ENVIRONMENT AUDIT REPORT
FOR
JECRC ENGINEERING COLLEGE & RESEARCH CENTRE
Jaipur

Carried On
11th Dec, 2021

Carried Out By

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ACKNOWLEDGEMENT

Elion Technologies and Consulting Pvt Ltd thanks the management of **Jaipur Engineering College And Research Centre** 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.

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 INSTITUTE

The National Society for Education Research and Development (NSERD) was registered in the year 1999 in Jaipur with the major objective of providing quality education and research environment in Rajasthan. It established its first college, Jaipur Engineering College & Research Centre (JECRC) in Jaipur, in the year 2000. Encouraged by its splendid achievements and overwhelming public patronage, it ventured into establishing second college, UDML College of Engineering (which is known as JECRC UDML College of Engineering) in the year 2007.

The JECRC Foundation having 22 years of existence, is amongst the most reputed educational groups in Higher and Technical Education in North India which has 2 large campuses with 10,000 students enrolled as on date in various courses alongside engineering courses, the major chunk of the admissions being routed through JEE examinations. The engineering colleges are approved by the AICTE, New Delhi and are affiliated to the Rajasthan Technical University, Kota.

JECRC has become the most sought-after institutions for admissions as evident by the REAP admission! Patterns. The JECRC Foundation has now become a brand name in professional education in Rajasthan.

JECRC was established in 2000. The institution started with three branches namely, Computer Science Engineering, Electrical Engineering and Electronics and Communication Engineering, with 180 students. The very next year one more branch introduced Information and Technology. After the introduction of the new branch total intake is increases by 240 students. In 2003, with the addition of Mechanical Engineering intake increased by 60. In 2009, college came up one more branch, Civil Engineering. With this new advancement, the student's sanctioned intake increased to 480. By 2013, second shift for Computer Science Engineering and Mechanical Engineering came into effect and at present the total sanctioned intake of 990 students in all.

The JECRC Foundation, is in its 19th year of existence, is amongst the most reputed educational groups in Higher and Technical Education in North India which has 2 large campuses with 10,000 students enrolled as on date in various courses along with engineering courses, the major chunk of the admissions being routed through JEE examinations. The JECRC Engineering College is approved by the AICTE, New Delhi and is affiliated to the Rajasthan

Technical University, Kota.

Elion Technologies and Consulting Pvt Ltd (Elion) team carried out remote audit of premises on 11th Dec, 2021. The audit was carried out using online meeting platform google hangout, prior to Audit questionnaire and checklists was shared with the client. During the audit Elion team carried out virtual visit of entire campus i.e. classrooms, library, washrooms, staff rooms, administration department, accounts department and hostels.

Campus Information

The college is offering courses in following fields:

- Applied Science
- Computer Science Engineering
- Mechanical Engineering
- Electronics and Communication Engineering
- Information Technology
- Civil Engineering
- Electrical Engineering

Details of the infrastructure of JRM college is as per below:

Building Name	Areas (Sq. Mtr.)	Number of Floors
Block A	4500	3
Block B	8372	5
Block C	10224	5
Block D	6698	6
Block E	1228	4
Workshop	242	1
BH 1	3000	3
BH 2	4400	4
GH	3600	4

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

AUDIT PARTICIPANTS

On behalf of Institute:

Name	Designation
Er. Yogendra Sharma	Asst. Proff.
Narendra Sipani	Estate Engineer
Rajesh Sir	Electrician
Abhilasha Ma'am	Asst. Proff.
Mukesh Sir	Asst. Proff.
Ashish Boraida	Asst. Proff.
Sumit Saini	Asst. Proff.
Narendra Sipani	Asst. Proff.

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 is very first environmental audit of institute for NACC affiliation; QS Program and doing their bid towards environmental protection and environmental awareness at local and global front. 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.

AREA OF IMPROVEMENTS

- Environment Policy to be adopted by the University Campus.
- Water consumption to be monitored in campus by installation of water meters.
- MSDS(Material Safety Data Sheet) and signages to be displayed for Storage of chemicals like; paints, gums resins, oils, lubricants, acids etc.
- All Equipment's in campus to be regularly checked with predefined checklist.
- Plan for waste management to be developed.
- Environmental drills to be carried out for response against spillage and leakage of chemicals in the campus.
- Sewage Treatment Plant shall be installed for treating of solid waste.

ENVIRONMENTAL AUDIT - QUESTIONARE

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

Dose any Environmental Audit conducted earlier?
No, this is first time a systematic way of monitoring their environmental eminence initiative taken by university for environment protection.

What is the total permanent population of the Institute?

	Male	Female	Total
Students	3138	678	**3816**
Teachers	143	85	**228**
Non-Teaching Staff	100	15	**115**
Sub Total	3381	778	**4159**
Approximate Number of Visitors (Per day)			**100**
What is the total number of working days of your campus in a year?			**260**

Where is the campus located?
The campus is Located in Jaipur city.

