

GREEN AUDIT REPORT

SANDIP
FOUNDATION



SANDIP
UNIVERSITY
— UGC Recognised —

TRIMBAK ROAD, NASHIK – 422113, MAHARASHTRA
February (A.Y. 2020-21)



CONDUCTED BY

MANTRAS GREEN RESOURCES LTD.

Hall No.1, First Floor, Nice Sankul

Near ITI Signal, Satpur MIDC.

Nashik - 422007, Maharashtra.

Email Id: info@mantrasresources.com

TEL: 0253-2355665, 23558806

Green and Environmental Audit Report



SANDIP
UNIVERSITY
— UGC Recognised —



SANDIP
FOUNDATION



TRIMBAK ROAD, NASHIK - 422213, MAHARASHTRA

February (A.Y. 2020-21)

A Project Developed by

Sandip Foundation & Sandip University, Nashik

Acknowledgement



Green Audit Team of 'Mantras Green Resource Ltd, expressing gratitude to the Principal, Sandip College, Trimbak Road for assigning the task of Green Audit of this college to us. We appreciate the cooperation that we got from all the faculties and students during the entire process. Our special thanks to the Principals and Vice-chancellor of the Sandip Foundation and Sandip University for their warm support and encouragement from the very beginning till the end of the process.

We are also thankful to the PhD division for conducting Air, Noise & Water Sample Tests & helping us in collecting different data and analysing the information.

Ms. Anagha Kapadnis
Environment Officer,
Team Leader 'Green Audit,
Mantras Green Resources Ltd.

Mantras Green Resources Ltd, Nashik

Disclaimer

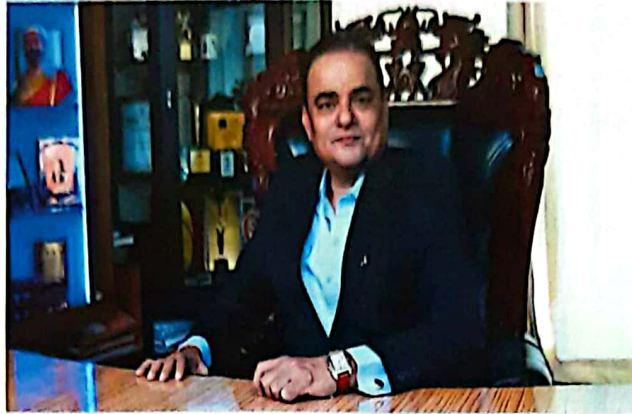
Green Audit team of 'Mantras Green Resources Ltd, has prepared this report on the basis of primary Baseline data collected from the different areas of the institutions. All reasonable care has been taken in its preparation; details contain in this report have been compiled in good faith based on information gathered.



**Prepared by -
Green Audit Team,
Mantras Green Resources Ltd.**



**Authorised Signatory:
Mantras Green Resources Ltd.**



Dr. Sandip Kumar Jha

Sandip Foundation was established in 2005 with a vision of creating an education system from which the leaders emerge of tomorrow. Since our inception we have been aware of our strengths, motives and goals which we have set out to achieve. Today it is our endeavor to be the most competitive institution in the country with an emphasis on efficiency in everyday operations, reliability for students and thrust on discovery and development of new technologies.

Our first campus is set up at Nashik, Maharashtra where the college building is spread across a 200-acres area. Keeping pace with the times, the campus is Wi-Fi enabled. To ensure the complete educational experience, laboratories with the latest tools and machinery are provided along with a comprehensive library with RFID technology, a computer centre with complete internet connectivity a wholesome cafeteria, all set up in a green environment to give our students the most healthy and pleasant experience as they embark and pursue their professional goals.

We are an organization that combines the latest developments in the field of education with our scientific and operational skills to create an environment which nurtures and encourages the aspirations of students. It is our aim that the combination of these factors along with the state-of-the-art infrastructure and a dedicated teaching staff will provide an impetus to the Indian educational system as a whole.

The cultural aspect has always been a strong-point of our Foundation as it has an acknowledged role in molding the personality, teaching soft-skills, developing leadership and management abilities and strengthening the EQ. Extra-curricular activities, participation in sports and other cultural activities has now become universal contributing to all-round formation which is much needed in the world today.

Finally, we look to create an Alumnus for inspiration and support so that our students have wonderful role models to emulate. Our faculty and students remain focused on a quality of education that is not just a academic degree but a way of life.

Chairman, Sandip Foundation.

(MD's note)



This is to certify that **M/s Mantras Green Resources Ltd.**, Nasik (Engineering and Environmental Consultant) has carried out Green Audit Studies for Sandip Foundation Campus Nasik during 2019-2023, includes Air quality, Water monitoring and Noise monitoring levels at network institutions of the Sandip Foundation campus.

The primary baseline data is collected by Mantras Green Resources Limited (MGRL) over a period of three – four years in specific timeframe.

M/s Mantras Green Resources limited is associated with the industries in highly diversified activities like; Environmental Impact Assessment, Engineering and consultancy services. The company is accredited under “EIA Consultant Organizations Accreditation scheme” of Quality Council of India (QCI) vide Notification latest dated May 09, 2023 (Certificate No. NABET EIA/2326/RA0286).

Mantras Green Resources limited an ISO 9001:2015 and 45001:2018 certified company.

The above study is carried out for Green Audit Studies for Sandip Foundation Campus Nasik on Air, Water and Noise quality as it is one of the reputed educational institutions in the state of Maharashtra as well as in Pan India.

(Dr. U.K. Sharma)

Note: This report is for reference only. It cannot be used as evidence and nobody will have the right to re-print it without prior written consent of MGRL, Nasik.

TABLE OF CONTENTS

Sr. No.	CONTENT	Page No.
01	INTRODUCTION	8
	1.1. Need for Green Auditing	11
	1.2. Goals of Green Audit	13
	1.3. Objectives of Green Audit	14
	1.4. Benefits of Green Audit to Educational Institutions	15
02	OBJECTIVE AND SCOPE	16
03	EXECUTIVE SUMMARY	18
04	ABOUT SANDIP FOUNDATION AND SANDIP UNIVERSITY	18
05	COURSES OFFERED	21
06	INFRASTRUCTURE	24
	6.1 BENEFITS OF GREEN BELT	26
	6.2 DETAILS OF TREES AND PLANTS IN CAMPUS	30
	6.3 ROOFTOP SOLAR PANEL-RENEWABLE ENERGY	37
	6.4 LIBRARY FACILITY	39
	6.5 MESS AND FOOD COURT FACILITY	40
	6.6 HOSTEL FACILITY	42
	6.7 LABORATORY FACILITY	43
	6.8 COMPUTER FACILITY	44
	6.9 AIR POLLUTION MANAGEMENT ANF RECOMMENDATION	45
	6.10 NOISE POLLUTION MANAGEMENT	47
	6.11 WATER MANAGEMENT	50
	6.12 RAIN WATER HARVESTING	54
	6.13 SOLID WASTE MANAGEMENT	55
	6.14 SEWAGE TREATMENT PLANT	56
	6.15 GYMNASIUM FACILITY	59
	6.16 REVERSE OSMOSIS	60
7	VIEWS OF GREENARY	65
8	SPORTS IN CAMPUS	67
9	SUMMARY	69
10	CONCLUSION	70
11	RECOMMENDATIONS	70
12	ANNEXURE	72

1. INTRODUCTION:

Green Audit

A Green Audit, also known as an Environmental Audit or Sustainable Audit, is a systematic evaluation of an organization's environmental performance, practices and impacts. It involves assessing various aspects of an organization's operations, processes, and policies to determine their compliance with environmental regulations, identify areas of improvement, and recommend sustainable practices.

The intention of organizing the Green Audit is to upgrade the environment condition in and around the institutes, colleges, companies and other organizations. It is carried out with the aid of performing tasks like waste management, energy savings and others to turn into a better environment friendly institute.

Background:

This Green Audit Report provides a comprehensive assessment of Sandip Foundation environmental performance and sustainability practices. North Maharashtra's a leading institution in providing higher education, Sandip Foundation recognizes the importance of integrating sustainability into its operations and strives to be a role model for environmental stewardship.

Purpose:

The purpose of this audit is to evaluate Sandip Foundation existing sustainability initiatives, measures its environmental impacts, and identify areas for improvements. By conducting this audit, the Foundation aims to strengthen its commitment to sustainable practices, reduce its ecological footprints, and foster a culture of environmental responsibility among its stakeholders.

Scope:

The Green Audit encompasses various aspects of Sandip Foundation operations, including energy consumption, waste management, water conservation, fuel efficient transportation practices, procurement policies, and sustainability education initiatives. By examining these areas, the audit aims to provide a comprehensive overview of the campus environmental performance.

Methodology:

The audit was conducted through a combination of data collection and interpretation, site visits, interviews with key stakeholders and review of relevant documents and records. These methods allowed for a holistic understanding of Sandip Foundation sustainability practices and their impacts on the environment.

Stakeholder Engagement:

Throughout the audit process, engagement with stakeholders has been vital. Sandip Foundation collaborated with faculty, staff, students, and external experts to gather insights, perspectives, and

recommendations. The involvement of stakeholders ensures that the audit reflects a collective effort towards sustainability and encourages a sense of ownership and responsibility among the university community.

Regulatory Framework:

In conducting this audit, Sandip Foundation adheres to relevant environmental regulations, guidelines and best practices. Compliance with local, National, and International Environmental standards is considered a fundamental aspect of the audit, ensuring that the university campus operates within the legal framework and strives for continuous improvements.

Report Structure:

This Green Audit Report is structured to present a comprehensive assessment of Sandip Foundation sustainability performance. It includes an analysis of energy consumption, waste management practices, water conservation efforts, transportation initiatives, procurement policies, and sustainability education. The report also provides recommendations to guide Sandip Foundation towards achieving its sustainability goals.

By undertaking this Green Audit, Sandip Foundation aims to enhance its environmental performance, foster a sustainable campus community and inspire future generations of environmentally conscious leaders. The findings and recommendations presented in this report serve as a roadmap for Sandip Foundation continued progress towards a more sustainable and resilient future.

