# ENVIRONMENT AUDIT REPORT
# FOR
# RAI UNIVERSITY

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# Acknowledgement

Elion Technologies and Consulting Pvt Ltd thanks the management of Rai University, Ahmedabad, Gujarat for assigning this important work of Environmental Audit. We appreciate the co-operation to our team for completion of study.

For giving us necessary inputs to carry out this very vital exercise of Environment Audit. We are also thankful to other staff members who were actively involved while collecting the data and conducting field measurements.

# Site Information

| | |
|---|---|
| **Name of University** | Rai University |
| **University Address** | SH 144, Village – Saroda, Taluka – Dholka, Dist. – Ahmedabad – 382260, Gujarat (India) |
| **Execution Partner** | ELION Technologies & Consulting Pvt Ltd |
| **Communication Address** | 307, 3rd Floor DDA Lal Market H-Block Vikas Puri, New Delhi, 110018 |
| **Date of Audit** | 03th September 2024 |
| **Year of Audit** | 2024 – 2025 |
| **Audit Participants from Site** | Prof. Deepesh Kumar Saxena-Registrar Dr. G. G. Shastri – Director, IQAC Yashesh Darji – Coordinator, IQAC Mr. Sanjeev Bhardwaj – Admin Head, Administration Mr. Ranjeet Tank – Sr. Manager, Administration |
| **Total University Area** | 24 Acre |
| **Total Green Area** | 11.07 Acre |

# Concept

The term 'Environmental audit' means differently to different people. Terms like 'assessment', 'survey' and 'review' are also used to describe similar activities. Furthermore, some organizations believe that an 'environmental audit' addresses only environmental matters, whereas others use the term to mean an audit of health, safety and environment-related matters. Although there is no universal definition of Environmental Audit, many leading companies/ institutions follow the basic philosophy and approach summarized by the broad definition adopted by the International Chambers of Commerce (ICC) in its publication of Environmental Auditing (1989).

The ICC defines Environmental Auditing as:
"A management tool comprising a systematic, documented, periodic and objective evaluation of how well environmental organization, management and equipment are performing with the aim of safeguarding the environment and natural resources in its operations/projects."

The European Commission, in its proposed regulation on environmental auditing, has also adopted the ICC definition of Environmental Audit.

# Introduction

A clean and healthy environment aids effective learning and provides a conducive learning environment. There are various efforts around the world to address environmental education issues.

Environmental Management Systems (EMS) is very popular in the industrial sector, but the general belief is that EMS is something pertaining to industries only. Other parts of the world have started adopting compatible environmental management systems either voluntarily or for promoting standards by external certification. International environmental standards do not suit the existing Indian educational system.

A very simple indigenized system has been devised to monitor the environmental performance of educational institutions. It comes with a series of questions to be answered on a regular basis. Environmental conditions may be monitored from angles that are relevant to Indian requirements, without stress on legal issues or compliance. This innovative scheme is user- friendly and totally voluntary. The environmental monitoring system helps the institution to set environmental examples for the community and to educate young learners. It can be adapted to urban and / or rural situations.

# Overview of Campus

Rai University was established by Gujarat State Legislature under Gujarat Act No. 12 of 2012. Rai University is at the forefront providing Quality Education and committed to upholding societal values through inclusive growth of all related Stakeholders. Rai University is spread over an environment friendly lush green campus within striking distance of Ahmedabad. Skill oriented curriculum in the disciplines of Engineering and Technology, Management, Sciences, Pharmacy, Law, etc. are being offered at Rai University. Life Skills embedded with Curriculum Knowledge are an excellent blend for shaping an Individual. Rai University thrives to develop thinking mindset, educate, enrich and elevate Students who are globally competent, ethical leaders working and serving in our complex and changing world.

