

SBS GOVT. P.G. COLLEGE PIPARIYA



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2018-19 TO 2022-23

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Institutional Values and Best Practices

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Document Title:

Reports of Green audit / Environment audit

Shaheed Bhagat Singh Government P.G. College Pipariya Distt.- Narmadapuram (M.P.)



College Code - 3203

AISHE Code - C-35178

Accredited by NAAC with B+ Grade

Email - hegpgcpiphos@mp.gov.in, Website - www.sbsgovtpgcollegepipariya.in, Phone/Fax - 07576-220112



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शासकीय स्नातकोत्तर महाविद्यालय
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OFFICE OF THE PRINCIPAL, SHAHEED BHAGAT SINGH
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PIPARIYA, DIST-NARMADAPURAM (M. P.)

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Ref No. 1440/Est/SBSGPGCP/2024

Pipariya, Date 19.06.2024

DECLARATION

This is to declare that the information, reports, true copies of supporting documents, numerical data etc. furnished in this file as supporting documents are verified by IQAC and found correct.


IQAC Coordinator
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S. B. S. Govt. P. G. College
PIPARIYA (M. P.)


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Shaheed Bhagat Singh Govt. P.G. College
PIPARIYA (M. P.)



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**Report
Of
Green Audit /
Environment Audit
By
TRFI, Jabalpur**

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ENVIRONMENT AND GREEN AUDIT REPORT

01 April 2023—30 June 2024

**Shaheed Bhagat Singh Govt. PG College, Pipariya,
District - Narmadapuram (M.P.)**



Conducted By

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भा.वा.अ.शि.प.-उष्णकटिबंधीय वन अनुसंधान संस्थान
(पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय, भारत सरकार के तहत एक स्वायत्त परिषद)

डाकघर- आर.एफ.आर.सी., मण्डला रोड, जबलपुर - 482021 (मध्य प्रदेश)

I.C.F.R.E.-Tropical Forest Research Institute

(Indian Council of Forestry Research & Education)

(An Autonomous Council under the Ministry of Environment, Forests
& Climate Change, Govt. of India)

P.O. – R.F.R.C, Mandla Road, Jabalpur – 482021 (M.P)



CERTIFICATE OF ENVIRONMENT AND GREEN AUDIT

This is to certify that the "Environment and Green Audit" of Shaheed Bhagat Singh P.G. Government College, Pipariya, Madhya Pradesh has been successfully conducted by ICFRE-Tropical Forest Research Institute, Jabalpur for the duration 01st April 2023-30th June 2024. The audit aimed to enhance environmental sustainability practices within the campus, identifying significant achievements in implementing sustainable initiatives and fostering a greener campus environment.

Date: 8. July 2024 .

Place: Jabalpur

(Dr. Avinash Jain)

Scientist- F & Head

Forest Ecology and Climate Change Division

प्रमाणाध्यक्ष / Head

वन पारिस्थितिकी एवं जलवायु परिवर्तन प्रभाग
Forest Ecology & Climate Change Division

उष्णकटिबंधीय वन अनुसंधान संस्थान
Tropical Forest Research Institute

जबलपुर - 482021 (M.P.)

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ACKNOWLEDGEMENT

I Would like to express my special thanks to faculty and staff for their support and sharing of required information for preparing the Environment and Green Audit report. I would Also like to extend my gratitude to the Dr. Rakesh Kumar Verma, Principal, Shaheed Bhagat Singh P.G. Government College, Pipariya, Madhya Pradesh who gave this opportunity to ICFRE-Tropical Forest Research Institute (TFRI), Jabalpur.

I extend my heartfelt gratitude to Dr. Jangam Deepika, Scientist-C, Forest Ecology and Climate Change Division, ICFRE-TFRI, Jabalpur, and Ms. Sangita Gami, Junior Project Fellow (JPF), for their invaluable support in conducting this audit and preparing the report. I am also deeply thankful to Dr. Avinash Jain, Scientist-F, Head of the Forest Ecology and Climate Change Division, for his invaluable guidance throughout this audit work. Finally, I sincerely thank Dr. H.S. Ginwal, Director of ICFRE-TFRI, Jabalpur, for his unwavering guidance and support.

Date:

08.07.24

Place:

Jabalpur

(Dheeraj Kr. Gupta)

Scientist- D

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धीरज कुमार गुप्ता / Dheeraj Kumar Gupta

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Executive Summary

The future of humanity hinges significantly on our ability to adopt low-consumption lifestyles, embracing sustainable development practices promptly. Scientists warn that the window to restore nature's ability to nurture thriving ecosystems may close by 2030. This urgency necessitates coordinated efforts worldwide, beginning now and continuing until a balanced state is achieved, where resource use is moderated and actions to heal environmental damage contribute positively to sustainability.

Many educational institutions have implemented the Eco Campus concept to address their substantial resource consumption and environmental impact. Recognizing the critical need to reverse environmental trends, Shaheed Bhagat Singh Government College, Pipariya approached ICFRE-Tropical Forest Research Institute, Jabalpur, to conduct an audit to ensure adherence to its Green Policy. This audit is mandated under Criterion VII of the Guidelines for Submission of the Internal Quality Assurance Report (IQAR) by Accredited Institutions.

The audit focused on various aspects of the Green Campus initiative, encompassing Water Conservation, Tree Plantation, Waste Management, Paperless Operations, and Alternative Energy. Its specific objectives were to assess the adequacy of the campus's environmental sustainability management framework and the departments compliance with relevant regulations, policies, and standards.

A team of scientists including Shri Dheeraj Gupta, Scientist-D; Dr. Jangam Deepika, Scientist-C visited college during 25-26 July, 2024. An initial meeting was convened to assess the existing resources of the campus and understand the resource consumption patterns among students and staff at Shaheed Bhagat Singh Government College, Pipariya. Collected data was systematically grouped, tabulated, and analyzed as part of an Environment and Green Audit process. Subsequently, a comprehensive report outlining the environmental management plan, including strengths, weaknesses, and suggestions for addressing campus environmental issues was documented.

CHAPTER 1: INTRODUCTION

An Environment and Green Audit serves as a critical evaluation tool for identifying environmental compliance and management system, implementation gaps, guiding subsequent corrective actions. By analyzing resource usage such as energy and water consumption, as well as waste generation patterns, the audit informs strategies for implementing changes and achieving cost savings. Furthermore, it fosters health awareness and enhances environmental consciousness, promoting values and ethical practices. Overall, it significantly contributes to enhancing staff and student understanding of the campus's environmental footprint and sustainability efforts.

Need for Environment and Green Audit:

As environmental sustainability is becoming an increasingly important issue on a national scale, higher educational institutions play a pivotal role in championing environmental stewardship. Implementing the Green Campus framework becomes imperative for fostering sustainable development and significantly reducing atmospheric carbon dioxide levels. Notably, the Green Audit aligns with Criteria 7 of NAAC, the National Assessment and Accreditation Council, an autonomous body in India that accredits institutions based on predefined criteria. NAAC mandates that all higher educational institutions submit an annual Green Audit Report, underscoring their commitment to environmental responsibility. By actively reducing their carbon footprints, these institutions fulfill a crucial social responsibility towards mitigating global warming impacts.



