Sri Sathya Sai College for Women, Bhopal

(Under Autonomous Scheme of U.G.C)

NAAC Re-accredited Autonomous College under the UGC Scheme with 'A' Grade

GREEN AUDIT REPORT

Covering, Green Audit, Environment Audit, and Energy Audit

JUNE 30, 2023

REPORT PREPARED BY

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Prepared for

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ISO 17020 Accrediated by NABCB
Personnel Certification Body - Yoga Certification Body

Dated:30.06.2023

To

Sri Sathya Sai College for Women,
Kasturba Hospital Road, Habib Ganj,
Bhopal, Madhya Pradesh, 462024

Subject: Green Audit Report and Certificate - Sri Sathya Sai College for Women

Dear Sir/Madam,

This is in reference to Green Audit held at your campus by Dr. Sridhar Harikrishnamoorthy, Lead Auditor on 30th June 2023. Please find attached herewith Green Audit Report and Certificate. We would like to inform you that this report is based on facts and figures provided by your team and observations done by the auditor during the visit to your campus.

Once again, we congratulate Sri Sathya Sai College for Women on their commitment to sustainability, and we believe that the Green Audit Report will serve as a valuable resource in their ongoing journey towards resource efficiency and environmental stewardship.

Thanking you,

Yours Sincerely,

For PQMS Quality Services Pvt. Ltd.

Paramjeet Singh
CEO

Authorized Signatory

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Date – 30/06/2023

Foreword

It gives me great pleasure to present the book of report for the Green Audit conducted at Sri Sathya Sai college for women, Kasturba hospital road, Habibganj, Bhopal – 462 024.. As a CII certified professional on resource efficiency and sustainability, I had the privilege of leading this audit on the 27th June, 2023.

The purpose of this comprehensive audit was to evaluate Sri Sathya Sai College for women's environmental performance and identify opportunities for improvement in the realm of resource efficiency and sustainability. This book of report encapsulates the findings, insights, and recommendations gathered during the audit process.

Energy Audit and Efficiency:

The energy audit section of this report delves into the assessment of Sri Sathya Sai College for women's energy consumption patterns, systems, and practices. It scrutinizes energy sources, distribution systems, and identifies potential areas where energy efficiency measures can be implemented. The aim is to promote the judicious use of energy, reduce carbon footprint, and enhance operational efficiency.

Green Audit:

The green audit component focuses on evaluating the Institution's overall environmental impact. It encompasses waste management, water usage, transportation, procurement practices, and environmental policies. By analyzing these aspects, we aim to encourage sustainable practices, minimize environmental risks, and foster a culture of environmental stewardship within the institution.

Environmental Audit:

The environmental audit section encompasses a broader assessment, considering factors such as compliance with environmental regulations, environmental incidents, and complaints management. It highlights the importance of maintaining a robust environmental management system, ensuring legal compliance, and continuously improving environmental performance.

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The outcomes of this audit provide a foundation for Sri Sathya Sai College for women to embark on a journey towards greater sustainability, resource efficiency, and environmental responsibility. The recommendations outlined in this report serve as a roadmap, offering practical solutions and strategies for achieving sustainable practices and reducing environmental impact.

I would like to express my sincere appreciation to the management, internal audit team.

Dr.Renu Mishra , HOD, Botany and Microbiology

Dr.Neena Arora, HOD, Chemistry

Dr.Rupa G.Nandi, HOD, Biotechnology and Zoology

Dr.Nishi Yadav, Assistance. Professor, Microbiology

Dr.Varsha Saxena, Associate professor, Chemistry

Ms.Supriya Gupta, Assistance. Professor. Botany

Faculty, staff, and students of Sri Sathya Sai College for women, for their active participation and cooperation during the audit. Their commitment to environmental sustainability has been instrumental in facilitating this comprehensive evaluation.

I hope this book of report serves as a valuable resource for Sri Sathya Sai College for women, empowering them to make informed decisions, implement sustainable practices, and contribute to a greener and more sustainable future.

H. Sridhar.

Dr. Sridhar Hari Krishnamoorthy

Lead Assessor, Green Audit, PQMS Quality Services Pvt Ltd, Punjab

& Founder, Orcci Eco Products, Chennai

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1 INTRODUCTION

This section provides background information about the purpose and importance of green auditing in educational institutions. It highlights how a clean and healthy environment promotes learning and is conducive to learning.

1.1 INSTITUTION ESTABLISHMENT

Sri Sathya Sai College for Women, Bhopal, was founded by the grace of Bhagwan Sri Sathya Sai Baba himself on 4th July 1974, a Guru Poornima day. By His Divine Grace, the institution finally set its sail on its worldly journey in December 1974 under the stewardship of Dr. (Miss) Tara Pandurang Prabhu. Swami deputed Dr. T.P. Prabhu with this special assignment from the Women's College at Anantapur, Andhra Pradesh, the first girls college established by Swami. Dr. Prabhu dedicated all her life for the establishment of this institution. The tiny sapling, in these 39 years, has grown into a tree.

The college was started in a metpha shed in the BHEL township. The BHEL community, secular in its outlook, enjoys wide exposure to modern science and technology. An ambience of sophistication and modernism, based on liberal education prevails in the township. Way back in the 70's, the Bhopal city was not so developed and it was not easy to commute from the township to the city. The need for a girls' college was strongly felt, but no serious effort had been made. The people of Bhopal and particularly BHEL township were blessed by Baba's divine grace when the college was established in December 1974 in the Piplani area of the BHEL township.

1.2 BACKGROUND INFORMATION ABOUT THE INSTITUTE

Aim

Sri Sathya Sai Institutions have been established not just to enable students to earn a living, but to make them acquire good traits and lead ideal lives. The students, thus concentrate, not only on their studies, but also on the development of their character, so that they may serve as examples to others and promote the Sai ideals by their actions.

Mission

Swami primarily stresses on four things: -

- The daily routine of the students and teachers should be a combination of the academic and spiritual aspect of education. The day should begin with prayer and meditation. Talks on spiritual subjects, elocution and spiritual quiz to be organized regularly.
- Every teacher, student and all other staff members should be encouraged to aim at the best and strive for excellence in their respective fields.

All students and staff should feel that they are the chosen instruments in Baba's mission. What is this mission? "Dharma Sthapana" i.e. restoring the virtues of righteousness. How can this be done? By Discipline, Love, Service and Sadhana. Baba has himself stated, "In this college, the medium is discipline. The first, second and the third languages are Love, Service and Sadhana". This has been accepted as the "Mission Statement" of the institution and the four points that he has emphasized upon, form the four pillars on which the foundation of the institution has been laid. From time to time, we keep receiving instructions from the Sai organization and the discourses of the founder president, Bhagawan Sri Sathya Sai Baba.

Sri Sathya Sai College for Women, Bhopal was established by Bhagwan Sri Sathya Sai Baba with the objective of providing conducive and healthy environment for the education of women.

In 2015, the college was accredited 'A' grade (2nd cycle) by National Assessment and Accreditation Council (NAAC), Bangalore, which is an autonomous body established by Institution Grants Commission, Govt of India and in 2018 college was given autonomous status.

Presently the college is efficiently running various UG and PG courses under New Education Policy (NEP). The subjects taught in the Faculty of Arts are Hindi, History, Economics, Political Science, Psychology, English, Home Science, Sanskrit, Sociology and Music. Also conduct B.A. LLB and LLB Courses. Under the Science faculty Zoology, Botany, Micro-Biology, Bio-technology. Chemistry, Computer Science, Mathematics and Physics are taught. The faculty of Commerce has B.Com. with Economics / Computer Application and other compulsory subjects. BCA a separate course in computer application.

- The college is running professional courses of Bachelor of Education (B.Ed.) recognized by NCTE since 1985.
- The college has PG courses in English, Hindi, Political Science, Chemistry, Mathematics, Zoology. Biotechnology, Computer Science and Commerce. They have Ph.D Programme in the departments of Hindi, Political Science Botany, Microbiology, Zoology, Chemistry, Physics and Commerce.
- The college is proud of almost 100% results every year. To facilitate placement,

campus selection by renowned companies are organized every year.

- The existing strength of the college is around 600 students and 61 teachers. The college is proud to have highly qualified and dedicated staff. Out of 61 there are 40 Ph.D. and 4 M.Phil. qualified teachers.
- A well equipped, fully computerized, spacious library, spread over 10,000 sq. ft., enriched with 35,488 books and modern amenities is a unique feature of the college.
- College has subscribed to electronic resources of more than 1.9 lakhs e-books and 6000+ e- journals under N-LIST facility of INFLIBNET.

- The College is committed to nurture harness and explore the potential of the students. With the passage of time the institution has evolved as an exemplary institution of higher education for women.

The college enjoys a distinct identity because of its unique features:

- The day begins with a general assembly attended by all students and teachers. One minutes 'Silence', Sarvadharma prayer, noble thought, mangal arti followed by few minutes of yogasana & meditation are the regular features in the assembly. Every Thursday, bhajans and spiritual talks are conducted.
- Special classes are held for education in human values.
- Celebration of Guru Purnima, visit to Prashanti Nilayam, Laksharchana on Makar Sankranti day are annual features.
- Dress code and strict discipline are observed.
- Surya Namaskar is also organized every year.

- Close teacher-Student relation facilitated by the advisor- advisee system. The institution has grown with a steady pace in these years. With the blessings of Swami, much has been achieved. Continuous progress has taken place and the process of expansion still going on. The institution has always given weight age to quality rather than mere quantity. Growth is a continuous process and in the path of perfection, sky is the limit. By the grace of Swami, the institution is constantly striving towards betterment with a view to accomplish a synthesis of the traditional and the modern values, of the material and the spiritual, of academic and extra curricular excellence, nurturing a firm hope that :

"Those who walk with God always reach their destination".

Location and Area of Land

The institution is spread in 19 acres. A built-up area is 4.25 acres. 14.75 acres is green area. The college maintained 8 different gardens including well developed Medicinal Garden, Rose Garden, Desert Garden, Orchard etc.

Figure 1 - The infrastructure aerial view of the campus

Sri Sathya Sai College for Women, Bhopal Details of Plot area/Building/Constructed area

S.No.	Particular	acre	Sq.Ft.
01	Total Area	19.00 acre	8,27,640 Sqft
02	Constructed Area	4.25 acre	1,85,430 Sqft
03	Forest or Green area	14.75 acre	6,42,210 Sqft

Sri Sathya Sai College for Women, Bhopal Details of Plot area/Building/Constructed area

S.No.	Particular		acre	Sq.Ft.
01	Total Area		19.00 acre	8,27,640 Sqft
02	Constructed Area		4.25 acre	1,85,430 Sqft
	Name	Sqft		
A	Administrative areas	3597		
B	Laboratories	15546		
C	Lecture halls	32454		
D	Class Room	4259		
E	Sports Grounds / Fields	77877		
F	Toilet's in building	1557		
G	Common Areas	40276		
H	Parking	2880		
	Total	1,78,446		
	other	6894		
	Total	1,85,430		
03	Forest Area		3 acre	6,42,210 Sqft.
	Green Area		11.75 acre	

1.3 PURPOSE OF GREEN AUDIT

The purpose of a Green Audit, also known as an Environmental Audit or Sustainability Audit, is to assess and evaluate the environmental performance and sustainability practices of an organization or a specific project. The goal of a Green Audit is to identify areas where improvements can be made to reduce environmental impact, conserve resources, and promote sustainability.

Green Audits typically involves a comprehensive examination of various aspects of an organization's operations, including energy usage, waste management, water consumption, greenhouse gas emissions, transportation practices, and adherence to environmental regulations. The audit may also assess the organization's policies, procedures, and management systems related to environmental sustainability.

The scope of a Green Audit typically includes three main areas: environmental audit, energy audit, and green audit. Let's take a closer look at each of these components:

Environmental Audit: This aspect focuses on assessing an organization's overall environmental performance. It involves evaluating various environmental aspects, such as air and water pollution, waste management practices, biodiversity conservation, and compliance with environmental regulations. The environmental audit provides insights into an organization's impact on the environment and helps identify areas for improvement.

Energy Audit: Energy audits specifically focus on evaluating an organization's energy consumption patterns and identifying opportunities for energy efficiency improvements. This includes assessing energy usage in buildings, industrial processes, transportation, and other operational aspects. The audit may involve analyzing energy bills, conducting on-site inspections, and recommending energy-saving measures, such as upgrading equipment, optimizing energy systems, and implementing renewable energy solutions.

Green Audit: The green audit component of the assessment concentrates on evaluating an organization's sustainability practices and their impact on the environment. It examines the organization's commitment to environmental sustainability, resource conservation, and social responsibility. The purpose is to identify opportunities for implementing environmentally friendly practices and promoting a culture of sustainability within the organization.

Combining these three components—environmental audit, energy audit, and green audit—provides an evaluation of an organization's environmental performance, energy efficiency, and overall sustainability practices. By assessing these areas, organizations can identify and implement measures to minimize their environmental footprint, reduce resource consumption, and enhance their commitment to sustainable practices.

1.3.1 THE KEY OBJECTIVES OF A GREEN AUDIT ARE:

Identifying environmental risks and opportunities: The audit helps identify potential environmental risks associated with an organization's activities, such as pollution, habitat destruction, or resource depletion. It also identifies opportunities for reducing environmental impact, improving efficiency, and implementing sustainable practices.

Assessing resource consumption and waste management: The audit examines the organization's resource consumption patterns, such as energy, water, and raw materials, and evaluates its waste management practices. This helps identify opportunities for reducing resource consumption, optimizing processes, and implementing recycling or waste reduction strategies.

Enhancing sustainability performance: By identifying areas for improvement, a Green Audit helps organizations enhance their sustainability performance. It provides recommendations and action plans to implement eco-friendly practices, reduce environmental impact, and promote sustainable development.

Promoting transparency and accountability: Green Audits increase transparency by evaluating and reporting an organization's environmental performance to stakeholders, including employees, Students, Parents, investors, and regulatory authorities. It demonstrates the organization's commitment to environmental responsibility and accountability.

Facilitating continuous improvement: A Green Audit is not a one-time assessment but an ongoing process. It helps organizations establish baseline environmental performance metrics, set targets, and monitor progress over time. Regular audits enable continuous improvement and ensure that sustainability practices are integrated into the organization's culture and operations.

Overall, the purpose of a Green Audit is to drive environmental responsibility, identify opportunities for improvement, and guide organizations toward sustainable practices that benefit both the environment and their bottom line.

2 PRE-AUDIT STAGE

This section explains the scope and goals of green auditing, which is an effective and sustainable method for handling environmental issues. It also describes the data collection methodology used in the audit process, including tools used for data collection and steps taken for data collection.

2.1 AUDIT SCOPE AND METHODOLOGY

2.1.1 INTRODUCTION:

This section provides an overview of the audit process and its objectives.

It outlines the scope of the audit, which includes sustainability, environment, and energy management practices at the institution. The section also describes the methodology used in conducting the audit, which involves a combination of document reviews, site inspections and interviews with relevant stakeholders.

2.1.2 AUDIT OBJECTIVES:

These objectives include evaluating waste management practices, water conservation measures, biodiversity conservation efforts, sustainable transportation options, air quality management strategies, hazardous waste management procedures, noise pollution control measures, energy efficiency initiatives, and renewable energy sources.

The objectives are based on national building code requirements for sustainability and energy efficiency as well as guidelines for environmental and sustainability audits from NAAC & NABCB.

The objectives are designed to promote sustainable practices that reduce environmental impact while improving occupant comfort and health.

The results of the audit will be used to develop recommendations for improving sustainability practices at the institution.

The objectives will be evaluated based on their effectiveness in achieving these goals.

2.1.3 AUDIT CRITERIA:

These criteria include compliance with national building code requirements for sustainability and energy efficiency; adherence to guidelines for environmental and sustainability audits from NAAC & NABCB; use of best practices for waste management, water conservation, biodiversity conservation, sustainable transportation, air quality management, hazardous waste management, noise pollution control, energy efficiency measures and renewable energy sources.

The criteria will be evaluated based on their effectiveness in achieving these goals.

Compliance with the criteria will be assessed through document review, site inspections, and interviews with relevant

2.2 AUDIT SCOPE

The audit covers sustainability, environment, and energy management practices at the institution.

The audit is conducted under National Building Code 2016 - Part 11 and directives of NAAC & NABCB.

The physical area covered by the audit is 19 acres of campus area consisting of instructional buildings, laboratory, Student Hostel, and administrative infrastructure.

The audit scope includes an evaluation of waste management, water conservation, biodiversity conservation, sustainable transportation, air quality management, hazardous waste management, noise pollution control, energy efficiency measures, and renewable energy sources.

The audit criteria are based on national building code requirements for sustainability and energy efficiency as well as guidelines for environmental and sustainability audits from NAAC & NABCB.

The audit process involves pre-audit planning and preparation, on-site audit activities (e.g., interviews, document review, site inspections), and post-audit reporting and follow-up.

2.3 DATA COLLECTION METHODOLOGY

The data collection methodology for green auditing involves two phases: preliminary data collection and detailed data collection. During the preliminary data collection phase, tools such as questionnaires, surveys, and interviews are used to gather information about an organization's operations. The steps taken during this phase include identifying key stakeholders, defining the scope of the audit process, developing a data collection plan, and selecting appropriate tools for data collection. During the detailed data collection phase, more in-depth information is collected using tools such as energy meters, water meters, and waste audits. This phase involves collecting quantitative data on energy use, water consumption, waste generation rates, and other relevant parameters.

2.4 Preliminary Data Collection Phase:

The preliminary data collection phase is the first step in the green audit process. It involves collecting basic information about an organization's operations and identifying areas where environmental improvements can be made. The following are the two main aspects of the preliminary data collection phase:

2.4.1 Tools Used for Data Collection:

During the preliminary data collection phase, various tools are used to collect information about an organization's operations. These tools include observation, surveys, questionnaires, interviews, and measurements. Observation involves visually inspecting an organization's facilities and operations to identify areas where environmental improvements can be made. Surveys and questionnaires are used to gather information from staff and students about their environmental practices and attitudes toward sustainability. Interviews are conducted with key stakeholders to gain a deeper understanding of an organization's operations and identify areas where improvements can be made. Measurements involve collecting quantitative data on energy use, water consumption, waste generation rates, and other relevant parameters.

2.4.2 Steps Taken for Data Collection:

The following steps are taken during the preliminary data collection phase:

- Identify key stakeholders: The first step is to identify key stakeholders who will be involved in the green audit process.
- Define the scope of the audit process: The scope of the audit process is defined by identifying which areas of an organization's operations will be audited.

- Develop a data collection plan: A data collection plan is developed that outlines which tools will be used for data collection and how they will be used.
- Select appropriate tools for data collection: The appropriate tools for data collection are selected based on the scope of the audit process.

2.5 Detailed Data Collection Phase:

The detailed data collection phase is the second step in the green audit process. It involves collecting more in-depth information about an organization's operations using specialized tools such as energy meters, water meters, and waste audits. The following are some aspects of detailed data collection:

Energy audits: Energy audits involve collecting detailed information about an organization's energy use, including electricity, gas, and other fuels. This information is used to identify areas where energy conservation measures can be implemented.

Water audits: Water audits involve collecting detailed information about an organization's water consumption, including the amount of water used for different purposes. This information is used to identify areas where water conservation measures can be implemented.

Waste audits: Waste audits involve collecting detailed information about an organization's waste generation rates and the types of waste generated. This information is used to identify areas where waste reduction and recycling programs can be implemented.

The detailed data collection phase involves collecting quantitative data on an organization's operations using specialized tools and techniques. The data collected during this phase is more detailed and specific than the data collected during the preliminary data collection phase. The following are some steps taken during the detailed data collection phase:

Develop a detailed data collection plan: A detailed data collection plan is developed that outlines which tools and techniques will be used for data collection and how they will be used.

Analyze the collected data: The collected data is analyzed to identify areas where environmental improvements can be made.

Identify opportunities for improvement: Based on the analysis of the collected data, opportunities for improvement are identified in areas such as energy conservation, water conservation, waste reduction, and recycling.

Develop recommendations: Recommendations are developed based on the identified opportunities for improvement. These recommendations may include specific actions that an organization can take to reduce its environmental impact.

