PANIPAT INSTITUTE OF ENGINEERING & TECHNOLOGY

70 Mile stone, Grand Trunk Road, Samalkha, Haryana 132102

PANIPAT INSTITUTE OF ENGINEERING & TECHNOLOGY

(Approved by AICTE, New Delhi & Affiliated to Kurukshetra University, Kurukshetra)

ENVIRONMENT AUDIT REPORT

(2023-2024)

Audit Done By

SEEC

SRISHTI ENGINEERING & ENERGY CONSULTANTS

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SEEC
SRISHTI ENGINEERING & ENERGY CONSULTANTS

CERTIFICATE

PRESENTED TO

PANIPAT INSTITUTE OF ENGINEERING & TECHNOLOGY
70 Mile stone, Grand Trunk Road, Samalkha, Haryana 132102

Has been Assessed by Srishti Engineering & Energy Consultants for the comprehensive study of Environmental impacts on institutional working framework to fulfill the requirements of

ENVIRONMENT AUDIT

The Environment initiatives carried out by the institute has been verified on the details submitted and was found to be satisfactory.

The efforts taken by the management and the faculty towards environment and sustainability are appreciated and noteworthy

Signature Lead Auditor   Dated: 06.04.2024

ACKNOWLEDGEMENT

SEEC would like to thank the management of **Panipat Institute of Engineering and Technology** for assigning this important work of Environment Audit. We appreciate the co-operation to the teams for completion of assessment. We would also like to thank Vice Chairman - Shri. Rakesh Tayal, Director - Prof. (Dr.) J. S. Saini, Dean Academics - Prof. (Dr.) D. P. S. Chauhan, Environment Audit Coordinator – Er. Amit Dubey, Dr. Neeraj Gupta and Teaching/Supporting Staff of institute has been invaluable to the success of this report., for his continuous support and guidance, without which the completion of the project would not have been possible. We are also thankful to other staff members who were actively involved while collecting the data and conducting field measurements.

Last but not the least, we would like to give **special thanks Dr. Neeraj Gupta – Head (Information Technology) and Er. Amit Dubey** for giving us an opportunity to evaluate the environmental performance of the campus.

DISCLAIMER

SEEC Audit Team has prepared this report for **Panipat Institute of Engineering and Technology** based on input data submitted by the representatives of college complemented with the best judgment capacity of the expert team. While all sensible care has been taken in its preparation, details contained in this report have been compiled in good faith based on information gathered. It is further informed that the conclusions are arrived following best estimates and no representation, warranty or undertaking, express or implied is made and no responsibility is accepted by Audit Team in this report or for any direct or consequential loss arising from any use of the information, statements or forecasts in the report. If you wish to distribute copies of this report external to your organization, then all pages must be included. **SEEC**, its staff and agents shall keep confidential all information relating to your organization and shall not disclose any such information to any third party, except that in the public domain or required by law or relevant accreditation bodies. **SEEC** staff, agents and accreditation bodies have signed individual confidentiality undertakings and will only receive confidential information on a 'need to know' basis.

Signature
Lead Auditor

CONCEPT AND CONTEXT

The **National Assessment and Accreditation Council, New Delhi (NAAC)** has made it mandatory from the academic year 2019–20 onwards that all Higher Educational Institutions should submit an annual Green, Environment and Energy Audit Report. Environment Audit is assigned to the Criteria 7 of NAAC, National Assessment and Accreditation Council which is a self-governing organization of India that declares the institutions as Grade A, Grade B or Grade C according to the scores assigned at the time of accreditation. Moreover, it is part of Corporate Social Responsibility of the Higher Educational Institutions to ensure that they contribute towards the reduction of global warming through Carbon Footprint reduction measures. In view of the NAAC circular regarding environment auditing, the College management decided to conduct an external environment assessment study by a competent external professional auditor. The environment audit aims to examine environmental practices within and outside the college campus, which impact directly or indirectly on the atmosphere. environment audit can be defined as systematic identification, quantification, recording, reporting and analysis of components of college environment. It was initiated with the intention of reviewing the efforts within the institutions whose exercises can cause risk to the health of inhabitants and the environment. Through the environment audit, a direction as how to improve the structure of environment and inclusion of several factors that can protect the environment can be commenced. This audit focuses on the environment Campus, Waste Management, Water Management, Air Pollution, Energy Management & Carbon Footprint etc. being implemented by the institution.