Figure 1: Focus areas of Environment and Green Audit

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Objectives of the Environment and Green Audit:

- Understanding current sustainability practices related to water and energy usage, waste generation, transportation, procurement of goods, etc.
- Establishing a baseline of existing environmental conditions, with a focus on the natural and physical environment.
- Raising awareness among students and staff about critical environmental issues and sustainability.
- Creating a report documenting baseline data on best practices, alongside strategies and action plans to enhance environmental quality for the future.

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CHAPTER 2: ABOUT THE COLLEGE

The Government P. G. College, Pipariya (Madhya Pradesh) was established in July 1962 with the erstwhile name Jai Hind Adarsh Mahavidyalaya, Pipariya. In 1965, the college was taken over by the Department of Higher Education, Government of Madhya Pradesh and renamed Government College Pipariya. In 1983-84, the college was elevated to a postgraduate study center.

This is second largest co-educational college of the district with more than 2000 students. The college offers 16 subjects at UG and 9 at PG level in arts, commerce, science and law faculties. The college has a large campus which is spread over 8.7 acres of land. There are three double story buildings having 34 rooms of different sizes, two single storied buildings one for law and other for central office, one laboratory building consisting of physics, chemistry, zoology and botany labs. Apart from this, geography and computer labs and one smart class room are accommodated. Two separate rooms with indoor gymnasium facilities and tennis are allotted for sports. One girl's common room and a separate toilet for physically challenged persons have been newly constructed with ramp facility. One double story building of 10 rooms and one auditorium are under construction. New education Policy 2020 has been implemented at U.G. level. The National Assessment and Accreditation Committee (NAAC) awarded the college 'B+' grade in 2017.



Figure 2: The Main Gate of College

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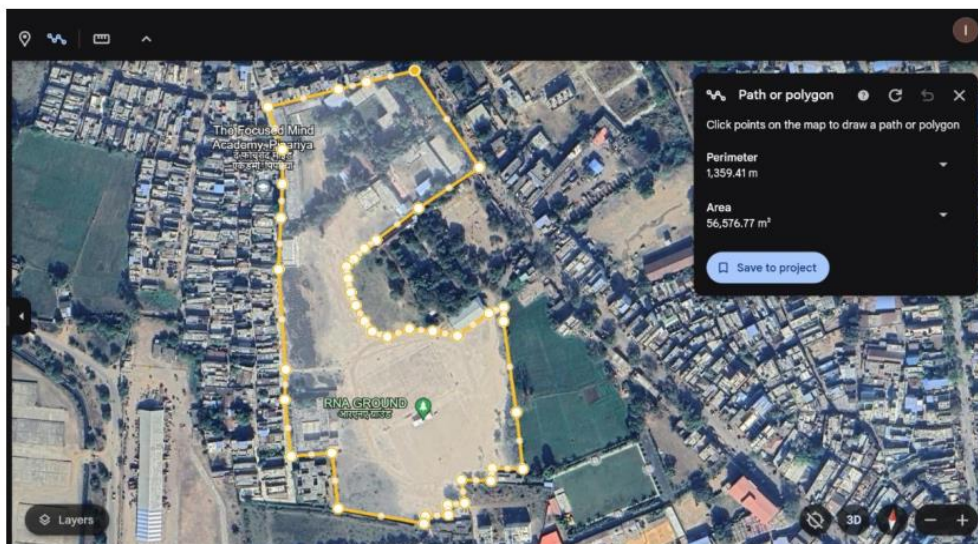


Figure 3: Google earth image of the college

Impart inclusive quality education to help them become socially committed citizens and competent professionals capable of meeting global challenges. Empowerment of students through value based holistic higher education. The objectives of the institution include:

- To impart quality knowledge and professionalism
- To inculcate and enrich ethical values
- To upgrade curriculum and make it consistent with the needs of the society
- To provide equal access and opportunities to physical challenged students and to students coming from weaker socio-economic backgrounds
- To sustain learning environment by promoting skill development and employability.

CHAPTER 3: METHODOLOGY

To conduct the green audit, a comprehensive methodology was adopted, incorporating various tools such as physical inspection of the campus, observation and review of documentation, interviews with key personnel, data analysis and recommendations.

Onsite Visit

The key focus of the onsite visit was to assess the status of the institution's green cover, waste management practices, energy conservation strategies, and other environmental initiatives. The Environment and Green Audit covered the entire campus, considering processes within both academic and administrative departments. Facilities shared among departments were also evaluated.

Focus Group Discussion

Focus group discussions were held with staff members and the management, concentrating on various aspects of the Environment and Green Audit. These discussions aimed to identify attitudes and awareness regarding environmental issues at both institutional and local levels. Data on several aspects of the environment and green audit—such as energy management, water management, material management (consumables), waste management, pollution management, travel and transport management, knowledge management, ecology management, and disaster preparedness—were collected. The data was gathered through discussions with the principal, faculty, and other staff of the college, complemented by a physical survey and inspection of the campus.



Figure 4: Group discussion with college faculty

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The study covered various areas to provide a comprehensive overview of the current state of environmental management on campus:

- A. Energy Management
- B. Water Management
- C. Material Management
- D. Waste Management
- E. Pollution Management
- F. Knowledge Management
- G. Ecology (Green area) Management



CHAPTER 4: OBSERVATIONS AND RECOMMENDATIONS

A. Energy Management

The College primarily uses energy in the form of electricity provided by Madhya Pradesh Vidyut Vitran Company Ltd., Bhopal. For a proper analysis of energy consumption, we need to understand the electricity consumption over at least one academic year, and ideally three previous years. However, in this case we were able to obtain one and half year energy bills from January 2023 to May 2024.

Table:1. Summary of one and half year electricity consumption (units)

| Sl No. | Year | Month | Unit |
|--------|------|-----------|------|
| 1 | 2023 | January | 1435 |
| 2 | 2023 | February | 1328 |
| 3 | 2023 | March | 1472 |
| 4 | 2023 | April | 2051 |
| 5 | 2023 | May | 2106 |
| 6 | 2023 | June | 2308 |
| 7 | 2023 | July | 2636 |
| 8 | 2023 | August | 1820 |
| 9 | 2023 | September | 1349 |
| 10 | 2023 | October | 1764 |
| 11 | 2023 | November | 2023 |
| 12 | 2023 | December | 1941 |
| 13 | 2024 | January | 1621 |
| 14 | 2024 | February | 1460 |
| 15 | 2024 | March | 1430 |
| 16 | 2024 | April | 1850 |
| 17 | 2024 | May | 2153 |

Based on the monthly unit consumption data from January 2023 to May 2024 (table – 1), the following conclusions are drawn:

1. Seasonal Peaks:

- **Highest Consumption:** July 2023, with 2636 units.
- **Lowest Consumption:** February 2023, with 1328 units.

2. Month wise Comparison:

- **January:** 1435 units in 2023 vs. 1621 units in 2024 (increase).
- **February:** 1328 units in 2023 vs. 1460 units in 2024 (increase).
- **March:** 1472 units in 2023 vs. 1430 units in 2024 (slight decrease).
- **April:** 2051 units in 2023 vs. 1850 units in 2024 (decrease).
- **May:** 2106 units in 2023 vs. 2153 units in 2024 (increase).

3. Seasonal Trends:

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- Higher consumption during summer months (April to August), likely due to increased cooling needs.
- Lower consumption during cooler months (September to February).

Observations:

The main electric appliances in the college are lighting elements, fans, computers, Air Conditioners, LCD projectors, computers and accessories. There is good number of lighting elements which are LED based. The refrigerators and air conditioners are 3 and above star rated. All the other appliances are in reasonably good condition. Individual teaching staff regularly reminds the students to ensure switching off of the fan and lights.