In summary, the preliminary data collection phase involves collecting basic information about an organization's operations using various tools such as observation, surveys, questionnaires, interviews, and measurements. The detailed data collection phase involves collecting more in-depth information about an organization's operations using specialized tools such as energy meters, water meters, and waste audits. Both phases are essential in identifying areas where environmental improvements can be made and developing recommendations for reducing an organization's environmental impact.

3 AUDIT STAGE

This section covers Energy Efficiency Design Features in Sri Sathya Sai college Buildings, and energy conservation measures such as lighting systems, air conditioning systems, and electrical appliances. It also discusses water conservation measures such as water supply systems and sanitation systems. Additionally, it covers waste management measures such as solid waste management and liquid waste management. Comprehensive Analysis of Energy Efficiency Design Features in Sri Sathya Sai college Buildings: Correlation with National Building Code of India, Chapter 11

3.1 ENERGY EFFICIENCY - INTRODUCTION:

This report provides a detailed examination of the energy-efficiency design features integrated into the buildings at Sri Sathya Sai college. The aim is to optimize energy consumption, reduce carbon emissions, and create a sustainable built environment. The following sections elaborate on the various aspects of the energy efficiency design, highlighting their correlation with specific provisions of Chapter 11 of the National Building Code of India (NBC).

3.1.1 BUILDING ENVELOPE:

WINDOWS AND GLAZING: The buildings at Sri Sathya Sai college incorporate energy-efficient windows that are equipped with low emissivity coatings and multiple panes of glass, such as double or triple glazing. These design choices align with the guidelines provided in Section 11.2.2 of the National Building Code (NBC), as detailed on pages 11-4. By utilizing such energy-efficient glazing systems, the institute aims to achieve several benefits. Firstly, these windows effectively reduce solar heat gain, minimizing the amount of heat transferred into

the buildings. Secondly, they enhance daylighting, allowing natural light to illuminate the interiors and reducing the reliance on artificial lighting. Lastly, the optimized energy performance of these windows contributes to overall energy efficiency within the buildings.

3.1.2 PASSIVE SOLAR DESIGN:

SHADING DEVICES: Overhangs, brise-soleil, louvers, or shading fins are installed to block direct sunlight and prevent excessive heat gain (NBC Section 11.3.3, pages 11-8). This corresponds to NBC's provisions for shading devices to reduce solar heat gain, enhance occupant comfort, and improve energy efficiency.

THERMAL MASS: Sri Sathya Sai college employs construction materials with high thermal mass, such as concrete or masonry, which effectively absorb and store heat energy. This strategic choice aligns with the recommendations provided in Section 11.3.2 of the National Building Code (NBC), as outlined on pages 11-8. By utilizing materials with high thermal mass, the Institution aims to achieve several advantages. Firstly, these materials facilitate the regulation of indoor temperatures by absorbing and releasing heat slowly, resulting in a more stable and comfortable environment. This helps to reduce the dependence on heating and cooling systems, subsequently minimizing energy consumption and associated costs.

Furthermore, the Institution emphasizes the use of locally available rock stones for building purposes. By sourcing materials from the local region, the Institution not only supports the local economy but also reduces the environmental impact associated with transportation. The incorporation of locally available rock stones showcases a sustainable approach to

construction, reflecting the Institution's commitment to environmentally friendly practices and promoting a sense of connection with the surrounding landscape.

Figure 2 - High Thermal Mass Rock stones used for construction

3.1.3 NATURAL VENTILATION:

WINDOW PLACEMENT: Sri Sathya Sai college's buildings are thoughtfully designed with strategically placed windows and openings to promote effective cross-ventilation. This design approach aligns with the guidelines presented in Section 11.4.1 of the National Building Code (NBC), as detailed on pages 11-10. By incorporating these design features, the Institution prioritizes natural ventilation strategies, aiming to achieve multiple benefits. Firstly, the strategic placement of windows and openings allows for the efficient circulation

of fresh air, enhancing indoor air quality and creating a healthier environment for occupants. Secondly, by maximizing the utilization of natural ventilation, the reliance on mechanical ventilation systems is reduced, resulting in energy savings and improved energy efficiency. This holistic approach to building design showcases Sri Sathya Sai college's commitment to providing a comfortable, sustainable, and environmentally conscious atmosphere for its occupants.

Figure 3 Wider and bigger Windows to allow natural light into the building

3.1.4 Efficient Lighting Design:

Daylight Harvesting: The buildings maximize the use of natural daylight through ample windows, skylights, and light wells (NBC Section 11.6.2, pages 11-18). This aligns with NBC's provisions for daylight harvesting techniques to reduce artificial lighting loads and optimize energy consumption.

Figure 4 Daylight Harvesting Feature

3.1.5 Conclusion:

Sri Sathya Sai college energy efficiency design features in its buildings closely align with the sustainability criteria specified in Chapter 11 of the National Building Code of India. The

emphasis on insulation, windows and glazing, air sealing, passive solar design, natural ventilation, and efficient lighting design demonstrates a commitment to energy conservation, thermal comfort, and environmental sustainability as outlined in the NBC. By incorporating these design elements, Sri Sathya Sai college for women, Bhopal sets a positive example for promoting sustainable building practices and reducing energy consumption in line with the guidelines provided by the National Building Code of India.

3.2 Energy Conservation Measures at Sri Sathya Sai College for Women, Bhopal

The Institution relies on energy sources for its power consumption, including grid electricity and electricity generated from Solar Panel. Typically, electricity is utilized to operate all electrical devices. In terms of power supply, the building is connected to BHEL Owned Power Grid.

3.2.1 Renewable energy

Solar Panel : Taking a significant step towards renewable energy, the college has successfully installed a 30 kW solar panel system on its terrace. This solar panel array generates an average of 110 kWh per day, harnessing the power of the sun to contribute to the campus's energy needs. The integration of an intelligent net metering system ensures a seamless connection to the grid. This system allows any surplus energy generated by the solar panels to be fed back into the grid, effectively turning the college into a local energy supplier. Conversely, when the college requires additional energy beyond what the solar panels produce, it can easily draw from the grid. This dual-flow energy arrangement optimizes energy usage while bolstering the college's commitment to sustainable practices.

Figure 5 Solar Panel installed at the premises

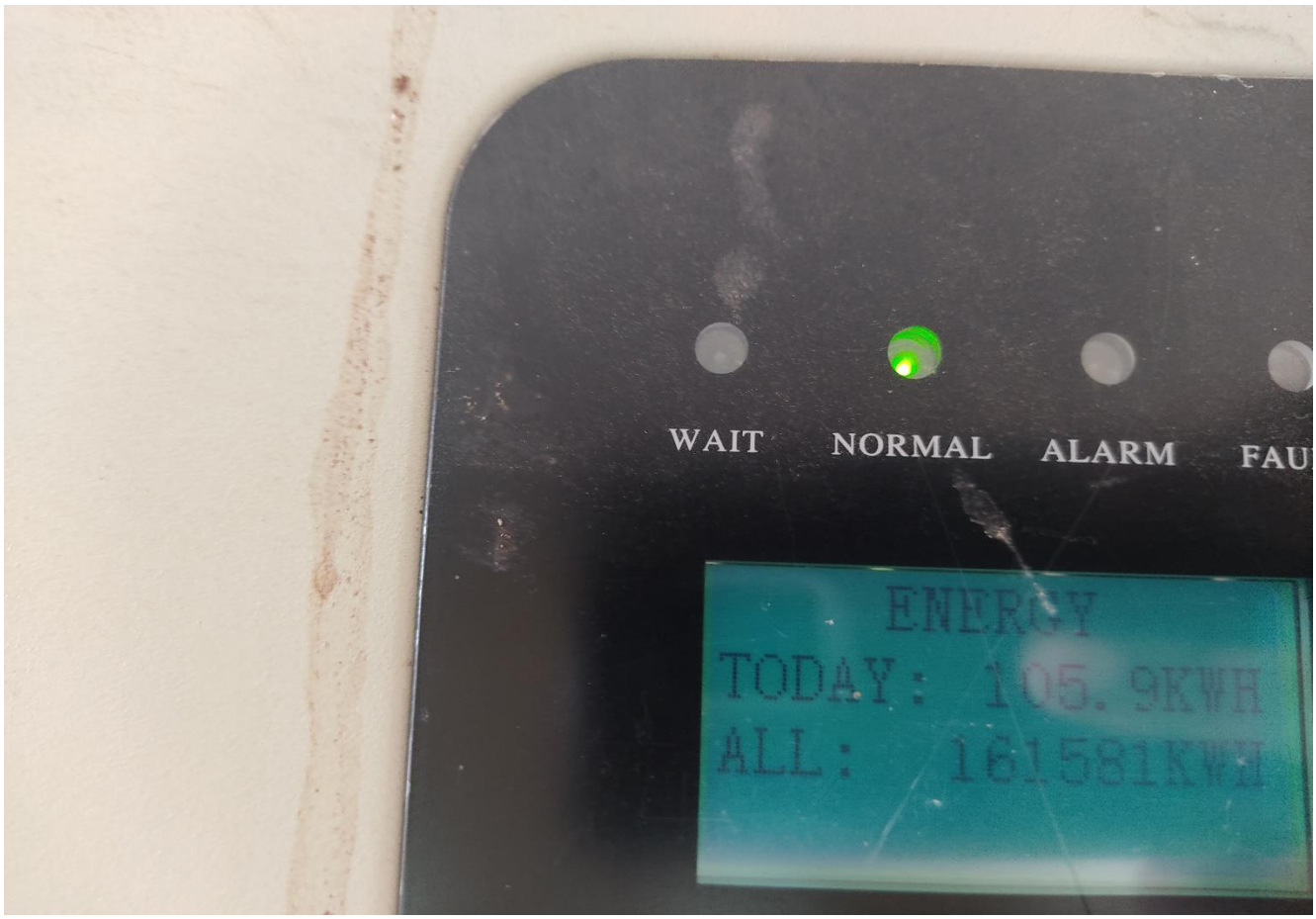


Figure 6 - Meter showing the KWH of energy produced b solar panels

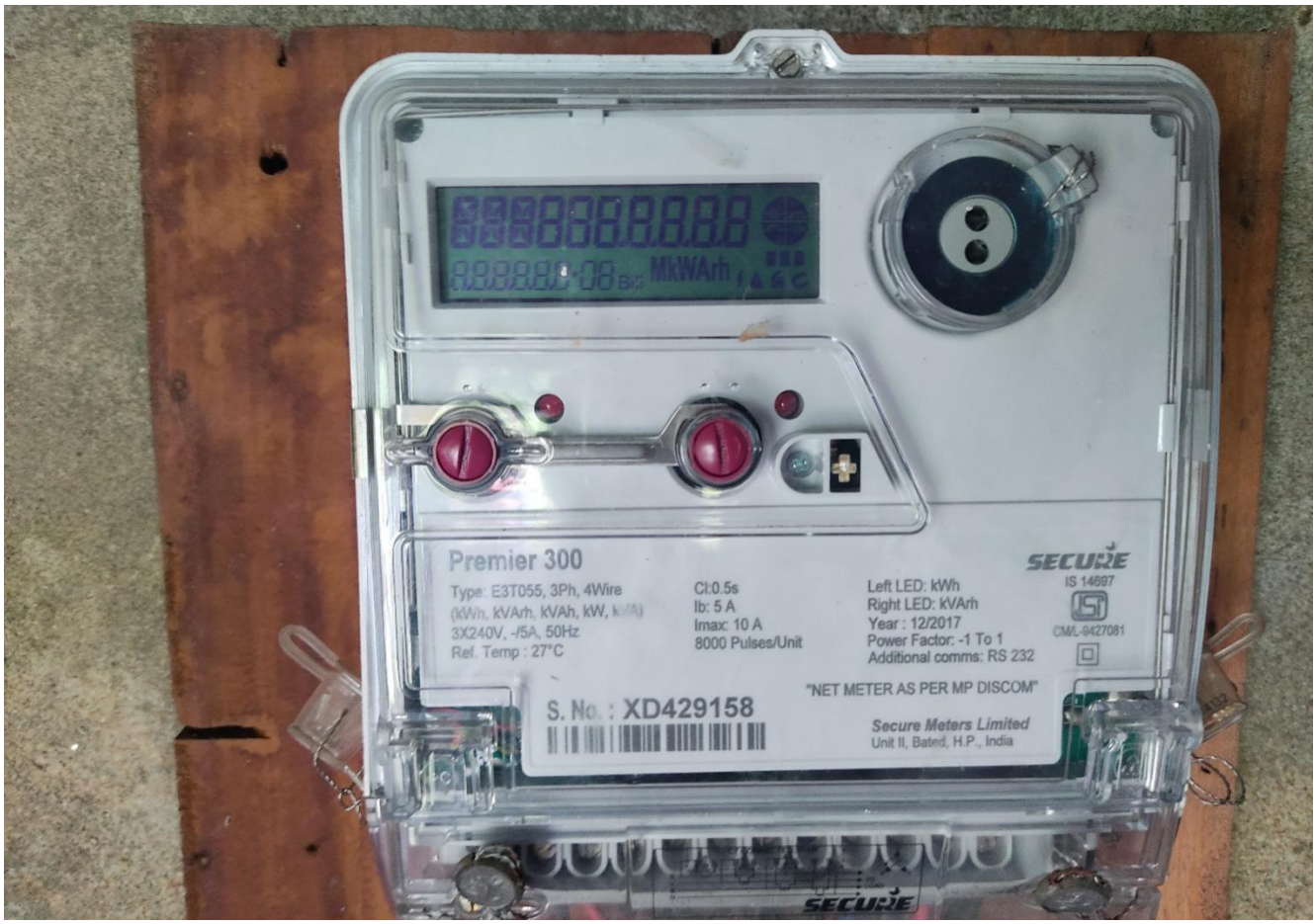


Figure 7 Net metering installed at the campus

3.2.2 LIGHTING SYSTEM:

The lighting system is one of the major energy-consuming systems in any building.

In terms of lighting, Sri Sathya Sai college, Bhopal has made significant progress in enhancing energy efficiency and reducing its environmental impact. The following measures have been implemented:

LED LIGHTING**:** The Institution has upgraded its lighting system by replacing traditional incandescent bulbs and fluorescent tubes with energy-efficient LED lights. LED lights consume less energy and have a longer lifespan compared to conventional lighting options. This switch has resulted in substantial energy savings across campus.

Figure 8 LED Lighting fixtures

TASK LIGHTING**:** The Institution encourages the use of task lighting instead of relying solely on overhead lighting. Task lighting provides focused illumination where it is required, allowing individuals to efficiently carry out their activities without illuminating an entire room unnecessarily. This approach reduces energy usage by targeting lighting precisely where it is needed.

In terms of lighting, Sri Sathya Sai college has made significant progress in enhancing energy efficiency and reducing its environmental impact. The following measures have been implemented:

NATURAL LIGHT UTILIZATION: Sri Sathya Sai college has incorporated the use of natural light by installing windows and skylights in buildings. By maximizing daylight penetration, the Institution reduces the dependence on artificial lighting during daylight hours. This not only minimizes energy consumption but also creates a more pleasant and sustainable indoor environment.

Figure 9 The Entire Laboratory is fully illuminated with Natural light

These availability measures demonstrate Sri Sathya Sai college's commitment to energy efficiency and sustainability specifically in the lighting domain. By adopting LED lighting, harnessing natural light, and promoting task lighting, the Institution significantly reduces energy consumption and contributes to a greener campus environment.

3.2.3 EFFICIENT CLIMATE MANAGEMENT::

Sri Sathya Sai College, Bhopal has ingeniously tackled energy consumption in buildings by opting for air cooler systems that are well-suited to the climate of Bhopal. The college has taken substantial steps to harness energy efficiency and the following strategies highlight their approach:

UTILIZATION OF ENERGY-SAVING AIR COOLERS: The college has embraced the use of energy-efficient air cooler units as an alternative to conventional air conditioning. These specially chosen air coolers are attuned to the climate of Bhopal and are designed to operate with minimal energy consumption. By incorporating features like adjustable cooling mechanisms and intuitive sensors, these units offer effective cooling while conserving valuable energy resources.

THOUGHTFUL COOLING DISTRIBUTION: In line with their energy-saving vision, the college has installed air coolers in strategic locations only where essential. Notably, the decision to use air coolers is limited to specific areas, ensuring that a comfortable environment is maintained without excessive energy use.

Figure 10 Air Cooler installed in the premises

STRATEGIC AIR CONDITIONING PLACEMENT: In a conscious effort to balance comfort and energy efficiency, the college has chosen to install air conditioning units exclusively in the auditorium ,Conference room, sophisticated instrument laboratories, Accounts and

principal's office. By targeting specific high-priority areas, the college ensures a conducive environment for important gatherings and administrative functions while minimizing unnecessary energy expenditure.

REGULAR MAINTENANCE AND TUNE-UPS: To ensure the optimal performance of air cooler systems, the college has established a routine maintenance protocol. This involves regular cleaning, filter replacements, and detailed inspections, all aimed at sustaining high efficiency and performance. By upholding such maintenance practices, the college effectively reduces energy consumption while extending the longevity of the air cooler units."

BUILDING ENVELOPE IMPROVEMENTS: Sri Sathya Sai college, Bhopal has invested in improving the insulation and sealing of its buildings to minimize heat gain or loss. Enhanced insulation, weather-stripping, and efficient windows reduce the workload on air conditioning systems, resulting in energy savings and improved cooling efficiency.

3.3 Energy Conservation Measures for Electrical Appliances at Sri Sathya Sai college For Women, Bhopal

3.3.1 Introduction:

This report highlights the successful implementation of energy conservation measures for electrical appliances at Sri Sathya Sai college . The Institution has taken specific actions to address energy consumption, focusing on appliances such as computers, printers, and refrigerators. By adopting the recommended strategies, Sri Sathya Sai college has achieved significant reductions in energy usage, cost savings, and positive environmental impacts. The following sections outline the measures that have been effectively implemented to conserve energy within the context of Sri Sathya Sai college .

3.3.2 Utilization of energy-efficient appliances:

Sri Sathya Sai college, Bhopal has prioritized the procurement of energy-efficient models when acquiring electrical appliances. The Institution carefully selects appliances with high energy efficiency ratings and certifications, such as the bureau of energy efficiency (BEE) star rating in India. By opting for energy-efficient appliances, Sri Sathya Sai college ensures that electricity consumption is minimized while maintaining the desired functionality of the appliances.

The college places a strong emphasis on sustainability and energy conservation by actively selecting appliances that adhere to BEE (Bureau of Energy Efficiency) rated standards. This conscientious approach extends to various appliances, including air conditioners and

refrigerators. By opting for BEE rated energy-efficient appliances, the college not only reduces its energy consumption but also sets a commendable example for responsible resource utilization within the campus community. These carefully chosen appliances contribute to a greener environment while aligning with the college's commitment to promoting energy efficiency.

Figure 11 - Star rated Air conditions installed

Figure 12 - Star rated Refrigerator installed

3.3.3 POWER MANAGEMENT AND USAGE:

Sri Sathya Sai college has successfully instilled a culture of responsible energy consumption among its faculty, staff, and students. The Institution promotes the habit of powering off electrical appliances, including computers, printers, and other equipment when they are not

in use. This proactive approach has significantly reduced energy wastage, as appliances are no longer left on standby mode, which still consumes electricity. The collective effort to power off appliances when not needed has resulted in substantial energy savings.

3.3.4 REGULAR CLEANING AND MAINTENANCE:

Sri Sathya Sai college has implemented a robust maintenance program to ensure optimal energy efficiency of electrical appliances. The Institution has prioritized regular cleaning of coils in refrigerators, air conditioners, and other cooling equipment across the campus. By preventing dust and debris accumulation on the coils, Sri Sathya Sai college maintains efficient heat exchange and minimizes energy consumption. Furthermore, the Institution diligently maintains the filters of appliances like air purifiers and HVAC systems as recommended by the manufacturer. This proactive filter maintenance ensures unrestricted airflow, enhances appliance performance and reduces energy usage.

3.3.5 CONCLUSION:

Sri Sathya Sai college has successfully implemented energy conservation measures for electrical appliances, resulting in notable reductions in energy consumption. The Institution's commitment to utilizing energy-efficient appliances, promoting the power-off habit, employing power strips with timers, and practicing regular maintenance has significantly contributed to energy efficiency and environmental sustainability. By raising awareness and fostering a culture of responsible energy consumption among its faculty, staff, and students, Sri Sathya Sai college serves as an exemplary institution, leading the way toward a greener and more sustainable future.