The purpose of the audit is to identify areas where the institute can improve its sustainability practices and reduce its environmental impact. It also helps universities demonstrate their commitment to sustainability and meet NAAC's accreditation criteria.

OVERVIEW OF INSTITUTE

Panipat Institute of Engineering & Technology (PIET) was established by the Vidyapeeth Education Trust in response to the acute deficiency of higher education institutes in the State of Haryana. The founders had a clear vision to provide world-class education and research with a view to serve the cause of society admirably. For the achievement of this cherished goal, PIET has covered many milestones of success till today.

When we look at some of the best Engineering Institutes in National Capital Region, PIET stands out with a clear lead. A multidisciplinary institute affiliated to Kurukshetra University, Kurukshetra and approved by AICTE, New Delhi provides Undergraduate and Postgraduate programs in Engineering and Management. PIET has consistently pushed the bar of excellence to garner a niche for itself amongst the top ten Engineering Institutes in Delhi/NCR, in the field of engineering education.

PIET presently imparts education in the following faculties:

- Faculty of Computer Science and Engineering
- Faculty of Civil Engineering
- Faculty of Electronics and Comm. Engineering
- Faculty of Information Technology
- Faculty of Mechanical Engineering
- Faculty of Textile Engineering
- Faculty of Applied Science and Humanities
- Faculty of Management Studies
- Faculty of Computer Applications
- Faculty of Business Studies
- Faculty of Diploma ME
- Faculty of Pharmacy
- Faculty of B. Voc. in BFSI

1.0 Environmental Audit-Introduction

The environment audit aims to analyze environmental practices within and outside the university campuses, which will have an impact on the eco-friendly atmosphere. Environment audit can be defined as systematic identification, quantification, recording, reporting and analysis of components of university environment. It was initiated with the motive of inspecting the effort within the institutions whose exercises can cause threat to the health of inhabitants and the environment. Through the environment audit, a direction as how to improve the structure of environment and there are include several factors that have determined the growth of carried out the environment audit.

1.1 NEED FOR ENVIRONMENT AUDITING

Environment 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, are 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? Environment 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 in to environment and clean one. Environment audit provides an approach for it. It also increases overall consciousness among the people working in institution towards an environment.

1.2 GOALS OF ENVIRONMENT AUDIT

PIET has conducted an environment audit with specific goals as:

1. Identification and documentation of environment practices followed by institute.

2. Identify strength and weakness in environment practices.

 3. Analyze and suggest solution for problems identified.

4. Assess facility of different types of waste management.

5. Increase environmental awareness throughout campus

6. Identify and assess environmental risk.

7. Motivates staff for optimized sustainable use of available resources.

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

1.3 OBJECTIVES OF ENVIRONMENT AUDIT

1. To examine the current practices, which can impact on environment such as of resource utilization, waste management etc.

2. To identify and analyze significant environmental issues.

3. Setup goal, vision, and mission for environment practices in campus.

4. Establish and implement Environment Management in various departments.

5. Continuous assessment for betterment in performance in ENVIRONMENT

1.4 BENEFITS OF ENVIRONMENT AUDIT TO EDUCATIONAL INSTITUTIONS

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

1. It would help to protect the environment in and around the campus.

2. Recognize the cost saving methods through waste minimization and energy conservation.

3. Empower the organization to frame a better environmental performance.

4. It portrays good image of institution through its clean and ENVIRONMENT campus. Finally, it will help to build positive impression for through ENVIRONMENT initiatives the upcoming NAAC visit.

2. OBJECTIVE AND SCOPE

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

- Sustainable use of natural resource in the campus.
- Financial savings through a reduction in resource use
- Curriculum enrichment through practical experience
- Development of ownership, personal and social responsibility for the College campus and its environment
- Enhancement of College profile
- Developing an environmental ethic and value systems in young people

3.0 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.