The following energy saving practices were observed in the campus:

- i. Each stakeholder taking up responsibility to ensure that they save energy in every possible way.
- ii. Ensuring that the light and fans are not switched on in any corner of every classroom, staffroom, office and library unnecessarily.
- iii. Upgrade to energy efficient LED lighting in the classrooms.
- iv. Unplugging unused devices which are generally not practiced.
- v. Painting class rooms with soft tones like off-white Colour will make it appear brighter and help in saving energy.
- vi. Upgrading to energy efficient electric devices used in the campus.

B. Water Management

Observations:

The study observed that the main source of water for the college is received from 4 bore wells. Water is used for drinking purpose, toilets and gardening. During the survey, no loss of water was observed, neither through any leakages, or over flow of water from overhead tanks. On an average the total use of water in the college is 8350 L/day, which include 4100 L/day for domestic, 2025 L/day for gardening purposes and 2225 L/day for drinking purpose.

| Sl. No | Parameter | Detail |
|--------|---------------------------|---------------------|
| 1 | Source of water | bore wells (4 Nos.) |
| 2 | No of motors used | 4 |
| 3 | Water level | Nominal |
| 4 | Any water wastage/why? | No |
| 5 | Water usage for gardening | 2025 liter |
| 6 | Waste water sources | Canteen |



C. Material Management

To gather data, the audit team sought information on the utilization of office stationery, lab chemicals, food items, and other consumables, as well as practices related to reducing, reusing, or recycling from all departments. This data was obtained from the office and the Heads of the departments.

Observations:

- The college is taking steps to ensure the responsible use of consumables.
- Efforts towards increased digitization aim to create a paperless system.
- Each teaching staff member receives a whiteboard marker and duster at the beginning of the academic year, reducing dependency on blackboard chalks (calcium carbonate/calcium sulphate).
- Markers are refilled with ink and reused, promoting sustainability.

D. Waste Management

This indicator addresses waste production and disposal, encompassing paper, food, plastic, biodegradable, construction, glass, and dust. Effective solid waste management is crucial, as improper handling can pose significant threats. The survey focused on identifying and categorizing the various types of waste generated on campus, including solid waste, garden waste, and e-waste. Solid waste is further classified into dry waste (plastic, glass, paper, metal, garden waste) and wet waste (primarily food waste from lunch boxes and food labs).

Observations:



Figure 5: Dustbins for wet and dry waste management

i. Solid waste management

Waste generated from tree droppings and lawn management are major solid wastes generated in the campus. Separate dustbins are provided for Bio-degradable and Plastic waste in order to segregate them at the source itself. The solid waste from respective floors is collected by the cleaning staff and separates wet and dry waste. The wet waste is composted in the pit to convert into manure and used for the plants in the campus. Less waste is generated by some departments, office, garden etc. Metal waste and wooden waste is stored and sent to authorize scrap agents for further processing. Glass bottles are reused in the laboratories. Regular meetings are conducted with ground staff regarding the cleanliness of the campus and proper disposal of waste.



Figure 6: Vermicompost Pit and Vermicompost manure

ii. E-waste Management

E-waste is a consumer and business electronic equipment that is near or at the end of its useful life. It is hazardous than other waste because electronic components contain cadmium, lead, mercury, and Polychlorinated biphenyls (PCBs) that can damage human health and the environment. It is being stored, keeping in mind the environmental hazards that may arise if not disposed properly. The cartridges of laser printers are refilled outside the college campus. The E- wastes and defective items from computer laboratories are being stored properly and recycled in effective Manner.



Figure 7: E-waste management in the college

E. Pollution Management

Observations:

- Some of college staff is using battery operated two wheelers and bicycles. Students living within 5 km distance of the campus is coming to college by bicycles and walking.
- In order to reduce the air pollution, the college has raised plantations of tree species, such as— *Azadirachta indica*, *Mangifera indica*, *Monoon longifolium*, *Ficus religiosa*, *Ficus bengalensis*, *Moringa oleifera*, *Phyllanthus embilca*, *Delonix regia*, *Vachellia nilotica*, *Dalbergia sissoo* and *Tamarindus indica*.



Ficus religiosa



Ornamental plants

Figure 8: Pollution management by maintaining age old tree and air purifying plants



F. Knowledge Management

Observations:

The college conducts different environment-related activities and projects under the NSS program (Fig: 9). The college provides environment related education and awareness to the students by engaging them in different vocational courses like Environmental protection and disaster management, Vermiculture, organic farming, cultivation of medicinal plants etc.



Figure 9: Environmental protection awareness rally



Figure 10: Environment Day celebration



Figure 11: Students giving the message of cleanliness outside the college campus



International women's day



Figure 12: Plantation along with municipal chairman (Mrs. Neeta Nagpal Ji Pipariya City), principal and other colleagues in the college campus



Figure 13: Plantation by college staff and student

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Figure 14: Sarpach village Richheda along with career cell in-charge S.B.S Government PG College Pipariya planted trees at village Richheda



Figure 15: Plantation and Environmental awareness program at Richhheda village



Figure 16: Environmental awareness street play at Dapka village (NSS Boys Unit)

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Figure 17: Plantation in village beejanwada by Incharge principal, college staff and students during 2018-2019



Figure 18: Cleanliness rally was taken out from the college for environmental protection during 2018-2029



Figure 19: Cyclothon (Environmental Awareness rally) sent from college with the participation of indian army on 24/11/2022

G. Ecology Management

Observations:

Gardens: The College has four gardens in its premise which adds aesthetic value to the campus and also contributes to the biodiversity. A botanical garden of 100 x120 feet, green lawn in front of C- Block and Old building a small garden of 30 x40 feet in front of administrative building. The list of flora and fauna found in these gardens as well as in the campus is provided below in the report (Annexure-I & II).



Figure 20: Botanical Garden

Biodiversity in the campus: Despite located in the middle of city the Govt. PG College, Pipariya is rich in biodiversity. Its lush green campus provides habitat to many birds, butterflies and Odonates. The number of flora and fauna found in the campus is provided in table-2.

Table 2: Variety of flora and fauna in the campus

| SI No | Species of flora and fauna | Quantity |
|-------|----------------------------|----------|
| 1 | Trees | 34 |
| 2 | Medicinal Herb/ Wild herbs | 31 |
| 3 | Ornamental Plants | 21 |
| 4 | Birds | 14 |
| 5 | Butterflies | 7 |
| 6 | Odonates | 3 |

Various tree plantation programmes are being organized at college campus through NSS (National Service Scheme) unit and Management. These programmes help in encouraging eco-friendly environment which provides pure oxygen within the institute and creates awareness among campus students. The plantation program includes various types of indigenous tree species, ornamental and medicinal plant species.



CHAPTER 5: CONCLUSION

Shaheed Bhagat Singh Government College, Pipariya approached ICFRE-Tropical Forest Research Institute, Jabalpur, to conduct an audit to ensure adherence to its Green Policy. This audit is mandated under Criterion VII of the Guidelines for Submission of the Internal Quality Assurance Report (IQAR) by Accredited Institutions.

A team of scientists visited the college on 25-26 July 2024 to assess the existing resources of the campus and understand the resource consumption patterns among students and staff. They conducted an initial meeting with the college faculty. Subsequently, a comprehensive report outlining the environmental management plan, including strengths, weaknesses, and suggestions for addressing campus environmental issues, was documented.