Rai University believes in the overall development of the Students and adopts a holistic approach which bring a 360° transformation in the personality of the Students. Curricular and Extra Curricular Development is supported by many other activities which improves leadership skills, managing ability, being part of a team, excel in talents, explore hidden talents and many more. Industry Academia tie up is the need of the hour. Rai University has collaborations with various Industries for imparting Industry relevant concepts and develop skills for meeting the different challenges. Leading Industries have joined hands with Rai University and actively participated in imparting Practical and Corporate Skills. Rai University is a Research Intensive University with focus on quality Research and Publications. The main focus is on creating a Research Forum consisting of pool of Scholars in related areas which can lead to sharing resources and leading to collaboration between like-minded Scholars. Rai University is providing Research opportunities in Computer Science, Management, Mechanical and allied disciplines.

Department of International Affairs, Rai University has International Collaborations with many renowned International Universities like University of Pardubice, Czech Republic etc. to provide exposure to Students and Faculty through Student Exchange and Faculty Mobility (Erasmus+) program. Rai University is focusing on Outcome based Education and continuous assessment of the Students throughout the year. Feedback from Students, Alumni and Stakeholders are taken regularly and are treated as Key Partners in the Teaching Learning process.

Students need support for their overall development and challenges faced by them. Rai University has a strong Mentoring process in place and guide Students not only when they are in the Campus but also after passing out guide the Alumni building a strong relationship and developing a ownership among the stakeholders. Need of the hour is Project based learning which can empower the Students in meeting future challenges. Employable Skills and the right attitude is developed in the Students. Innovative Learning practices that ignite the curiosity of the Student fostering an Entrepreneurial mind-set.

Rai University believes in providing equal opportunities to the underprivileged sections of Society. Extensive Scholarships are being provided to the needy and meritorious Students in addition to the Gujarat Government Scholarships.

## List of courses offered by the institute:

- B.Tech. (Information Technology)
- B.Tech. Computer Science and Engineering)
- BCA
- B.Sc. (Information Technology)
- B.Com.
- BBA
- B.Sc. (Microbiology)
- LLB
- B.Pharma.
- M.Sc. (Microbiology)
- M.Tech. (Information Technology)
- M. Tech. (Computer Science and Engineering)
- MCA
- M.Sc. (Chemistry)
- MBA
- PhD or DPhil (Commerce)
- PhD or DPhil(Management)
- PhD or DPhil(Chemistry)
- PhD or DPhil(Microbiology)
- PhD or DPhil(Computer Science and Engineering)
- PhD or DPhil (Computer Science)

# Audit Objectives

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

- Environmental education through systematic environmental management approach.
- Improving environmental standards.
- Benchmarking for environmental protection initiatives.
- Reduction in resource use.
- Financial savings through a reduction in resource use.
- Curriculum enrichment through practical experience.
- Development of ownership, personal and social responsibility for the university campus and its environment.
- Enhancement of university profile.
- Developing an environmental ethic and value systems in young people.

# 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.

Audit criterion is environmental cognizance, waste minimization and management, biodiversity conservation, water conservation, energy conservation and environmental legislative compliance by the campus. A questionnaire is used during audit. This audit report contains observations and recommendations for improvement of environmental consciousness.

# Environmental Audit

The areas of eco/environmental/green auditing to be followed/practiced by participating institutions:

I.      Waste Minimization and Recycling
II.     Greening
III.    Energy Conservation
IV.     Water Conservation
V.      Clean Air
VI.     Animal Welfare
VII.    Environmental Legislative
VIII.   General Practices

**Is any Environmental Audit conducted earlier?**
No

**What is the total permanent population of the Campus?**

|  | Male | Female | Total |
|---|---|---|---|
| Students | 1522 | 536 | 2058 |
| Teachers | 65 | 34 | 99 |
| Non-Teaching Staff | 95 | 33 | 128 |
| Sub Total | 1682 | 603 | - |
| Approximate Number of Visitors (Per day) | | | 25 |
| What is the total number of working days of your campus in a year? | | | 246 |

**Where is the campus located?**
University is located in the saroda, Ahmedabad, Gujarat.

## Which of the following are available in your campus?

| | | |
|---|---|---|
| 1 | Garden area | Yes |
| 2 | Playground | Yes |
| 3 | Kitchen | Yes |
| 4 | Toilets | Yes |
| 5 | Garbage Or Waste Store Yard | Yes |
| 6 | Laboratory | Yes |
| 7 | Canteen | Yes |
| 8 | Hostel Facility (Numbers) | 2 |
| 9 | Guest House | Yes |