1.1. NEED FOR GREEN AUDITING

Green auditing is the process of identifying and determining whether institutions practices are eco-friendly and sustainable. Traditionally, we are good and efficient users of natural resources. But over the period of time excess use of resources like; energy, water is become habitual for everyone especially, in common areas. Now, it is necessary to check whether our processes are consuming more than required resources? Whether we are handling resources carefully? Green audit regulates all such practices and gives an efficient way of natural resource utilization. In the era of climate change and resource depletion it is necessary to verify the processes and convert it into green and clean one. Green audit provides an approach for it. It also increases overall consciousness among the people working in institution towards an environment.

1. Environmental Responsibility:

In today's world, environmental sustainability has become a pressing global concern. As an educational institution, Sandip Foundation has a unique role to play in promoting environmental responsibility and serving as a model for sustainable practices. Conducting a Green Audit is necessary to evaluate the university's current environmental performance and identify areas where improvements can be made.

2. Legal Compliance:

Environmental regulations are becoming increasingly stringent, and universities are not exempt from these requirements. By conducting a Green Audit, Sandip Foundation ensures compliance with relevant environmental laws and regulations, minimizing the risk of penalties, fines, and legal consequences. The audit provides an opportunity to assess and rectify any areas of non-compliance.

3. Resource Efficiency:

Efficient utilization of resources is crucial for both environmental sustainability and cost savings. A Green Audit helps Sandip Foundation identify opportunities for optimizing resource consumption, such as reducing energy usage, managing waste more effectively, and conserving water. By implementing sustainable practices, the university can achieve resource efficiency, leading to long-term cost reductions and operational savings.

4. Reputation and Stakeholder Expectations:

As an institution of higher education, Sandip Foundation is accountable to its stakeholders, including students, faculty, staff, alumni, and the wider community. Stakeholders increasingly expect universities to demonstrate a commitment to environmental sustainability. Conducting a Green Audit demonstrates transparency, accountability, and a proactive approach towards meeting these expectations. It enhances the university's reputation as an environmentally responsible institution.

5. Environmental Impact Reduction:

By conducting a Green Audit, Sandip Foundation can assess its environmental impact and identify areas where mitigation measures can be implemented. Universities have a significant carbon footprint through their energy consumption, waste generation, and transportation activities. The audit helps pinpoint opportunities for reducing greenhouse gas emissions, minimizing waste, and adopting sustainable transportation alternatives, contributing to the overall fight against climate change.

6. Educational and Research Opportunities:

The Green Audit process presents valuable educational and research opportunities for students, faculty, and researchers. It allows them to actively participate in data collection, analysis, and recommendation development. The audit fosters interdisciplinary collaboration, knowledge sharing, and

engagement with sustainability concepts, promoting a culture of environmental awareness and innovation within the university community.

7. Continuous Improvement:

Sustainability is an ongoing journey, and universities must continuously strive for improvement. A Green Audit serves as a baseline assessment, enabling Sandeep Foundation to set goals, track progress, and measure the effectiveness of sustainability initiatives. It provides a framework for implementing changes, monitoring their impact, and refining strategies over time. Regular audits ensure that the university remains on a sustainable path and adapts to evolving environmental challenges.

In conclusion, a Green Audit of Sandeep Foundation is essential to fulfill its environmental responsibilities, comply with regulations, optimize resource usage, meet stakeholder expectations, reduce its environmental impact, provide educational opportunities, and strive for continuous improvement. By conducting a thorough assessment of its sustainability practices, Sandeep Foundation can enhance its position as a leader in environmental stewardship and inspire positive change within the university community and beyond.

1.2. GOALS OF GREEN AUDIT

University has conducted a green audit with specific goals as:

- 1) Identification and documentation of green practices followed by university.
- 2) Assess Environmental Performance across various aspects.
- 3) Identify strength, weakness and areas of improvement in green practices.
- 4) Analyze and suggest solution for problems identified.
- 5) Assess facility of different types of waste management.
- 6) To suggest the best protocols for adding to sustainable development.
- 7) Increase environmental awareness throughout campus.
- 8) Identify and assess environmental risk.
- 9) Motivates staff for optimized sustainable use of available resources.

10) The long-term goal of the environmental audit program is to collect baseline data of environmental parameters and resolve environmental issue before they become problems.

By pursuing these goals through the Green Audit, Sandeep Foundation demonstrates its commitment to environmental sustainability, showcases its progress, and inspires positive change within the university community and beyond.

1.3. OBJECTIVE OF GREEN AUDIT

Policies and standards. The main objectives of carrying out Green Audit are:

- 1) To examine the current practices, which can impact on environment such as of resource utilization, waste management etc.
- 2) To secure the environment and cut down the threats posed to human health by analyzing the pattern and extent of resource use on the campus.
- 3) To set a procedure for disposal of all kinds of wastes and use green cover as carbon sink for pollution free air.
- 4) To establish a baseline data to assess future sustainability by avoiding the interruptions in environment that are more difficult to handle and their corrections requires high cost.
- 5) To grow a large number of oxygens producing and carbon-dioxide absorbing plants in the campus to give a pure atmosphere to the stakeholders.
- 6) To bring out a status report on environmental compliance
- 7) To identify and analyze significant environmental issues.
- 8) Setup goal, vision, and mission for Green practices in campus.
- 9) Establish and implement Environment Management in various departments.
- 10) Continuous assessment for betterment in performance in green.
- 11) The main objective of the green audit is to promote the Environment Management and Conservation in the College Campus.

The purpose of the audit is to identify, quantify, describe and prioritize framework of Environment Sustainability in compliance with the applicable regulations.

1.4. BENEFITS OF GREEN AUDIT TO EDUCATIONAL INSTITUTIONS

There are many advantages of green audit to an Educational Institute:

1. It would help to protect the environment in and around the campus.
2. Would help to prepare plan to project the environment.
3. Recognize the cost saving methods through waste minimization and management.
4. Point out the prevailing and fourth coming impacts on environment.
5. Ensures conformity with the applicable laws.
6. Improving the drinking water/RO water/Bore well water/Open well water/Pond water/Municipal or Corporation water quality through the analysis of Physio-chemical properties of water.
7. Implementing status of the rain harvesting system, water reservoirs, percolation pond, etc., in the campus to increase the ground water level.
8. Empower the organizations to frame a better environmental performance.
9. It portrays a good image of an institution which helps building better relationships with the group of interested parties.
10. Promotes the alertness for environmental guidelines and duties.
11. Recognize the cost saving methods through waste minimization and energy Conservation.
12. Empower the organization to frame a better environmental performance.
13. It portrays good image of institution through its clean and green campus.
14. It will help to build positive impression through green initiatives for the Upcoming NAAC visit.
15. Developing an environmental ethic and value systems in youngsters.

2. OBJECTIVE AND SCOPE



Figure No. 1: Scope of the Green Audit

The broad aims/benefits of the eco-auditing system would be:

- a. Environmental education through systematic environmental management approach.
- b. Reducing Carbon Footprint.
- c. Steps taken for organic, inorganic, toxic, e-waste, biomedical, food, sewage Waste management, segregation of wastes and reuse methods.
- d. Public transport, low-emitting vehicles and control of car smokes and exhaust towards Carbon accumulation in the campus by carbon footprint studies.
- e. Improving environmental standards.
- f. Bench marking for environmental protection initiatives.
- g. Sustainable use of natural resource in the campus.
- h. Financial savings through a reduction in resource use.
- i. Curriculum enrichment through practical experience.
- j. Development of ownership, personal and social responsibility for the College
- k. Campus, and its environment.
- l. Enhancement of College profile.
- m. Developing an environmental ethic and value systems in young people.