The audit focused on various aspects of the Green Campus initiative, including water conservation, tree plantation, waste management, paperless operations, and alternative energy. The specific objectives were to assess the adequacy of the campus's environmental sustainability management framework and the departments' compliance with relevant regulations, policies, and standards.

The environmental audit of Shaheed Bhagat Singh Government College, Pipariya, revealed several noteworthy achievements in various areas of campus management. In Energy Management, the college has upgraded to energy-efficient LED lighting in classrooms, significantly reducing electricity consumption. Water Management practices have been exemplary, with no water loss observed due to leaks or overflows. Material Management initiatives, such as the responsible use of consumables and the reuse of refilled markers, reflect the college's commitment to sustainability. Waste Management is effectively handled with the segregation of bio-degradable and plastic waste, composting of wet waste, and proper disposal of e-waste to minimize environmental hazards. Pollution Management efforts include encouraging the use of bicycles and battery-operated vehicles, as well as tree plantations to combat air pollution. Knowledge Management is actively pursued through environmental education and various NSS programs that engage students in vocational courses related to environmental protection. Finally, Ecology Management has resulted in the maintenance of four gardens on campus, enhancing biodiversity and providing a habitat for various birds, butterflies, and other fauna. These significant positive findings highlight the college's dedication to fostering a sustainable and environmentally conscious campus.

Shaheed Bhagat Singh Government P.G. College Pipariya Distt.- Narmadapuram (M.P.)



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AISHE Code – C-35178

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In conclusion, several practical steps have been suggested to further enhance the environmental sustainability of the college campus. These measures aim to reduce the environmental impact and nurture a culture of environmental awareness within the college community. The key recommendations are as follows:

1. Explore rooftop solar PV for electricity generation.
2. Investigate the feasibility of sewage water treatment and reuse for purposes like toilet flushing and gardening.
3. Continue efforts towards paperless administration while implementing effective electronic waste management systems.
4. Expand environmental activities to include education on climate change mitigation, adaptation issues, challenges, and career opportunities.
5. Explore the installation of monitoring devices on campus to track air pollution from nearby busy roads.

These recommendations aim to further enhance the college's environmental sustainability efforts, ensuring a greener and more resilient campus environment.

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Annexure 1

Shaheed Bhagat Singh Govt. PG College, Pipariya Campus Flora

| List of Wild and Evergreen trees | | | |
|------------------------------------|--|-----------------------|----------------------|
| Sr. No. | Scientific name | Common name | Local name |
| 1. | <i>Nyctanthes arbor-tristis</i> L. | Tree of Sorrow | Parijatak, Harsingar |
| 2. | <i>Dalbergia sissoo</i> Roxb. ex DC. | Indian rosewood | Shisham |
| 3. | <i>Phyllanthus emblica</i> L. | Indian gooseberry | Aonla |
| 4. | <i>Alstonia scholaris</i> (L.) R.Br. | Scholar Tree | Saptaparni |
| 5. | <i>Syzygium cumini</i> (L.) Skeels | Java plum | Jamun |
| 6. | <i>Cordia dichotoma</i> G.Forst. | Indian cherry | Lasora |
| 7. | <i>Aegle marmelos</i> (L.) Corrêa | Bel | Bel |
| 8. | <i>Pongamia pinnata</i> (L.) Pierre | Pongame Oil Tree | Karanj |
| 9. | <i>Tamarindus indica</i> L. | Tamarind | Imli |
| 10. | <i>Cassia fistula</i> L. | Golden shower tree | Amaltas |
| 11. | <i>Thespesia populnea</i> (L.) Sol. ex Corrêa | Indian tulip tree | Paras pipal |
| 12. | <i>Ficus religiosa</i> L. | Sacred fig tree | Peepal |
| 13. | <i>Ficus benghalensis</i> L. | Banyan tree | Bargad |
| 14. | <i>Terminalia catappa</i> L. | Indian Almond | Jangli badam |
| 15. | <i>Butea monosperma</i> (Lam.) Kuntze | Flame of the Forest | Palash |
| 16. | <i>Bombax ceiba</i> L. | Silk Cotton Tree | Semal |
| 17. | <i>Azadirachta indica</i> A.Juss. | Neem | Neem |
| 18. | <i>Ailanthus excelsa</i> Roxb. | Indian Tree of Heaven | Maha neem |
| 19. | <i>Annona squamosa</i> L. | Custard apple | Sitaphal |
| 20. | <i>Ficus carica</i> L. | Common Fig | Anjeer |
| 21. | <i>Neolamarckia cadamba</i> (Roxb.) Bosser | Kadamb | Kadamb |
| 22. | <i>Jatropha curcas</i> L. | Jatropha | Ratanjot |
| 23. | <i>Delonix regia</i> (Bojer ex Hook.) Raf. | Flame Tree | Gulmohar |
| 24. | <i>Monoon longifolium</i> (Sonn.) B.Xue & | False Ashok | Ashok |
| 25. | <i>Plumeria alba</i> L. | White Frangipani | Champa |
| 26. | <i>Mimusops elengi</i> L. | Spanish cherry | Maulsari |
| 27. | <i>Cascabela thevetia</i> (L.) Lippold | Yellow Oleander | Peeli Kaner |
| 28. | <i>Mangifera indica</i> L. | Mango | Aam |
| 29. | <i>Pithecellobium dulce</i> (Roxb.) Benth. | Madras Thorn | Jangal Jalebi |
| 30. | <i>Senegalia catechu</i> (L.f.) P.J.H.Hurter & Mabb. | Black Cutch Tree | Khair |
| 31. | <i>Vachellia nilotica</i> (L.) P.J.H.Hurter & Mabb. | Gum arabic | Babool |
| 32. | <i>Moringa oleifera</i> Lam. | Drumstick | Senjana, Moonaga |
| 33. | <i>Limonia acidissima</i> L. | Wood apple | Kaith |
| 34. | <i>Phoenix sylvestris</i> (L.) Roxb. | Wild Date Palm | Khajur |
| List of Medicinal Herb/ Wild herbs | | | |
| Sr. No. | Scientific name | Common name | Local name |
| 1. | <i>Kalanchoe pinnata</i> (Lam.) Pers. | Canterbury Bells | Amar poi |
| 2. | <i>Euphorbia hirta</i> L. | Common spurge | Bara dudhi |
| 3. | <i>Phyllanthus amarus</i> Schumach. & Thonn. | Carry Me Seed | Bhui aonla |
| 4. | <i>Oxalis corniculata</i> L. | Creeping Wood Sorrel | Amrul |