3.4 Successful Implementation of Water Conservation Measures in Building Water Supply Systems

3.4.1 Introduction:

This report provides a comprehensive overview of the successful implementation of water conservation measures in the building water supply systems at Sri Sathya Sai college. The Institution, has demonstrated a strong commitment to sustainable water management practices. By effectively utilizing various components such as overhead tanks, RO purifying plants, rainwater harvesting systems, and storm water percolation ponds. Sri Sathya Sai college has achieved remarkable water savings, efficient water management, and environmental sustainability.

3.4.2 Overhead Tank Management:

Sri Sathya Sai college has implemented efficient management strategies for overhead tanks to minimize water wastage and optimize water distribution. The following practices have been adopted:

Regular inspections and proactive maintenance of the tanks to identify and promptly repair any leaks or issues in the water distribution system.

3.4.3 RO Purifying Plant:

The Institution has installed an RO purifying plants that ensures optimal water conservation while meeting the demands of purified water. The following measures have been undertaken:

Regular maintenance and servicing of the RO plant to maximize its efficiency and minimize water losses resulting from system inefficiencies.

Figure 13 RO Plant

Installation of water flow meters and comprehensive monitoring systems that provide real-time data on water usage, enabling the identification of any anomalies or excessive wastage.

Implementation of innovative techniques to reuse rejected water from the purification process for non-potable purposes, significantly reducing water waste.

3.4.4 RAINWATER HARVESTING SYSTEM:

The college has taken a proactive stance in environmental sustainability by installing a state-of-the-art rainwater harvesting system. This innovative system is adept at capturing rainwater cascading down from the terrace, channeling it for optimal utilization. The collected rainwater is directed towards recharging the groundwater, serving as a valuable source for replenishing the water table. By implementing such a system, the college showcases its commitment to responsible water management and conservation.

UTILIZING AN OLD WELL FOR RAINWATER HARVESTING: In addition to modern rainwater harvesting methods, the college has ingeniously repurposed an age-old well on its premises into a natural rainwater harvesting system. The well's strategic location at a lower elevation compared to other areas allows it to effortlessly accumulate rainwater. This collected rainwater subsequently percolates into the ground, contributing to the augmentation of groundwater resources. This traditional approach to rainwater harvesting demonstrates the college's holistic perspective on sustainable water practices, utilizing age-old wisdom to complement modern conservation efforts.

Figure 14 Rain water harvesting system

Figure 15 Rain water recharge well

3.4.5 CONCLUSION:

Sri Sathya Sai college's successful implementation of water conservation measures in its building water supply systems serves as a notable example of sustainable water management practices. Through their proactive approach and diligent efforts in managing overhead tanks, RO purifying plants, and rainwater harvesting systems.

3.5 COMPREHENSIVE WASTE MANAGEMENT MEASURES FOR SUSTAINABLE PRACTICES:

3.5.1 INTRODUCTION:

This report focuses on the comprehensive waste management measures implemented at Sri Sathya Sai college , showcasing their commitment to sustainability and responsible waste disposal. In addition to effective solid waste management practices, the Institution has partnered with an authorized third-party waste management company, to handle inorganic e-waste, recyclable waste, and hazardous waste. These initiatives ensure proper disposal, recycling, and responsible handling of different types of waste, minimizing environmental impact and promoting a cleaner and greener campus.

3.5.2 SOLID WASTE MANAGEMENT:

Waste segregation at source, as per NBC Chapter 11 (Section 11.3.1), promotes proper waste management and facilitates recycling.

Installation of recycling bins throughout the campus, following NBC Chapter 11 (Section 11.3.2), to encourage waste segregation and facilitate recycling of materials such as paper, plastic, metal, and glass.

Figure 16 Colour coded dust bins

Regular waste audits, as recommended by NBC Chapter 11 (Section 11.3.3), assess waste composition, identify opportunities for waste reduction, and develop targeted waste management strategies.

3.5.3 INORGANIC E-WASTE MANAGEMENT:

Sri Sathya Sai college recognizes the importance of responsible e-waste disposal and has taken the following measures:

Collaboration with Waste Management Company, an authorized waste management service provider specializing in the collection and recycling of electronic waste.

Regular awareness campaigns and workshops to educate students, faculty, and staff about the hazards of improper e-waste disposal and the importance of recycling electronic devices.

Dedicated collection points and drop-off locations for e-waste across the campus, making it convenient for the Institution community to dispose of their electronic devices safely.

Regular pickups by Management Company to ensure the proper handling, dismantling, and recycling of e-waste in compliance with relevant regulations and guidelines.

Figure 17 E-waste storage place

3.5.4 RECYCLABLE WASTE MANAGEMENT:

Sri Sathya Sai college actively promotes recycling by implementing the following practices:

Collaboration with Waste Management Company to collect and recycle various recyclable materials, such as paper, plastic, metal, and glass.

Placement of designated recycling bins in key areas throughout the campus, clearly labeled for specific recyclable materials, ensuring proper segregation and easy disposal.

Regular collection and transportation of recyclable waste by Waste Management Company to authorized recycling facilities.

Monitoring and auditing the recycling process to ensure compliance with recycling standards and guidelines.

Figure 18 Waste collection bin installed by waste management company

3.5.5 HAZARDOUS WASTE MANAGEMENT:

Sri Sathya Sai college gives high priority to the safe handling and disposal of hazardous waste by taking the following measures:

Identification and proper labeling of hazardous waste generated within the campus, including chemicals, batteries, and other potentially harmful materials.

Collaboration with Waste Management Company, which specializes in the collection, transportation, and disposal of hazardous waste in compliance with regulatory requirements.

Implementation of strict protocols and guidelines for the safe storage, handling, and transportation of hazardous waste to prevent environmental contamination and ensure the well-being of the Institution community.

3.5.6 VERMICOMPOSTING PIT FOR EFFECTIVE WASTE MANAGEMENT:

The college has embraced an eco-conscious approach to waste management by introducing a vermicomposting pit on its premises. This ingenious pit serves as a focal point for processing wet waste efficiently. The process involves the utilization of earthworms to break down organic waste materials, transforming them into nutrient-rich compost. By adopting this sustainable practice, the college not only reduces the environmental impact of wet waste disposal but also generates valuable compost that can be used to enrich the soil and promote greener surroundings. This vermicomposting pit underscores the college's commitment to adopting environmentally friendly solutions for waste management.

Figure 19 composting pit

3.5.7 LIQUID WASTE MANAGEMENT

Liquid waste includes, laboratory waste, canteen etc. Waste generated from laboratory does not contain any hazardous chemical waste. Water of distillation units and RO are reused for washing and gardening purpose.

3.5.8 LABORATORY WASTE MANAGEMENT

Laboratory wastes are never mixed with other waste in laboratory and are segregated in specified bag and are treated within 48 hrs. Autoclaving is done to decontaminate waste by destroying pathogens.

After treatment Laboratory wastes are buried in a pit which is 2 m deep and then covered with soil and lime. It is ensured that these burial sites are not accessible by animals and human. The burial sites are away from surface water or any other water resources. Institution maintains a record of all such pits.

3.5.9 CONCLUSION:

Sri Sathya Sai college's comprehensive waste management measures, including the partnership with Waste Management Company, demonstrate their commitment to sustainable practices and responsible waste disposal. By effectively managing inorganic e-waste, recyclable waste, and hazardous waste, the Institution ensures proper disposal, recycling, and safe handling of different types of waste. These initiatives contribute to minimizing environmental impact, reducing landfill waste, and promoting a cleaner and healthier campus environment. Sri Sathya Sai college serves as a role model for other educational institutions in adopting comprehensive waste management practices and fostering a culture of sustainability.

3.6 BIODIVERSITY CONSERVATION EFFORTS

3.6.1 INTRODUCTION:

This report highlights Sri Sathya Sai college commendable efforts towards biodiversity conservation on its campus, aligning with the principles outlined in the National Building Code (NBC) of India. The Institution recognizes the importance of preserving biodiversity and has implemented various initiatives to protect and enhance the natural ecosystems present within its premises. This report showcases Sri Sathya Sai college commitment to biodiversity conservation, showcasing its adherence to the guidelines set forth by NBC.

3.6.2 GARDENS IN THE COLLEGE CAMPUS

1. **Rose Garden**-This garden is situated at the entrance of the college.Around 500 different varities of hybrid rose plants are present in this garden.

2. **Dhanvantari medicinal garden**– It is situated in front of Home Science block. In this garden around 200 plants of highly important medicinal value are present.

3. **Navagraha Vraksha Vatika** – It is situated in front of library.Navagraha Vatika means garden of 9 planets represented by the plants or trees or bushes or grasses which have the forces of 9 planets. These plants of 9 planets are planted in a particular direction to get the benefit of 9 planets. Navgraghavatika is very important and source of energy if planted anywhere. As these plants represents different planets i.e. represent different celestial forces, so this vatika gets the power of Navagraha. It gives the person Healthy and Wealthy life. On all the four sides of

this vatika acupressure tiles are present. A person taking parikrama of this vatika protects from various diseases..

4. **Butterfly Garden -** It is small garden situated in front of English department with many all season flowering plants. Because of flowering throughout the year, most of the time butterfly are present their.

5. **Desert Bloom –** It is small garden situated next to B.Ed. Block with many xerophytic plants.

6. **Sciophyte (Shade Loving) Plants –** Next to the Desert garden many potted shade loving plants are kept in a shade.

7. **Hostel garden –** Hostel premises also have a small garden with many flowering plants and trees.

8. **Hydrophytes –** Near Navagraha VarkshaVatika a small pond for hydrophytic plant is present. In this pond many water plants along with Lotus is present.

Besides there garden the campus is very rich in vegetation and biodiversity having green belt. All plants in the campus are named and tagged.

Figure 20 Poster on the gardens

Figure 21 - Navagraha Garden at the premises

3.6.3 Flora and Fauna of the Institution

3.6.3.1 LIST OF FLORA WITH DETAILS ENCLOSED. SRI SATHYA SAI COLLEGE

Provided in Annexure

3.6.3.2 LIST OF FAUNA WITH IN SRI SATHYA SAI COLLEGE

Provided in Annexure

3.6.4 TREE COVER AND GREEN SPACES:

Sri Sathya Sai college adheres to NBC's recommendations for creating green spaces and preserving tree cover (NBC, Chapter 11, Section 11.7.3).

The Institution has meticulously maintained a substantial tree cover, incorporating indigenous and native species to support local biodiversity.

The presence of green spaces and preserved tree cover not only enhances the aesthetic appeal but also provides habitat and food sources for various fauna.

Figure 26 - Dense tree cover inside the campus

3.6.5 ECOLOGICAL RESTORATION:

The Institution's ecological restoration initiatives comply with the NBC's emphasis on environmental sustainability and ecological balance (NBC, Chapter 11, Section 11.2.3).

Figure 22 Forest developed inside the campus

Restoration projects, such as reforestation, and meadow creation, aim to revive and enhance native habitats.

These efforts align with the NBC's guidelines for promoting ecological restoration and conserving natural ecosystems (NBC, Chapter 11, Section 11.2.4).

3.6.6 NATIVE PLANT LANDSCAPING:

Sri Sathya Sai college’s focus on using native plants for landscaping aligns with NBC's recommendations for promoting local biodiversity (NBC, Chapter 11, Section 11.7.4).

Native plants require less maintenance, conserve water, and support local flora and fauna.

The Institution's landscaping practices prioritize the use of indigenous and native species, contributing to the conservation of biodiversity as encouraged by the NBC.

Figure 23 Green scape inside the campus

Figure 24 - Forest developed inside the campus

3.6.7 WILDLIFE HABITAT CREATION:

The creation of designated wildlife habitats on campus complies with the NBC's emphasis on promoting biodiversity conservation (NBC, Chapter 11, Section 11.5.4).

Bird nesting boxes, butterfly gardens, provide shelter, breeding grounds, and food sources for wildlife.

These habitat creation efforts support the NBC's recommendations for enhancing wildlife habitats and promoting biodiversity within built environments.

3.6.8 EDUCATION AND OUTREACH:

Sri Sathya Sai college's educational programs and outreach initiatives regarding biodiversity conservation align with NBC's call for promoting environmental awareness (NBC, Chapter 11, Section 11.4.4).

Workshops, seminars, and nature walk organized by the Institution foster a deeper understanding of biodiversity and encourage community involvement.

These initiatives demonstrate the Institution's commitment to NBC's guidelines on raising awareness about biodiversity conservation and about the importance of waste reduction and recycling.

Figure 25 Environmental Promotional Activities in Godgram Tola Chotakheda Village

Figure 30 Environmental Promotional Activities in Godgram Tola Chotakheda Village

Figure 26 Swachh Bharat Mission: Village outreach Programme

Figure 27 Tree Plantation Drive

3.6.9 CONCLUSION:

Sri Sathya Sai college's biodiversity conservation efforts align with the principles outlined in the National Building Code (NBC) of India. By preserving tree cover, undertaking ecological restoration projects, prioritizing native plant landscaping, creating wildlife habitats, and promoting environmental education, the Institution demonstrates its commitment to complying with NBC's guidelines for biodiversity conservation. These efforts contribute to the preservation of local ecosystems, support wildlife habitats, and inspire the campus community to embrace sustainable practices. Sri Sathya Sai college, Bhopal serves as a role model for integrating biodiversity conservation into built environments while adhering to the principles set forth by the NBC.

3.7 Pollution Control and Environmental Protection: A Comprehensive Approach at Sri Sathya Sai college

3.7.1 Introduction:

This report highlights Sri Sathya Sai college's proactive measures and comprehensive approach towards pollution control and environmental protection on its campus. The Institution recognizes the importance of preserving the environment and minimizing pollution to create a sustainable and healthy ecosystem. This report showcases Sri Sathya Sai college's initiatives and adherence to environmental protection guidelines, focusing on pollution control measures, waste management practices, and conservation efforts.

3.7.2 Air Pollution Control:

Sri Sathya Sai college, Bhopal is committed to reducing air pollution on its campus by implementing various measures.

The Institution follows guidelines outlined in the National Building Code of India (NBC) Chapter 11, Section 5, which emphasizes the control of air pollution in buildings and surroundings.

The Institution promotes the use of renewable energy sources and encourages energy-efficient practices to minimize air pollution from fossil fuel combustion.

3.7.3 Water Pollution Control:

Sri Sathya Sai college prioritizes water pollution control through sustainable water management practices.

The Institution adheres to NBC Chapter 11, Section 6, which emphasizes the prevention of water pollution in buildings and surroundings.

Rainwater harvesting systems are implemented to conserve water and reduce the strain on local water resources.

Regular monitoring and maintenance of plumbing systems are carried out to prevent leaks and minimize water contamination.

3.7.4 WASTE MANAGEMENT:

Sri Sathya Sai college, Bhopal implements effective waste management practices to minimize environmental impact.

The Institution follows the guidelines outlined in NBC Chapter 11, Section 7, which emphasizes waste management principles.

Recycling bins are strategically placed throughout the campus to encourage waste segregation and recycling.

Organic waste, including food waste and garden waste, is composted using a dedicated composting yard, reducing the amount of waste sent to landfills.

Authorized third-party waste management companies are engaged in the proper collection and disposal of hazardous and inorganic waste.

Awareness campaigns and educational programs are conducted to educate the Institution Stakeholders

3.7.5 BIODIVERSITY CONSERVATION:

Sri Sathya Sai college, Bhopal places significant emphasis on biodiversity conservation within its campus.

The Institution promotes the preservation of green spaces, including gardens, parks, and natural vegetation, in line with NBC Chapter 11, Section 8, which emphasizes biodiversity conservation.

Tree cover and natural vegetation are preserved, providing habitat for local flora and fauna.

The campus landscaping is designed to support biodiversity and ecological balance, creating a harmonious environment.

3.7.6 CONCLUSION:

Sri Sathya Sai college's commitment to pollution control and environmental protection is reflected in its proactive measures and comprehensive approach. By adhering to guidelines outlined in the National Building Code of India (NBC), the Institution ensures the implementation of sustainable practices for air pollution control, water pollution control, waste management, and biodiversity conservation. These efforts contribute to creating a healthy and eco-friendly campus environment, fostering environmental awareness and sustainability among the Institution community. Sri Sathya Sai college, Bhopal serves as a model institution for pollution control and environmental protection, aligning with national standards and inspiring others to adopt similar practices for a greener and more sustainable future.

3.8 Carbon Footprint Analysis: Scope 1 and Scope 2 Emissions at Sri Sathya Sai College

3.8.1 Introduction:

This report presents an analysis of the carbon footprint at Sri Sathya Sai college, Bhopal focusing on Scope 1 and Scope 2 emissions. The carbon footprint assessment is a crucial step in understanding the environmental impact of the Institution's activities and identifying opportunities for emission reduction. This report highlights the sources of emissions, the efforts taken by the Institution to mitigate them, and the importance of addressing Scope 1 and Scope 2 emissions for sustainable campus operations.

3.8.2 Scope 1 Emissions:

Scope 1 emissions include direct greenhouse gas (GHG) emissions from sources that are owned or controlled by Sri Sathya Sai college ,Bhopal.

The combustion of fossil fuels in Laboratory, and transportation on campus contributes to Scope 1 emissions.

The LPG used in the Laboratory comes under the Institution scope 1. The Institution utilized 2 nos of 19 Kg LPG cylinders were used during the FY 22-23 for in Laboratory which amounts to 114 kg of Equivalent CO_2 emission which is insignificant.

Regular maintenance and optimization of combustion equipment and vehicles help minimize emissions and improve energy efficiency.

3.8.3 Scope 2 Emissions:

Scope 2 emissions include indirect GHG emissions associated with the consumption of purchased electricity, heat, or steam by Sri Sathya Sai college, Bhopal .

The Overall Annual Purchased Electricity by the institute is 262330Kwh for the FY 22-23, accounting for 21.5 tons of Equivalent CO_2 emission

3.8.4 CARBON FOOTPRINT OFFSET

SOLAR PANEL INSTALLATION FOR CARBON FOOTPRINT REDUCTION: In a significant stride towards environmental responsibility, the college has installed a 30 kW solar panel system that yields an impressive 110 kWh of energy daily. This sustainable energy generation plays a pivotal role in mitigating the college's carbon footprint. By harnessing solar power, the college not only reduces its reliance on fossil fuels but also offsets a substantial portion of its carbon emissions. This endeavor exemplifies the college's commitment to adopting renewable energy sources as a means to contribute positively to the environment and work towards a greener future.

3.8.5 EMISSION REDUCTION STRATEGIES:

Sri Sathya Sai college, Bhopal is committed to reducing its carbon footprint and implementing sustainable practices to mitigate GHG emissions.

The adoption of renewable energy technologies, such as the biogas plant and solar water heaters, helps reduce dependence on fossil fuels and contributes to emissions reduction.

The Institution promotes energy conservation and efficiency measures through awareness campaigns, regular maintenance of equipment, and implementation of energy-efficient practices.

Also, the Institution has created a thick Agroforestry inside its campus in the last 12 years. Most of the trees are fully grown and mature, capable of absorbing CO2 from the atmosphere. Thus, moving towards a carbon Neutral in the coming years.

Ongoing monitoring and assessment of energy consumption and GHG emissions assist in identifying areas for further improvement and implementing targeted reduction strategies.

3.8.6 CONCLUSION:

Sri Sathya Sai college, Bhopal recognizes the importance of addressing its carbon footprint to mitigate climate change and promote sustainable practices. Through the analysis of Scope 1 and Scope 2 emissions, the Institution has identified key sources of emissions and implemented measures to reduce its environmental impact. The adoption of renewable energy sources, such as the Solar Panels plant, demonstrates the Institution's commitment to carbon reduction. By prioritizing emission reduction strategies, Sri Sathya Sai college, Bhopal serves as a role model for other educational institutions, contributing to a greener and more sustainable future. Continued efforts in monitoring and improving the carbon footprint will help Sri Sathya Sai college,Bhopal to further mitigate its impact on the environment.

4 Post-Audit Stage

This section explains how to evaluate and monitor green audit results to ensure that they are effective in achieving their goals. It highlights how useful recommendations, alternatives, and observations obtained through audits have improved campus administration.