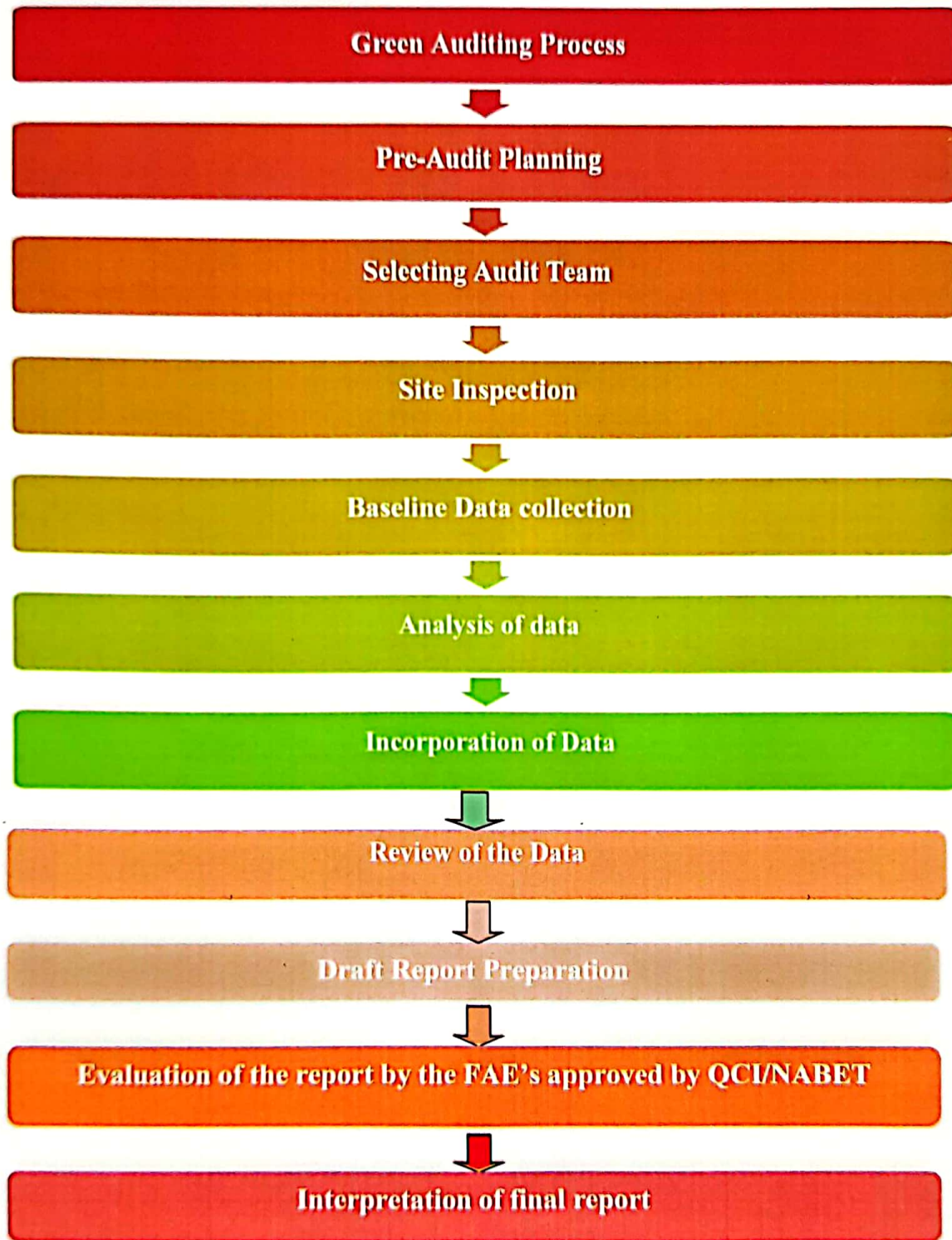


Figure No. 2: Process of Green Auditing

3. EXECUTIVE SUMMARY

An environmental audit is a snapshot in time, in which one assesses campus performance in complying with applicable environmental laws and regulations. Though a helpful benchmark, the audit almost immediately becomes outdated unless there is some mechanism in place to continue the effort of monitoring environmental compliance.

This audit report contains observations and recommendations for improvement of environmental consciousness.

4. ABOUT THE SANDEEP FOUNDATION AND SANDIP UNIVERSITY

Sandip Foundation was established in 2005 with a vision of creating an education system from which the leaders of tomorrow emerge. Sandip Foundation is spread across more than 250+ acres in a lush green environment in which all the colleges are housed. Being among the Top Engineering Colleges in India, its infrastructure is world class with workshops, state-of-the-art Laboratories, overhead projectors in every Class Room, the campus is Wi-Fi enabled, to ensure the complete educational experience, laboratories with the latest tools and machinery are provided along an extensive library and hostel facilities for outdoor students. With a comprehensive library with RFID technology, a computer center with complete internet connectivity a wholesome cafeteria, all set up in a green environment to give students the most healthy and pleasant experience as they embark and pursue their professional goals.

Institution has three academic divisions its 250+ acres primary campus is approximately 13 km from Nasik, near Trimbakeshwar. Sandip Foundation is affiliated with All India Council of Technical education and Savitribai Phule Pune University. Sandip Foundation has been illuminating lives through education over the last one decade. Their active contributions towards the realms of Engineering, Management, Science, Arts, Pharmacy, and Polytechnic Studies have helped shape many successful careers.

With education system that matches global standards, they endeavor to give a rewarding and fulfilling experience to our students. The best education leads to all-round development of an individual. Institute also stresses on the importance of extra-curricular activities and conduct various sports and cultural events through the year. Comprehensive development is achieved with strong emotional quotient and personal grooming. The excellence our students imbibe reflects in their personal and professional lives. The foundation of Sandip Foundation was laid in Nashik, Maharashtra, over a sprawling 250 acres + plot. The lush green city provides a beautiful backdrop to the campus. The campus houses Top Engineering Colleges in Nashik and is state-of-the-art with Wi-Fi, fully-equipped laboratories, a library with RFID technology, a computer center, and a wholesome underground cafeteria.

Sandip Foundation soon expanded its horizon with a second campus Sijoul Campus in Madhubani, Bihar, and spread over a 50-acre area. The second campus too upholds the values and principles on which Sandip Foundation has been built.

Sandip University is a thriving hub of 21st century higher education. It is a UGC-approved University in India, located in Nashik, Maharashtra. The University is set in a picturesque lush green Wi-Fi enabled campus spanning across 250+ acres and is home to cutting-edge infrastructure for a holistic student experience.

As a best private university in Nashik, Maharashtra, Sandip University attuned to the pulse of global educational standards, and so provides students with an education that takes those places.

Sandip University prepares students of today to become leaders of tomorrow on the global stage.

Mission

- To build a strong Center of Excellence in Learning & Research in Engineering and Frontier Technology.
- To facilitate students to learn and imbibe discipline, culture and spirituality besides encouraging them to assimilate the latest technological knowhow.
- To render a helping hand to the underprivileged, thereby acquiring happiness and imparting the same to others without any reservation whatsoever.
- To emerge into a magnificent and mighty launching pad to turn out technological gains.

Vision

- To mould our youngsters into Millennium Leaders not only in Technological and Scientific fields but also to nurture and strengthen the Innate goodness and human nature in them.
- To equip them to face the future challenges in technological Breakthroughs, information explosions and deliver the bounties of Frontier knowledge for the benefit of humanity in general, the Downtrodden and the underprivileged in particular.

5. COURSES OFFERED BY COLLEGE:

Faculty of:-Engineering, Management, Pharmacy

SITRC	SIEM	SIPS	SANDIP UNIVERSITY
Computer Engineering	Engineering Sciences & Humanities	D. Pharm	School of Design
Information Technology	Civil Engineering	B. Pharm	School of commerce & Management studies
E&TC Engineering	Computer Engineering	M. Pharm	School of science
Mechanical Engineering	Electrical Engineering	M. Pharm (QA)	School of vocational studies
Civil Engineering	Electronics & Telecommunication Engineering	-	School of LAW
Electrical Engineering	Mechanical Engineering	-	-
Automation & Robotics	-	-	-
Artificial Intelligence & Data Science	-	-	-

Table 1: List of Courses offered by University

➡ Cumulative number of students in Sandip University – 10000

➡ Cumulative number of students in Sandip Foundation – 5000

Sandip Institute of Technology and Research Centre (SITRC)

Sandip Institute of Technology and Research Centre (SITRC) is a renowned educational institution located in campus of Sandip Foundation Nashik, Maharashtra. The institute has gained a reputation for its commitment to providing quality education and fostering innovation in the field of technology and research.

SITRC offers a wide range of undergraduate and postgraduate programs in engineering and technology disciplines, catering to the evolving needs of industries. The institute boasts a team of highly qualified and experienced faculty members who impart knowledge and mentor students, ensuring a rigorous academic environment.

BUILDING OF SITRC



Photo No. 1: Building of Sandip Institute of Technology and Research Centre

Availability of adequate infrastructure and physical facilities viz., Class Rooms, laboratories, ICT facilities, cultural activities, gymnasium, yoga center etc. in the institution.

Sandip Institute of Engineering and Management (SIEM)

Sandip Institute of Engineering and Management (SIEM) provides undergraduate and postgraduate programs in various disciplines, including engineering, computer science, information technology, and management. The college maintains a rigorous curriculum that combines Theoretical knowledge with practical application, preparing students to meet the challenges of the professional world.

BUILDING OF SIEM (Sandip Institute of Engineering and Management)



Photo No. 2: Building of Sandip Institute of Engineering and Management

PHARMACEUTICAL SCIENCES (SIPS)

Sandip Institute of Pharmaceutical Sciences (SIPS) at Sandip Foundation, one of the top pharmacy colleges in Nashik and indeed the best pharmacy college in India.

At SIPS, the approach to Pharmaceutical Sciences is far ahead and beyond the mere drug information which other institutes deliver. SIPS have taken the humanitarian approach and inculcation of value-based teaching and delivery system ensures our graduates adopt 'humane' approach in innovating, thinking, designing and delivering next generation of drugs to cure 'future problems'.

BUILDING OF SIPS (Sandip Institute of Pharmaceutical Sciences)



Photo No. 3: Building of Sandip Institute of Pharmaceutical Sciences

6. INFRASTRUCTURE

The Table below provides the information at a glance and the link for Geo-tagged photo /plan for the Institution having adequate infrastructure and physical facilities for teaching- learning. viz., Class Rooms, laboratories, computing equipment etc.

FACILITIES
Campus area
Class rooms
Laboratories
Seminar Halls
Class Rooms with LCD facilities
Class Rooms with Wi-Fi/ LAN
Seminar halls with ICT facilities
Hostel
Gymnasium, playground, cricket ground, volleyball court, other indoor games

Table: 2. Infrastructure & physical facilities of the institute

Sr. No.	Particulars	Link for additional geotagged photographs
1	Geo tagged photograph of Institute infrastructure and physical facilities	https://siem.sandipfoundation.org/wp-content/uploads/2022/03/Class-Rooms_Seminal-Hall_Gym-Photos_with-Geotagging-word-compressed.pdf
2	Infrastructure Facility	https://siem.sandipfoundation.org/infrastructure-facility/

Table 3: Link for additional geotagged photographs

6.1 Benefits of Green belt

Lawns in university campuses offer several benefits that can contribute positively to a college Environment Here are some of the key advantages of lawns:

Green belt development: Lawns act as carbon sinks, absorbing carbon dioxide from the atmosphere and helping to mitigate climate change. They also help reduce heat island effects by absorbing and dissipating heat, keeping the surroundings cooler, about 68% of the entire campus area is developed as Green belt.

Air Quality Improvement: Lawns play a role in improving air quality by capturing dust, pollen, and other particulate matter. The grass blades trap these pollutants, preventing them from becoming airborne and reducing their impact on respiratory health.

Water Filtration: Lawns act as natural filters, helping to purify rainwater as it percolates through the soil. The grass and root systems remove impurities and pollutants, preventing them from entering groundwater and protecting local water sources.

Vertical Plants Summary

Vertical plants offer several benefits in university settings, contributing to a greener environment and supporting sustainability efforts.

Improved Air Quality: Vertical plants help in purifying the air by absorbing pollutants and releasing oxygen through photosynthesis. They act as natural air filters, reducing the concentration of harmful substances and enhancing overall air quality within the university premises.