Which of the following are available in your institute?

1	Garden area	Yes
2	Play ground	Yes
3	Kitchen	Yes
4	Toilets	Yes
5	Garbage or Waste Store Yard	Yes
6	Laboratory	Yes
7	Canteen	Yes
8	Hostel Facility (numbers)	Yes (16)
9	Guest House	Yes

Which of the following are found near your institute?

1	Municipal dump yard	No
2	Garbage heap	No
3	Public convenience	Yes
4	Sewer line	No
5	Stagnant water	No
6	Open drainage	No
7	Industry – (Mention the type)	No
8	Bus / Railway station	Yes
9	Market / Shopping complex / Public halls	Yes

I WASTE MINIMIZATION AND RECYCLING

1.	Does your institute generate any waste? If so, what are they?	Yes Paper and Residential Waste
2.	What is the approximate amount of waste generated per day? (in Kilograms/month) (approx.)	150 kg/day 4500 kg/Month
3.	How is the waste generated in the institute managed? By Composting Recycling Reusing Others (specify)	WMT plant of capacity 2KLD is applied to DST, Govt. of India. It is under process
4.	Do you use recycled paper in institute?	No
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.	Awareness through posters
7.	Can you achieve zero garbage in your institute? If yes, how?	It is under process, not yet achieved.

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	500 Trees and Plants
4.	Suggest plants for your campus. (Trees, vegetables, herbs, etc.)	Trees = 500 Herbs = 20 Other Plants = 500
5.	Is the university campus have any Horticulture Department	Not Applicable
	Number of Staff working in Horticulture Department	Not Applicable
6.	Number of Tree Plantation Drives organized by School per annum. (If Any)	Environment Day, Earth Day, Milap culture event
7.	Number of Trees Planted in Last FY.	200
	Survival Rate	90%
8.	Plant Distribution Program for Students and Community	Yes (Giloy Distribution) With the help of Rajasthan state medicinal plant board, Jaipur
9.	Plant Ownership Program	Yes, Till date 100 trees adopted under FRUITFULL JECRC campaign.

III ENERGY

1.	List ten 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 employed in your institute? If yes, please specify. If no, suggest some	Yes, All street lights are LED based.
3.	How many CFL/LED bulbs has your institute installed?	250
4.	Are any alternative energy sources employed / installed in your institute? (photovoltaic cells for solar energy, windmill, energy efficient stoves, etc.,) Specify.	Solar Energy
5.	Do you run "switch off" drills at institute?	Yes
6.	Are your computers and other equipment's put-on power-saving mode?	Yes (Auto Saving Mode)
7.	Does your machinery (TV, AC, Computer, weighing balance, printers, etc.) run on standby modes most of the time? If yes, how many hours?	6 hours/day

IV WATER CONSERVATION

1.	List four uses of water in your institute	1. Drinking 2. Flushing 3. Washing clothes 4. Cooking 5. Gardening
2.	How does your institute store water? Are there any water saving techniques followed in your institute?	Yes, There are 4 tube wells in institute, all water is collected in underground water tank and then pumped to all academic blocks and hostel blocks.
3.	If there is water wastage, specify why and How can the wastage be prevented / stopped?	Regular inspection by estate office is being done regarding the same.
4.	Locate the point of entry of water and point of exit of waste water in your institute. Entry- Exit-	UGT Main Gate to road
5.	Write down four ways that could reduce the amount of water used in your institute	1. Reorganize Landscape design 2. Check for leak in pipes, hoses and coupling 3. Smart flushing system 4. Water free urinals
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 liters of water have been used.	Water meters are currently not installed.
7.	Does your institute harvest rain water?	Yes
8.	Is there any water recycling System?	Yes

V CLEAN AIR

1.	Are the Rooms in Campus being Well Ventilated?	**Yes**				
2.	Window Floor ratio of the Rooms	**0.17**				
3.	What is the ownership of the vehicles used by your school? (Please Tick * only one)		Yes			
			Operator-owned vehicles			
		*	College-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	9	7	-	-	16
	No. of vehicles more than five years old	9	5	-	-	14
	No. of Air-conditioned vehicles	-	7	-	-	7
	PUC done	Done	Done			
5.	Specify the type of fuel used by your school's vehicles:	Buses	Cars	Vans	Other	
	Diesel	*	*			
	Petrol		**			
	CNG					
	LPG					
	Electric					
6.	Air Quality Monitoring Program (If Any)	Plantation & Green gardens				
7.	Students suffer from respiratory ailments? (If Any)	No				
8.	Details of Genset	Two gen Set (200 kVA & 125 kVA)				

VI ANIMAL WELFARE

1.	List the animals (wild and domestic) found on the campus (dogs, cats, squirrels, birds, insects, etc.)	Birds and Squirrels are commonly found in campus. A variety of birds species and other flora and fauna available but these are not harmful to human so institute doing their bid for its conservation.
2.	How many dogs in your area have undergone Animal Birth Control - Anti Rabies (ABC - AR)?	4Nil
3.	Does your institute have a Biodiversity Program?	Students have undergone such activities