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| | | | |
|-----|--|---------------------------|------------------|
| 5. | <i>Boerhavia diffusa</i> L. | Red Spiderling | Punarnava |
| 6. | <i>Cissus quadrangularis</i> L. | Bone setter | Hadjod |
| 7. | <i>Butea superba</i> Roxb. ex Willd. | Palash Lata | Bel-palash |
| 8. | <i>Solanum americanum</i> Mill. | American Black Nightshade | Chirpoti |
| 9. | <i>Solanum diphyllum</i> L. | Two leaf Nightshade | Pili Makoe |
| 10. | <i>Achyranthes aspera</i> L. | Prickly Chaff Flower | Apamarga, Aghara |
| 11. | <i>Barleria prionitis</i> L. | Porcupine Flower | Vajradanti |
| 12. | <i>Dioscorea bulbifera</i> L. | Air potato | Zimikand |
| 13. | <i>Malvastrum coromandelianum</i> (L.) Garcke | False Mallow | Kharenti |
| 14. | <i>Sida cordata</i> (Burm.f.) Borss.Waalk. | Heart-Leaf Sida | Bhuinii |
| 15. | <i>Tinospora cordifolia</i> (Willd.) Hook.f. & Thomson | Heart-leaved moonseed | Giloy |
| 16. | <i>Rhynchosia minima</i> (L.) DC. | Burn-Mouth Vine | Kulata |
| 17. | <i>Coccinia grandis</i> (L.) Voigt | Ivy Gourd | Kundru |
| 18. | <i>Sphagneticola trilobata</i> (L.) Pruski * | Creeping daisy | Creeping daisy |
| 19. | <i>Parthenium hysterophorus</i> L. * | Congress grass | Gajar ghas |
| 20. | <i>Oldenlandia corymbosa</i> L. | Corymb Diamond Flower | Pitpapra |
| 21. | <i>Alternanthera sessilis</i> (L.) DC. | Sessile Joyweed | Garundi |
| 22. | <i>Acalypha indica</i> L. | Indian Copperleaf | Kuppi |
| 23. | <i>Cyanthillium cinereum</i> (L.) H.Rob. | Little ironweed | Sahadevi |
| 24. | <i>Heliotropium indicum</i> L. | Indian Heliotrope | Hathajori |
| 25. | <i>Asparagus racemosus</i> Willd. | Satawari | Shatamuli |
| 26. | <i>Curcuma longa</i> L. | Turmeric | Haldi |
| 27. | <i>Trachyspermum ammi</i> (L.) Sprague | Ajwain | Ajwain |
| 28. | <i>Plumbago zeylanica</i> L. | Safed Chitrak | Safed Chitrak |
| 29. | <i>Rauvolfia serpentina</i> (L.) Benth. ex Kurz | Indian Snakeroot | Sarpagandha |
| 30. | <i>Mentha spicata</i> L. | Garden mint | Pudina |
| 31. | <i>Ocimum tenuiflorum</i> L. | Holy Basil | Tulsi |

List of Air Purifying/ Ornamental Plants

| Sr. No. | Scientific name | Common name | Local name |
|---------|--|------------------------|------------|
| 1. | <i>Passiflora foetida</i> L. | Passion flower | Pandav Bel |
| 2. | <i>Dieffenbachia seguine</i> (Jacq.) Schott | Dumb cane | |
| 3. | <i>Dracaena trifasciata</i> (Prain) Mabb. | Mother in law's tongue | |
| 4. | <i>Codiaeum variegatum</i> (L.) Rumph. ex A.Juss. | Croton | |
| 5. | <i>Polyscias fruticosa</i> (L.) Harms | Shield Aralia | |
| 6. | <i>Beaucarnea recurvata</i> (K.Koch & Fintelm.) Lem. | Ponytail Palm | |
| 7. | <i>Hymenocallis littoralis</i> (Jacq.) Salisb. | Beach Spider Lily | |
| 8. | <i>Cestrum nocturnum</i> L. | Night Blooming Jasmine | |
| 9. | <i>Tradescantia spathacea</i> Sw. | Moses in the Cradle | |

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| | | | |
|-----|---|------------------|------------|
| 10. | <i>Canna indica</i> L. | Indian Shot | Sarvajjaya |
| 11. | <i>Acalypha wilkesiana</i> Müll.Arg. | Copperleaf | |
| 12. | <i>Rosa indica</i> L. | Rose | Rose |
| 13. | <i>Euphorbia tithymaloides</i> L. | Devil's Backbone | Dudhi |
| 14. | <i>Clematis gouriana</i> Roxb. ex DC. | Bel kangu | Morvel |
| 15. | <i>Dracaena zeylanica</i> (L.) Mabb. | Snake plant | |
| 16. | <i>Cereus fernambucensis</i> Lem. | Torch Cactus | |
| 17. | <i>Euphorbia lactea</i> Haw. | Mottled spurge | |
| 18. | <i>Agave angustifolia</i> Haw. | Variegated Agave | |
| 19. | <i>Nymphaea nouchali</i> Burm.f. | Blue water lily | Neel Kamal |
| 20. | <i>Platycladus orientalis</i> (L.) Franco | Morpankhi | Thuja |
| 21. | <i>Duranta erecta</i> L. | Pigeon Berry | Neelkanta |

* = Invasive species

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Annexure 2

Shaheed Bhagat Singh Govt. PG College, Pipariya Campus Fauna

| List of Birds | | |
|---------------------|----------------------------------|----------------------|
| Sr .No. | Scientific Name | Common Name |
| 1. | <i>Pycnonotus cafer</i> | Red-vented Bulbul |
| 2. | <i>Columba livia</i> | Rock Pigeon |
| 3. | <i>Eudynamys scolopaceus</i> | Asian Koel |
| 4. | <i>Vanellus indicus</i> | Red-wattled Lapwing |
| 5. | <i>Apus affinis</i> | Little Swift |
| 6. | <i>Acridotheres tristis</i> | Common Myna |
| 7. | <i>Argya striata</i> | Jungle Babbler |
| 8. | <i>Cinnyris asiaticus</i> | Purple Sunbird |
| 9. | <i>Ocyeros birostris</i> | Indian Gray Hornbill |
| 10. | <i>Copsychus fulicatus</i> | Indian Robin |
| 11. | <i>Streptopelia senegalensis</i> | Laughing Dove |
| 12. | <i>Dicurus macrocercus</i> | Black Drongo |
| 13. | <i>Merops orientalis</i> | Green Bee Eater |
| 14. | <i>Sturnia pagodarum</i> | Brahminy Starling |
| List of Butterflies | | |
| Sr .No. | Scientific Name | Common Name |
| 1. | <i>Danaus genutia</i> | Common Tiger |
| 2. | <i>Eurema hecabe</i> | Common Grass Yellow |
| 3. | <i>Luthrodes pandava</i> | Plains cupid |
| 4. | <i>Danaus chrysippus</i> | Plain Tiger |
| 5. | <i>Junonia lemonias</i> | Lemon Pansy |
| 6. | <i>Catopsilia Pomona</i> | Common Emigrant |
| 7. | <i>Talicaa nyseus</i> | Red Pierrot |
| List of Odonates | | |
| Sr. No. | Scientific Name | Common Name |
| 1. | <i>Diplacodes trivialis</i> | Ground Skimmer |
| 2. | <i>Crocothemis servilia</i> | Ruddy Marsh Skimmer |
| 3. | <i>Agriocnemis pygmaea</i> | Pygmy Dartlet |



PHOTO GALLERY

Flora and Fauna of the campus



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Facilities of the college



Girls common room



e-Classroom



Classroom



Auditorium



Computer Lab



Open Gym

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Facilities of the college



Girls common room



e-Classroom



Classroom



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Computer Lab



Open Gym

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Library



Play Ground

DISCLAIMER

This is explicitly declared that all photos under figure no. 9-19 have been provided by the college.