Increased Green Space: Universities often have limited outdoor space, making it challenging to create expansive gardens or green areas. Vertical plants allow for the utilization of vertical surfaces, such as walls and fences, to create vertical gardens. This optimizes the use

of space and maximizes green areas, providing a refreshing and aesthetically pleasing environment for students, faculty, and staff.

Noise Reduction: Vertical plants can act as natural sound barriers, absorbing and diffusing sound waves. This is particularly beneficial in university settings where there might be high levels of ambient noise from traffic, nearby construction, or other activities. By reducing noise pollution, vertical plants contribute to a more peaceful and conducive learning environment.

Sr. No.	Location	Qty	Unit
1	SITRC	53000	Sq.Ft.
2	SIPS	10500	Sq.Ft.
3	SIEM	700	Sq.Ft.
4	SP	23000	Sq.Ft.
5	SOET	4200	Sq.Ft.
6	Sandip University	9700	Sq.Ft.
7	Boys Hostel	3900	Sq.Ft.
8	Girls Hostel	2900	Sq.Ft.
9	Open lawn/Ground	350000	Sq.Ft.
Total Lawn Area (Sq. Ft.)		457900	

Table 4: GREEN BELT AREA IN CAMPUS



Photo No. 4: Tree Plantations I



Photo No. 5: Tree Plantations II



Photo No. 6: Tree Plantations III

Vertical Plant Summary

Sr. No.	Location	Qty.	Unit
1	SITRC	1871	Nos
2	SIPS	206	Nos
3	SIEM	544	Nos
4	SP	640	Nos
5	SOET	726	Nos
6	SANDIP UNIVERSITY	604	Nos
7	BOYS HOSTEL	355	Nos
8	GIRLS HOSTEL	218	Nos
9	PLAY GROUND	405	Nos
10	FARMING	2102	Nos
Total vertical plants		7671	

Table 5: Vertical Plant Summary at University Campus



Photo No. 7: Tree Plantations IV

6.2 DETAILS OF TREES AND PLANTS IN CAMPUS**SITRC**

Sr. No.	Location	Plant Name	Qty.	Unit
1	Maingate (Trmbak)	Roystonea Regia (Royal Palm)	10	Nos.
		Delonix Regia	8	Nos.
2	Maingate to Fountain	Alstonia Scholaris	24	Nos.
3	Fountain to MSEB Room	Delonix Regia (Pilmohar)	16	Nos.
4	MSEB room to olive canteen	Spathodea Campanulata	38	Nos.
		Delonix Regia	12	Nos.
		Mangifera Indica	207	Nos.
5	Olive canteen	Alstonia Scholaris	8	Nos.
		Livistona Rotundifolia	25	Nos.
		Sapota	4	Nos.
		Guava	5	Nos.
		Acacia Mangium	133	Nos.
6	SITRC Workshop Parking	Samanea Saman	10	Nos.
		Jackfruit	25	Nos.
7	SITRC Workshop Parking to L' Shape	Delonix Regia	13	Nos.
8	L' Shape	Grevillea Robusta	286	Nos.
		Casuarinaequisetifolia	22	Nos.
		Eucalyptus	7	Nos.
9	Old RO Plant	Neolamarckia Cadamba	33	Nos.
10	SITRC Workshop	Phoenix dactylifera	3	Nos.
		Bauhinia variegata	5	Nos.
		Livistona Rotundifolia	13	Nos.
11	E' Building	Musa acuminate	4	Nos.
		Neolamarckia Cadamba	7	Nos.
		Roystonea Regia (Royal Palm)	2	Nos.
		Golden Bamboo	30	Nos.
		Raphis Palm	10	Nos.
		Bauhinia Variegata	5	Nos.
		Plumeria alba	2	Nos.

GREEN AUDIT REPORT – SANDIP FOUNDATION AND SANDIP UNIVERSITY, NASHIK

12	D' Building	Bauhinia Variegata	16	Nos.
		Roystonea Regia (Royal Palm)	2	Nos.
		Christmas tree	4	Nos.
		Miniature Date Palm	3	Nos.
		Raphis Palm	8	Nos.
		Areca Palm	77	Nos.
		Supari Palm	5	Nos.
		Brinjal Tree	2	Nos.
		Kailashpati	2	Nos.
		Ficus Benjamina	8	Nos.
13	C' Building	Musa Acuminata	2	Nos.
		Areca Palm	55	Nos.
		Ficus Benjamina	-	Nos.
		Roystonea Regia (Royal Palm)	2	Nos.
		Kailashpati	2	Nos.
		Bird Nest Palm	3	Nos.
		Christmas tree	2	Nos.
14	B' Building	Roystonea Regia (Royal Palm)	2	Nos.
		Areca Palm	46	Nos.
		Palmyra Palm	5	Nos.
		Bird Nest Palm	2	Nos.
		Benjinius Palm	6	Nos.
		Raphis Palm	42	Nos.
		Ficus Benjamina	1	Nos.
		Christmas tree	3	Nos.
		Livistona Rotundifolia	40	Nos.
		Foxtail Palm	7	Nos.
15	A' Building	Foxtail Palm	20	Nos.
		Bottle Brush Palm	7	Nos.
		Areca Palm	19	Nos.
		Benjinius	7	Nos.
		Roystonea Regia (Royal Palm)	2	Nos.
		Alota	5	Nos.
		Britonia Tree	9	Nos.
16	Trustee Cabin	Altamash	3	Nos.
		Golden Bamboo	127	Nos.
		Areca catechu	45	Nos.

		Phoenix dactylifera	6	Nos.
		Mangifera Indica	1	Nos.
		Plumeria alba	12	Nos.
		Mogashi	5	Nos.
17	SITRC Parking	Azadirachta indica	1	Nos.
		Delonix Regia	1	Nos.
		Spathodea Campanulata	2	Nos.
		Coconut Tree	180	Nos.
		Ficus Religiosa	1	Nos.
		Ficus benghalensis	1	Nos.
		Aeglemarmelos	3	Nos.
18	Amphitheatre	Ficus Benjamina	5	Nos.
		Bauhinia Variegata	31	Nos.
		Sankrant Vel	45	Nos.
Total			1871	Nos.

Table 5: List of Plantations at SIRTTC

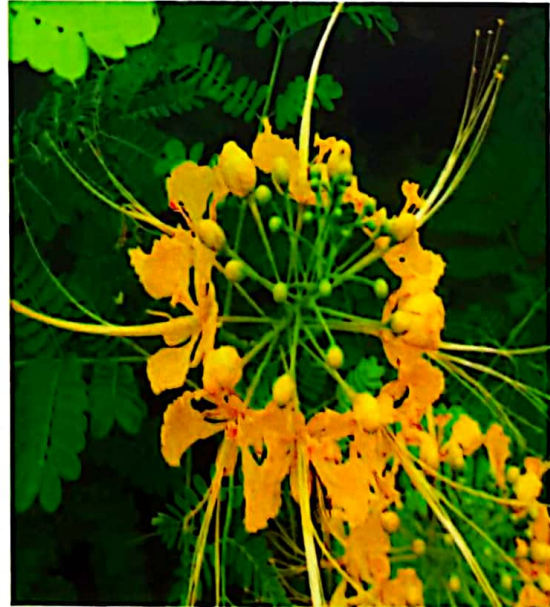
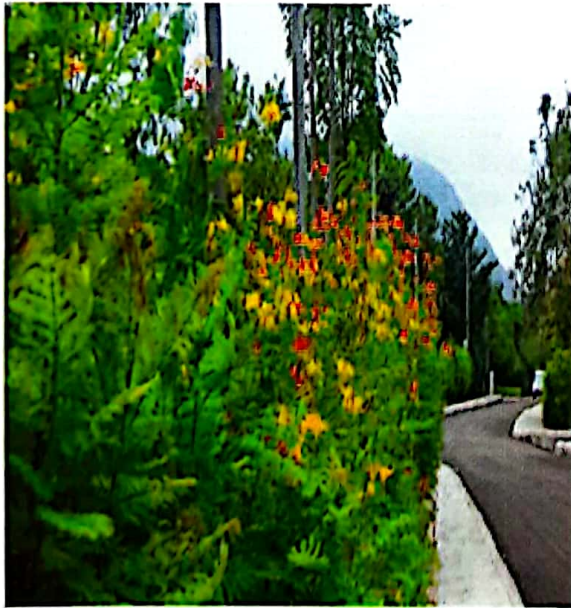


Photo No. 8: Tree Plantations V and VI

SIPS

Sr.No.	Location	Plant Name	Qty.	Unit
1.	SIPS Backside Road	Delonix Regia (Gulmohar)	47	Nos.
2.	SIPS Front	Magnolia Champaca	15	Nos.
		Azadirachta indica	1	Nos.
3.	SIPS Valley	Golden Cypress	55	Nos.
		Ficus Racemosa	1	Nos.
		Ficus Benjamina	5	Nos.
		Elaeocarpus Angustifolius	2	Nos.
		Millettiapinnata	5	Nos.
		Buteamonosperma	4	Nos.
		Ziziphusmauritiana	3	Nos.
		Chilar(Bhokar)	11	Nos.
		Cassia fistula	10	Nos.
		Custard Apple	4	Nos.
		Morus alba	6	Nos.
		Phyllanthus emblica	4	Nos.
		Terminalia Arjuna	13	Nos.
		Total		

Table No. 6: List of Plantations at SIPS

	SIPS Campus	Lawn	10500	Sq.Ft.
--	-------------	------	-------	--------



Photo No. 9: Tree Plantations VII

SIEM

Sr. No.	Location	Plant Name	Qty	Unit
1	SIEM Civil Building	Roystonea Regia (Royal Palm)	4	Nos.
		Mimusopselengi	1	Nos.
2	SIEM Road	Tabebuia rosea	48	Nos.
		Ficus benghalensis	35	Nos.
		Mimusopselengi	9	Nos.
		Bauhinia Variegata	25	Nos.
		Azadirachta indica	1	Nos.
		Eucalyptus	5	Nos.
		Moringa oleifera	1	Nos.
3	SIEM Front	Saraca asoca	14	Nos.
		Bambusa vulgaris	302	Nos.
		Millettiapinnata	5	Nos.
		Mangifera Indica	3	Nos.
		Santalum album	2	Nos.
		Plumeria	6	Nos.
		Psidium guajava	2	Nos.
		Pilea	2	Nos.
		Morus alba	1	Nos.
		Prunus avium	5	Nos.
4	SIEM Parking	Anacardium occidentale	53	Nos.
		Prunus dulcis	8	Nos.
		Saraca asoca (Sita Ashok)	12	Nos.
Total			544	Nos.