4.0   METHODOLOGY

In order to perform environment audit, the methodology included different techniques such as physical inspection of the campus, observation and review of the documentation, interviewing key persons and data analysis, measurements and recommendations. 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.

5.0 AREA OF IMPROVEMENTS

- Water usage monitoring to be implemented
- Stack height should be as per DG Rules.
- Internal inspection system should be improved for various equipment's such as STP and rain water harvesting and recharge pit available in the campus.
- Waste management plan should be updated for the campus.
- Environmental drills for response against spillage and leakage of chemicals in labs and oil in the vehicle maintenance section.
- The monthly inventory of e-waste is required to be maintained in formats on regular basis.
- All departments generate paper waste. Especially, academic building is using more one paper for printing and writing is good practices.
- Food waste generated in campus is mostly from is collected from dining areas. The food waste is diverted to nearby farm.
- Rainwater is collected from rooftop to recharge the ground water level table.

6.0 SUMMARY

Environment Audit is one of the important tools to check the balance of natural resources and its judicial use. Environment auditing is the process of identifying and determining whether institutional practices are ecofriendly and sustainable. It is a process of regular identification, quantification, documenting, reporting and monitoring of environmentally important components in a specified area. Mangalore Institute of Technology and Engineering has conducted a "Environment Audit" in the academic year 2023-24. The main objective to carry out environment audit is to check the green practices followed by PITE and to conduct a well-defined audit report to understand whether the PITE is on the track of sustainable development.

7.0 RECOMMENDATIONS

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

1) 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.

2) The solid waste should be reused or recycled at maximum possible places.

ENVIRONMENTAL AUDIT - QUESTIONARE

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

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

What is the total permanent population of the Institute?

Particulars	Total
Students	3195
Teachers	211
Non-Teaching, gardeners, transportation, support Staff	309
Sub Total	3715
Approximate Number of Visitors (Per day)	28

Where is the campus located?
The **Panipat Institute of Engineering and Technology** is located in Samalkha, Panipat, Haryana. The PIET campus is far away from the crowded city and well connected with the G. T. Road.

Which of the following are available in your institute?

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

Which of the following are found near your institute?

1	Municipal dump yard	Not in vicinity of institute
2	Garbage heap	No Garbage heaps
3	Public convenience	Yes , public convenience is available
4	Sewer line	STP installed (Cap 35000 Ltr/Day)
5	Stagnant water	No stagnant water
6	Open drainage	No
7	Industry – (Mention the type)	No
8	Bus / Railway station	Far away from campus
9	Market / Shopping complex / Public halls	Yes

1.0   WASTE MINIMIZATION AND RECYCLING

1.	Does your institute generate any waste? If so, what are they?	Yes, Solid waste, Canteen waste, Paper, Plastic, Horticulture Waste etc			
2.	What is the approximate amount of waste generated per day? (in kilograms/month) (approx.)	Bio Degradable	Non- Bio degradable	Hazardous	Others
		3564.5 kg	15 kg	Yes	< 1kg

3.	How is the waste generated in the institute managed? By 1 Composting 2 Recycling 3 Reusing 4 Others (specify)	Reuse of one side printed paper for internal communication. Sewage water used for gardening. Two types of waste bins are provided in campus for biodegradable and non-biodegradable waste. Horticulture waste is also disposed by the land fill method.
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, Done in locality for awareness of resource crunches (Photographs in Annexure)
7.	Can you achieve zero garbage in your institute? If yes, how?	Not yet achieved. Possible through waste management plan.