Report
Of
Green audit /
Environment audit
By
District level Audit Team,
Narmadapuram Division,
Constituted by Principal, Govt.
Home Science Lead College,
Narmadapuram

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Green and Environment Audit Report

Shaheed Bhagat Singh Post Graduate College, Pipariya 2022-23



Prepared By

District Level Audit Team , Narmadapuram Division

Narmadapuram

*Formed by the office of Principal Govt. Home Science Lead college, Narmadapuram.

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Environmental Audit Team , Narmadapuram

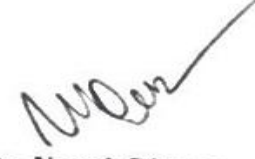
Formed under -Office of the Principal , Govt. Home Science lead College, Narmadapuram

Certificate


Green and Environment Audit Report of Shaheed Bhagatsingh Govt. Post Graduate College, Pipariya has been prepared by the District level audit team, Narmadapuram Formed wide letter no1637/stha/2023 Narmadapuram dated 14/07/2023 of The Principal ,Govt. Home Science lead College, Narmadapuram . based on the physical survey with a review of relevant documentation and interviews with the concerned person.

The audit was conducted for the session of 2022-23. The report also presents green initiatives followed and taken up by the college and provides suggestions and recommendations to improve environmental sustainability.


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Annexure 1: List of flora in the campus

Annexure 2: List of fauna in the campus

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1.Introduction

Shaheed Bhagat Singh Government P. G. College, Pipariya, Madhya Pradesh was established in July, 1962 by the name Jai Hind Adarsh Mahavidyalaya Pipariya. In 1965 the college was undertaken by the department of higher education, government of Madhya Pradesh and was christened as government college Pipariya. In 1983-84 the college was elevated to post graduate level study center. This is second largest co-educational college of the district with more than 2000 students. The college offers 16 subjects at UG and 9 at PG level in arts, commerce, science and law faculties, Ph.D. scholars are registered in three departments. The college has a large campus which is spread over 8.7 acres of land. There are three double story buildings having 34 rooms of different sizes, two single storied buildings one for law and other one for central office, one laboratory building consisting of physics, chemistry, zoology and botany labs. Apart from this geography and computer labs and one smart class room are accommodated in the rooms of building. Two separate rooms with indoor gymnasium facilities and tennis room are allotted for sports. One girl's common room and a separate toilet for physically challenged persons have been newly constructed with ramp facility. One double story building of 10 rooms and one auditorium are under construction. New education Policy 2020 has been implemented at U.G. level. The National Assessment and Accreditation Committee (NAAC) awarded the college 'B+' grade in 2017.

Impart inclusive quality education to help them become socially committed citizens and competent professionals capable of meeting global challenges. Empowerment of students through value based holistic higher education. The objectives of the institution include:

- To impart quality knowledge and professionalism
- To inculcate and enrich ethical values
- To upgrade curriculum and make it consistent with the needs of the society
- To provide equal access and opportunities to physical challenged students and to students coming from weaker socio-economic backgrounds
- To sustain learning environment by promoting skill development and employability.

1.1 Green Auditing

Green audit is a step towards environmental protection and conservation. The modernization and industrialization are the two important outputs which have made human more comfortable. Today, people are getting more familiar to the global issues like global warming, greenhouse effect, ozone depletion and



climate change. The time has come to wake up, unite and combat together to walk on the path of sustainable development.

Green auditing is the process to identify and determine whether institutions practices are environment friendly and sustainable. Traditionally, everything is good and efficiently using natural resources. But over the period of time excess use of resources like forest, energy and water is happening. To analyze whether our requirements are consuming more than required resources green audit is required. Green audit regulates all such practices and gives an efficient way to utilize natural resources. The climate change and resource depletion demands to verify the processes and convert it in to green and clean ones. Green audit provides an approach towards it. It also increases consciousness among the people working in institution towards healthy and green environment.

1.2 Goals of Green audit: The Shaheed Bhagatsingh Govt. P.G. College has conducted a green audit of its campus with the aim of identification and documentation of green practices of college, conduct a survey to know the scope of green practices in the campus, analyze solutions for problem identified from survey, to assess different types of waste management, identify and assess environmental risks. increase environmental awareness throughout campus, to encourage staff for sustainable use of available natural resources. The long term goal of any environmental audit program is to collect baseline data and resolve environmental issues before they become disaster. As far as NAAC is concerned Green Audit has become mandatory procedure for educational institutions under Criterion VII. The intention of green audit is to upgrade the environmental condition in and around the institution.

1.3 Objective

The purpose of Green and Environment audit was to ensure that the Green Practices are followed by students, teachers and other staff and, implemented in the campus, across all departments and administrative bodies.

2. Methodology

In order to accomplish above mentioned objectives the audit combined physical survey with a review of relevant documentation and interviews with the concerned person. The various aspects which were considered during the survey include good daylight design and ventilation, water efficiency, wastewater management, noise quality, energy efficiency, solid waste management, transportation, green initiatives and

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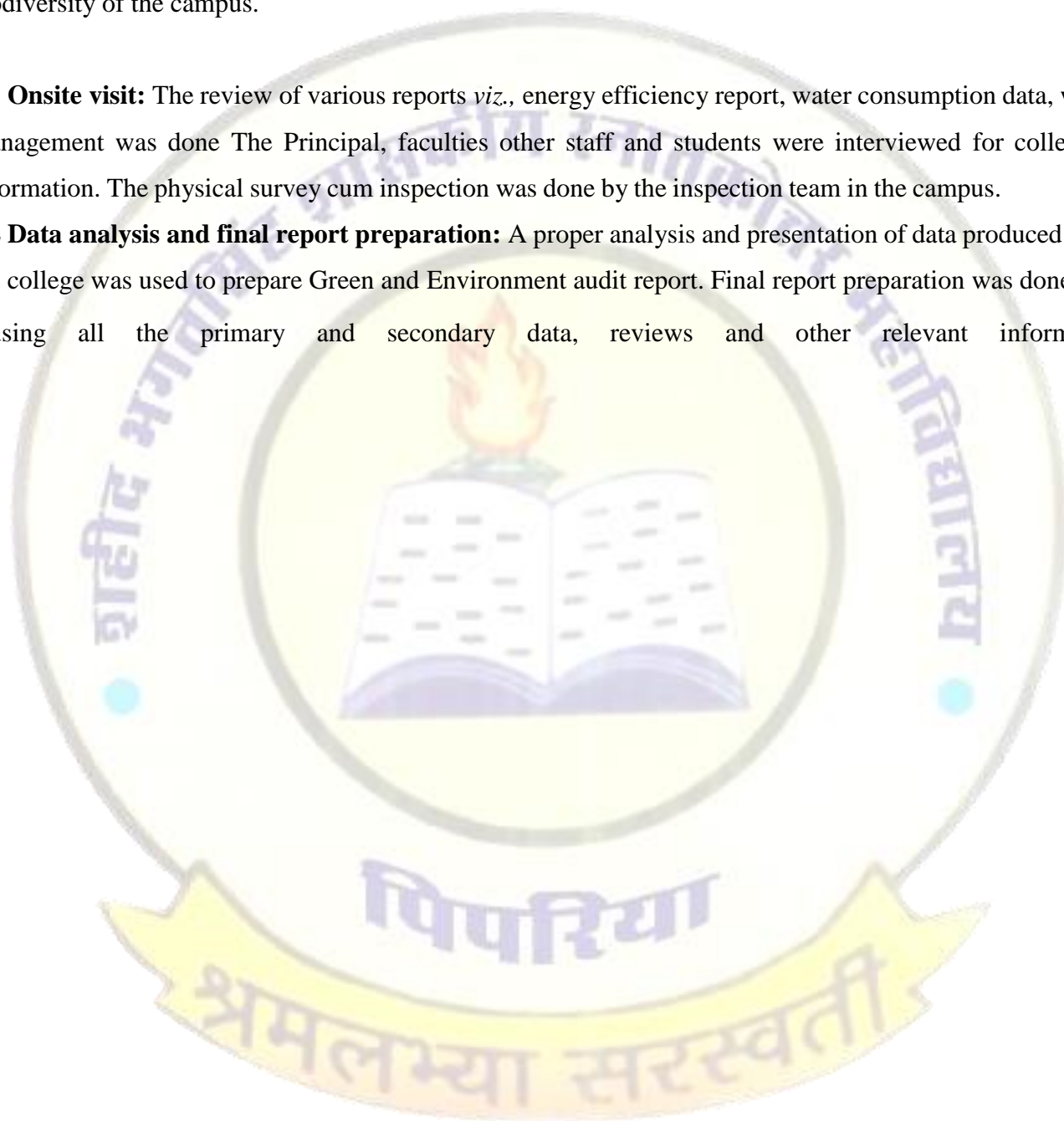
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biodiversity of the campus.