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
3.	Dose Environmental Ambient Air Quality Monitoring conducted by the Institute?	Yes
4.	Dose Environmental Water and Wastewater Quality monitoring conducted by the Institute?	Yes
5.	Dose stack monitoring of DG sets conducted by the Institute?	Yes
6.	Is any warning notice, letter issued by state government bodies?	No
7.	Dose any Hazardous waste generated by the Institute? If yes explain its category and disposal method	No
8.	Dose 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.	No plucking of trees or plants.
3.	Does housekeeping schedule in your campus?	Yes
4.	Are students and faculties aware of environmental cleanliness ways? If Yes Explain	Yes. Regular awareness being carried out.
5.	Dose Important Days Like World Environment Day, Earth Day, and Ozone Day etc. eminent in Campus?	Yes Environment Day, Earth Day
6.	Dose Institute participated in National and Local Environmental Protection Movement?	No
7.	Dose Institute has any Recognition/certification for environment friendliness?	No
8.	Dose Institute using renewable energy?	No
9.	Dose Institution conducts a green/ environmental audit of its campus?	No
10.	Has the institution been audited / accredited by any other agency such as NABL, NABET, TQPM, NAAC etc.?	NAAC, NBA, AICTE

RECOMMENDATIONS

- Environment Policy to be adopted by the University Campus.
- Metering of Water from bore well and other sources in different uses are not available.
- Water Meter should be installed and maintain the inventory of water resource
- Storage of chemicals like; paints, gums resins, oils, lubricants, acids etc. in designated place and safety/warning signs should be displayed.
- Internal inspection system should be developed for various equipments available in campus.
- Waste Management plan should be prepared for the campus.
- Environmental drills for response against spillage and leakage of chemicals in the campus
- Sewage Treatment Plant to be provided for treating of solid waste

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, 30% of university 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 college team to initiate actions.

The audit team opines that the overall site is maintained well from environmental perspective. There are no major observations but few things are important which if implemented would further strengthen the environment setting in the college.

REFERENCE

- 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

ANNEXURE –
PHOTOGRAPHS OF ENVIRONMENT CONSIOUSNESS

Green Campus

TREE Plantation

Playground

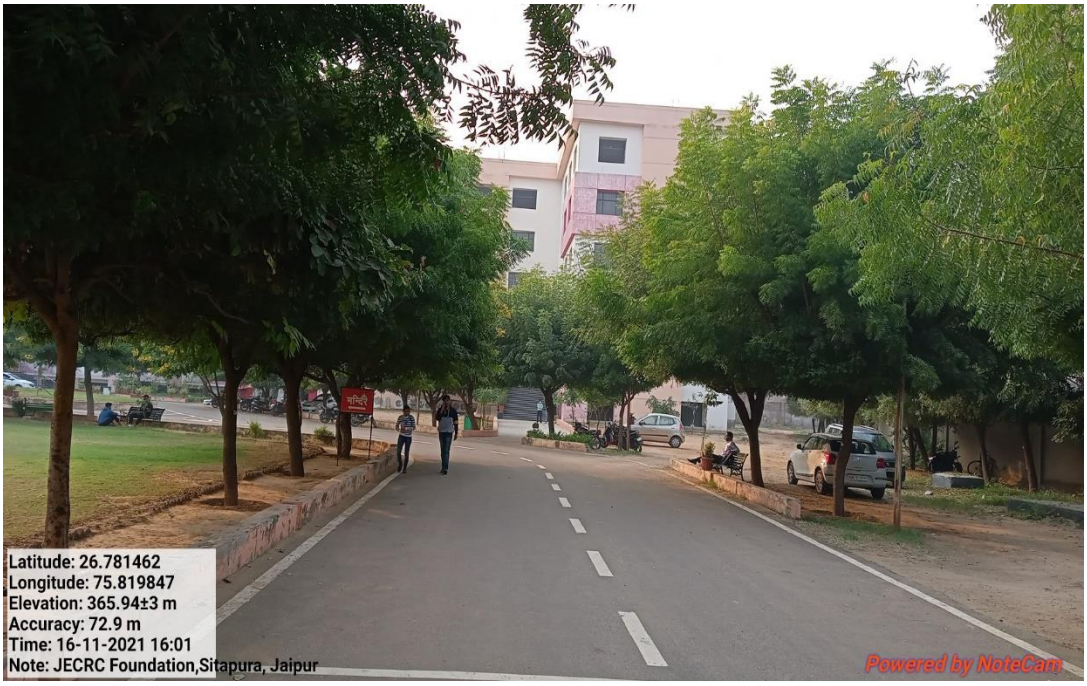
Playground

Tress on Boundary

Tree Plantation

Playground

Tree Plantation



Tree Plantation

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