assumed to be 200 g (in consultation with environment scientists). Based on this, the total carbon absorption of 3526 plants was calculated to be 3530×200 g = 7, 06,000 g or 706.0 kg or 0.7 tonnes of CO₂.

4. The Eco-Club maintains the lawns of the College Indigenous grass species are being raised and maintained in the lawn. The total area of the lawn is 97,539 sq.ft. The carbon absorption capacity of a 10-sq.ft. area of lawn is 1 g CO₂. Hence, 97,539 sq.ft. of lawn absorbs 9,753.9 g or 9.75 kg CO₂ per day.

At this rate, the total carbon absorption per year $(9.75 \text{ kg} \times 365) = 3558.75 \text{ kg}$ or 3.55 tonnes per year.

The grand total of carbon absorption by the flora in the campus of Belda College is (4.93 + 1.58 + 0.7 + 3.55) = 10.76 tonnes. This is the sink effect of the flora in the campus.

Calculation of oxygen emission by flora:

According to the Arbor Day Foundation, 'a mature leafy tree produces as much oxygen in a season as 10 people inhale in a year'.

A person breathes 7 or 8 litres of air per minute. Air is about 20% oxygen. But the exhaled air has about 15% oxygen, and hence the net consumption is about 5%. Therefore, a person uses about 550 litres of pure oxygen each day.

The number of litres in 1 kilogram depends on the density of the substance being measured. Litre is a unit of volume, and kilogram a unit of mass. Litres and kilograms are approximately equivalent when the substance measured has a density of close to 1 kilogram per litre.

On average, one full-grown tree produces nearly 260 pounds or 117.6 kg of oxygen each year. Two mature trees can provide enough oxygen for a family of four.

1. Total oxygen emitted by 726 full-grown trees per year (117.6 kg \times 726) = 85,377.6 kg or 85.3677tonnes.

2. Total oxygen emitted by semi-grown trees (58.8 kg \times 466) = 27,400.8 kg or 27.400tonnes (oxygen emission is 50% of that of the full-grown tree).

3. Total oxygen emitted by 3530 bushes is calculated based on the following oxygen-inhaling requirement per person per day. A normal human being requires 550 litres of oxygen per day. 400 bushes

produce enough oxygen per day to enable a person to breathe adequate quantity of oxygen of 550 litres. Total quantum of oxygen produced by 400 plants per day is 550 litres of oxygen. Taking 400 plants as one unit, the number of units of bushes in the campus (3530/400) = 8.825. Total quantity of oxygen produced by 8.825 units is $(8.825 \times 550 \text{ litres}) = 4,853.75$ litres of oxygen per day. The annual production of oxygen at this rate (4853.75 \times 365) = 1,771,618.75 litres or kg of oxygen, which is approximately 1771.618 tonnes of oxygen.

Lawn is an incredible oxygen-making machine. A 25-sq.ft. area will supply enough oxygen to support one person for a day. Quantitatively speaking, this area of grass produces 550 litres of oxygen per day.

The total area of lawn in the campus is 97,539 sq.ft. In units, the value (97,539/25) = 3,901.56 units, which produce $(3901.56 \times 550$ litres of oxygen) = 2,145,858 litres of oxygen per day. Total quantity of oxygen is produced by the 97,539 sq.ft. of lawn per year (2,145,858) litres/day $\times 365$ = 783,238,170 litres or approximately 738,238.17 tonnes.

Carbon footprint reduction:

Carbon footprint is defined as the total set of greenhouse gas emissions expressed as carbon dioxide equivalent.

Sl. No.	Flora	Quantity of CO ₂ (tonnes)
1	726 Full-grown trees	4.93
2	466 Semi-grown trees	1.58
3	3530 Bushes	0.7
4	97,539 sq.ft Lawn	3.55
	Total	10.76

1. Carbon dioxide absorption

2. Oxygen emission by flora

Sl. No.	Flora	Quantity of O ₂ (tonnes)
1	726 Full-grown trees	85.3677
2	466 Semi-grown trees	27.400
3	3530 Bushes	1771.618
4	97,539 sq.ft Lawn	738,238.17
	Total	740122.5557

Energy-saving measures and Carbon Footprint Reduction:

The Energy Audit Report of the College during the year 2023-24 revealed that the total consumption of electricity was 230.014 KW Hour i.e. 230 units of electricity (approx).

One unit is equals to 1000watts (1kWhr). It requires 0.538kg or approximately ½ kg of coal to produce 1 unit of electricity.

The total quantity of coal required to produce 230 units of electricity $(230 \times 0.538 \text{ kg coal}) = 123.74 \text{ kg/h or } 123.74 \text{ tonnes/year}$ (Approx 1000h).