5 Recommendations and Action Plan

5.1 Suggestions for Improving Sustainability, Environment, and Energy Management Practices at the Institution

The Green Audit Report provides several recommendations for improving sustainability, environment, and energy management practices at the institution. The report identifies areas where the institute can improve its practices to reduce its environmental impact and promote sustainable development. The following are some of the key suggestions made in the report:

1. Reduce Energy Consumption: The institution should take measures to reduce its energy consumption by Expanding energy-efficient technologies such as LED lighting, motion sensors, and smart thermostats to all the infrastructure. This will not only reduce energy bills but also help in reducing carbon emissions.

2. Waste Reduction: The institution should implement a waste reduction program that includes recycling. It can also encourage students and staff to reduce waste by using reusable water bottles, coffee cups, and food containers.

3. Water Conservation: The report suggests that the institution should implement water conservation measures such as low-flow toilets and faucets to reduce water consumption on campus.

4. Biogas Plant Implementation:

Installing a biogas plant can help the college manage organic waste effectively by converting it into biogas and nutrient-rich slurry. This reduces waste sent to landfills and generates clean energy for cooking or heating purposes.

5. Sewage Treatment Plant (STP) / Bioseptic tank:

Establishing an STP / Biospetic tank can treat wastewater generated within the college premises before it's released into the environment. This ensures that water resources remain clean and helps prevent pollution.

6. Proper RO System and Waste Segregation:

Upgrading to a proper Reverse Osmosis (RO) system ensures efficient water purification while minimizing water wastage. Additionally, promoting waste segregation at the source encourages recycling and finding ways to reduces the load on landfills

7.Storm water Drain and Percolation Pond:

Designing and implementing a well-structured storm water drainage system, along with a percolation pond, helps manage rainwater effectively, prevents flooding, and recharges groundwater.

8.Water Management Sensors:

Utilizing smart water management sensors can help monitor and optimize water usage across the campus, leading to efficient consumption and conservation.

9.Sprinklers and Drip Irrigation:

Implementing efficient irrigation methods like drip irrigation and sprinkler systems minimizes water wastage and ensures that plants receive the right amount of water.

It's important to prioritize these recommendations based on the college's resources, goals, and specific environmental challenges. Collaborating with experts, local authorities, and sustainability organizations can provide valuable insights and support in implementing these initiatives effectively.

5.2 Proposed Action Plan for Implementing Recommendations

To implement these recommendations effectively, the Green Audit Report proposes an action plan that outlines specific steps that the institution can take to improve its sustainability practices. The following are some of the key actions proposed in the report:

1. Establish a Sustainability Committee: The institution should establish a sustainability committee comprising representatives from different departments to oversee sustainability initiatives on campus.

2. Conduct Awareness Campaigns: The report recommends conducting much more awareness campaigns among students and staff about sustainable practices such as energy conservation, waste reduction, and sustainable transportation options.

3. Develop an Energy Management Plan: The institution should develop an energy management plan that includes measures to reduce energy consumption, such as installing energy-efficient technologies and implementing a building automation system.

4. Implement Sustainable Procurement Policies: The report recommends that the institution should adopt sustainable procurement policies that prioritize environmentally friendly products and services.

5. Develop a Waste Reduction Program: The institution should develop a waste reduction program that includes recycling and composting facilities on campus. It can also encourage students and staff to reduce waste by using reusable water bottles and coffee cups.

6 CONCLUSION AND CERTIFICATION

Summary of Initiatives Taken by the Institution as Elucidated from the Audit

The Green Audit Report is a comprehensive analysis of an institution's sustainability, environment, and energy management practices. The report evaluates the institute's performance against specific criteria and provides recommendations for improving its practices. The following are some of the initiatives taken by the Institution as elucidated from the audit:

1. Energy Conservation: The Institution has implemented several energy conservation measures on campus, such as installing solar panels, LED lighting, and procurement of energy efficient appliances. These measures have resulted in a significant reduction in energy consumption and carbon emissions.

2. Waste Management: The Institution has implemented several waste management initiatives on campus, such as setting up a mechanism to recycle paper, plastic, and glass waste. The Institution also encourages composting of organic waste generated on campus.

3. Water Conservation: The Institution has implemented water conservation measures on campus, Rain water harvesting system, using old well as percolation pond to reduce water imbalance.

5. Green Campus Initiative: The Institution has launched a Green Campus Policy and initiative that aims to promote sustainable development practices on campus through awareness campaigns, workshops, seminars, and other activities.

In conclusion, the Green Audit Report highlights several initiatives taken by the Institution to promote sustainability, environment, and energy management practices on campus. These initiatives demonstrate the institution's commitment to environmental responsibility and accountability towards stakeholders. The Institution has an opportunity to lead by example and inspire others to adopt sustainable practices. By continuing to implement eco-friendly initiatives, the Institution can reduce its carbon footprint, conserve resources, and promote a healthier environment for all stakeholders.

The report also identifies areas for improvement and provides recommendations for implementing eco-friendly practices to reduce environmental impact and promote sustainable development. The institution has an opportunity to lead by example and inspire others to adopt sustainable practices. By implementing the recommendations outlined in the report, the institution can reduce its carbon footprint, conserve resources, and promote a healthier environment for all stakeholders. The certification of compliance with sustainability standards demonstrates the institution's commitment to environmental responsibility and accountability. Overall, the Green Audit Report provides a positive outlook for the institution's future as a leader in sustainable development.

7 APPENDICES

Supporting documents for the Report are annexed in the upcoming pages of the report.

Our Mission

Swami primarily stresses on four things: -

- The daily routine of the students and teachers should be a combination of the academic and spiritual aspect of education. The day should begin with prayer and meditation. Talks on spiritual subjects, elocution and spiritual quiz to be organized regularly.

- Every teacher, student and all other staff members should be encouraged to aim at the best and strive for excellence in their respective fields.

Ø All students and staff should feel that they are the chosen instruments in Baba's mission. What is this mission? "Dharma Sthapana" i.e. restoring the virtues of righteousness. How can this be done? By Discipline, Love, Service and Sadhana. Baba has himself stated, "In this college, the medium is discipline. The first, second and the third languages are Love, Service and Sadhana". This has been accepted as the "Mission Statement" of the institution and the four points that he has emphasized upon, form the four pillars on which the foundation of the institution has been laid. From time to time, we keep receiving instructions from the Sai organization and the discourses of our founder president, Bhagawan Sri Sathya Sai Baba.

Establishment

Sri Sathya Sai College for Women, Bhopal, was founded by the grace of Bhagwan Sri Sathya Sai Baba himself on 4th July 1974, a Guru Poornima day. By His Divine Grace, the institution finally set its sail on its worldly journey in December 1974 under the stewardship of Dr. (Miss.) Tara Pandurang Prabhu. Swami deputed Dr. T.P. Prabhu with this special assignment from the Women's College at Anantapur, Andhra Pradesh, the first girls college established by Swami. Dr. Prabhu dedicated all her life for the establishment of this institution. The tiny sapling, in these 39 years, has grown into a tree.

The college was started in a metpha shed in the BHEL township. The BHEL community, secular in its outlook, enjoys wide exposure to modern science and technology. An ambience of sophistication and modernism, based on liberal education prevails in the township. Way back in the 70's, the Bhopal city was not so developed and it was not easy to commute from the township to the city. The need for a girls' college was strongly felt, but no serious effort had been made. The people of Bhopal and particularly BHEL township were blessed by Baba's divine grace when the college was established in December 1974 in the Piplani area of the BHEL township.

The institution is spread in 19 acres. A built-up area is 4.25 acres. 13.45 acres is green and 1.30 acres open area is available for cultivation of Medicinal Plants. Our college maintained 8 different gardens including well developed Medicinal Garden, Rose Garden, Desert Garden, Orchard etc.

IQAC Coordinator

Brief about College

Sri Sathya Sai College for Women was established by Bhagwan Sri Sathya Sai Baba with the objective of providing conducive and healthy environment for the education of women.

In 2015, the college was accredited 'A grade' (2nd cycle) by National Assessment and Accreditation Council (NAAC), Bangalore, which is an autonomous body established by University Grants Commission, Govt of India, and in 2018 college was given autonomous status.

- ***Presently the college is efficiently running various UG and PG courses under New Education Policy (NEP). The subjects taught in the Faculty of Arts are Hindi, History, Economics, Political Science, Psychology, English, Home Science, Sanskrit, Sociology and Music. We also conduct B.A. LLB and LLB Courses. Under the Science faculty Zoology, Botany, Micro-Biology, Bio-technology. Chemistry, Computer Science, Mathematics and Physics are taught. The faculty of Commerce has B.Com. with Economics / Computer Application and other compulsory subjects. BCA a separate course in computer application.***
- ***The college is running professional courses of Bachelor of Education (B.Ed.) recognized by NCTE since 1985.***
- ***The college has PG courses in English, Hindi, Political Science, Chemistry, Mathematics, Zoology. Biotechnology, Computer Science and Commerce. We have Ph.D Programme in the departments of Hindi, Political Science Botany, Microbiology, Zoology, Chemistry, Physics and Commerce.***
- ***The college is proud of almost 100% results every year. To facilitate placement, campus selection by renowned companies are organized every year.***
- ***The existing strength of the college includes 1000 students and 68 teachers. The college is proud to have highly qualified and dedicated staff. Out of 70 there are 38 Ph.D. and 8 M.Phil. qualified teachers.***
- ***A well equipped, fully computerized, spacious library, spread over 10,000 sq. ft., enriched with 35,399 books and modern amenities is a unique feature of our college.***
- ***College has subscribed to electronic resources of more than 1.9 lakhs e-books and 6000+ e- journals under N-LIST facility of INFLIBNET.***

IQAC Coordinator

- ***The College is committed to nurture harness and explore the potential of the students. With the passage of time the institution has evolved as an exemplary institution of higher education for women.***

Our college enjoys a distinct identity because of its unique features:

- **The day begins with a general assembly attended by all students and teachers. Sarvadharma prayer, two minutes 'Maun', noble thought, mangal arti followed by few minutes of yogasana & meditation are the regular features in the assembly. Every Thursday, bhajans and spiritual talks are conducted.**
- **Special classes are held for education in human values.**
- **Celebration of Guru Purnima, visit to Prashanti Nilayam, Laksharchana on Makar Sankranti day are annual features.**
- **Dress code and strict discipline are observed.**
- **Surya Namaskar is also organized every year.**
- **Close teacher-pupil relation facilitated by the advisor- advisee system. The institution has grown with a steady pace in these twenty-nine years. With the blessings of Swami, much has been achieved. Continuous progress has taken place and the process of expansion still going on. The institution has always given weight age to quality rather than mere quantity. Growth is a continuous process and in the path of perfection, sky is the limit. By the grace of Swami, the institution is constantly striving towards betterment with a view to accomplish a synthesis of the traditional and the modern values, of the material and the spiritual, of academic and extra curricular excellence, nurturing a firm hope that :**

"Those who walk with God always reach their destination".

IQAC Coordinator

Sri Sathya Sai College for Women, Bhopal
Details of Plot area/Building/Constructed area

S.No.	Particular	acre	Sq.Ft.
01	Total Area	19.00 acre	8,27,640 Sqft
02	Constructed Area	4.25 acre	1,85,430 Sqft
03	Forest or Green area	14.75 acre	6,42,210 Sqft
04	Open area for cultivation	1.30 acre	56,680 Sqft
	260x218 = 56680 Sqft.		

IQAC Coordinator

Sri Sathya Sai College for Women, Bhopal
Details of Plot area/Building/Constructed area

S.No.	Particular		acre	Sq.Ft.
01	Total Area		19.00 acre	8,27,640 Sqft
02	Constructed Area		4.25 acre	1,85,430 Sqft
	Name	Sqft		
A	Administrative areas	3597		
B	Laboratories	15546		
C	Lecture halls	32454		
D	Class Room	4259		
E	Sports Grounds / Fields	77877		
F	Toilet's in building	1557		
G	Common Areas	40276		
H	Parking	2880		
	Total	1,78,446		
	other	6894		
	Total	1,85,430		
03	Forest Area		3 acre	6,42,210 Sqft.
	Green Area		10.75 acre	
04	Open area for cultivation		1.30 acre	56,680 Sqft
	260x218 = 56680 Sqft			

IQAC Coordinator

SRI SATHYA SAI COLLEGE FOR WOMEN, BHOPAL

Record of Electrical Gadgets/ Appliance in Different rooms of College Campus

S. No.	Details	Quantity		
1	Tube light	371		
2	Ceiling fan	247		
3	Bulb	43		
4	A/C	25		
5	Exhaust Fan	26		
6	Computer	186		
7	Cooler	10		

SRI SATHYA SAI COLLEGE FOR WOMEN, HABIBGANJ, BHOPAL

Record of Electricity related Gadgets/ Appliance in Different Rooms of College Campus

Name of the Building- College Main Building G. Floor

S. No.	Room Number	Tube light	Ceiling Fan	Bulb LED	A/C	Cooler	Freeze	Exhaust Fan	Heater	Computer	Printer	Photocopy machine
1	MG - 1 Chairman room	–	03	08	01	–	–	–	–	–	–	–
2	MG - 2 Commerce Dept	03	03	–	–	01	–	–	–	–	–	–
3	MG - 3 Chemistry Lab	02	02	–	–	–	01		–	–		–
4	MG - 4 Physics Dept	07	07	–	–	01			–	–		–
5	MG - 5 Chemistry Dept	10	06	–	–	02		03	–	–		–
6	MG - 6 Chemistry Lab	07	06	01	–	–	01		–	–		–
7	MG - 7 Assembly Hall	10	10	–	–				–	–		–
8	MG - 8 Multi Purpose Hall	05	08	–	–				–	–		
9	MG - 9 Office	08	06	–	–	02			–	–		
10	MG - 10 Principal office	05	04	–	01	–	01		–	–		01
11	MG - 11 NAAC	06	07	–	02	–	–			–	–	01
12	MG - 12 Accounts	–	06	15	03	–	–			–	–	–
13	MG - 13 Class Room	07	08	–	–	–	–			–	–	–
14	MG - 14 Computer Literacy Lab	06	06	–	–	–	–			–	–	–
15	Bathroom	03	–	–	–	–	–	01		–	–	–
16	Gallery	14	–	–	–	–	–			–	–	–
17	porch area	–	–	05	–	–	–			–	–	–
18	Reception	–	02	14	–		–		**01 T.V.**	–	–	–
19	Bath room	03	–	–	–	–	–	01	–	–	–	–
	Total	**96**	**84**	**43**	**07**	**06**	**03**	**05**	**01**			**02**

SRI SATHYA SAI COLLEGE FOR WOMEN, HABIBGANJ, BHOPAL

Record of Electricity related Gadgets/ Appliance in Different Rooms of College Campus

Name of the Building- College Main Building I. Floor

S. No.	Room Number	Tube light	Ceiling Fan	Bulb LED	A/C	Cooler	Freeze	Exhaust Fan	Heater	Computer	Printer	Photocopy machine
1	MF - 1Botany Dept./MicroBiology	34	10	0		01	02	02	03			
2	MF - 2 Zoology /Biology Dept.	26	7			01	01	02	03			
3	MF - 3 Instrumentation Lab	23	16				01	01				
4	MF - 4 I.T.Cell	4	4		01							
5	MF - 5 Computer Dept.	2	2									
6	MF - 6 U.G.lab	14	13		03							
7	MF - 7 Class Room	3	3									
8	MF - 8 Centeral Research Lab				13							
9	MF - 9 Auditorium											
10	MF - 10 Autonomous (Prit.Cell)	4	2		01							**01**
11	MF - 11 **Autonomous Exam. (Cell)**	4	3			02						01
12	MF - 12 Control Room Exam.											
13	MF - 13 Class Room	8	7									
14	MF - 14 Class Room	7	7									
15	MF - 15 Class Room	9	7									
16	Both Room	1										
17	Gallery	17							01			
	Total	**156**	**81**	**0**	**18**	**4**	**10**	**5**	**06**			**02**

SRI SATHYA SAI COLLEGE FOR WOMEN, HABIBGANJ, BHOPAL

Record of Electricity related Gadgets/ Instruments in Different Rooms of College Campus

Name of the Building- College Main Building II. Floor

S. No.	Room Number	Tube light	Ceiling Fan	Bulb LED	A/C	Cooler	Freeze	Exhaust Fan	Heater	Computer	Printer	Photo copy machine
1	MS - 1 Class Room	11	8									
2	MS - 2 Class Room	13	8									
3	MS - 3 Class Room	6	4									
4	MS - 4 Class Room	7	4									
5	MS - 5 Class Room	9	6									
6	MS - 6 Class Room	9	6									
7	MS - 7 Class Room	9	8									
8	MS - 8 Class Room	6	4									
9	MS - 9 Class Room	6	6									
10	MS - 10 Mathematics Dept	5	4									
11	MS - 11 Class Room	11	8									
12	MS - 12 Class Room	11	8									
13	MS - 13 Class Room	11	8									
14	Gallery	5	0									
	Total	**119**	**82**									

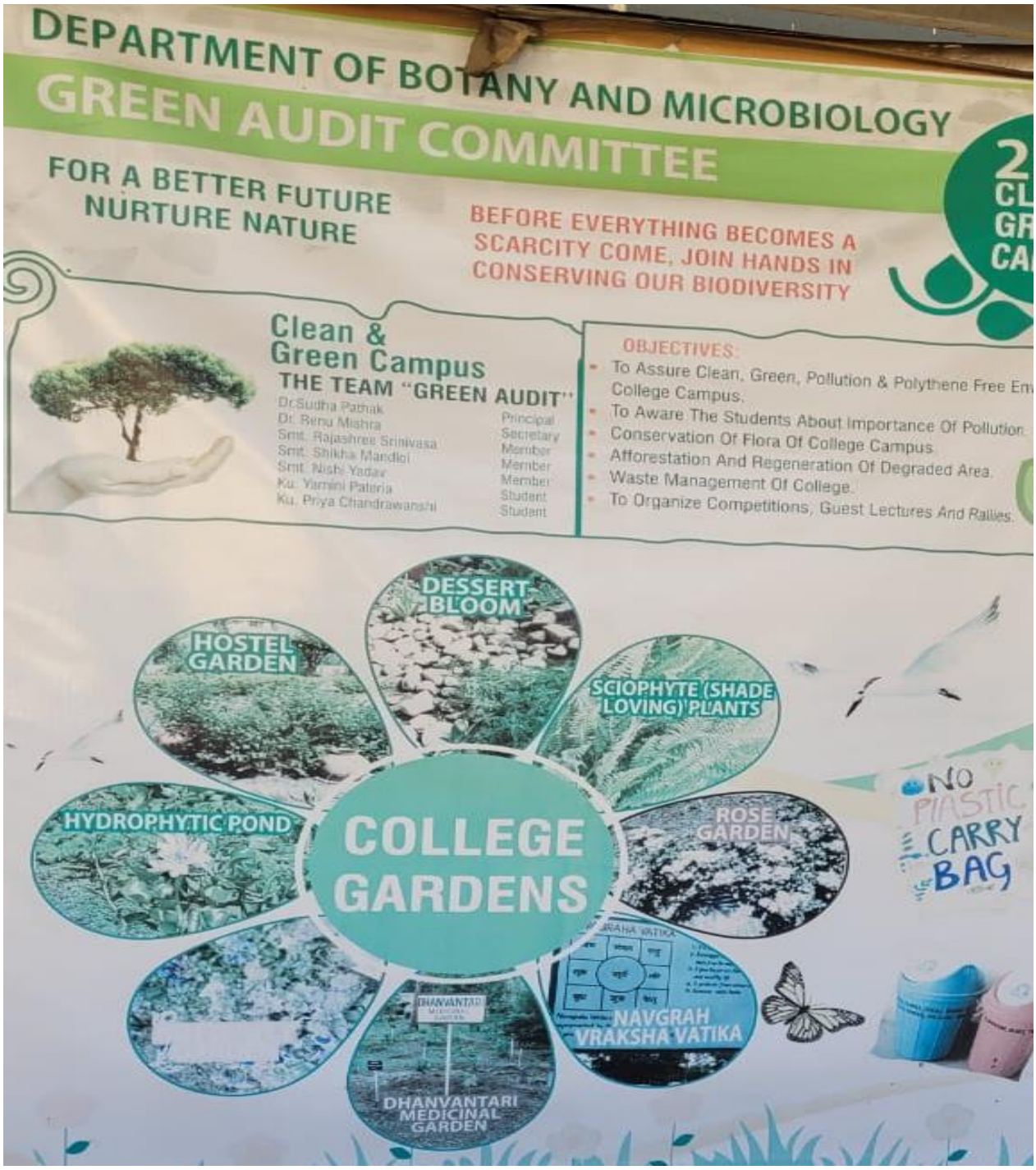
SRI SATHYA SAI COLLEGE FOR WOMEN, HABIBGANJ, BHOPAL

Record of Electricity related Gadgets/ Instruments in Different Rooms of College Campus

Name of the Building- College Other Building GYM / English Deptt / HOME Science / B.Ed / LIBRARY)

S. No.	Room Number	Tube light	Ceiling Fan	Bulb LED	A/C	Cooler	Freeze	Exhaust Fan	Heater	Computer	Printer	Photocopy machine
1	GYM.	14	08					02				
2	English Dep.	13						06				
3	HOME Science	10	08	07								
4	B.Ed.	51	48			06		05				
5	COMPUTER									186		
6	LIBRARY	63	26			05						
7	Canteen	04	03	01				01				
8	Rajat mandap Others	05	01	01								
9	Pole light			36								
10	Tube well											
11	other											
12	Other											
	Total	**160**	**94**	**45**		**11**		**14**		**186**		

Green Space & Land Scaping



Approx 12 acre

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Gardens in the College Campus

1. **Rose Garden**-This garden is situated at the entrance of the college.Around 500 different varities of hybrid rose plants are present in this garden.
2. **Dhanvantari medicinal garden**– It is situated in front of Home Science block. In this garden around 200 plants of highly important medicinal value are present.
3. **Navagraha Vraksha Vatika** – It is situated in front of library.Navagraha Vatika means garden of 9 planets represented by the plants or trees or bushes or grasses which have the forces of 9 planets. These plants of 9 planets are planted in a particular direction to get the benefit of 9 planets.