2.0 GREENING THE CAMPUS

8.	Is there a garden in your institute?	Yes, about Approx. 50000.00 Sq. Meter areas are developed as Gardens.	
9.	Do students spend time in the garden?	Yes	
10.	Total number of Plants in Campus	Plant type	Approx. number
		Trees	6421
		Ornamental	434
11.	Suggest plants for your campus. (Trees, vegetables, herbs, etc.)	Ficus, Amla, Guava, Rosemallows, Champaca, Cycas, Crepe Jasmine, Pomeg ranate, Ashoka T ree, Kadam, Indian Almond, Lichi, Vilayati, Babul and Neem	
12.	Is the institute campus has any Horticulture Department	Yes	
	Number of Staff working in Horticulture Department	17- Tree Gardeners, One Civil Engineer	
13.	Number of Tree Plantation Drives organized by institute per year (If Any)	Yes, Two to Three plantation drives are organized annually on world environment day and world ozone day etc. in the rainy season.	
14.	Number of Trees Planted in Last FY.	1384	
	Survival Rate	99%	

15.	Plant Distribution Program for Students and Community	Yes, Saplings are distributed to students and visitors at various occasions. Besides this landscape of some area in city are developed by Institute. *(photographs attached)*
16.	Plant Ownership Program	Various Trees are Planted and owned by visitors as well as students.

3.0 ENERGY

17.	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
18.	Are there any energy saving methods employed in your institute? If yes, please specify. If no, suggest some	Electricity saved by CFL/LED bulbs for illumination, LPG saved by use of Pressure cookers for cooking canteen food using efficient stoves. Alternate source of energy i.e. Solar Heaters Installed.
19.	How many CFL/LED bulbs has your institute installed?	100 % of Conventional bulbs are replaced by CFL/LED Lights.
20.	Are any alternative energy sources employed / installed in your institute? (photovoltaic cells for solar energy, windmill, energy efficient stoves, etc.,) Specify.	Yes, Renewable source of energy through solar plants (Average 31450 KW per month). Massages are displayed at various locations to aware the peoples about energy savings. Use of natural lights and natural ventilation is promoted.
21.	Do you run "switch off" drills at institute?	Yes
22.	Are your computers and other equipment's put on power-saving mode?	Yes

23.	Does your machinery (TV, AC, Computer, weighing balance, printers, etc.) run on standby modes most of the time? If yes, how many hours?	No

4.0 WATER CONSERVATION

24.	List four uses of water in your institute	Basic use of water in campus: 1. Drinking – 400 kL/month 2. Gardening – STP treated water 3. Kitchen and Toilets – 1550 kL/month 4. Others – 950 kL/month
25.	How does your institute store water? Are there any water saving techniques followed in your institute?	27 numbers of Overhead Water Tanks (with total capacity 85000 Liters) installed for storage of water. Avoid overflow of water controlled valves are provided in water supply system. Close supervision for water supply system. Rain water harvesting pits - 03
26.	If there is water wastage, specify why and How can the wastage be prevented / stopped?	No
27.	Locate the point of entry of water and point of exit of waste water in your institute. (Entry-; Exit-)	Entry- Water comes from submersible pumps at campus Exit- Water drainage system to STP
28.	Write down four ways that could reduce the amount of water used in your institute	1. Close the taps after usage 2. Maintenance and monitoring of valves in supply system to avoid overflow, leakage and spillage. 3. Water Conservation awareness for new Students 4. Reuse STP water for gardening
29.	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	No, Water meters available for calculation of usage of total quantity.

	how many liters of water have been used.	
30.	Does your institute harvest rain water?	Three numbers of modern rain water harvesting system are available.
31.	Is there any water recycling System?	Yes

5.0 CLEAN AIR

32.	Are the Rooms in Campus being Well Ventilated?	Yes				
33.	Window Floor ratio of the Rooms	Very Good				
34.	What is the ownership of the vehicles used by your institute? (Please Tick ✔ only one)		Yes			
			Operator-owned vehicles			
		✔	Institute-owned vehicles			
			A combination of campus-owned and operator-owned vehicles			
35	Provide details of institute-owned motorized vehicles?	Buses	Cars	Vans	Bike +Other	Total
	No. of vehicles	44	5	2	4+1	56
	No. of vehicles more than five years old	15	5	2	0	22
	No. of Non-Air-conditioned vehicles	29	0	0	4+1	34
	PUC done	Yes	Yes	Yes	Yes	Yes
36.	Specify the type of fuel used by your institute's vehicles:	Buses	Cars	Vans	Other	
	Diesel	27	4	2	0	
	Petrol + CNG	0	1	0	0	
	CNG	17	0	0	1	
	LPG	0	0	0	0	
	Petrol	0	0	0	4	
	Electrical	0	0	0	0	