Table No. 7: List of Plantations at SIEM

	SIEM	Lawn	700	Sq.Ft.
--	-------------	-------------	------------	---------------

SIPS

Sr.No.	Location	Plant Name	Qty	Unit
	SIPS Campus	Lawn	23000	Sq.Ft.
1	SP Workshop	Prunusavium	5	Nos.
		Azadirachta indica	1	Nos.
		Areca Palm	20	Nos.
		Plumeria	4	Nos.
		Platyclusorientalis	12	Nos.
		Mangifera Indica	52	Nos.
2	SP Round Building	Areca Palm	157	Nos.
		Ficus Benjamina	4	Nos.
3	SP Admin Building	Roystonea Regia (Royal Palm)	5	Nos.
		Areca Palm	83	Nos.
		Bauhinia Variegata	6	Nos.
		Cassia fistula	5	Nos.
		Neolamarckia Cadamba	24	Nos.
		Bocote (Cordia)	5	Nos.
		Erythrina orientalis	11	Nos.
		Corchorus	3	Nos.
		Plumeria	8	Nos.
		Coconut Tree	60	Nos.
4	SP Backside	Bauhinia Variegata	5	Nos.
		Cassia fistula	5	Nos.
		Neolamarckia Cadamba	13	Nos.
		Bottle Brush Palm	3	Nos.
		Magnolia champaca	2	Nos.
5	SP Nalaside	Mimusopselengi	4	Nos.
		Plumeria	6	Nos.
		Foxtail Palm	7	Nos.
		Bottle Brush Palm	54	Nos.
		Areca Palm	76	Nos.
Total			640	Nos.

Table No. 8: List of Plantations at SIPS

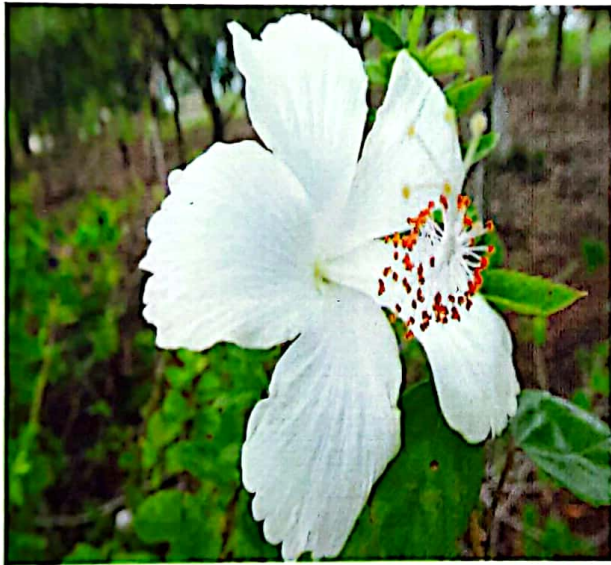


Photo No. 10: Different species of flowers VIII to XI

6.3 ROOFTOP SOLAR PANEL: RENEWABLE ENERGY

Is the college having solar, wind, or other forms of renewable energy?	The college has solar water heating system. College Management is evaluating the feasibility of introduction of the solar PV generation.
	As a normal rule of thumb, 100 liters of solar water heater running 300 days a year saves 1200 kWh of electricity. College hostel has installed 5000X6(30000) liters solar water heater. Thus, the annual savings will be approximately 36000 kWh. Annual average electricity consumption for college is 497732 kWh (Electricity consumption for 2014-15 was 427344 kWh, for 2015-16 was 479244kWh, 2016-17 was 586608 kWh) ¹⁵ . Thus the % contribution of the renewable energy =36000/497732=7.23%. The college has 29.12 % share applied for the electric billing thus applying the same factor for determination of share for college. The share of renewable energy comes to 2.1%.
	The C-Wet governed by MNRE (Enterprise of Govt of India) and SITRC signed MoU dated 2013-09-13. As part of MoU wind mast and pilot solar plant is installed. This arrangement captures key data to as a certain feasibility of installation of renewable energy (solar and wind) in the control region of 25 km radius. There port generation is automatic and data is Directly available to MNRE. Roof top solar water heaters are installed in the hostel building. Total 6 Solar water heaters (4 at boy's hostel & 2 at girl's hostel) of 5000 liters /day capacity of each is installed in hostel.
Is the college purchasing renewable power from third party or renewable energy certificates for its electricity use?	No. Grid electricity is purchased. This is verified from the submitted bills.
Is the college offering renewable Energy lessons/programs?	Yes. Students are also encouraged to present Papers. List of papers is enclosed with this report.
	Under Annexure. Also, there is subject called Basic
	Civil and Environmental Engineering in First Year of
	Engineering.

Table No. 9: Renewable Energy Facility at University Campus

Recommendation

The college needs to chalk out long term strategy towards carbon neutrality and install renewable electricity generation (solar PV) to offset emissions of grid-based electricity generation. College can also buy carbon credits (registered under CDM, VCS) to offset its GHG emissions.

Details of Solar Cells Used for Water Heating



Photo No. 11: Solar panel A, B, C

Sr. No	Hostel	No. of Panels	Capacity of Water Tank (Lts)
1	Girls Hostel	02	5000
2	Boys Hostel	04	5000

Table No. 10: Hot water Facility at University Hostels

6.4 LIBRARY

The college library is fully automated and it has a collection of over 26,500 books and a subscription of about 7,631 e-journals and 10000+ e-books for Engineering & Management. Internet browsing and mobile library application is also available.



Photo No. 12: Library Pictures A & B

6.5 MESS AND FOOD COURT FACILITY

Mess and food court facility has been provided. Canteen has large area as well as seating arrangements.