## Which of the following are found near your campus?

| | | |
|---|---|---|
| 1 | Municipal dump yard | Yes -1 |
| 2 | Garbage heap | Yes – 1 |
| 3 | Public convenience | Yes – 2 |
| 4 | Sewer line | Yes – 1 |
| 5 | Stagnant water | Yes – 9 |
| 6 | Open drainage | Yes – 1 |
| 7 | Industry – (Mention the type) | Yes – 1 |
| 8 | Bus / Railway station | Bus – 7 |
| 9 | Market / Shopping complex / Public halls | Market - 6 |

## I - WASTE MINIMIZATION AND RECYCLING

| | | |
|---|---|---|
| 1. | Does your institute generate any waste? If so, what are they? | Yes, the Dry waste, wet waste and e-wastes are generates in the Institute. |
| 2. | What is the approximate amount of waste generated per day? (in Kilograms/month) (approx.) | Dry waste 50 kg approx. per month Wet waste 180 kg approx. per month |
| 3. | How is the waste generated in the institute managed? By 1 Composting 2 Recycling 3 Reusing 4 Others(specify) | Composting |
| 4. | Do you use recycled paper in institute? | Yes |
| 5. | Do you use reused paper in institute? | Yes |
| 6. | How would you spread the message of recycling to others in the community? Have you taken any initiatives? If yes, please specify. | Yes -By organizing drives and seminars in the surrounding communities. |
| 7. | Can you achieve zero garbage in your institute? If yes, how? | No |

## II – GREENING THE CAMPUS

| | | |
|---|---|---|
| 1. | Is there a garden in your institute? | Yes |
| 2. | Do students spend time in the garden? | Yes |
| 3. | Total number of Plants in Campus | 600 |
| 4. | Provide some names of trees and plants in the campus. | Pagoda, Peltaphorum, Pongamia, Neem, Gulmohar, Conocarpus, Jamun, Ashok, Palm, Cycus rotundus, Ficus, False Date palm, |

| | | Casuarina, Bougainvillea, Ixora, Mandevelia |
|---|---|---|
| 5. | Is the university campus have any Horticulture Department? | Yes |
| | If yes, number of Staff working in Horticulture Department? | 11 |
| 6. | Number of Tree Plantation Drives organized by School per annum.(If Any) | 2 |
| 7. | Number of Trees Planted in Last year. | 61 |
| | Survival Rate | 51 |
| 8. | Plant Distribution Program for Students and Community | Yes |
| 9. | Plant Ownership Program | Yes |

## III – ENERGY

| | | |
|---|---|---|
| 1. | List down ways that you use energy in your institute. (Electricity, LPG, firewood, others). Using this list, try to think of ways that you could use less energy every day. | Electricity, LPG |
| 2. | Are there any energy saving methods, equipment's, techniques employed in your institute? If yes, please specify. If no, suggest some | Yes, the sensor based lights are installed in the offices and washrooms. To provide a warning when the water tank is full, a water alarm system has been installed in the tanks. |
| 3. | Give an estimate of number of lights installed in your campus along with numbers? | 689 |
| 4. | Are any alternative energy sources employed/ installed in your institute? (photovoltaic cells for solar energy, windmill, energy efficient stoves, etc.,) Specify. | 60 |
| 5. | Do you run "switch off" drills at institute? | Yes |

| 6. | Are your computers and other equipment's put-on power-saving mode? | Yes |
|---|---|---|
| 7. | Does your machinery (TV, AC, Computer, weighing balance, printers, etc.) run on standby modes most of the time? If yes, how many hours? | Yes, only 15 to 20 minutes |