   Navgraghavatika is very important and source of energy if planted anywhere. As these plants represents different planets i.e. represent different celestial forces, so this vatika gets the power of Navagraha. It gives the person Healthy and Wealthy life. On all the four sides of this vatika acupressure tiles are present. A person taking parikrama of this vatika protects from various diseases..
4. **Butterfly Garden -** It is small garden situated in front of English department with many all season flowering plants. Because of flowering throughout the year, most of the time butterfly are present their.
5. **Desert Bloom** – It issmall gardensituated next to B.Ed. Block with many xerophytic plants.
6. **Sciophyte (Shade Loving) Plants** – Next to the Desert garden many potted shade loving plants are kept in a shade.
7. **Hostel garden** – Hostel premises also have a small garden with many flowering plants and trees.

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8. **Hydrophytes** – Near Navagraha VarkshaVatika a small pond for hydrophytic plant is present. In this pond many water plants along with Lotus is present.

   Besides there garden our campus is very rich in vegetation and biodiversity having green belt. All plants in the campus are named and tagged.

GARDEN OF THE COLLEGE

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Dhanvantari Medicinal Garden

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Navagraha Vatika

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Butterfly Garden

Desert Bloom

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Sciophyte (Shade Loving) Plants

Hostel garden

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Hydrophytes

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Waste Management

Solid Waste Management

Solid and liquid waste is generated by canteen, and by students in general and this is handed over to Municipal Corporation. Bio degradable wastes are used to make manure in the compost pit within the institution. Some Solid waste is also incinerated. Cartons of tetra pack waste is disosed off in a bin kept by 'The Kabadiwala' which is collected by them and then further disposed off.

The Solid waste generated in the campus including paper, biomass etc. Old newspaper, used paperwhich is collected in different colour dustbins **and other non-degradable and E-waste are given to external agencies/ Municipal Corporation for decompose/ recycling.**

Institution has a wide area covered by plants and trees. Waste like Biomass / leaf litter is decomposed systematically by vermicomposting and used as manure in the gardens of the institution. Canteen Waste like peel of vegetables is disposed off at the back side of canteen in the Kitchen Garden and compost is made from the waste which is used as natural manure for the plants of Gardens.

Liquid Waste Management

Liquid waste includes, laboratory waste, canteen etc. Waste generated from laboratory does not contain any hazardous chemical waste. Water of distillation units and RO are reused for washing and gardening purpose.

Biomedical Waste Management

Biomedical wastes are never mixed with other waste in laboratory and are segregated in specified bag and are treated within 48 hrs. Autoclaving is done to decontaminate waste by destroying pathogens.

After treatment Biomedical wastes are buried in a pit which is 2 m deep and then covered with soil and lime. It is ensured that these burial sites are not accessible by animals and

IQAC Coordinator

human. The burial sites are away from surface water or any other water resources. Institution maintains a record of all such pits.

E-Waste Management

For the management of e-waste the Institute as the first step, try to repair and reuse the computers. In case, they are totally perishable, the disposing off of the waste material by following the rules.E Waste generated in the campus is disposed of in a bin outside the computer Lab which is collected to the outside agencies for further disposal.

Project work on "The Role of Municipal Solid Waste Management in the Sustainable Development : A Case Study of Indore City' and "Waste Management with special reference to E-Waste Management." was done under the guidance of Dr. Renu Mishra

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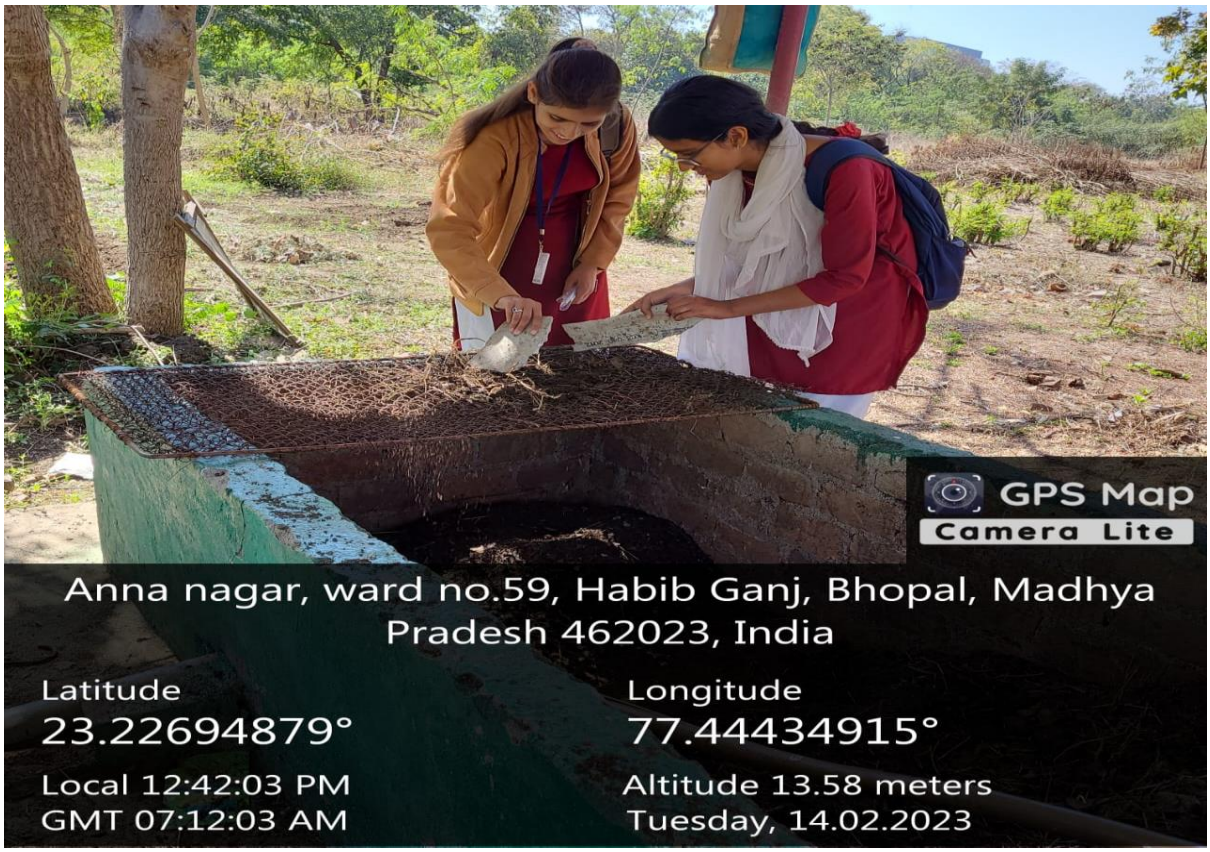

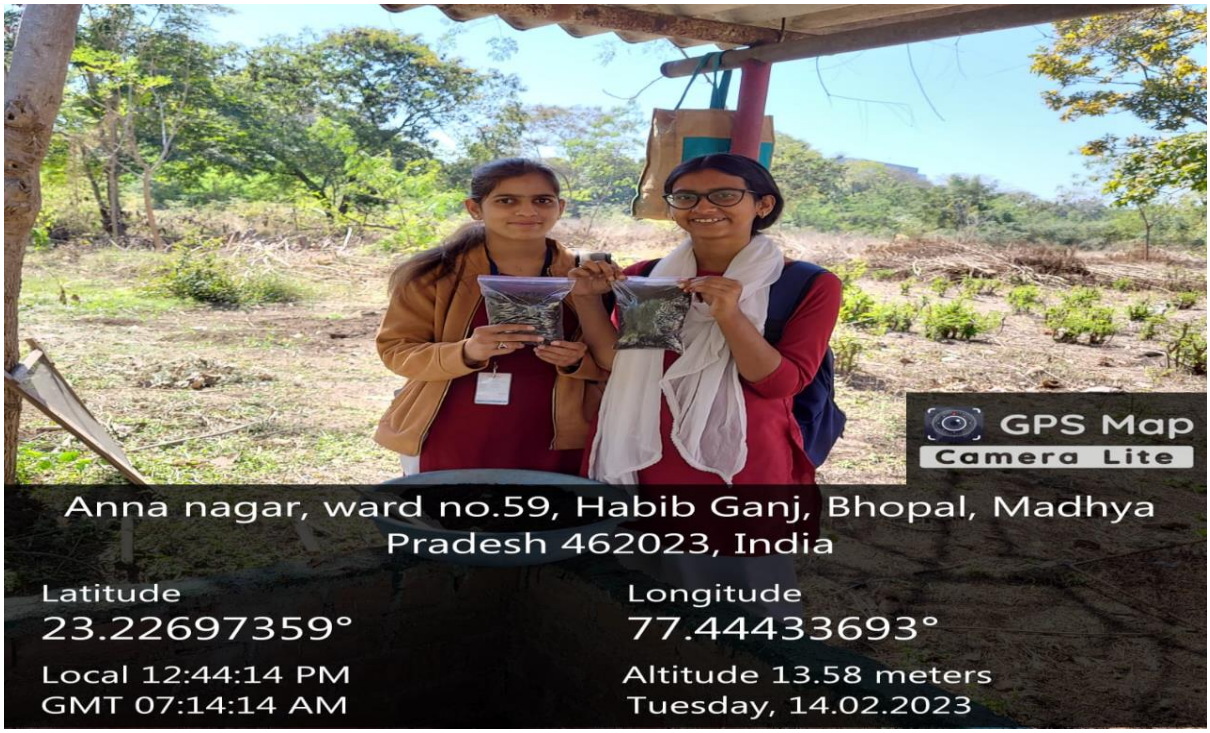

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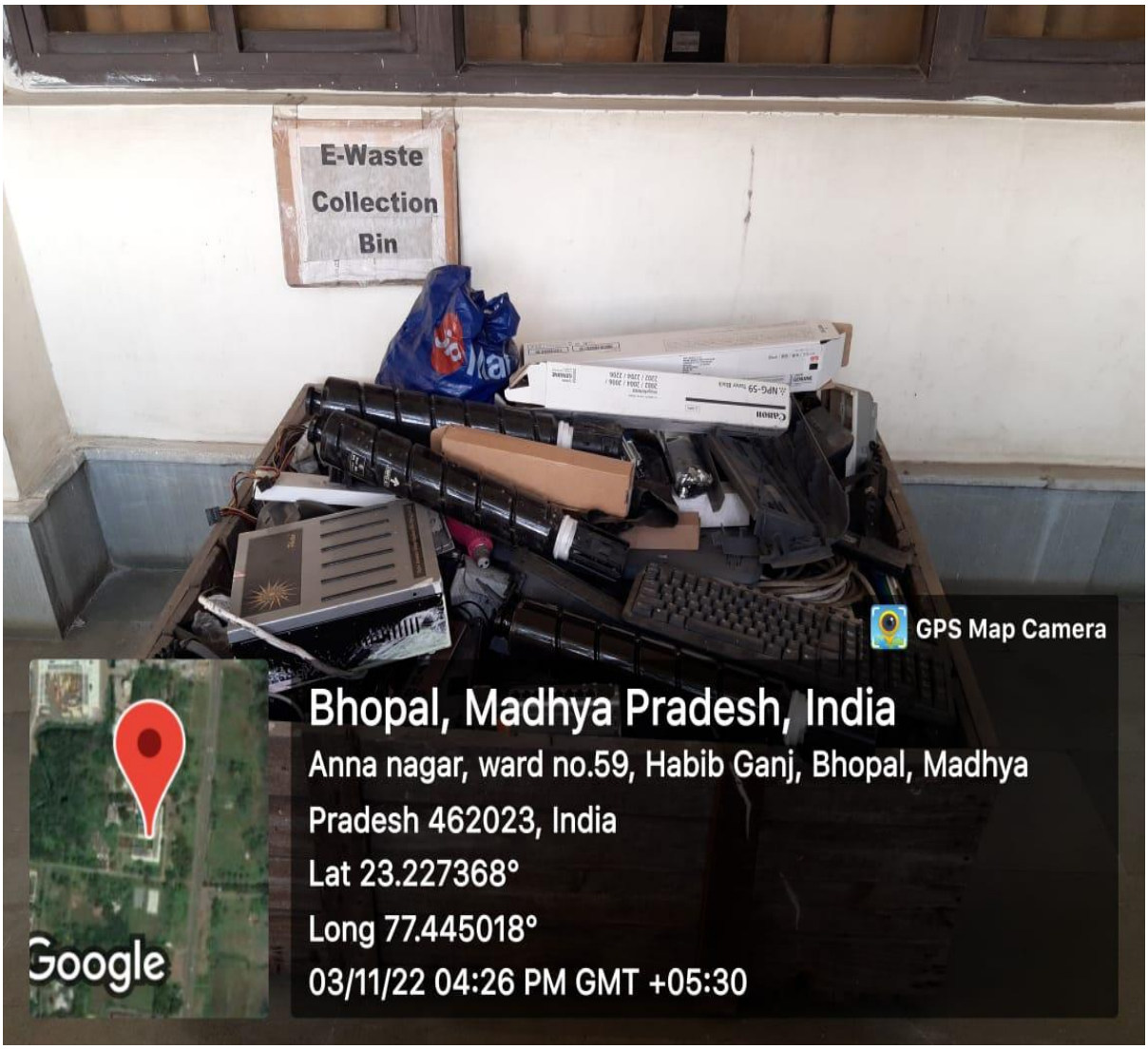

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Beyond the Campus Environmental Promotional Activities in Godgram Tola Chotakheda Village

As per guidelines given by Barkatullah University village “Tola Chhota Kheda” Panchayat Kalapani, District Bhopal has been adopted by college for the betterment of Health and Education of children residing in the village. Village adopted in May, 2018.

One day camp was organised on "Environment protection and Personal hygiene" at Godgram Tola Chota Kheda on 16.8 .21 by Environment society and NCC. In the camp various fruit plant saplings like amrud, khirni, amla, nimboo were distributed by members of Environment society. All distributed 40 plants have their own medicinal properties. Dr. Nishi Yadav, In charge Environment society create awareness among villagers towards environment through lecture.

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Students had planted trees at their home due to covid 19.

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Water Analysis of College Campus

(Physico- Chemical Properties)

PARAMETERS	VALUE
Temperature	32°
Colour	Colourless
Odour	Odourless
Taste	Tasteless
pH	7.5
Salinity	0.31
Conductivity	649 µs
TDS	325 ppm
Total hardness	620 ppm
Phosphorous	1.73 ppm

Soil Analysis of College Campus

(Physico- Chemical Properties)

PARAMETER	BLACK SOIL	RED SOIL
Colour	Black	Red
Texture	Loamy	Soft and clayey
Solubility	Water soluble	Water soluble
pH	7.5	6.8
Carbonate	Absent	Absent
Nitrate	Absent	Absent
Iron	Present	Present
Sulphate	Absent	Absent
Phosphate	Absent	Absent

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POLICY DOCUMENT

ON

ENVIRONMENT

The Environment Policy of Sri Sathya Sai College for Women, Bhopal is committed to providing green campus and quality service in a manner that ensures a safe and healthy workplace for our employees and minimises our potential impact on the environment. A Green Campus is a place where environmental friendly practices and education system jointly promote sustainable and eco-friendly ambiance in the campus. The green campus concept offers an institution the opportunity to take the lead in redefining its environmental culture and developing new paradigms by creating sustainable solutions to environmental, social and economic needs of the mankind. Green Campus status is achieved by making significant progress in cross campus community collaboration under one or a number of the following themes: Energy, Water, Waste, Green Campus & Biodiversity. **Environment Society and IQAC** devoted to the cause of environmental awareness, to undertake green initiatives, and to conduct green literacy programs to save energy and to protect the environment.

Objectives

- To manage energy in such a systematic way so as to minimize its impact on the environment.
- To explore the renewable energy resources.
- To find out substitute natural resources as solutions to the energy crisis.
- To reduce pollution.
- To adopt water conservation measures.
- To manage proper waste disposal.
- Quality audit on environment and energy (Energy audit, Green audit, Environment audit).

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POLICIES:

ENERGY

To Reduce energy consumption College has adopted the following policies.

- To install photovoltaic solar panels for the generation of alternate energy.
- To install LED bulbs in the campus as much as possible to save energy.
- To take additional measures to continuously improve our energy consumption.
- To encourage use of advanced technology to minimize energy consumption, atmospheric emissions and noise, particularly from our vehicle fleets.
- To engage in dialogue with the government agencies, municipal corporation and the affiliating university and actively work with the local organizations in the areas of environment, energy efficiency and sustainable development.
- To provide information and training opportunities on energy saving measures.
- To activate power management features on computer and monitor so that it will go intŽ Ă ů Ž ‖ Đ Ž ‖ Ğ. đ ¯ ε ů Ğ Ğ Đ __ ŵ Ž Ě Ğ
- To turn off unnecessary lights and use daylight instead.
- To switch off lights, fans in conference rooms, classrooms, lecture halls when they are not in use.

WATER

Minimize consumption of water College has adopted the following policies.

- To develop rain water harvesting unit.
- To repair sources of water leakage, such as dripping taps and showers as quickly as possible.
- To install appliances which reduce water consumption.
- To encourage use of recycled rainwater and grey water to reduce mains water

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consumption.

- To reuse the water coming out from RO water purification systems, Distillation system and Soxhlet apparatus.
- To use an efficient and hygienic water storage mechanism is to minimize the loss of water during storage.

Waste

Waste minimization is very important because it makes good sense to protect the environment and boost environmental performance. College therefore commits to:

- To develop systematic waste management mechanism.
- To minimize the use of fertilizers and pesticides in college grounds, opting for the use of compost produced on site wherever possible.
- To reduce the practice of burning plastic and other materials that emit harmful gas on burning is prevented in the campus.
- To ensure that all cleaning products used by college staff have a minimal detrimental impact on the environment
- To use two types of bins separately for biodegradable and non-biodegradable wastes in the college campus as well as in hostels
- To recycle electronics and batteries in e-waste recycling bins located around campus.
- To dispose the biomedical and chemical waste generated from the laboratories in a scientific manner.
- To keep a stack of paper that has been printed on one side and uses it for day to day rough paper work.
- To reduce the hard readout material. Use more of e-mail for officially communicating the information needed, online reading etc.

Green Campus & Biodiversity

- To undertake tree plantation drive.