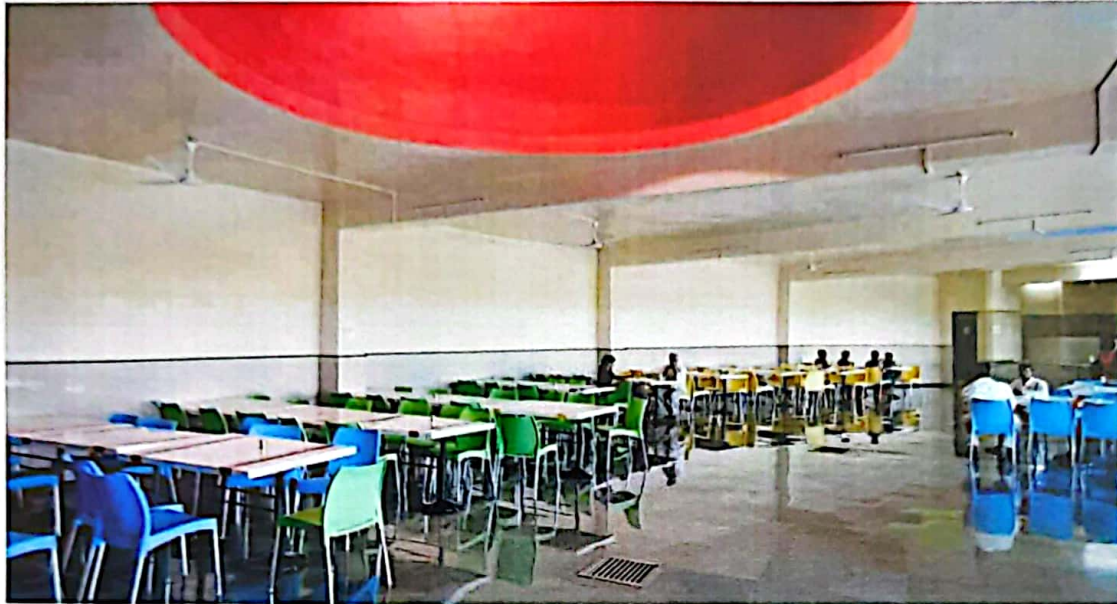


Photo No. 13: Mess Facility A & B

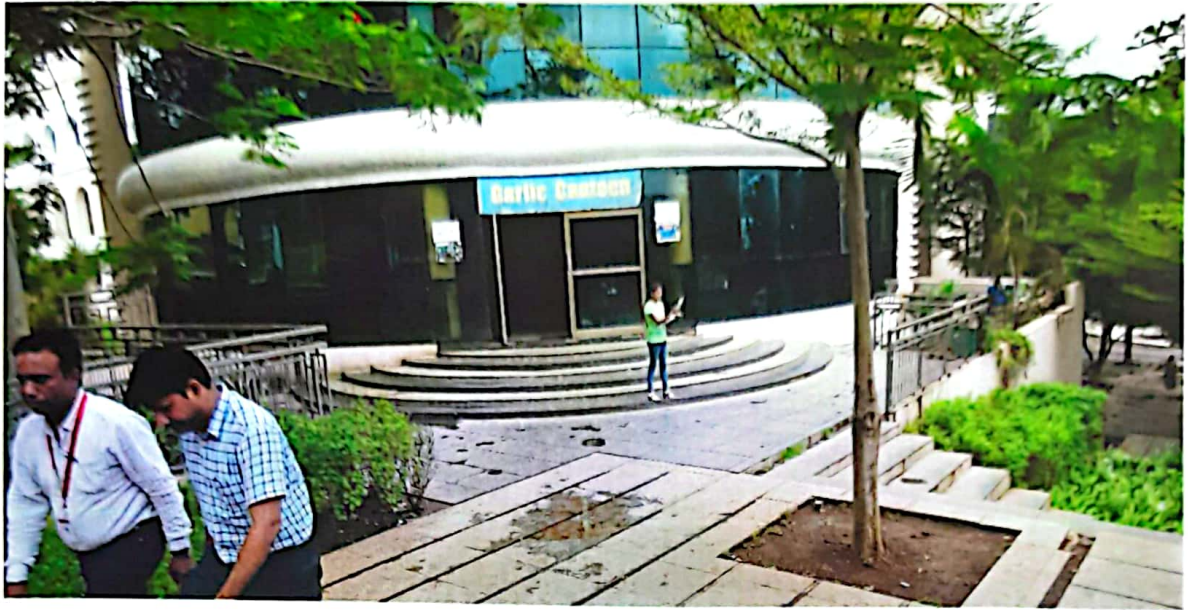


Photo No. 14: Food Court A & B

6.6 HOSTELS ACCOMODATION



Photo No. 15: Hostel Facility



Photo No. 16: Library Building

6.7 LABORATORY FACILITY



Photo No. 17: Laboratory Facility A, B

6.8 COMPUTER LABS FACILITY

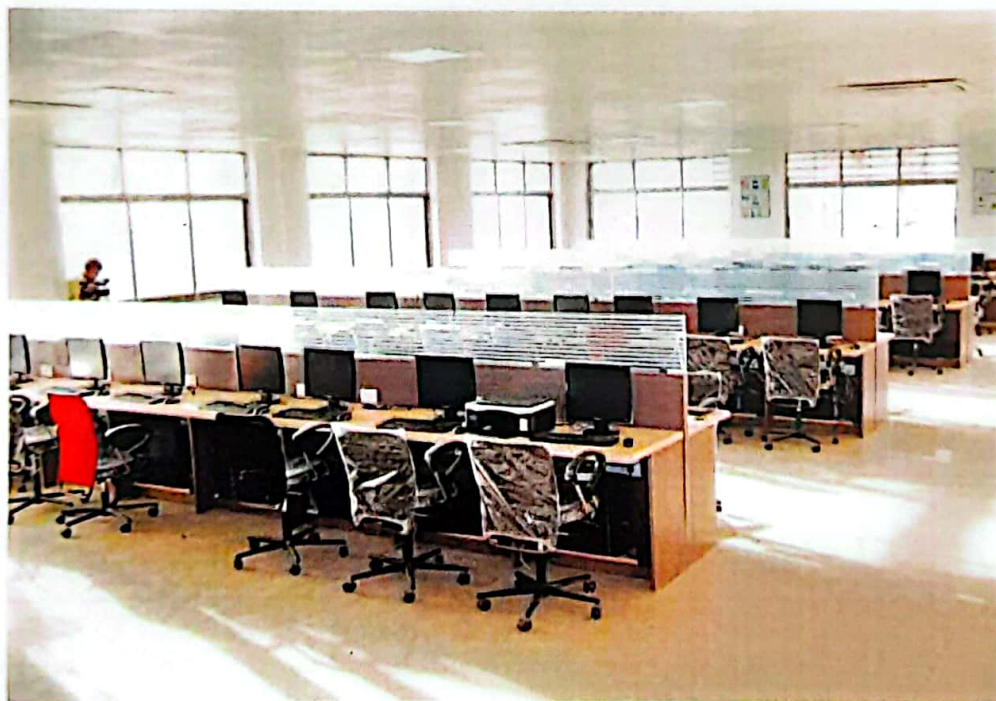


Photo No. 18: Computer Lab Facility A, B

6.9 AIR POLLUTION MANAGEMENT PERIODIC AWARENESS PROGRAMME FOR STAFF, STUDENTS AND SOCIETY

The College has been continuously conducting awareness programs for staff, students and society, for protecting and maintaining environment. The awareness is also done by arranging various programs, rallies on Environment and Health safety. The college students and faculty members are also involved in conducting Green audit activities in the premises such as displaying sign boards for conservation of Environment in the college premises.

During audit activity there are about 100 Two wheelers and 25 four wheelers were observed in the campus parking area. Initiative is taken for balancing Carbon Emissions by planting of numerous trees in the parking areas. Vehicle Exhaust Gas Analysis and Vehicular movement noise and vibration pollution is absorbed by the excessive tree plantation in the premises. Carpooling system is implemented by staff and students.

Air Quality: Ambient Air Test Report as per Location 15.2.21 to 16.2.21

Sr No	Test Parameters	Results	Results	Results	Results	Results	Limits	Unit
		Near SITRC-Sandip Institute of Technology and Research Center (Building)	Near SIEM-Sandip Institute of Engineering and Management (Building)	Near SIPS-Sandip Institute of Pharmaceutical Sciences (Building)	Near Sandip University (Building)	Inside Library		
1	Sulphur Dioxide (SO ₂)	3	4.1	3.9	4.6	3.4	< 80	µg/m ³
2	Nitrogen Dioxide (NO ₂)	3.9	6	4.6	4.8	4.8	< 80	µg/m ³
3	Particulate Matter PM ₁₀	26	24	26	23	22	< 100	µg/m ³
4	Particulate Matter PM _{2.5}	24	21	22	21.5	18.6	< 60	µg/m ³
5	Carbon Monoxide (CO)	1.9	1.8	1.9	1.4	1.8	< 4	mg/m ³

Table No. 11: Ambient Air Quality Test Reports

RECOMMENDATIONS

The College may consider these on top priority: -

1. World Environment Day to be celebrated in college premises every Year on 5th June and whole college students and staff shall get involved and take OATH for ENVIRONMENT CONSERVATION not only in College but also in every span of life.
2. Chemistry and Botany Department shall monitor the Ambient Air Quality as per the guidelines of “Air (Prevention and Control of Pollution) Act 1981.
3. Exhaust gases shall be monitored, analyzed and check regularly.
4. Parking zone of college shall be neat & clean.
5. Use of bicycle in campus to be promoted.

6.10 NOISE POLLUTION MANAGEMENT

A) SILENCE ZONES IN THE COLLEGE

Various display boards have been placed in the library and other places for awareness to maintain silence in the college.

B) NOISE CONTROL IN THE COLLEGE

The college adopts no honking policy and prevents use of any honk and noise in campus. Certain areas like library, class room are declared as Silence zone and noise pollution is kept to minimum on college campus.

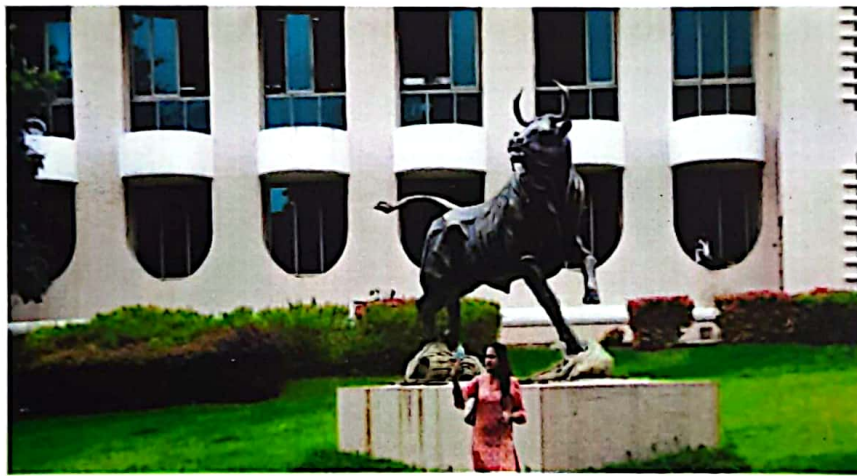


Photo No. 19: Noise Monitoring (A), (B)

C) DG SET FOR POWER BACK-UP

The college had DG set as power backup and used whenever there is power cut-off due to load shading or maintenance of electricity in college campus. It is observed that acoustication is not done on DG Set for noise pollution reduction. The exhausted gases are not monitored, tested and analyzed to know the pollution load.

Noise level readings:



Photo No. 20: Noise Monitoring near DG set

NOISE MONITORING		Date of Monitoring		15 Feb 2021
Sr. No.	Name of the place	Maximum In Leq	Minimum In Leq	CPCB NORMS
1	Near SITRC- Sandip Institute of Technology and Research Center (Building)	28.2	30.1	75
2	Near SIEM- Sandip Institute of Engineering and Management (Building)	29.3	31.5	
3	Near SIPS- Sandip Institute of Pharmaceutical Sciences (Building)	28.6	31.4	
4	Near Sandip University (Building)	29.9	31.8	
5	Inside Library	26	28.1	

Table No. 12: Noise Monitoring Test Reports



Photo No. 21: Noise Monitoring at entrance of Pharmaceutical Sciences

RECOMMENDATIONS

The College administration may consider on top priority.

1. Noise Level Monitoring shall be done as per the guideline of “Noise Pollution (Regulation and Control) Rules 2000.
2. Vehicular exhausts shall be examined regularly in the collage as per Central Motor Vehicle Act 1988.
3. Vehicular movements shall be restricted by putting boundary limit and beyond that limit usage of bicycles shall be promoted to all students and staff.

6.11 Water Management:

Water conservation is a key activity as water availability effects on the development of the campus as well as on all area of development such as farming, industries, etc. Keeping this view water conservation activity is carried out.

SOURCES OF WATER

Sr. No	Source of water	Number of times the water is uplifted from the source	Average of quantity of water uplifted. (Lit)
1	Neelamsagar DAM-1-35900m ² DAM -2-16421m ²	Four Times a day. 4 Motors, are used to pump 20,000 liters of water per day by using 10 HP Motor.	80,000/ day (in Liters) 24,00,000/Month (in Liters) 28,800,000/yearly (in Liters)

Table No. 13: Sources of Water in University Campus



Photo No. 22: Neelamsagar small pond for water collection facility

Dam water A Main source of water is Ground water is extracted to full fill the requirement. At present there are 2 Dams. The college stores the water in overhead tank.

The source of wastewater is Domestic Waste Water i.e., Sewage water.

The Sewage water mainly comes from Toilets of college, hostel, kitchen and canteen.

Sewage Treatment Plant was installed in the campus of capacity of 80,000 lit per day.