## IV – WATER CONSERVATION

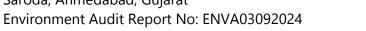| 1. | List all the uses of water in your institute? | <ul><li>Drinking</li><li>Washroom</li><li>Toilets</li><li>Hostels</li><li>Garden Watering</li><li>Agricultural Farm, etc.</li></ul> |
|---|---|---|
| 2. | Agriculture your institute store water? (mention tanks with capacity) Are there any water saving techniques followed in your institute? | <ul><li>Total 84000 Litre capacity tanks are installed on Admin, Academic, Hostel and Staff Residence.</li><li>1 tank with 2 Lakh litre water capacity in the garden area.</li><li>Water harvesting techniques is following for rain water saving.</li></ul> |
| 3. | If there is water wastage, specify why and how can the wastage be prevented/ stopped? | No water wastes in the campus buildings because are plumbing staff is checking all pipelines, washroom and kitchen areas. |
| 4. | Locate the point of entry of water and point of exit of waste water in your institute. Entry- Internal Sever Line Exit- unused separate open land area | - |

| 5. | Write down few ways that could reduce the amount of water used in your institute? | • We are using push taps in washrooms <br><br> • Regular checking all the pipe lines, taps and flushes. |
|----|---|---|
| 6. | Record water use from the institute water meter for six months (record at the same time of each day). At the end of the period, compile a table to show how many litres of water have been used. | N.A. |

| S/N | Area / Item | Water uses (Per day in Litre) |
|-----|-------------|-------------------------------|
| 1 | Air Cooler | 2200 |
| 2 | Bathrooms and Toilets | 6000 |
| 3 | Sweeping | 1000 |
| 4 | Watering the ground | 40000 |
| 5 | Laboratories | 1000 |
| 6 | Bus cleaning | 1000 |
| 7 | Drinking | 4500 |

| 7. | Does your institute harvest rain water? (Please explain the method and uses) | Yes |
|----|---|---|
| 8. | Is there any water recycling System. | - |

## V – CLEAN AIR

| 1. | Are the Rooms in Campus are Well Ventilated? | Yes | |
|----|---|---|---|
| 2. | Number of windows per room (aggregate value to be provided) | 3 | |
| 3. | What is the ownership of the vehicles | ✓ | Yes |

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| | | | | | | |
|---|---|---|---|---|---|---|
| | used by your school? (Please Tick ☐only one) | | Operator-owned vehicles | | | |
| | | | School-owned vehicles | | | |
| | | | A combination of campus-owned and operator-owned vehicles | | | |
| 4. | Provide details of school-owned motorized vehicles? | Buses | Cars | Vans | Other | Total |
| | No. of vehicles | 6 | 5 | 2 | 3 | - |
| | No. of vehicles more than five years old | 4 | 5 | - | 2 | - |
| | No. of Air conditioned vehicles | - | 5 | 2 | - | - |
| | PUC done | Ok | | | | |

| | | | | | |
|---|---|---|---|---|---|
| 5. | Specify the type of fuel used by your school's vehicles: | Buses | Cars | Vans | Other |
| | Diesel | 6 | 2 | - | - |
| | Petrol | - | 3 | - | - |
| | CNG | - | - | 2 | - |
| | LPG | - | - | - | - |
| | Electric | - | - | - | - |

| | | |
|---|---|---|
| 6. | Air Quality Monitoring Program (If Any) | No |
| 7. | Students suffer from respiratory ailments? (If Any) | No |
| 8. | Details of Diesel/Gas Generator. (Rating & Make) | Diesel Generator – 125KVA |

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## VI – ANIMAL WELFARE

| | | |
|---|---|---|
| 1. | List the animals (wild and domestic) found on the campus (dogs, cats, squirrels, birds, insects, etc.) (if any) | Squirrels, birds, cats and monkey, peacocks, parrots, pigeons and different types of birds |
| 2. | How many dogs in your area have undergone Animal Birth Control - Anti Rabies (ABC - AR)? | No |
| 3. | Does your institute have a Biodiversity Programme or a KARUNA CLUB? | No |

## VII - ENVIRONMENTAL LEGISLATIVE COMPLIANCE

| | | |
|---|---|---|
| 1. | Are you aware of any environmental Laws pertaining to different aspects of environmental management? | Yes |
| 2. | Does your institute have any rules to protect the environment? List possible rules you could include. | Yes<br>• Plant a Tree<br>• Save Water<br>• Reduce, Reuse and Recycle |
| 3. | Does Environmental Ambient Air Quality Monitoring conducted by the Institute? | No |
| 4. | Does Environmental Water and Wastewater Quality monitoring conducted by the Institute? | No |
| 5. | Does stack monitoring of DG sets conducted by the Institute? | No |
| 6. | Is any warning notice, letter issued by state government bodies? | No |
| 7. | Does any Hazardous waste generated by the Institute? If yes explain its category and disposal method. | No |
| 8. | Does any Bio medical waste generated by the Institute? If yes explain its category and disposal method. | No |