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- To ensure the availability of necessary resources to achieve our objectives.
- To monitor and respond to emerging environmental issues.
- To strengthen our employees' and students' environmental knowledge and skills in order to improveour own environmental performance.
- To offer opportunities for employees and students to engage in initiatives those contribute to environmental protection.
- To train, educate and inform our employees and students about environmental issues that may affect their work.
- To promote environmental awareness among our employees and students and encourage them to work in an environmentally responsible manner.

This policy will be communicated to the students and employees via internal communication channels, and will be made available to all the stakeholders on the institutional website. The Environment and Energy Policy, objectives and targets will be reviewed on a regular basis by the members of **Environment Society and IQAC** under the guidance of the Principal of the college.

IQAC Coordinator

ॐ श्री साई राम OM SRI SAI RAM

श्री सत्य साई महिला महाविद्यालय

SRI SATHYA SAI COLLEGE FOR WOMEN

(Autonomous College)

Kasturba Hospital Road, Habibganj, Bhopal - 462 024 (M.P.)

E-mail : ssswcbhopal@yahoo.co.in, Website : www.srisatyasaiedubpl.org

Phone : 0755-2451119, 2456308

Established in 1974

NAAC Re-Accredited A GRADE

NO.: SSSC \ \ DATE : .....

Chemical Waste Management Policy

One of the important responsibilities of a chemistry lab is to manage chemical waste in a safe and environmentally sound manner . The policy aims to ensure compliance with environmental regulations, protect the health and safety of lab personnel and minimize the environmental impact of chemical waste generated during laboratory activities. Green Chemistry principles should be followed for environmental sustainability.

Chemical Waste can be defined as any material that is no longer wanted or intended for use and contains potentially harmful substances.Following points should be kept in mind for waste management :

1. Waste Segregation and Collection:

Chemical waste must be segregated at the point of generation into categories such as flammable, corrosive, toxic, reactive, and non-hazardous waste.

Segregated waste should be collected in properly labeled and compatible containers, ensuring that the containers are kept closed when not in use.

2. Labeling and Identification:

All waste containers must be clearly labeled with information like waste type and date of accumulation.

Hazardous waste containers should display hazard symbols.

3. Waste Minimization and Disposal

Laboratory personnel should aim to minimize waste generation through proper experimental planning, reduced-scale reactions and recycling when feasible.

Simple policy of reduction at source should be followed by using the smallest quantity of chemicals in reactions.

Surplus chemicals should be shared with other labs.

Separate containers should be used for neutralizing acidic or alkaline waste before disposing it off with excess water in sinks.

All laboratory personnel must receive training on chemical waste management, including waste segregation, labeling, handling, and emergency procedures.

Policy developed by:

Neena 10.1.23
Dr. Neena Arora
HOD - Chemistry

Varsha 10.1.23
Dr. Varsha Saxena
Assistant Professor -Chemistry

Agrawal
Dr. Asha Agarawal
Principal

Ramesh
IQAC Coordinator

ॐ श्री साई राम OM SRI SAI RAM

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Policy developed by:

10.1.23
Dr. Neena Arora
HOD - Chemistry

Varsha 10-1-23
Dr. Varsha Saxena
Assistant Professor -Chemistry

Agarawal
Dr. Asha Agarawal
Principal

Ramesh
IQAC Coordinator

ॐ श्री साई राम OM SRI SAI RAM
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NO.: SSSC\ 108 \431 DATE : 17/11/2021

Memorandum of Understanding
Between
Environmental Planning & Coordination Organization, Bhopal
&
Sri Sathya Sai College for Women, Bhopal

This Memorandum of Understanding is entered into on 24th Sept. 2021 between, **Environmental Planning & Coordination Organization, Bhopal,** and **Sri Sathya Sai College for Women, Bhopal** here in after referred to as **EPCO** and **SSSCW, Bhopal**

1. PREAMBLE

Collaborative efforts in education are need of hour to share domain specific strategic knowledge and institutional resources. The institutions are entering into MoUs with organizations having similar mandate on viable collaborative platforms for both knowledge dissemination and ground actions. The collaboration could be in the areas of projects, students and faculty /professionals exchange, joint publications, joint sponsored academic projects, joint faculty and staff development programmes *etc*. The above two institutions signing this MoU have agreed to work on the points mentioned in the preamble.

2. PURPOSE

The purpose of this MoU is primarily to establish a partnership under which both the institutes i.e. EPCO & SSSCW, Bhopal will perform collaborative programmes and activities in the areas pertaining to sustainable development studies and activities.

This MoU is purely for academic purpose and it will not carry any financial implications on both the organizations.

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3. AREA OF COLLABORATION

Both institutes i.e. EPCO and SSSCW, Bhopal agree to develop the following collaborative activities in the areas of sustainable development studies and activities on the basis of the equality and reciprocity.

The two institutions shall seek to promote

a. **Faculty exchanges**

- The exchange of faculty of the mutual benefit of both institutions
- Collaboration in teaching, research and development and consultancy studies in the field of issues pertaining to sustainable development
- Exchange of academic materials and publications
- Conducting Lectures
- Undertaking joint research
- Attachment of staff purpose of curriculum development and review, upgrading of teaching and research skills
- Participating in seminars, workshops, conferences, symposiums and other types of academic discussions.
- Conducting joint consultancy wok

A specific plan will be worked out for each activity; setting forth detailed arrangements for collaboration will be agreed. Terms and conditions for each visit or such exchange including those concerning monetary implications will be worked out between the institutes. A separate agreement will be entered as per requirements.

b. **Placement Events / Programmes**

I. To exchange information on fairs pertaining to placement, training on placements and placement drives.

II. To jointly organize placement drives.

c. **Skill Development Programs**

I. To exchange information on Skill Development Programs.

II. To jointly organize short term Skill Development Programmes and to invite each other's students to participate therein.

d. **Entrepreneurial Activities**

I. To exchange information on **Entrepreneurial Activities.**

II. To jointly organize **Entrepreneurial Workshops** and training activities and to invite each other to participate therein

III. To promote and encourage students' entrepreneurs.

IQAC Coordinator

However, both the signing parties shall ensure that the provisions of this Memorandum shall continue to apply to all activities in progress until their completion.

7. AMENDMENTS/ MODIFICATIONS

This MOU may be amended or modified by a written agreement signed by representatives of both institutions.

8. ADHERENCE TO LAWS

Participating faculties, Staff and Students involved in any activities under this memorandum must adhere to the law of the country and rules and regulations of the institutions.

9. LEGAL EFFECT

Nothing in this memorandum shall be construed as creating any legal responsibility/ liability between the institutes. This Memorandum is a statement of intent to foster genuine and mutually beneficial collaboration.

10. CONFLICT RESOLUTIONS

In case, there be a dispute or conflict to any aspect of academic cooperation, **Executive Director, EPCO** and **Principal, SSSCW, Bhopal** will jointly resolve the issue in spirit of independence, mutual respect and shared responsibility.

Signed for

Principal
EPCO Institute of Environmental Studies
Paryavaran Parisar, E-5 Arera Colony,
Bhopal

EPCO, Bhopal

Signed for 8/11/21

SSSCW, Bhopal

MEMORANDUM OF UNDERSTANDING

Between

Asar Green Kabadi Pvt. Ltd

And

Sri Sathya Sai College for Women, Bhopal

Agreement for Disposal of E waste

This MEMORANDUM OF UNDERSTANDING for disposal of E-waste is made at between: Sri Sathya Sai College For Women, Bhopal and Asar Green Kabadi Pvt. Ltd. 2nd floor near D-Mart Hoshangabad Road Bhopal.

Objective of the agreement-

a. The Vendor hereby agrees that it shall pick material from institute/college Premises as per shared list by institute/college without any cost and shall ensure that proper documentation of the same is done as required under the applicable laws/rules/regulations.

b. The Vendor agrees that when the E-waste comprises of Hard Disk(s). it shall be destroyed by the Vendor and the Vendor shall share photographs of the destroyed Hard Disk(s) as evidence while sending final reports evidencing disposal of the E-waste.

c. The Vendor hereby undertakes that it shall follow proper ISO guideline and/or any other applicable guidelines in the process of disposing the E-waste.

d. Vendor represents and warrants that its licenses pertaining to E-waste disposal (as more particularly stated in **Annexure I)** are currently valid and further **undertakes to maintain the said licenses (and any other licenses / permissions that may** from time to time be required to perform its obligation hereunder) valid throughout the term of this Agreement.

e. The Vendor undertakes that its representative shall inspect the said E-waste before the said E-waste is collected from the institute/college. Premises in order to verify that it is as per specification mentioned in the Annexure I.

f. The Vendor hereby undertakes that it shall be responsibility of the Vendor for safe & secured transition of the E-waste collected from the Company's Premises to the destination of the Vendor.

g. The Vendor further undertakes that the responsibility of safe & secured storage, segregation, recycling, extraction, destruction, disposal of the E-waste will be that of the Vendor as per the guidelines of the Central and relevant State Pollution Control Board and other authorities and Vendor shall issue a disposal certificate to the Company within 45 days from the date of collection of the E-waste from the Premises of the Company.

Asar Green Kabadi Pvt. Ltd. thekabadiwala.com

Terms & Conditions

The duration of the Agreement shall be 5 years from the date hereof unless it is the duration of the Agreement shall be 5 years from the date hereof unless it is terminated earlier as hereinafter provided. On the expiration of the said period, the Agreement shall stand terminated and may be renewed by the Parties with mutual consent at any time during the pendency of the agreement or even after.

ANNEXURE -1

List of E-waste generated

DESKTOP
LAPTOP
MOBILE
ELECTRONIC GADGETS
PRINTER
SCANNER
POWER SUPPLY
HEATERS
CHARGERS
HEADPHONES
PCBS AND ELECTRONIC COMPONENTS
SMPS
STABILIZERS
KEYBOARDS
MOUSE

h. Counterparts: The Agreement is executed in duplicate and one copy will be retained by the institute/college and the other by Vendor each of which shall be deemed an original, but both of which shall together constitute one and the same instrument.

i. Exclusive arrangement: The institute /college/ confirms that it. will maintain this exclusive arrangement with Vendor during the period of continuity of this agreement for handling E-waste generated at its present officers across India and new additions during the period of this agreement in force.

IN WITNESS WHEROF. this MOU shall be executed by the parties through a duly authorized representative and shall be effective as at the date of last signing.

Asar Green Kabadi Pvt. Ltd. thekabadiwala.com

For

Signed:

Name: Dr. Asha Agarwal

Designation: PRINCIPAL

DATE:

COLLEGE SEAL

For

Signed:

Name: Mr. Kavindra Raghuvanshi

Designation: Director, Asar Green Kabadi Pvt. Ltd.

DATE:

VENDOR SEAL

Asar Green Kabadi Pvt. Ltd. ★ thekabadiwala.com ★

Witness to

Signature:

Name: **Dr. Renu Mishra**

Designation: IQAC Coordinator

DATE:

Witness to

Signature:

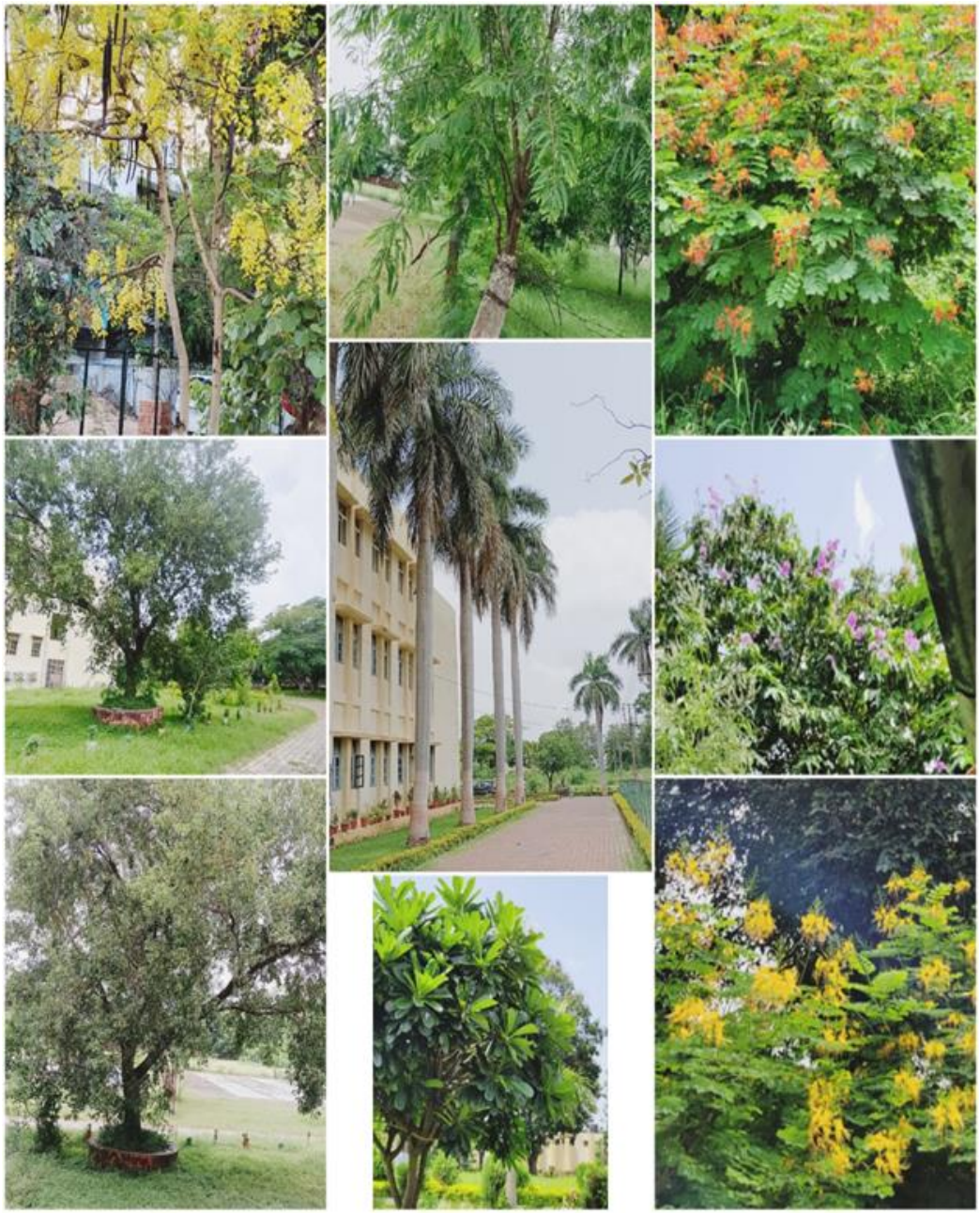
Name: **Dr. Vaishali Kadwey**

Designation: HOD, Computer Science & App.

DATE:

SRI SATHYA SAI COLLEGE FOR WOMEN, BHOPAL

CAMPUS FLORA



IQAC Coordinator

TREES IN THE COLLEGE CAMPUS

S. No.	Plant Name	COMMON NAME	FAMILY/ SUB-FAMILY	HABIT	USES
1	*Acacia caetchu*	Kattha	Mimosaceae	Tree	Food plants
2	*Acacia arabica*	Babool	Mimosaceae	Tree	Timber
3	*Acacia leucophloea*	Subabool	Mimosaceae	Tree	Timber
4	*Aegle marmalos*	Bael	Rutaceae	Tree	Religious
5	*Ailanthus excelsa*	Ghoraneem	Simaroubaceae	Tree	Medicinal
6	*Albizia lebbeck*	Siris	Mimosaceae	Tree	Ornamental
7	*Alstonia schloris*	Saptaparni	Apocynaceae	Tree	Medicinal
8	*Annona squamosa*	Sugar apple	Annonaceae	Tree	Fruit tree
9	*Anogeissus pendula*	Dhauk	Combretaceae	Tree	Medicinal
10	*Araucaria spp.*	Christmas tree	Araucariaceae	Tree	Ornamental
11	*Azadirachta indica*	Neem	Meliaceae	Tree	Medicinal
12	*Bauhinia variegata*	Kachnar	Caesalpinieae	Tree	Ornamental

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13	***Bauhinia purpurea***	**Kaniar**	**Caesalpinieae**	**Tree**	**Ornamental**
14	***Bixa orillana***	**Sindoor**	**Bixineae**	**Tree**	**Ornamental**
15	***Bombax malabaricum***	**Semal**	**Bombaceae**	**Tree**	**Medicinal**
16	***Boswellia serrata***	**Salai**	**Burseraceae**		**Medicinal**
17	***Buchania axillaris***	**Cuddapah almond**	**Anacardiaceae**	**Tree**	**Medicinl**
18	***Butea monosperma***	**Palash**	**Papilionaceae**	**Tree**	**Ornamental & medicinal**
19	***Calotropis gigantia***	**Lal madar**	**Asclepiadeaceae**	**Tree**	**Religious**
20	***Calotropis procera***	**Madar**	**Asclepiadeaceae**	**Tree**	**Religious**
21	***Cassia fistula***	**Amaltas**	**Caesalpinieae**	**Tree**	**Ornamental**
22	***Cassia siamea***	**Kassos**	**Caesalpinieae**	**Tree**	**Ornamental**
23	***Carica papaya***	**Papaya**	**Caricaceae**	**Tree**	**Fruit tree**
24	***Casuarinas equisetifolia***	**Vilayati jhari**	**Casurinaceae**	**Tree**	**Ornamental**
25	***Citrus spp.***	**Lemon**	**Rutaceae**	**Tree**	**Fruit tree**
26	***Crataeva religiosa***	**Brarna**	**Capparidaceae**	**Tree**	**Medicinal**
27	***Cloerodendrum***	**Glorybower**	**Verbenaceae**	**Tree**	**Ornamental**

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	spp.				
28	***Dalbergia sissoo***	**Shisham**	**Papilionaceae**	**Tree**	**Timber yielding**
29	***Datura metel***	**Datura**	**Solanaceae**	**Tree**	**Religious**
30	***Delonia regia***	**Gulmohar**	**Caesalpinieae**	**Tree**	**Ornamental**
31	***Emblica officinalis***	**Amla**	**Euphorbiaceae**	**Tree**	**Medicinal**
32	***Erythina indica***	**Rakta madar**	**Papilionaceace**	**Tree**	**Medicinal**
33	***Eucalyptus citridora***	**Lal neelgiri**	**Myrtaceae**	**Tree**	**Medicinal**
34	***Eucalyptus globulus***	**Blue gum**	**Myrtaceae**	**Tree**	**Medicinal**
35	***Eucalyptus paniculata***	**Grey ironbark**	**Myrtaceae**	**Tree**	**Medicinal**
36	***Euphorbia pulcherima***	**Lalpaatta**	**Euphorbiaceae**	**Tree**	**Ornamental**
37	***Ficus bengalensis***	**Bargad**	**Moraceae**	**Tree**	**Religious**
38	***Ficus religiosa***	**Peepal**	**Moraceae**	**Tree**	**Religious**
39	***Ficus carica***	**Anjeer**	**Moraceae**	**Tree**	**Medicinal**
40	***Ficus racemosa***	**Gular**	**Moraceae**	**Tree**	**Medicinal**
41	***Grevillea robusta***	**Silver oak**	**Proteaceae**	**Tree**	**Ornamental**

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42	***Hardwickia binata***	**Anjan**	**Detarioieae**	**Tree**	**Medicinal**
43	***Hibiscus ros-sinensis***	**Gurhal**	**Malvaceae**	**Tree**	**Ornamental**
44	***Holoptelea integrifolia***	**Papri**	**Ulmaceae**	**Tree**	**Medicinal**
45	***Indigofera tinctoria***	**Neel**	**Papillionaceae**	**Tree**	**Industrial**
46	***Jacarandra mimosifolia***	**Neeli gulmohar**	**Bignoniaceae**	**Tree**	**Ornamental**
47	***Jasminum multiflorum***	**Kunda**	**Coliaceae**	**Tree**	**Ornamental**
48	***Kigelia pinnata***	**Jhar phanoos**	**Bignoniaceae**	**Tree**	**Ornamental**
49	***Lagerstroemia indica***	**Guli phanoos**	**Lythraceae**	**Tree**	**Ornamental**
50	***Lagerstroemia speciosa***	**Arjuna**	**Lythraceae**	**Tree**	**Medicinal**
51	***Lantana camara***	**Saptrangi**	**Verbenaceae**	**Shrub**	**Ornamental**
52	***Leucaena leucocephala***	**Shoo babool**	**Caesalpinieae**	**Shrub**	**Medicinal**
53	***Mangifera indica***	**Mango**	**Anacardiaceae**	**Tree**	**Fruit tree**
54	***Melia azedarach***	**Bakain**	**Meliaceae**	**Tree**	**Medicinal**
55	***Mimusops elengi***	**Bakul**	**Sapotaceae**	**Tree**	**Medicinal**