CO₂ emission by coal:

One kilogram of coal emits 2.86 kg of CO₂, thereby increasing the carbon footprint which in turn contributes to global warming. Therefore, 123.74 tonnes of coal consumed indirectly by the Institution through consumption of 230 units of electricity led to the emission of (123.74 kg of coal \times 2.86 kg CO₂) 353.89 kg or 353.89 tonnes of CO₂ into the atmosphere/ year.

The management of college is conscious of this damage to the environment and has been implementing various programs/activities to reduce energy consumption on the one hand and increase green energy sources on the other.

They are

* Replacing high energy-consuming lighting system with energy-efficient lighting systems.

ANALYSIS OF CO2 REDUCTION THROUGH THE ABOVE MEASURES:

Installing energy-efficient lighting system:

Based on the recommendations of the Energy Audit Team, the Institution has reduced CO_2 emissions indirectly by replacing high energy-consuming electric bulbs with energy-efficient LED lighting systems. To understand the carbon emission reduction, it is appropriate to compare the units of electricity consumed between incandescent lamps and LED.

The following table illustrates this.

3. Carbon emission reduction:

Sl. No. Contents Value

Sl. No.	Contents	Value	
1	Total no. of tube light used earlier	533	
2	Average energy consumption by a tube light	40 W	
3	Total no of CFL lamp used earlier and average energy consumption	20 and 18 W	
4	Energy consumed by 533 FTL for 1.5 hr/day	31.98 kw hr or 31.98 units	
5	Energy consumption of 20 CFL LAMPS	0.36 kWhr or 0.36 units	
6	Total Energy consumption of tube lights and lamps for 300 days per year.	(31.89+0.36) X 300 = 9675 units	
7	Energy consumed by 292 LED tube lights for 1.5 hr/day	292x18=5.25 kWhr	
8	Energy consumption of 4 LED lamps for	4x9=0.036 kWhr or 0.036 units	
9	Total Energy consumption of LED tube lights and LED lamps for 300 days/year	(5.25 + 0.036) X 300= 56.7 Units	
10	Total Energy consumption for 300 days/year	9731.7 Units	

CARBON FOOTPRINT REDUCTION ANALYSIS:

One Fluorescent tube light (FTL) consumes 40W of energy. One LED Tube light consumes 18W of energy. One CFL LAMP consumes 18 W of energy. One LED lamp consumes 9W of energy.

First, it is appropriate to analyses the carbon emission due to consumption of 9675 units of electricity by 533 tube lights and 20 CFL lamps per year. The standard tool of analysis employed in this Green Audit is coal equivalent of electricity.

0.538 kg of coal is required to produce 1 unit of electricity.

Total units of electricity consumed by Tube lights and lamps = 9675 units

Coal equivalent of 9675 units $(9675 \times 0.538 \text{ kg coal}) = 5205.15 \text{ kg or } 5.205 \text{ tonnes}.$

1 kg coal emits 2.86 kg CO₂ into the atmosphere.

At this rate, 5205.15 kg coal emits $(5205.15 \times 2.86) = 14886.729$ kg or 14.886 tonnes of CO₂.

Energy-saving measures and Carbon Footprint Reduction

Calculation Methodology:

- 1. Electricity: Input value (in KWh/Yr) X 0.85 (Emission Factor) = Output value in (Kg of CO₂)
- 2. **Petrol:** Input Value (In Litres/Yr) X 2.296(Emission Factor) = Output value in (Kg of CO₂)
- 3. **Diesel:** Input Value (In Litres/Yr) X 2.653 (Emission Factor) = Output value in (Kg of CO₂)
- 4. **LPG:** Input Value (In Kg/Yr) X 2.983 (Emission Factor) = Output value in (Kg of CO₂)
- 5. Your Carbon Footprint: Add (1+2+3+4) =Output value in (Kg of CO₂)

Divide final value (no 5) with 1000 so that you get total carbon footprint in ton of CO_2 . Final Carbon footprint should be in tons of CO_2 (t CO_2 .).

Know more about the source of emission factors:

• Electricity = 0.85 kg CO₂ per KWh.

(Source: CO₂ emission factor database, version 06, CEA (Government of India).

Motor gasoline/ Petrol = 2.296 kg CO₂ per liter.

(Source: Emission factors are taken from the file "Emission factors from across the sector -tool").

• Diesel= 2.653 kg CO₂ per litre.

Source: Emission factors are taken from the file "Emission factors from across the sector -tool").

• Liquefied petroleum gas (LPG) = 2.983 kg CO₂ per kilogram.

(Source: Emission factors are taken from the file "Emission factors from across the sector -tool").