2.1 Onsite visit: The review of various reports viz., energy efficiency report, water consumption data, waste management was done. The Principal, faculties, other staff and students were interviewed for collecting information. The physical survey cum inspection was done by the inspection team in the campus.

2.2 Data analysis and final report preparation: A proper analysis and presentation of data produced from the college was used to prepare Green and Environment audit report. Final report preparation was done by using all the primary and secondary data, reviews and other relevant information.



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3.Green Audit Findings

3.1 Good daylight design and ventilation: The college buildings have enough day light and proper ventilation. The daylight design of the building reduce energy consumption of the college and ventilation provide healthy environment to the campus.



Classroom with good daylight design and proper ventilation



Good clean and green campus with dust bins

3.2 Water efficiency: The water used for various activities in campus from different water sources was evaluated under this heading. This includes water usage in academic buildings, residential halls, on campus and on grounds. The water demand of MLB college was met supplied from Bhopal Municipal Corporation (BMC, Bhopal). There are four old bore wells in the campus but not functioning at present. In the case of

water shortage in the near future, such initiatives help in water conservation.

3.3 Water harvesting: The water harvesting helps in conservation and management of water. In all four buildings of the college roof top rain water harvesting is installed. Such initiatives help in water conservation and restoration of ground water recharge table.

3.4 Energy efficiency: The average annual expenditure of SBS Govt PG College Pipariya on Electricity bills is Rs. 8.11 Lakh (~ monthly expenditure Rs. 67,588/-). The annual consumption is 66,985 units ~ monthly consumption of 5,582 Units. The solar panels are installed at the roof of science block of the college. Such practices help in energy saving and load on nonrenewable resources. However, earthing pits should be made, placement of fire extinguishers near main electric LT panels and laboratories should be done. Normal tube lights should be replaced with LEDs in phased manner.

3.5 Noise quality: The average noise quality was recorded from various sites viz., old building, office area, law building, Library building was 45.025 dB.

3.6 Transportation: The college has connectivity from all the areas of the city by public transportation. There is bus stand very near to college. Buses are available from all nearby places and villages to reach the college. The teachers and students uses both private as well as public vehicles to reach the college. However, teachers continuously encourage students to travel by public transport to reduce pollution load and they are economical also. Most of the students either use bicycle or come by walk from nearby areas.

3.7 Solid waste management: The solid waste generated from the college is collected by Pipariya Municipality. The different types of waste generated from the campus include paper waste mainly, plastic waste, biodegradable waste etc. Two types of Dust bins have been arranged to collect biodegradable and non-biodegradable waste.



Environment Day celebration

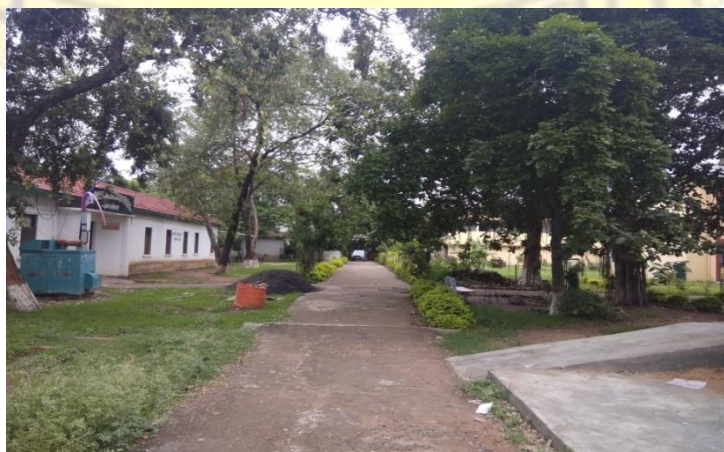
3.8 E-waste management: Generation of e-waste is common in every educational institution. There is need to reuse and recycle the electronic waste. In this regard college has started procedures for its proper disposal with the contribution of local agencies involved in collection and disposal of e-waste and it will be soon implement in the campus.

3.9 Special day celebration: The college conduct awareness program in order to encourage feeling of conservation of environment. Forest day was celebrated with the same intention with the contribution of students in the college. Mushroom culture is done on waste materials and plant waste. Such green activities reduce waste in the environment and supports sustainable development.

3.10 Green initiatives: The campus is total green with more than 50% area under green cover. practices ban on single use plastic therefore very less amount of plastic waste is generated in the campus. The college using printing on both side papers for printing. Vermicomposting unit is also in working condition in the campus.

3.11 Gardens: The college has four gardens in its premise which adds aesthetic value to the campus and also contribute to the biodiversity. A botanical garden of 100 x 120 feet, Green lawn in front of C- Block and Old building, a small garden of 30 x40 feet in front of administrative building. The list of flora and fauna found in these gardens as well as in the campus is provided below in the report.

3.12 Biodiversity in the campus: Despite located in the middle of city the Govt. PG College, Pipariya is rich in biodiversity. Its lush green campus provides habitat to many birds, butterflies and Odonates. The campus has 153 species of plants, 55 trees , 14 species of birds, 9 species of butterflies and 3 species of odonates. The college has good greenery and natural environment which supports biodiversity.



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Green college campus

4. Other facility: The campus has an auditorium where cultural and other programs are organized. The auditorium is big enough to conduct programs . A separate well equipped smart room is present to conduct seminar and workshops in the college.



Auditorium

5. Conclusion: After conducting survey for green and environment audit of the MLB College, Bhopal following conclusions were drawn:

- The campus put efforts to dispose majority type of waste by proper methods.
- The green practices viz., no single plastic usage, printing on both side of paper, e-waste management are helpful for reducing carbon footprint.
- Biodegradable waste is used efficiently for composting and vermicomposting.
- Installation of solar panels provides ample amount of electricity and reduces energy load.
- Roof top rain water harvesting has proved beneficial.
- E-waste disposal facility will be initiated soon.

6. Summary: Green and Environment audit is one of the important tool to promote and assess green practices in any institution. Green auditing emphasizes on environmental friendly and sustainable ways to carry out work. It is a process of regular identification, quantification, monitoring, documenting and reporting of environmental important components in a specified area. The main objective of the audit was to assess the green practices followed by college, to prepare audit report on the basis of survey and to suggest measures to improve green and environment audit indicators in order to promote sustainable development.