Water Storage:

Sr. no.	Storage devices	Quantity	Capacity in K liters
1	Overhead tank	2	5600 KL
2	Underground tank	2	1300 KL
3	PVC tank	4	20 KL

Table 14: Water Storage Facility at University Campus



Photo No. 23: Storage tank facility

Observations:

- No leaking taps, pipes, valves were identified in the college premise.
- Rain water from terrace is collected in pits located around the building and water is collected.
- Presence of dripping system.
- ACs are operated mainly in the months of March, April, May, June and October. Condensed water is collected and utilized for gardening.
- The evaporation losses from soil surface are reduced by application of the drip irrigation.
- Sprinklers are also utilized as the Sprinkler systems eliminate water conveyance channels, thereby reducing water loss, Sprinklers provide a more even application of water to agricultural land, promoting steady crop growth.
- The rain water harvested from the roof top is collected in the soak pits and then charged into the storage tank. Total area of roof top is 7492 m² the rainfall for Nasik region is approximately 2362 mm. Total rain water harvested is estimated as 15926 m³ at the run off coefficient of 0.91 Dam 1-35900 m.



Photo No. 24: Drip Irrigation facility



Photo No. 25: Farming activity

6.12 RAIN WATER HARVESTING

The rainwater harvesting strengthens the water supply to enhance water level of wells in the campus through ground water recharging process. Rain water collection facility is provided to collect the surface run-off from the roads



Photo No. 26: Rain water Harvesting (A), (B), (C)

Generation of waste water in campus: (Average)

Any other information about waste water disposal:

6.13 SOLID WASTE MANAGEMENT:

Table No. 15: Amount of Solid Waste Generated at University Campus

Sr. No.	Location	Solid waste (Kg/month)	Recyclable waste (Kg/month)	E-waste (Kg/month)	Construction waste (Kg/month)
1	Class Rooms	500	5	-	40
2	Laboratories	500	5	-	20
3	College Canteen	1100	10	-	20
4	Lecture Halls	500	5	-	40
5	Staff quarters	500	5	-	40
6	College campus	500	10	-	40
		3600 kgs	40 kgs	NIL	200 kgs

Sr. No.	Description	Capacity
1	Sewage Treatment Plant - 01	0.35 MLD
2	Area of plant	800 Sq. mtr
3	Type of treatment system	Anaerobic treatment followed by Root zone (plant) treatment
4	Year of construction	2017-2018
5	Plant Designed By	EEPL - SINE IITB Incubation Firm (IIT Bombay)

Table No. 16: Description of STP at University Campus

Segregation of Solid Waste:

6.14 WASTE MANAGEMENT (Liquid Waste Management):

A sewage treatment plant of 3.5 million of liters capacity is being installed in campus through which recycled water will be used for gardening & flushing.

Sewage Treatment Plant: A Key Component of College Sustainability

The implementation of a sewage treatment plant is a vital step towards achieving sustainability goals in college campuses. By effectively managing and treating wastewater, colleges can significantly reduce their environmental impact, conserve water resources, and promote a healthier campus ecosystem.

Water Conservation:

A sewage treatment plant allows colleges to recycle and reuse water efficiently. Through advanced treatment processes such as filtration, sedimentation, and disinfection, wastewater is treated to a high standard, enabling its safe reuse for non-potable purposes like irrigation, toilet flushing, and landscape maintenance. By minimizing reliance on freshwater sources for non-drinking water needs, the college reduces its strain on local water supplies and contributes to sustainable water management practices.



Photo No. 27: Sewage Treatment Plant Facility (A), (B)

Environmental Protection:

The treated effluent becomes environmentally safe when discharged into rivers or used for irrigation. This significantly reduces the impact on aquatic ecosystems, preserving biodiversity and ensuring a healthier environment for wildlife.

Nutrient Recovery:

Sewage treatment plants can incorporate processes for nutrient recovery from wastewater, particularly nitrogen and phosphorus.



Photo No. 28: Nutrient Recovery from wastewater produced from STP

6.15 GYMNASIUM FACILITY

Gymnasium is provided inside the campus facility to encourage physical activity among the students for their physical health.

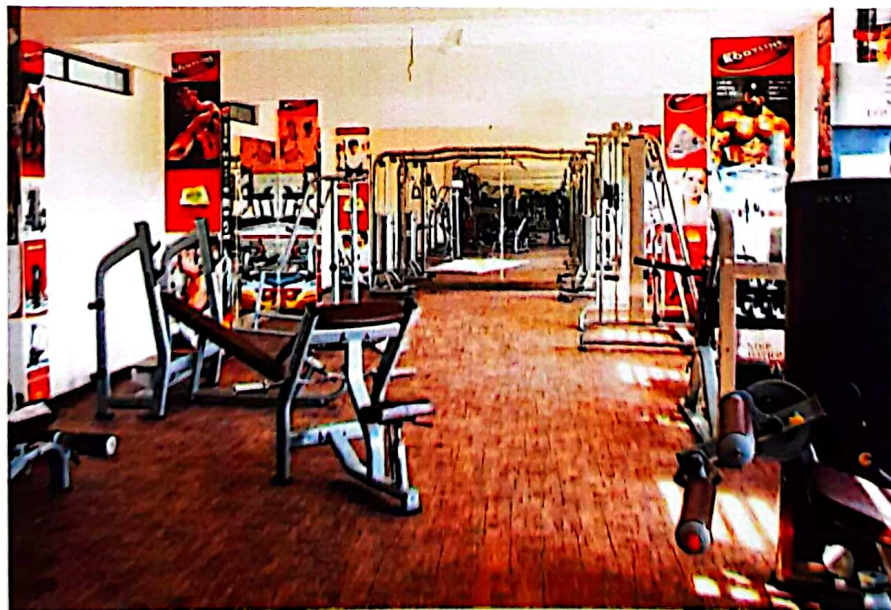


Photo No. 29: Gymnasium Facility

6.16 REVERSE OSMOSIS PLANT

Mechanism and Operation of Reverse Osmosis (RO) Plant: A Sustainable Solution for University/college Water Management.

A Reverse Osmosis (RO) plant is an essential component of sustainable water management in universities. By employing advanced filtration technology, RO plants remove impurities and contaminants from water, ensuring a safe and reliable water supply for various campus needs.

Mechanism of Reverse Osmosis:

Reverse Osmosis is a water purification process that utilizes a semipermeable membrane to separate dissolved solids, contaminants, and impurities from water.

The process works by applying pressure to the water, forcing it through the membrane while blocking the passage of contaminants.

This mechanism effectively removes substances such as salts, minerals, bacteria, viruses, and organic compounds, producing clean and purified water.

Key Components of a RO Plant:

A RO plant consists of several essential components that work together to achieve efficient water treatment:

- a. Pre-treatment:** Incoming water undergoes pre-treatment processes such as sediment filtration, activated carbon filtration, and disinfection to remove larger particles, chlorine, and organic matter, thus protecting the RO membrane from potential damage.
- b. High-Pressure Pump:** The high-pressure pump provides the energy required to push water through the RO membrane against the osmotic pressure, facilitating the separation of contaminants.
- c. RO Membrane:** The semipermeable RO membrane acts as a barrier, allowing water molecules to pass through while rejecting dissolved solids and contaminants. It effectively filters out impurities, producing purified water known as permeate.
- d. Concentrate Disposal:** During the RO process, a portion of water, referred to as concentrate or reject water, containing the concentrated impurities, is generated. Proper disposal methods must be employed to manage this waste stream responsibly.

Operation of a RO Plant:

The operation of a RO plant involves several stages:

a. Inlet and Pre-treatment: Raw water enters the plant through an inlet and undergoes pre-treatment processes to remove larger particles, sediment, and impurities. This step protects the RO membrane and enhances its longevity and efficiency.

b. High-Pressure Pumping: Pre-treated water is pressurized using a high-pressure pump. The pump applies sufficient force to overcome the osmotic pressure, allowing water to pass through the RO membrane.

c. Membrane Filtration: Pressurized water is forced through the RO membrane, which acts as a molecular filter, selectively rejecting contaminants based on their size and charge. Purified water (permeate) passes through the membrane, while impurities and concentrated contaminants are separated as reject water.

d. Post-Treatment: Permeate undergoes post-treatment processes, such as disinfection, pH adjustment, and demineralization, to ensure its quality meets the desired standards for safe use.

e. Concentrate Disposal: The reject water, containing concentrated impurities, is appropriately managed and disposed of according to environmental regulations. Options for disposal may include dilution, recycling, or safe discharge.

Conclusion:

The mechanism and operation of a Reverse Osmosis (RO) plant play a crucial role in the sustainable water management of a university. By effectively removing impurities and contaminants from water, RO plants provide a reliable and safe water supply for various campus needs while minimizing the dependence on single-use plastic bottle.



Photo No. 30: Centralized Reverse Osmosis Facility (A), (B), (C)



Photo No. 31: Centralized Reverse Osmosis Distribution Facility (A), (B)