Working Days = 300/Yr.

4. Table: Carbon Production:

Name of carbon producing agents	Amount of CO ₂ produced (Kg / Yr)
Electricity	70,150 KWh/Yr X 0.85 = 59,627.5
Diesel	445.15 lit / Yr X 2.653=1172.97
LPG	7.2Kg X 300days =2160.0Kg/Yr X 2.983 =6443.28
Total:	67,243.75

The Belda College is conscious of this damage to the environment and has been implementing various /activities to reduce energy consumption on the one hand and increase green energy sources on the other.

They are-

a) Replacing high energy-consuming lighting system with energy-

efficient lighting systems

b) Installing solar power system.

c) Installing energy-efficient lighting system based on the

recommendations of the Energy Audit conducted by last year.

d)The Institution has reduced CO₂ emissions indirectly by replacing high energy-consuming electric bulbs with energy-efficient.

Solar energy is the most feasible and viable green energy available around the globe. Its viability is very high in tropical countries like India. 44 solar panels, each measuring 4×3 ft, were installed on the terrace of the college building where light intensity is very high. However, the panels will function effectively only for about 10 months per year (300 days). Monsoon and clouds prevent sun's rays for more than 2 months. At this rate, the 44 panels produce electricity to the tune of $12kw \times 300$ days = 3600kw, which is equivalent to 3600 units of electricity per year. This solar power system is connected to the college grid via a solar string inverter. The 3600kW power generated per year from this solar panel, the coal equivalent (3600×0.538) = 1936.8 kg coal. The CO₂ equivalent is 1936.8 × 2.86 = 5539.248kg.

Conservation of rain water through rainwater harvesting system is practised by the college management. The total open terrace area of the buildings amounts to 1, 00,000 sq.ft.

Rainfall calculator

A 10-sq.ft. area receives 1 litre of water if the rainfall is 1 mm. The average rainfall per year is 1,200 mm in the district. Hence, the total volume of water received on the 1,00,000 sq.ft. area of the terrace (1,200 mm \times 1,00,000 sq.ft.) = 12,00,00,000 litres per year. If this is converted into metric tonnes, it is 1,20,000 metric tonnes.

Rainwater collected from the roof of the building is diverted to a storage tank. Each drainpipe have mesh filter at mouth and first flush device followed by filtration system before connecting to the storage tank. Each tank has excess water over flow system. Excess water is channelized through a PVC pipe drainage system to the ground water directly. Water from storage tank can be used for secondary purposes such as washing and gardening etc.

The main advantage of collecting and using the rainwater during rainy season is not only to save water from conventional sources, but also to save energy incurred on transportation and distribution of water at the doorstep. Only 10% of the water is channelized to the freshwater fish pond which houses different varieties of indigenous fishes.

Solid Waste Management:

Management of solid waste is an important driver in Green Audit. Solid waste not properly managed leads to the degradation of the environment which, in turn, affects the flora and fauna. Keeping this in mind, the College has been strictly implementing scientific solid waste management to maintain the green status of the campus. Small buckets numbering 66 have been kept in various places of the campus so that students shall deposit the solid waste in the buckets. Apart from that, three tanks with dimensions of $15 \times 4 \times 3$ ft. have been constructed to collect compostable and non-compostable solid waste throughout the year. The volume of each tank is 80 litres. The quantity of compostable solid waste collected per year is 3,500 kg or 3.5 tonnes and that of non-compostable waste is 400 kg. Of the compostable waste, the Department of Zoology and Eco-Club members produce 400 kg of vermin compost per year. The market value of the vermin compost is Rs. 4,000. Apart from that the college canteen produces 5 kg of compostable and 2 kg of non-compostable waste per day. The 400 kg of vermin compost contributes to the reduction in carbon footprint if the coal equivalent to produce

Recommendation:

Water:

- 1. Remove damaged taps and install sensitive taps is possible.
- 2. Drip irrigation for gardens and vegetable cultivation can be initiated
- 3. Establish rain water harvesting systems for each building.
- 4. Establish water treatment systems.
- 5. Awareness programs on water conservation to be conducted.
- 6. Install display boards to control over exploitation of water.

Energy:

- 1. Employment of more solar panels.
- 2. Conduct more save energy awareness programs for students and staff.
- 3. Replace computers and TVs with LED monitors.
- 4. More energy efficient fans should be replaced.
- 5. Observe a power saving day every year.
- 6. Automatic power switch off systems may be introduced.

Waste:

- 1. A model solid waste treatment system to be established.
- 3. Practice of waste segregation to be initiated.
- 4. Establish a plastic free campus.
- 6. Avoid paper plates and cups for all functions in the college.