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56	***Morus alba***	**Tut**	**Moraceae**	**Tree**	**Medicinal**
57	***Morus indica***	**Shehtoot**	**Moraceae**	**Tree**	**Food**
58	***Moringa oleifera***	**Munga**	**Moringaceae**	**Tree**	**Food**
59	***Musa spp.***	**Banana**	**Musaceae**	**Shrub**	**Fruit**
60	***Neolamarckia cadamba***	**Kadam**	**Rubiaceae**	**Tree**	**Ornamental**
61	***Nyctanthes arbortistis***	**Harsinghar**	**Nyctanthaceae**	**Tree**	**Ornamental**
62	***Ocimum bacillicum***	**Ram tulsi**	**Lamiaceae**	**Shrub**	**Religious**
63	***Ocimum sanctum***	**Tulsi**	**Lamiaceae**	**Shrub**	**Religious**
64	***Parkinsonia aculeata***	**Vilayati imli**	**Caesalpinioideae**	**Tree**	**Medicinal**
65	***Peltophorum pterocarpum***	**False ashok**	**Caesalpinioideae**	**Tree**	**Medicinal**
66	***Phoenix acaculis***	**Dwarf date palm**	**Arecaceae**	**Tree**	**Fruit tree**
67	***Pithecellobium dulce***	**Jangal jilebee**	**Caesalpinieae**	**Tree**	**Medicinal**
68	***Plumeria alba***	**Chameli**	**Apocynaceae**	**Tree**	**Ornamental**
69	***Plumeria rubra***	**Champa**	**Apocynaceae**	**Tree**	**Ornamental**
70	***Polyalthia longifolia***	**False ashok**	**Annonaceae**	**Tree**	**Ornamental**

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71	***Pongamia pinnata***	**karanj**	**papillionaceae**	**Tree**	**Medicinal**
72	***Prosopis julifolia***	**Keekar**	**Mimosaceae**	**Tree**	**Medicinal& religious**
73	***Prosopis spicigera***	**Chonkra**	**Mimosaceae**	**Tree**	**Medicinal**
74	***Psidium guajava***	**Guava**	**Myrtaceae**	**Tree**	**Fruit tree**
75	***Putranjiva roxburghii***	**Pubiyia**	**Euphorbiaceae**	**Tree**	**Religious**
76	***Ricinus communis***	**Arandi**	**Euphorbiaceae**	**Shrub**	**Medicinal**
77	***Rosa indica***	**Rose**	**Roseceae**	**Shrub**	**Ornamental**
78	***Riystonia regia***	**Royal palm**	**Palmaceae**	**Tree**	**Ornamental**
79	***Santalum album***	**Chandan**	**Santalaceae**	**Tree**	**Religious**
80	***Sida cordata***	**Flannelweed**	**Malvaceae**	**Shrub**	**Ornamental**
81	***Syzygium cumini***	**Jamun**	**Myrtaceae**	**Tree**	**Fruits**
82	***Tabernaemontana divaricata***	**Chandni**	**Apocynaceae**	**Tree**	**Ornamental**
83	***Tamarindus indica***	**Imli**	**Caesalpinieae**	**Tree**	**Fruit**
84	***Terminalia catappa***	**Jangali badam**	**Combretaceae**	**Tree**	**Medicinal**
85	***Tinospora cordifolia***	**Giloy**	**Menispermaceae**	**Tree**	**Medicinal**

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86	***Thespesia populnea***	**Tulip tree**	**Malvaceae**	**Tree**	**Ornamental**
87	***Thuja occidentalis***	**Vidhya tree**	**Cupressaceae**	**Shrub**	**Ornamental**
88	***Vitex negundo***	**Nirgundhi**	**Verbinaceae**	**Tree**	**Medicinal**
89	***Zizyphus mauriliana***	**Indian jujube**	**Rhamnaceae**	**Tree**	**Fruit tree**

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HERBS IN THE COLLEGE CAMPUS

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S. No.	BOTANICAL NAME	COMMON NAME	FAMILY/SUB-FAMILY	HABIT	USES
1.	Abutilon indicum	Kanghi	Malvaceae	Herb	Medicinal
2.	Abrus precatorius	Gunja	Leguminosae	Herb	Medicinal
3.	*Aerva lanata*	Gorakhbuti	Amaranthaceae	Herb	Medicinal
4.	*Ageratum conyzoides*	Billygoat Weed, visadoori	Asteraceae	Herb	Medicinal
5.	*Albizia procera*	White Siris	Caesalpinieae	Herb	Medicinal
6.	*Albizia sp.*	Albizia	Caesalpinieae	Herb	Medicinal
7.	*Allium cepa*	Onion	Liliaceae	Herb	Food plant
8.	*Allium sativum*	Garlic	Liliaceae	Herb	Food plant
9.	*Aloe vera*	Gwarpatha	Liliaceae	Herb	Medicinal
10.	*Alternanthera sessilis*	Sessile Joyweed	Amaranthaceae	Herb	Medicinal
11.	*Amaranthus viridis*	Slender Amaranth	Amaranthaceae	Herb	Medicinal
12.	*Apluda app.*	Apluda	Poaceae	Herb	Medicinal
13.	*Atylosia scarabaeoides*	Butterfly Pea	Fabaceae	Herb	Medicinal
14.	*Asparagus racemosus*	Satavari	Liliaceae	Creeper	Medicinal

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15.	***Bamboosa indica***	**Bans**	**Poaceae**	**Herb**	**Medicinal**
16.	***Bambusa guangxiensis***	**Chinese dwarf bamboo**	**Poaceae**	**Herb**	**Medicinal**
17.	***Biophytum sensitivum***	**Sensitive Plant**	**Oxalidaceae**	**Herb**	**Medicinal**
18.	***Blumea laciniata***	**Blumea**	**Asteraceae**	**Herb**	**Medicinal**
19.	***Boerhaavia diffusa***	**Red Spiderling**	**Nyctaginaceae**	**Herb**	**Medicinal**
20.	***Brassica juncea***	**Mustard**	**Brassicaceae**	**Herb**	**Oil yielding**
21.	***Brassica oleracea***	**Cabbage**	**Brassicaceae**	**Herb**	**Food plant**
22.	***Bryophyllujm nudum***	**Patharchatta**	**Crassulaceae**	**Herb**	**Medicinal**
23.	***Bryophyllum pinnatum***	**Patharchur**	**Crassulaceae**	**Succulent**	**Medicinal**
24.	***Canna indica***	**Bajarbattu**	**Cannaceae**	**Herb**	**Medicinal**
25.	***Capsicum frutescens***	**Chilly**	**Solanaceae**	**Herb**	**Food plant**
26.	***Catheranthus roseus***	**Sadabahar**	**Apocynaceae**	**Herb**	**Ornamental**
27.	***Celastrus paniculata***	**Jyotishmati**	**Celastraceae**	**Liana**	**Medicinal**
28.	***Cuscuta reflexa***	**Amarbel**	**Cuscutaceae**	**Creeper**	**Medicinal**
29.	***Cissus quandragulosis***	**Veld grape**	**Vitaceae**	**Herb**	**Medicinal**

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30.	***Citrullus spp.***	**Colocynth**	**Cucurbitaceae**	**Creeper**	**Medicinal**
31.	***Calliandra mimosa***	**Powderpuff**	**Fabaceae**	**Herb**	**Medicinal**
32.	***Cocculus hirsutus***	**Jaj jamani**	**Menispermaceae**	**Climber**	**Medicinal**
33.	***Colocasia esculenta***	**Arbi**	**Araceae**	**Herb**	**Food plants**
34.	***Corchorus tridens***	**Wild Jute**	**Malvaceae**	**Herb**	**Fiber**
35.	***Cosmos bipinntus***	**Garden Cosmos**	**Asteraceae**	**Herb**	**Medicinal**
36.	***Crotalaria sp.***	**Rattlepod**	**Fabaceae**	**Herb**	**Medicinal**
37.	***Cynodon dactylon***	**Cyanadon**	**Poaceae**	**Herb**	**Medicinal**
38.	***Cyperus rotundus***	**Baranagarmotha**	**Cyperaceae**	**Herb**	**Medicinal**
39.	***Cymbopogon martini***	**Rusa**	**Poaceae**	**Herb**	**Medicinal**
40.	***Datura metel***	**Datura**	**Solanaceae**	**Herb**	**Religious**
41.	***Dichanthium annulatum***	**Buffel Grass**	**Poaceae**	**Herb**	**Medicinal**
42.	***Eclipta alba***	**Bhringraj**	**Asteraceae**	**Herb**	**Medicinal**
43.	***Eragrostis spp.***	**Cane Grass**	**Poaceae**	**Herb**	**Medicinal**
44.	***Euphorbia geniculata***	**Garden purge**	**Euphorbiaceae**	**Herb**	**Medicinal**
45.	***Euphorbia hirta***	**Asthma Plant**	**Euphorbiaceae**	**Herb**	**Medicinal**

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46.	***Euphorbia pulcherima***	**Lalpatta**	**Euphorbiaceae**	**Herb**	**Ornamental**
47.	***Gloriosa superba***	**Agnishikha**	**Liliaceae**	**Herb**	**Ornamental**
48.	***Gnaphalium spp.***	**Cudweed**	**Asteraceae**	**Herb**	**Medicinal**
49.	***Gomphrena celosioides***	**Globe Amaranth**	**Amaranthaceae**	**Herb**	**Medicinal**
50.	***Gymnema sylvestre***	**Gudhmar**	**Asclepiadaceae**	**Herb**	**Medicinal**
51.	***Heylandia latebrosa***	**Heylandia**	**Melastomataceae**		**Medicinal**
52.	***Hosta spp.***	**Hosta**	**Asparagaceae**	**Herb**	**Medicinal**
53.	***Indigofera enneaphylla***	**Indigo**	**Fabaceae**	**Herb**	**Medicinal**
54.	***Indigofera linifolia***	**Indigo**	**Fabaceae**	**Herb**	**Medicinal**
55.	***Indigofera trita***	**Indigo**	**Fabaceae**	**Herb**	**Medicinal**
56.	***Justicia simplex***	**Dwarf Water Willow**	**Acanthaceae**	**Herb**	**Medicinal**
57.	***Kirganelia reticulate***	**Kirganelia**	**Melastomataceae**	**Herb**	**Medicinal**
58.	***Launaea asplenifolia***	**Launaea**	**Asteraceae**	**Herb**	**Medicinal**
59.	***Lepidium sativum***	**Garden Cress**	**Brassicaceae**	**Herb**	**Medicinal**
60.	***Melilotus albus***	**White Sweet Clover**	**Fabaceae**	**Herb**	**Medicinal**
61.	***Mimosa pudica***	**Touch me not plant**	**Caesalpinieae**	**Herb**	**Medicinal**

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62.	***Momordica charantia***	**Bitter gourd**	**Cucurbitaceae**	**Herb**	**Food plant**
63.	***Oldenlandia dichotoma***	**Oldenlandia**	**Rubiaceae**	**Herb**	**Medicinal**
64.	***Oxalis corniculata***	**Creeping Woodsorrel**	**Oxalidaceae**	**Herb**	**Medicinal**
65.	***Oxalis latifolia***	**Amrulsak**	**Oxalidaceae**	**Herb**	**Medicinal**
66.	***Parthenium hysterophorus***	**Gajar grass**	**Asteraceae**	**Herb**	**Medicinal**
67.	***Pennisetum orientale***	**Oriental Fountain**	**Poaceae**	**Herb**	**Medicinal**
68.	***Pentas spp.***	**Egyptian star cluster**	**Rubiaceae**	**Herb**	**Medicinal**
69.	***Peristrophe bicalyculata***	**Peristrophe**	**Acanthaceae**	**Herb**	**Medicinal**
70.	***Phaseolus trilobus***	**Three-lobed Bean**	**Fabaceae**	**Herb**	**Medicinal**
71.	***Phyllanthus niruri***	**Stonebreaker**	**Phyllanthaceae**	**Herb**	**Medicinal**
72.	***Phyllanthus simplex***	**Phyllanthus**	**Phyllanthaceae**	**Herb**	**Medicinal**
73.	***Piper betle***	**Pan**	**Piperaceae**	**Herb**	**Food plant**
74.	***Plumbago zeylanica***	**Chitrak**	**Plumbaginaceae**	**Herb**	**Medicinal**
75.	***Polygonum plebeium***	**Asiatic Knotweed**	**Polygonaceae**	**Herb**	**Medicinal**
76.	***Psoralea corylifolia***	**Babchi**	**Fabaceae**	**Herb**	**Medicinal**

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77.	***Quisqualis spp.***	**Madhumalti**	**Combretaceae**	**Herb**	**Ornamental**
78.	***Rhynchosia minima***	**Small-leaved Bush Bean**	**Fabaceae**	**Herb**	**Medicinal**
79.	***Rungia pectinata***	**Rungia**	**Acanthaceae**	**Herb**	**Medicinal**
80.	***Sida acuta***	**Common Wireweed**	**Malvaceae**	**Herb**	**Medicinal**
81.	***Sida rhombifolia***	**Arrow leaf Sida**	**Malvaceae**	**Herb**	**Medicinal**
82.	***Smilex spp.***	**ramdaton**	**Liliaceae**	**Herb**	**Medicinal**
83.	***Solanum tuberosum***	**Potato**	**Solanaceae**	**Herb**	**Food plants**
84.	***Solanum lycopersicum***	**Tomato**	**Solanaceae**	**Herb**	**Food plant**
85.	***Solanum melongena***	**Brinjal**	**Solanaceae**	**Herb**	**Food plant**
86.	***Sonchus oleraceus***	**Common Sowthistle**	**Asteraceae**	**Herb**	**Medicinal**
87.	***Spinacea oleracea***	**Spinach**	**Apiaceae**	**Herb**	**Food plant**
88.	***Spilanthes***	**Toothache Plant**	**Asteraceae**	**Herb**	**Medicinal**
89.	***Stellaaria media***	**Chicken weed**	**Caryophyllceae**	**Herb**	**Medicinal**
90.	***Tagetes erecta***	**African Marigold**	**Asteraceae**	**Herb**	**Ornamental**
91.	***Trachyspermum ammi***	**ajwain**	**Apiaceae**	**Herb**	**Medicinal**

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92.	***Tridax procumbens***	**Coatbuttons**	**Asteraceae**	**Herb**	**Medicinal**
93.	***Trigonella foenum-graecum***	**Methi**	**Papillionaceae**	**Herb**	**Medicinal**
94.	***Vetiveria zizaniodes***	**khus**	**Poaceae**	**Herb**	**Medicinal**
95.	***Vernonia cineria***	**Sahadevi**	**Asteraceae**	**Herb**	**Medicinal**
96.	**Vitex negundo**	**Nirgunthi**	**Verbenaceae**	**Herb**	**Medicinal**
97.	***Vicoa indica***	**Vicoa**	**Asteraceae**	**Herb**	**Medicinal**

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FAUNAL DIVERSITY IN COLLEGE CAMPUS

FAUNAL GROUP	SCIENTIFIC NAMES
SPIDERS	Myrmachne orientalis(Family Salticidae); Nephila plipes (Family-Nephilidae); Heteropoda sp (Family-Sparassidae); Phintella vitatta (Family Salticidae)
MOTHS & BUTTERFLIES	Antheria assmensis;Bombyx mori;Philosamia ricini; Junonia atlites atlites ; Commander (Moduza procris procris);Ethope himachala ; Melanitis leda leda ; Paltoporia paraka paraka; Ypthima baldus ; Acraea terpsicore ; Elymnias hypermnestra undularis ; Mycalesis perseus blasius ; Tanaecia lepidea lepidae ; Euploea core core
OTHER INSECTS	Apis indica; Apis dorsata; Apis florae, Crocothemis erythraea(Scarlet dragonfly); Pantala flavescens (wandering glider)
AMPHIBIANS	Duttaphrynus melanostictus (Assian common toad), Leptobrachium smithi; Hoplobatrachus tigerinus; Hylarana tytleri; Humerana humeralis; Hylarana leptoglossa; Polypedates leucomystax.
REPTILES	Calotes versicolor (Garden Lizard); Hemidactylus frenatus (House lizard); Eutropis multifasciata (East Indian brown mabuya); H. Sphenomorphus maculates Enhydris enhydris;; Amphiesma stolatum ;
BIRDS	Acridotheres tristis (Common myna); Streptopelia orientalis (Oriental Turtle Dove); Athene noctua (little owl); Pycnonotus cafer (Red- vented Bulbul) kingfisher, koel ,

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MAMMALS	Sciurus carolinensis (Eastern gray squirrel); Pteropus giganteus (The Indian flying fox)

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LIST OF EQUIPMENT

Home Science Department

List of Equipments run on Electricity

1. **Mixer**
2. **Electric Iron**
3. **Toaster**
4. **Machine – Fine Edge Maker**
5. **Designer Machine**
6. **OTG**
7. **Microwave Oven**
8. **Refrigerator**
9. **Water Purifier (Aquaguard)**
10. **Air Cooler**
11. **Induction Heater**

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Sri Sathya Sai College for Women, Bhopal

List of Apparatus & Equipments used for Botany Practical

B.Sc. I, II, III Year Students and M.Sc. Previous & Final

2022-23

S.No.	List of Apparatus
1.	Binocular research microscope
2.	Chromatography drier
3.	Compound microscope
4.	Digital electronic balance
5.	Hot plate
6.	Table Lamp
	List of Equipments
1	Auto clave
2	Centrifuge electrical
3	Colony counter digital
4	Colorimeter digital
5	Digital Balance
6	Hot air Oven
7	Incubator
8	Laminar Air Flow
9	Mono Quartz Distillation Apparatus
10	pH meter digital with electronic model 335
11	Refrigerated Microcentrifuge with Rotor Head and Voltage Stabilizer
12	Soxhlet apparatus with heating unit
13	Spectrophotometer
14	Synthesis Microwave
15	Trinacular Microscope with camera
16	Trinacular Research Microscope

Dr. (Smt.) Renu Mishra
Associate Professor and HOD
Botany and Microbiology
Sri Sathya Sai College for Women
Bhopal (M.P.)

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Dept. Of chemistry

No of Labs;- 02 Smart class Room

Lis tof Electronic and Electrical Instruments 2022/23

	Product	company	Nos.	Year of purchase	Cost [Rs.]
1	Oven Universal	Vitco	1	1984	4150
2	centrifuge	asmi	2	2002/12	1450
3	Refrigerator with stabilizer	Videocon	1	2003	7990
4	Conductivity meter [rp]	ststronics	1	2003	11,8oo
5	Conductivity meter	systronics	2	2003	15,600
6	pH meter [digital]	systronics	4	2003/2012	12820 +10320
7	pH meter [Electronic]	Systronics	1	2003	10’900
8	Over head projector	Actiz economy	1	2003	14’500
9	Melting point apparatus	wisvo	3	2003/2012	2948
10	Photoelectric colorimeter	systronics	3	2003	13,800+6624
11	Suction vaccum pump	Biocraft&scientific industries	2	2004	4658

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Equipment Details (as on 29-03-2023)

HARDWARE items

- **Laptops**

▪ HCL Laptop (Pentium DC)	▪ 01	2007
▪ Dell Vostro 1556 Laptop (core i3) 2nd gen.	▪ 01	2012
▪ LENOVO LAPTOP	▪ 01	2015 (under MRP)

- **Desktops**

IBM	6	PIV	2006
Acer	4	Intel Dual core	2007
Wipro	15	Intel Dual core	2009
Wipro	5	Intel i3	2011
Wipro	6	Intel i3	2012
Wipro (for exam control room)	1	Intel i3	2012
Assembled m/c	30	DC	2015
Assembled m/c	30	C2D	2015
Assembled m/c	25	Intel Core i3	2015
HP (From FIST grant)	11	Intel Core i3	2016
HP (From FIST grant)	1	Issued to maths department	
	=134		
Server	1	From MRP	

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❖ **Networking Equipment**

- 24-port switch 08
- 8-port switch 05
- 4-port switch 01
- 2-port switch 01
- Router for Internet leased line 01
- Media Convertor for Internet leased line 01
- Modem for Wi-fi connectivity 02

❖ **Printers/Scanners**

- HP laserjet 1007 01
- HP lj m1136 mfp 02
- HP lj m1136 mfp (exam control room) 01
- HP lj pro M201 02

06

- HP scanjet 3670 48-bit Scanner 01
- Samsung ultra thin DVD Writer 02
- External Hard Disk 1 TB 01

- Frontech E-cam camera 300 k Pixel 03
- Frontech Light Pen with cordless mouse 05

- LCD Projector 02
- White Screen 01
- Multimedia Trolley 01

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❖ **Smartclass equipment**

- Interactive Board 02
- Wireless Interactive Student Panel 05
- Visual Presenter 01
- Multimedia DLP Projector 01
- Collar MIC 01
- Woofer sound system with speakers 01+02

❖ **Equipment purchased under MRP (2015)**

- HP Server 01
- HP Laserjet Printer M1005 01
- Lenovo Laptop 01
- Dlink 8 port switch 01
- Wifi Router 01
- HUAWEI Power- Fi Dongle 01

❖ **Power Back-up**

- UPS 10 KVA 06
- UPS 7.5 KVA 01
- UPS 600 VA 01
- UPS 1 KVA 01
- Stabilizers (for AC)(4 kva) 03
- 26Ah-12Volt DC, Make Exide SMF Battery 30
- 26Ah-12V DC, Make Exide SMF Battery 15

(HOD, Dept. of Comp. Sc. and App.)