## VIII – GENERAL

| | | |
|---|---|---|
| 1. | Are you aware of any environmental Laws pertaining to different aspects of environmental management? | Yes |
| 2. | Does your institute have any rules to protect the environment? List possible rules you could include. | Yes<br>• Plant a Tree<br>• Save Water<br>• Reduce, Reuse and Recycle |
| 3. | What is the housekeeping schedule of garden and common areas in your institute? | Housekeeping schedule:-<br>Morning : 8:00 AM<br>Afternoon : 3:00 AM<br><br>Garden schedule<br>Morning : 8:00 AM<br>Afternoon : 3:00 AM |
| 4. | Are students and faculties aware of environmental cleanliness ways? If Yes Explain | Yes,<br>Twice in a year environment cleanliness programs are conducted by the University. |
| 5. | Does Important Days Like World Environment Day, Earth Day, and Ozone Day etc. celebrated in your Campus? | Yes |
| 6. | Does Institute participated in National and Local Environmental Protection Movement? | Yes |
| 7. | Does Institute has any Recognition/certification for environment friendliness? | Yes |
| 8. | Does Institute using renewable energy? | Yes |
| 9. | Does Institution conducts a green/environmental audit of its campus? | Yes |
| 10. | Has the institution been audited / accredited by any other agency such as NABL, NABET, TQPM, NAAC etc.? | No |

# Recommendations

- Environment Policy to be adopted by the Campus.
- Equipments when not in use shall be switched off and should not run in standby modes or ideal.
- Indoor Air quality monitoring shall be carried out.
- Awareness programmes shall be carried out for promoting environmental awareness in nearby areas.
- A sewage treatment plant will be installed to treat greywater, helping the university take a significant step toward sustainability.

# Photographic Evidences



University Main Gates



Garden and Lawns



Trees and Plants



Water tanks present in university

Rainwater harvesting





Energy sources

Tree Plantation Drive

# Conclusion

This audit involved extensive consultation with all the campus team, interactions with key personnel on wide range of issues related to Environmental aspects. Overall, a large are of campus is for landscaping. The audit has identified several observations for making the campus premise more environmentally friendly. The recommendations are also mentioned with observations for university campus team to initiate actions.

The audit team opines that the overall site is maintained well from environmental perspective. There are no major observations but recommendation is made in this report which would further strengthen the goal to achieve 100% environment friendly campus.

# References

- The Environment [Protection] Act – 1986 (Amended 1991) & Rules-1986 (Amended 2010)
- The Petroleum Act: 1934 – The Petroleum Rules: 2002
- The Central Motor Vehicle Act: 1988 (Amended 2011) and The Central Motor Vehicle
- Rules:1989 (Amended in 2005)
- Energy Conservation Act 2010.
- The Water [Prevention & Control of Pollution] Act – 1974 (Amended 1988) & the Water (Prevention & Control of Pollution) Rules – 1975
- The Water [Prevention & Control of Pollution] Cess Act-1977 (Amended 2003) and Rules- 1978
- The Air [Prevention & Control of Pollution] Act – 1981 (Amended 1987) The Air (Prevention & Control of Pollution) Rules – 1982
- The Gas Cylinders Rules – 2016 (Replaces the Gas Cylinder Rules – 1981
- E-waste management rules 2016
- Electrical Act 2003 (Amended 2001) / Rules 1956 (Amended 2006)
- The Hazardous Waste (Management and Handling and Trans-boundary Movement) Rules, 2008 (Amended 2016)
- The Noise Pollution Regulation & Control rules, 2000 (Amended 2010)
- The Batteries (Management and Handling) rules, 2001 (Amended 2010)
- Relevant Indian Standard Code practices

## End of Report

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