Green Campus:

- 1. All trees in the campus should be named scientifically.
- 2. Create more space for planting.
- 3. Grow potted plants at both verandah and class rooms.
- 4. Create automatic drip irrigation system during summer holidays.
- 5. Not just celebrating environment day but making it a daily habit.
- 6. Beautify the college building with indoor plants.
- 7. Providing funds to nature club for making campus more green
- 8. Encouraging students not just through words, but through action for making the campus green.
- 9. Conducting competitions among departments for making students more interested in making the campus green.

Carbon footprint:

- 1. Establish a system of carpooling among the staff to reduce the number of four wheelers coming to the college.
- 2. Introduce college bus services to the students and staff.
- 3. Encourage students and staff to use cycles.
- 4. Establish a more efficient cooking system to save gas.
- 5. Discourage the students using two wheelers for their commutation.

Annexure 1 (2022-2023)

No. of Tank	Capacity (lit.)
15	14,500

Annexure 2(2022-2023)

Type of Load	Total	Electricity Generation
Generator (DG)	02	70 kw
Generator	02	22.5 kw

Annexure 3 (2022-2023)

Type of Load	Total	Consumption	Total consumption (× average	Total Kw
		_	hour per day considering 300	
			days in a year)	
Ac (3 Star)	15	1800 watt	27000	27 kw
Ac (5 Star)	14	1200 watt	16800	16.8 kw
Aqua guard	18	25 watt	450	0.45 kw
Computer	140	210 watt	29400	29.40 kw
Ceiling Fan	562	65 watt	36530	36.53 kw
Wall Fan	10	75 watt	750	0.75 kw
Inverter	21	150 watt	3150	3.15 kw
Laptop	17	120 watt	1680	1.68 kw
Refrigerator	8	250 watt	1250	1.25 kw
Exhaust fan	10	75 watt	750	0.75 kw
LCD TV	04	150 watt	600	0.6 kw
Tube Light (LED)	292	18 watt	5256 × 1.5=7884	7.884 kw
Tube Light (fluorescent)	533	40 Watt	21320×1.5=31980	31.98 kw
CFL Lamp	20	18 watt	360	0.36 kw
LED Lamp	4	9 watt	36	0.036 kw
LED Street Light	33	24 watt	792 × 5=3960	3.960 kw
Printer	49	400 watt	19600	19.6 kw
Scanner Printer	05	20 watt	100	0.1 kw
Projector	22	250 watt	5500	5.50 kw
Stand Fan	03	100 watt	300	0.3 kw

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Water Pump	06	750 watt	4500	4.5 kw
Water Cooler	07	500 watt	3500	3.5 kw
Stage Light	26	450 watt	11700	11.7 kw
Incubator	01	40 watt	40	.04 kw
CRO	07	40 watt	280	0.28 kw
Mixer Grinder	01	750 watt	750	0.75 kw
Microscope Light	04	25 watt	100	0.1 kw
Xerox	04	1800 watt	7200	7.2 kw
Hot air Oven	04	2000 watt	8000	8 kw
Distil Water Plant	02	3000 watt	6000	6 kw
Total				230.150 kw

Annexure 4 (2023-2024)

Name of Programme	Date
1.Van Mahotsav/Aranya Saptaha	July 1 to July 7. ,2023
2.World AIDS Day	01.12.2023
3. We and our Biodiversity (State level seminar)	16.02.2024
4. One life one tree	22.03.2024
5. Awareness management on e-waste management	22.03.2024
6. Earth day	22.04.2024
7. Swach Bharat Abhiyan at the adopted village	15.05.2024
Binodpur, 8/2Deuli Gram Panchayat	
8. International Biodiversity Day	22.05.2024
9. World Environment Day	07.06.2024
10. Plantation Programme	07.06.2024

<u>РНОТО</u>



Lawn



Bee hive in College Campus





Anacardium occidentalis



Aegle marmelos

Mangifera indica



Acacia auriculiformis



Manilcara zapota

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Andrographis paniculata



Barleria lupulina

Adhatoda vesica



Achatina fulica



Calotes versicolor



Halcyon smyrensis



Lanius cristatus



Dendrelaphis tristis in the campus



Polypedates sp



Oriolus xanthornus



Rain Water Harvesting

Avenue Trees



Garden

Solar Unit



Vermicompost Unit

Rain fed Pond



Tobacco and Smoke free Campus.



Medicinal Plant Garden

Canteen

GREEN AUDIT REPORT: BELDA COLLEGE 2023-2024



Medicinal Plant Garden

Canteen



Chim

(Dr. Chandrasekhar Hajra) Principal Belda College

E Inc

Principal BELDA COLLEGE Belda, Paschim Medinipur