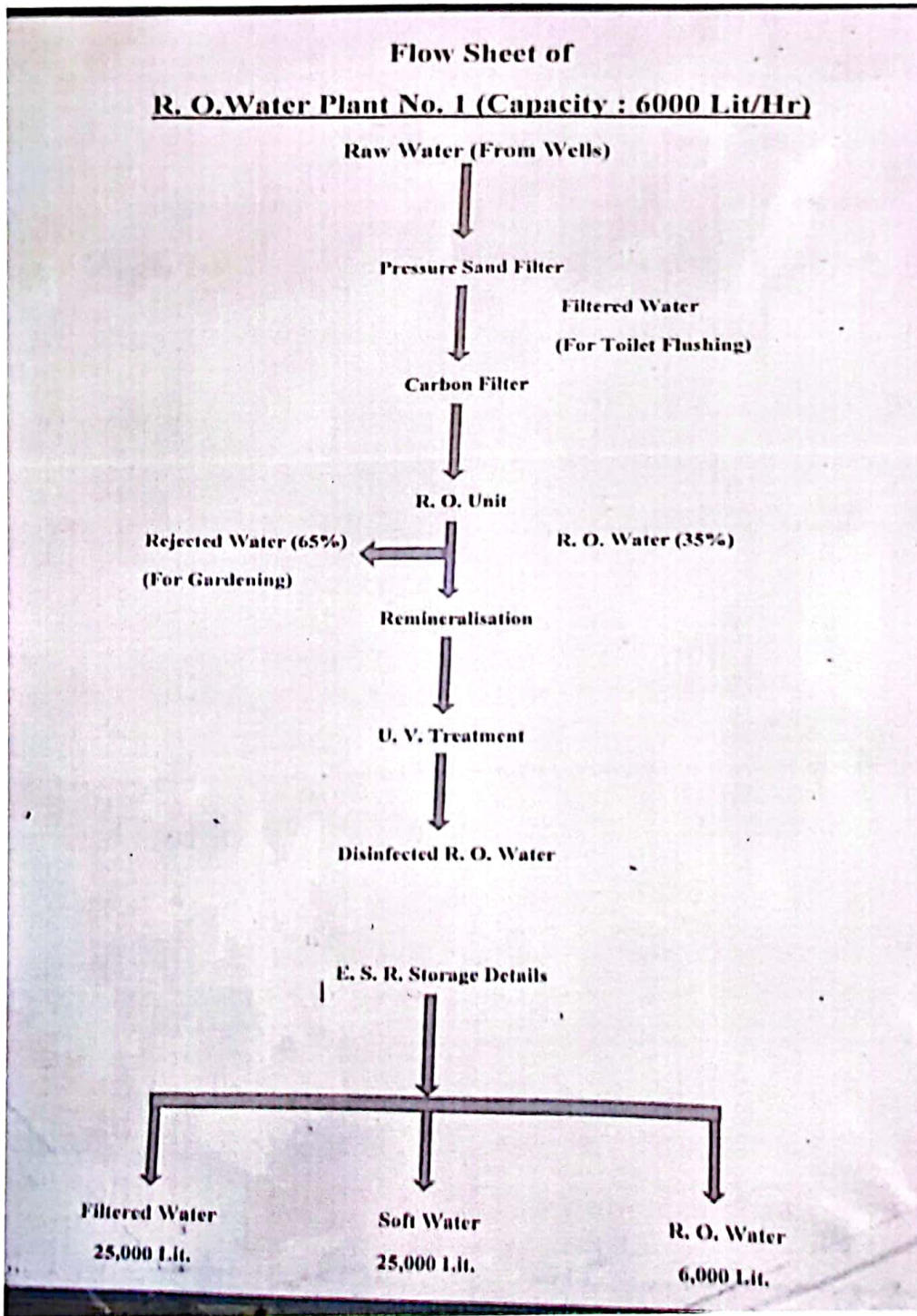


Figure No. 3: Flow Chart of Reverse Osmosis

7. VIEWS OF GREENERY



Photo No. 32: Tree Plantation across main road of campus



Photo No. 33: Open Podium of the University campus



Photo No. 34: Greenery across main buildings

8. SPORTS IN CAMPUS OF SANDIP UNIVERSITY

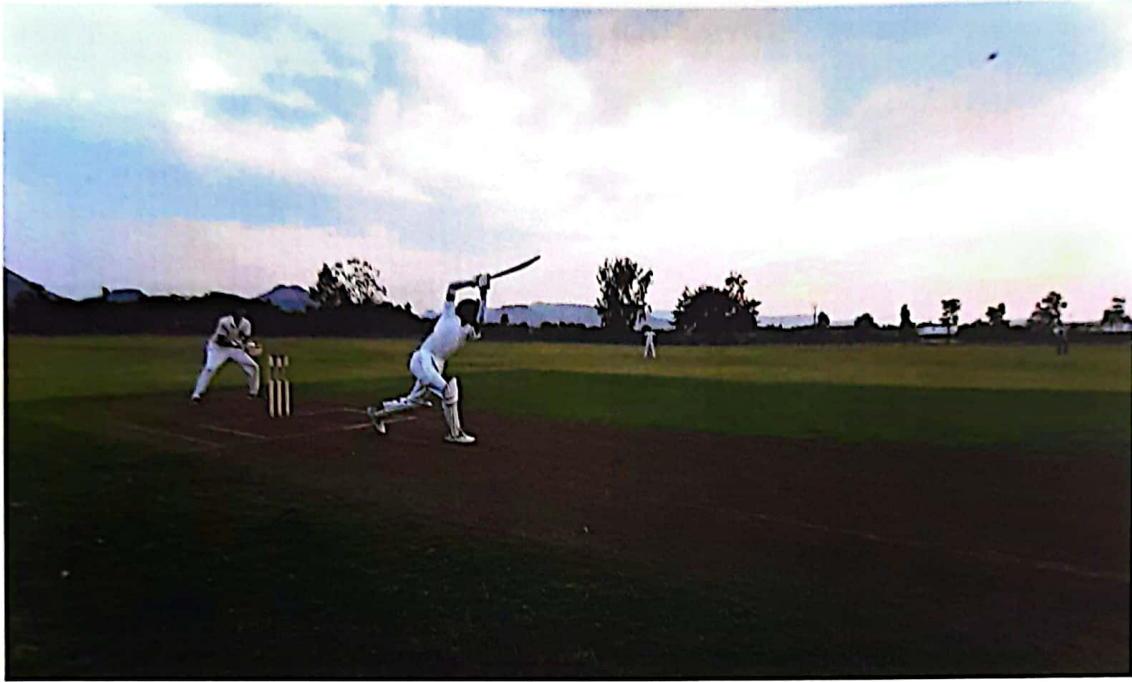


Photo No. 35: Outdoor Sport Campus of Sandip University



Photo No. 36: Indoor Sport Campus of Sandip University

9. SUMMARY

Green Audit is one of the important tools to check the balance of natural resources and its judicious use. Green auditing is the process of identifying and determining whether institutional practices are eco-friendly and sustainable. It is a process of regular identification, quantification, documenting, reporting and monitoring of environmentally important components in a specified area.

Sandeep Institute of Technology and Engineering has conducted a “Green Audit” in the academic year 2022-2023. The main objective to carry green practices followed by our green audit is to check and to conduct a well-defined audit report to understand whether the institute is on the track of sustainable development.

10. CONCLUSION

From the green audit following are the conclusions, which can be taken for improvement in the campus.

- 1) Absence of visitors due to peak of COVID19
- 2) Rain-water is collected from the ground water level table.

11. RECOMMENDATIONS

Following are some of the key recommendations for improving campus environment:

- a) A frequent visit should be conducted to ensure that the generated waste is measured, monitored and recorded regularly and information should be made available to administration.
- b) The solid waste should be reused or recycled at maximum possible places.
- c) Installation of a water-meter to record water usage in the college premises at each cadre.
- d) Wastage of paper can also be reduced to some extent by providing students' digital access to notes and study materials.
- e) The best practice that every institution should follow is the planting of different plants. It not only helps in reducing pollution also makes the environment cleaner and greener.

Sandeep Foundation Green Audit Team (Year 2021)

Sr. No.	Project Staff	Qualification	Designation	Work Done
1.	Prof. A. K. Dwivedi	Ph.D.	Professor	Baseline instructions
2.	Prof. J. G. Nayak	M. Tech	Associate Professor	Framing the report inputs
3.	Prof. S. A. Patil	M. Tech	Assistant Professor	Data collection
4.	Prof. K. A. Salunke	M. Tech	Assistant Professor	Data collection, Site Visit
5.	Prof. P. N. Sable	M. Tech	Assistant Professor	Site Visit

Mantras Green Audit Team

Sr.No.	Project Staff	Qualification	Designation	Work Done
1.	Ms. Anagha Kapadnis	M.sc, Environment	Environment Officer	Formatting and display
1.	Mr. Tushar Ahire	M.sc, Environment	Environment Officer	Baseline Data Collection
2.	Ms. Neha Shinde	M.sc Environment	Team Member	Framing of the report
3.	Mr. Rohit Aher	B.sc computer science	IT section	Alignments work
4.	Mr. Ashish Mainkar	PGDM, MA (Social Work)	Operation & Business Development	Formatting and display
5.	Ms. Sayori Dasgupta	M.sc, Environment	Environment Officer	Formatting and display

12. ANNEXURE

We would like to be sincere thanks to Dr. U. K. Sharma (MD), Mantras Green Resources Ltd. for his valuable guidance and mentorship over the course




Quality Council of India
National Accreditation Board for
Education & Training

CERTIFICATE OF ACCREDITATION

Mantras Green Resources Ltd., Nashik

Hall No. 1, 1st Floor, NICE Sankul, Plot No. A -9, Opp. Nashik Merchant Co- op Bank Ltd., ITI Signal, MIDC Satpur, Nashik-422007

The organization is accredited as Category-A under the QCI-NABET Scheme for Accreditation of EIA Consultant Organization, Version 3: for preparing EIA-EMP reports in the following Sectors –

Sl. No.	Sector Description	Sector (as per)		Cat.
		NABET	MoEFCC	
1.	Mining of minerals including opencast / underground mining	1	1 (a) (i)	A
2.	River Valley projects	3	1 (c)	A
3.	Thermal power plants	4	1 (d)	B
4.	Coal washeries	6	2 (a)	B
5.	Metallurgical industries (ferrous & non-ferrous)	8	3 (a)	B
6.	Cement plants	9	3 (b)	B
7.	Synthetic organic chemicals Industry	21	5 (f)	A
8.	Distilleries	22	5 (g)	A
9.	Sugar Industry	25	5 (j)	B
10.	Highways,	34	7 (f)	A
11.	Building and construction projects	38	8 (a)	B
12.	Townships and Area development projects	39	8 (b)	B

Note: Names of approved EIA Coordinators and Functional Area Experts are mentioned in RAAC MoM dated Feb 19, 2021 posted on QCI-NABET website.

The Accreditation shall remain in force subject to continued compliance to the terms and conditions mentioned in QCI-NABET's letter of accreditation bearing no. QCI/NABET/ENV/ACC/21/1714 dated April 20, 2021. The accreditation needs to be renewed before the expiry Mantras Green Resources Ltd, Nashik following due process of assessment.


 Sr. Director, NABET
 Dated: April 20, 2021

Certificate No.
 NABET/EIA/1922/RA 0201

Valid till
 April 18, 2022

For the updated List of Accredited EIA Consultant Organizations with approved Sectors please refer to QCI-NABET website.