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Sri Sri Sathya Sai College For Women, Bhopal

Department of Physics

Till Aug' 2023

List of Main Apperatus/Equipments

S.No.	Name of Apparatus
1	Ammeter
2	Battery Charger
3	Battery Eliminator
4	Transformer
5	Galvanometer (Moving Coil)
6	Electrical Vibrator
7	Voltameter(D.C.+MV)
8	Triode Char.App.
9	Heater
10	Sodium Vapour Lamp
11	Newton's ring App.
12	Nodal Slide with Optical Bench
13	Determination of plank's constant
14	L-B Photometer with Optical Bench
15	Polarimeter
16	Soldering Iron bit
17	VTVM
18	Audio Generator
19	Charging &Discharging of a condensor
20	Doide & Zener Diode ch. App.
21	Impedence & Power factor of LCR Circuit
22	Oscilloscope(C.R.O.)
23	Determination of E/M app.
24	Pentode ch. App.
25	Electric Kettle
26	Commen Emitter Transistor ch.app.
27	Transisterised Power Supply
28	Band Gap in Semiconductor device
29	Commen Base Transistor ch.app.
30	Babinet Componsater
31	Hydrogen Discharge Tube
32	RC.Amplifier with Oscillator and AC MV
33	Series&and Parallel Resonance LCR.Circuit
34	Unregulated Power Supply(Ripple Factor)
35	Hartley Oscillator
36	Wave Meter(Digital frequency counter
37	Function Generator
53	Study of Lissajous Figures using CRO.
54	Measurment of Dielectric Constant
55	GM Countor and study of radioactivity
56	Hall Effects and coefficient determination
57	Microphone
58	LoudSpeaker
59	LED Char.App
60	Transistorised emitter follower amplifier
61	FET characteristic app
62	Common Source amplifier
63	Osciilators Circuit
64	Study of Zeeman Effect
65	Digital nanometer
66	Thermo EMF Thermometry
67	Four Probe Method
68	Hystersis Loop Tracer
69	He-Ne Laser Experiments
70	Michelson Interferometer
71	Characteristics of Solar cell
72	Diode Laser Diffraction Experiments
73	Study of NOT Gate
74	Study of AND/NAND Gate
75	Study of LOGIC Gate Trainer
76	Study of Boolean Law
77	Study of De Morgans Theorem
78	Study of Flip Flops

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38 maximum Power Transfer Theorem
39 Thevenin's Theorem
40 Norton Theoram
41 Reciprocity Theorem
42 Computer with printer
43 Overhead Projector
44 Tunnel Diode Characteristics
45 Study of RC&TC coupled amp.
46 Thermo EMF Thermometry
47 Stephan's Radiation Constant
48 Absorption Spectrum of Iodine Vapour
49 Rydberg constant
50 Wavelength of a laser beam
51 AC Millivoltameter
52 Hystersis Curve Demostrator

Facilities Created

A separate instrumentation laboratory named as DST-FIST supportedCentral research Laboratory was established. Following instruments have been purchased for research purpose.

Details of equipments purchased under Research Facility and Teaching Facility

S. No.	***Name(withModel&Make)***	***OrderDate***	***Installationdate***	***CostinINR***
RESEARCH FACILITIES				
1	Binary HPLC Model: LC 138(B)	SSSC/37"B"/444 dated 02.08.16	30-8-16	9,97,500.00
2	Millipore Model: DQ3	SSSC/88/438 dated 26.07.16	24-8-16	6,07,383.00

Department of Chemistry				
S. No.	***Name(withModel&Make)***	***OrderDate***	***Installationdate***	***CostinINR***
1	Synthesis Microwave Model: Monowave 200	SSSC/37"B"/474 dated 02.08.16	23-3-17	9,16,000.00

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2	High Precision water bath Model: SE-135	SSSC/37"B"/1219 dated 03.02.17	09-8-16	38,950.00
3	Digital Melting Point Model: SE-174	SSSC/37"B"/442 dated 27-7-16	09-8-16	53,900.00
4	Vaccum compressor pump Model: SE-173	SSSC/37"B"/442 dated 27-7-16	09-8-16	18,975.00
5	Clevenger Apparatus 1000ml.(Borosil.)	SSSC/37"B"/443 dated 27-7-16	09-8-16	9450.00
				Rs.10,37,275.00

3. Department of Chemistry

List of Minor Instruments to be used in UG and PG labs

1	High Precision water bath Model: SE-135	38,950.00	It is used to boil the reaction mixture at desiredtemperature and for definite duration of timeused for organic synthesis. Mainly used for conducting lab practical.
2	Digital Melting Point Model: SE-174	53,900.00	To find out more accurate melting point of thesubstance. Mainly used for conducting lab practical.
3	Vacuum Compressor Pump Model: SE-173	18,975.00	Used in inorganic chemistry for gravimetricestimation of metal ions. Mainly used for conducting lab practical.
4	Clevenger Apparatus 1000ml.	9450.00	For extraction of oil. Mainly used for conducting lab practical.

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Details of Equipment acquired under FIST Program
Department of Chemistry

Name of the Equipment	Millipore water purification System
Model Number	DQ3
Complete Specification	High quality ultra pure water with UV lamp (185/254nm) for preparation of solution required for sophisticated instruments. **Flow rate**=3L/hr at 25 C
Details of Manufacturer	
Name	Merck India Head Office
Address	GODREJ One, 8th floor, Pirojshanagar Eastern Express Highway Vikroli
City	Mumbai
PIN	400079
State	Maharashtra
Phone	+912262109800
Fax	+912262109999
Email	nikita.rishi@external.merckgroup.com
Details of Local Agent/Supplier	
Name	Sumeet Enterprises
Address	103,Malviya Nagar, Bhopal
City	Bhopal
PIN	462003
State	M.P.
Phone	9827098426
Fax	91-0755-2675730
Email	sumeetenterprises@gmail.com
Actual cost (in Foreign Exchange)	8137.24USD
Actual cost (in Indian Rupees)	6,07,383/-Rs
Used for	For ultrapure water for synthesis and solution preparation

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Scanned Photograph of the Equipment (front view)

Details of Equipment acquired under FIST Program

Name of the Equipment	Clevenger Apparatus
Model Number	-
Complete Specification	Capacity 1000 ml with heating mantle with stand and clamp.
Details of Manufacturer	
Name	Borosil Co.
Address	1101, Crescenzo, G-Block, Opp. MCA Club, Bandra Kurla Complex, Bandra (East)
City	Mumbai
PIN	400051
State	Maharashtra
Phone	02267406300
Fax	-
Email	www.borosil.com
Details of Local Agent/Supplier	
Name	Newtech Inst.
Address	Shop No.M-2, chitra complex,178,zone-1,M.P. Nagar,Bhopal-11
City	Bhopal
PIN	462011
State	M.P.
Phone	9827098426
Fax	-
Email	newtechinstruments2012@gmail.com
Actual cost (in Foreign Exchange)	126.59USD

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Actual cost (in Indian Rupees)	9,450/- Rs.
Used for	Extraction of oil
Scanned Photograph of the Equipment (front view)	

Details of Equipment acquired under FIST Program

Name of the Equipment	Binary HPLC System with Software SYS
Model Number	LC 138(B)
Complete Specification	Solvent delivery Pump (2 nos.), UV-VIS Detector, Injection Port, Inbuilt Solvent Tray, Gradient Mixture, Chromatography Workstation VI2010 **Accessories-**C18 Column for HPLC, ULTRASONIC BATH (SONICATOR) (3.5 ltr.), Solvent Filtration Kit, Sample filtration Kit, PC and Printer
Details of Manufacturer	
Name	Systronics
Address	B/116-129,Supath-II Complex, Near Juna Wadaj Bus Terminus,Ashram Road
City	Ahmadabad
PIN	380013
State	Gujarat
Phone	27557072,27553589
Fax	-
Email	sysbpl@systronicsindia.com
Details of Local Agent/Supplier	
Name	Systronics (India) Ltd.
Address	262,1st Floor, Major Shopping Centre Opp. Hotel Tulsi Exotic, Zone-ll, M.P. Nagar
City	Bhopal
PIN	462011
State	M.P

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Phone	0755-2555343
Fax	0755-2555411
Email	sysbpl@systronicsindia.com
Actual cost (in Foreign Exchange)	13362.59USD
Actual cost (in Indian Rupees)	9,97,500/-Rs.
Used for	For quantitative estimation of organic functional groups

Scanned Photograph of the Equipment (front view)

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Details of Equipment acquired under FIST Program

Name of the Equipment	Synthesis Microwave reactor Monowave -200
Model Number	Monowave -200**,**Serial No. 81919710
Complete Specification	Temperature- 300 C and pressure - 30 bar can be reached.3 borosilicate glass vials (2 ml - 20 ml capacity), Reusable snap cap magnet.Unique silicon carbide vial for new method development.
Details of Manufacturer	
Name	Anton Paar GmbH
Address	Anton Paar GmbH,Anton-paar-strasse 20,
City	Graz
PIN	8054
State	Austria
Phone	-
Fax	-
Email	info.in@anton-paar.com
Details of Local Agent/Supplier	
Name	Anton Paar India Pvt. Ltd.
Address	Udyog 582, Phase V, Vihar, Industrial Area
City	Gurugram
PIN	122016
State	Haryana
Phone	+911244932800
Fax	+911244932866
Email	info.in@anton-paar.com
Actual cost (in Foreign Exchange)	12,270.20USD
Actual cost (in Indian Rupees)	916000/- Rs.
Used for	Used for synthesis method development and optimization, provides rapid uniform heating with immersing temperature sensing system along with real time pressure reading.

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Scanned Photograph of the Equipment (front view)

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Details of Equipment acquired under FIST Program

Name of the Equipment	High Precision Digital Melting Point Apparatus
Model Number	SE-174
Complete Specification	Use of C-MOS LSI technology.Digital display with automatic polarity indication and decimal positioning.In built magnetic stirrer keeps uniform temperature.
Details of Manufacturer	
Name	Scientech Instruments
Address	59B-UA, Jawahar Nagar, Near Kamla Nagar, Delhi-110007
City	Delhi
PIN	110007
State	Delhi
Phone	9811014850
Fax	-
Email	scienceenterprise@gmail.com
Details of Local Agent/Supplier	
Name	Sumeet Enterprises
Address	103,Malviya Nagar, Bhopal
City	Bhopal
PIN	462003
State	M.P.
Phone	9827098426
Fax	91-0755-2675730
Email	sumeetenterprises@gmail.com
Actual cost (in Foreign Exchange)	722.01USD
Actual cost (in Indian Rupees)	53,900/- Rs.
Used for	Determination of Melting Point

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Scanned Photograph of the Equipment (front view)

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Details of Equipment acquired under FIST Program

Name of the Equipment	High Precision Water bath 430 X 240 X 245mm
Model Number	SE-135
Complete Specification	Desired temperature digital controller with red indicator, chamber size=430X240X265 mm with approximate 27L capacity with stirring arrangement.
Details of Manufacturer	
Name	Scientech Instruments
Address	59B-UA, Jawahar Nagar, Near Kamla Nagar, Delhi-110007
City	Delhi
PIN	110007
State	Delhi
Phone	9811014850
Fax	-
Email	scienceenterprise@gmail.com
Details of Local Agent/Supplier	
Name	Sumeet Enterprises
Address	103 Malviya Nagar, Bhopal
City	Bhopal
PIN	462003
State	M.P.
Phone	9827098426
Fax	91-0755-2675730
Email	Sumeetenterprises2gmail.com
Actual cost (in Foreign Exchange)	521.68USD
Actual cost (in Indian Rupees)	38,950/-Rs.
Used for	For evaporation and heating under controlled condition
Scanned Photograph of the Equipment (front view)	

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Details of Equipment acquired under FIST Program

Name of the Equipment	Vacuum – cum pressure pump Diaphragm type cap.
Model Number	SE-173
Complete Specification	Soundless, beltless and oil free pump.
Details of Manufacturer	
Name	Scientech Instruments
Address	59B-UA, Jawahar Nagar, Near Kamla Nagar, Delhi-110007
City	Delhi
PIN	110007
State	Delhi
Phone	9811014850
Fax	-
Email	scienceenterprise@gmail.com
Details of Local Agent/Supplier	
Name	Sumeet Enterprises
Address	103 Malviya Nagar, Bhopal
City	Bhopal
PIN	462003
State	M.P
Phone	9827098426
Fax	91-0755-2675730
Email	sumeetenterprises@gmail.com
Actual cost (in Foreign Exchange)	254.14$(USD)
Actual cost (in Indian Rupees)	18,975/-
Used for	Used for filtration under vacuum using glass crucible.

Scanned Photograph of the Equipment (front view)

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SRI SATHYA SAI COLLEGE FOR WOMEN

List of equipments run by electricity

Zoology/Biotechnology Department 2022-23

S.No.	Name of Instrument	Quantity
1	Autoclave	02
2	Electrophoresis	01
3	Electric Lamp	01
4	Heater	01
5	Hot plate	01
6	Centrifuge	03
7	colorimeter	01
8	Conductivity meter	01
9	Hot Air Oven	01
10	Refrigerator	01
11	Digital Balance	03
12	Interactive Smart Board	01
13	Cabon Di oxide incubator	01
14	Trinocular microscope (image projection system)	01
15	Digital microphotography system	01
16	Water bath	01
17	Distillation apparatus	01
18	BOD Incubator	01
19	Cooling centrifuge	01
20	Deep Freeze	01
21	Gel electrophoresis	01
22	Incubator	01
23	Laminar air flow	01
24	PAGE electrophoresis	01
25	PCR	01
26	Rotatory Flask shaker	01
27	Spectrophotometer	01
28	pH Meter	01
29	UV transilluminator	01
30	Plant tissue culture cabinet	01
31	Homogenizer	01
32	Humidifier	
33	Magnetic stirrer	04
34	Horizontal Electrophoresis	01
34	Shaker Incubator	01
35	Soxhlet Apparatus	01
36	Fermentor	01

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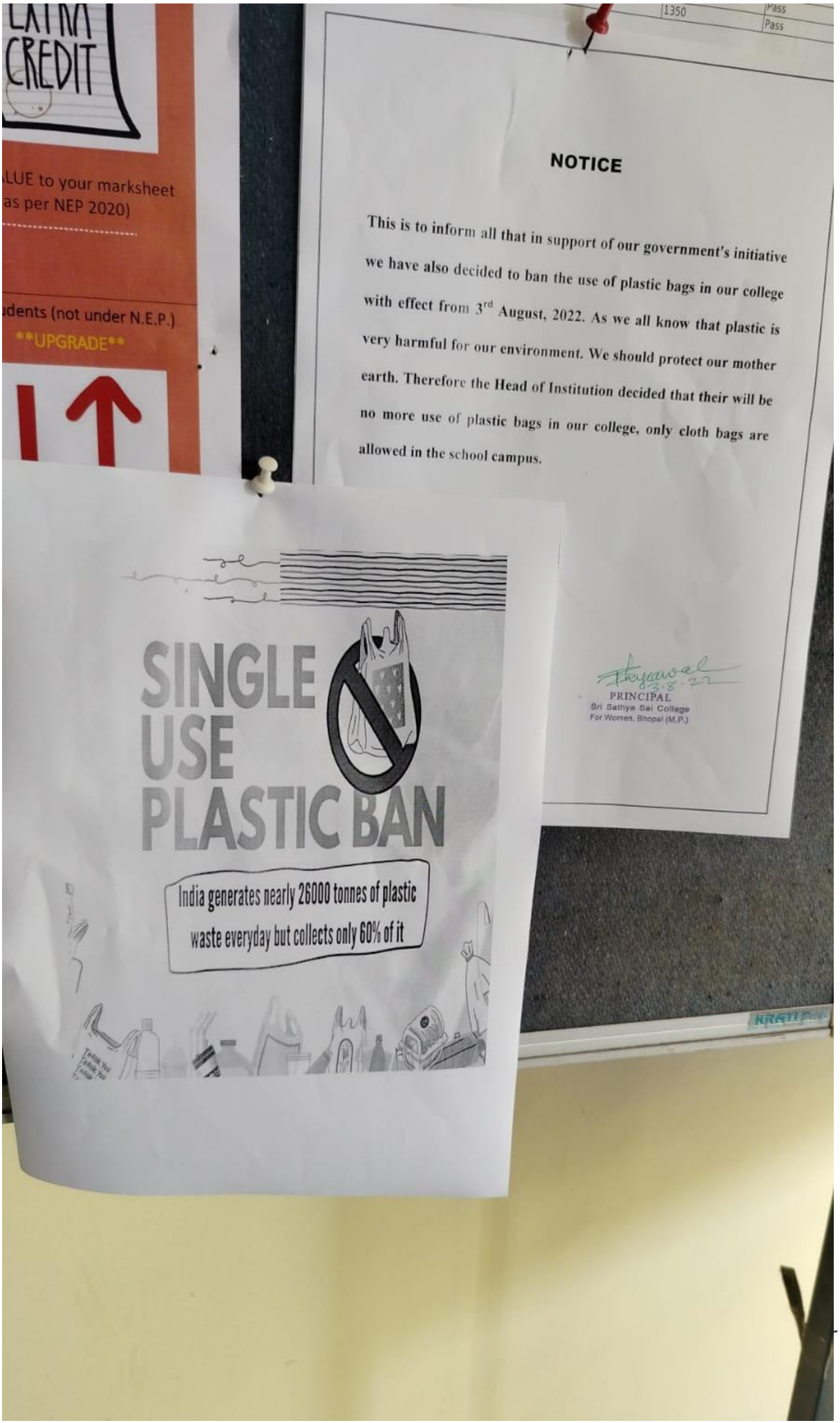
CREDIT
LUE to your marksheet
as per NEP 2020)
dents (not under N.E.P.)
UPGRADE
1350
Pass
Pass
NOTICE
This is to inform all that in support of our government's initiative we have also decided to ban the use of plastic bags in our college with effect from 3rd August, 2022. As we all know that plastic is very harmful for our environment. We should protect our mother earth. Therefore the Head of Institution decided that their will be no more use of plastic bags in our college, only cloth bags are allowed in the school campus.
PRINCIPAL
Sri Sathya Sai College
For Women, Bhopal (M.P.)
SINGLE USE PLASTIC BAN
India generates nearly 26000 tonnes of plastic waste everyday but collects only 60% of it

NOTICE

This is to inform all that in support of our government's initiative we have also decided to ban the use of plastic bags in our college with effect from 3rd August, 2022. As we all know that plastic is very harmful for our environment. We should protect our mother earth. Therefore the Head of Institution decided that their will be no more use of plastic bags in our college, only cloth bags are allowed in the school campus.

3.8.22

PRINCIPAL
Sri Sathya Sai College
For Women, Bhopal (M.P.)

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