7. Recommendations: Following are some of the recommendations suggested by the audit committee:

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- Biodegradable waste generated from canteens should be collected and treated by composting process.
- The bore wells in the campus should be recharged and replenished soon.
- The solid waste should be reused or recycled at maximum possible places.
- The biodegradable waste is generated should be properly utilized for manure preparation or biogas generation.
- The electrification of street lights by solar power should be encouraged.
- Earthing pits should be made and tube lights should be replaced with LEDs in phased manner.
- The regular maintenance of pipes, overhead tanks and other plumbing system should be done in order to reduce overflow of water, leakages and corrosions.
- The biomedical waste and chemical waste from laboratories should be properly disposed off.
- The old taps should be replaced or repaired. in a phased manner.
- No Vehicle Day proves to be one of the good practices to save the fuel and help for green and clean environment on the campus.
- An environmental policy document should be prepared for the college which should include the

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objectives and targets to be achieved by the campus.

- A frequent green audit survey should be conducted to ensure that the generated waste is managed, monitored and recorded regularly.

Annexure 1

Shaheed Bhagatsingh Govt. P.G.College, Pipariya

Some Campus Flora

| S. No. | Common Name | Scientific Name |
|--------|-------------------|--------------------------------|
| 1 | Kadam | <i>Anthocephalus cadamba</i> |
| 2 | | <i>Clerodendrum splendid</i> |
| 3 | Bargad | <i>Ficus bengalensis</i> |
| 4 | Ratanjot | <i>Jatropha circas</i> |
| 5 | Sarpgandha | <i>Rauwolfia serpentina</i> |
| 6 | Saptaparni | <i>Alstonia scholaris</i> |
| 7 | Sindoor | <i>Bixa orellana</i> |
| 8 | Paras Peepal | <i>Thespesia</i> |
| 9 | Amaltas | <i>Cassia fistula</i> |
| 10 | Parijat | <i>Nyctanthes</i> |
| 11 | Peepal | <i>Ficus religiosa</i> |
| 12 | Lemon Grass | <i>Citronella</i> |
| 13 | Sheesham | <i>Dalbergia sissoo</i> |
| 14 | Subabul | <i>Leucaena leucocephala</i> |
| 15 | Gulmohar | <i>Delonix regia</i> |
| 16 | | <i>Solanum trilobatum</i> |
| 17 | Neem | <i>Azadirachta indica</i> |
| 18 | Palm | <i>Areca palm</i> |
| 19 | False Ashok | <i>Polyalthia</i> |
| 20 | Karahja, Malapari | <i>Pongamia pinnata</i> |
| 21 | Frangipani | <i>Plumeria obtusa</i> |
| 22 | | <i>Euphorbia paniculata</i> |
| 23 | False Ajwain | <i>Trachyspermum ammi</i> |
| 24 | Arrowhead Plant | <i>Syngonium potophyllum</i> |
| 25 | | <i>Bauhinia toimentosa</i> |
| 26 | Kaner | <i>Nerium indica</i> |
| 27 | | <i>Tebubia rosea</i> |
| 28 | Harshingar | <i>Nyctanthes arbortristis</i> |
| 29 | Banyan Tree | <i>Ficus bhengalensis</i> |
| 30 | Black Board Tree | <i>Alestonia scholarisis</i> |
| 31 | | <i>Impatience pulcherima</i> |

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| | | |
|----|--------------|--------------------------------|
| 32 | Saptparni | <i>Lageustonia</i> |
| 33 | | <i>Poinsettia</i> |
| 34 | Mahaneem | <i>Allanthus excelss</i> |
| 35 | Bakaan | <i>Melia azadirachta</i> |
| 36 | Kaner | <i>Nerium indica</i> |
| 37 | Madhukamini | <i>Murraya paniculata</i> |
| 38 | Molshree | <i>Mimusops elengi</i> |
| 39 | Shirish | <i>Albizia lebbeck</i> |
| 40 | Awala | <i>Phyllanthus officinalis</i> |
| 41 | Imli | <i>Tamarindus indica</i> |
| 42 | Mango | <i>Mangifera indica</i> |
| 43 | Chilbili | <i>Holeoptilia</i> |
| 44 | | <i>Hamelia pateus</i> |
| 45 | Bel | <i>Aegle marmelos</i> |
| 46 | | <i>Kuphea</i> |
| 47 | Vilayti Imli | <i>Pithecellobium dulce</i> |
| 48 | Babul | <i>Acacia arabica</i> |
| 49 | | <i>Aurellia</i> |
| 50 | | <i>Iglooneme</i> |
| 51 | Mandar | <i>Calotropis</i> |
| 52 | Nirgundi | <i>Vitex negundo</i> |
| 53 | | <i>Pothus</i> |
| 54 | | <i>Phyllodendrum</i> |
| 55 | | <i>Latana</i> |
| 56 | Munga | <i>Moringa</i> |
| 57 | Yellow Kaner | <i>Thevetia peruviana</i> |
| 58 | Kachnar | <i>Bauhinia variegata</i> |

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Annexure 2

Shaheed Bhagat Singh Govt. PG College, Pipariya

Campus Fauna

List of Birds

| S.No. | Common Name | Scientific Name |
|-------|----------------------|----------------------------------|
| 1. | Red-vented Bulbul | <i>Pycnonotus cafer</i> |
| 2. | Rock Pigeon | <i>Columba livia</i> |
| 3. | Asian Koel | <i>Eudynamys scolopaceus</i> |
| 4. | Red-wattled Lapwing | <i>Vanellus indicus</i> |
| 5. | Little Swift | <i>Apus affinis</i> |
| 6. | Common Myna | <i>Acridotheres tristis</i> |
| 7. | Jungle Babbler | <i>Argya striata</i> |
| 8. | Purple Sunbird | <i>Cinnyris asiaticus</i> |
| 9. | Indian Gray Hornbill | <i>Ocyrceros birostris</i> |
| 10. | Indian Robin | <i>Copsychus fulicatus</i> |
| 11. | Laughing Dove | <i>Streptopelia senegalensis</i> |
| 12. | Black Drongo | <i>Dicrurus macrocercus</i> |
| 13. | Green Bee Eater | <i>Merops orientalis</i> |
| 14. | Brahminy Starling | <i>Sturnia pagodarum</i> |

List of Butterflies

| S.No. | Common Name | Scientific Name |
|-------|---------------------|--------------------------|
| 1. | Common Tiger | <i>Danaus genutia</i> |
| 2. | Common Grass Yellow | <i>Eurema hecabe</i> |
| 3. | Plains cupid | <i>Luthrodes pandava</i> |
| 4. | Plain Tiger | <i>Danaus chrysippus</i> |
| 5. | Lemon Pansy | <i>Junonia lemonias</i> |
| 6. | Common Emigrant | <i>Catopsilia Pomona</i> |
| 7. | Red Pierrot | <i>Talica nyseus</i> |

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List of Odonates

| S.No. | Common Name | Scientific Name |
|-------|---------------------|-----------------------------|
| 1. | Ground Skimmer | <i>Diplacodes trivialis</i> |
| 2. | Ruddy Marsh Skimmer | <i>Crocothemis servilia</i> |
| 3. | Pygmy Dartlet | <i>Agriocnemis pygmaea</i> |

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