37.	Air Quality Monitoring Program (If Any)	Yes
38.	Students suffer from respiratory ailments? (If Any)	No
39.	Details of Gen set:	Yes, 01 Numbers of Silent DG Set

6.0 ANIMAL WELFARE

40	List the animals (wild and domestic) found on the campus (dogs, cats, squirrels, birds, insects, etc.)	Birds and Squirrels are commonl y found in campus. A variety of birds species and other flora and fauna available but these are not harmful to human so institute is taking care of their conservation.
41.	How many dogs in your area have undergone Animal Birth Control - Anti Rabies (ABC - AR)?	Not Required
42.	Does your institute have a Bio diversity Programme or a KARUNA CLUB?	Not Available

7.0 ENVIRONMENTAL LEGISLATIVE COMPLIANCE

43.	Are you aware of any Environmental Laws pertaining to different aspects of environmental management?	Yes
44.	Does your institute ha ve any rules to protect the environment?	Yes
45.	Dose Environmental Ambient Air Quality Monitoring conducted by the Institute?	No
46.	Dose Environmental Water and Wastewater Quality monitoring conducted by the Institute?	Yes
47.	Dose stack monitoring of DG sets conducted by the Institute?	No
48.	Is any warning notice, letter issued by state government bodies?	No

49.	Dose any Hazardous waste generated by the Institute? If yes explain its category and disposal method	Yes (Disposal of chemistry laboratory hazardous waste by dilution method)
50.	Dose any Bio medical waste generated by the Institute? If yes explain its category and disposal method	No

8.0   GENERAL

51.	Are you aware of any environmental Laws pertaining to different aspects of environmental management?	Yes
52.	Does your institute ha ve any rules to protect the environment? List possible rules you could include.	Yes
53.	Does housekeeping schedule in your campus?	Yes
54.	Are students and faculties aware of environmental cleanliness ways? If Yes Explain	Yes, Periodically pollution reduction, plantation, energy conservation awareness campaigns carried out by institute
55.	Dose Important Days Like World Environment Day, Earth Day, and Ozone Day etc. celebrated in Campus?	Yes
56.	Dose Institute participated in National and Local Environmental Protection Movement?	Yes, Swatch Bharat Abhiyan by the institute students.
57.	Dose Institute has any Recognition/certification for environment friendliness?	No
58.	Dose Institute using renewable energy?	Yes
59.	Dose Institution conducts a green/environmental audit of its campus?	Yes
60.	Has the institution been audited / accredited by any other agency such as NABL, NABET, TQPM, NAAC etc.?	Yes

1   BEST PRACTICES/INITIATIVES FOR ENVIRONMENT

A	Renewable Energy Solar water Heaters at PIET campus A clean source of energy is utilized at campus. Efforts towards Carbon Neutrality. The capacity of 170 kW Solar plant on building roofs is already installed.	
B	Biodiversity Conservation Flora and fauna conservation	It is in schedule plan of Campus Environment committee
C	Tree Plantation Drives Two Drives Annually as well as Guests are honored by Tree Plantation at Campus.	Yes
D	Ground Water Recharge 03 units of Rain Water Harvesting System.	Yes
E	Pollution Reduction Personal Vehicles (Students) not allowed inside campus	Reduction in Air Pollution through vehicular emission.
F	E Waste Management	Handover to the Authorized recycler
G	Solid Waste Management Lifting of garbage from PIET campus on alternate day for landfill.	Yes
H	Adoption of Village School CSR	Yes
I	Water Conservation	Yes, The STP treated water used for gardening in campus.
J	Corporate Resource Center (CRC)	Yes
K	Mitigation measures for Air pollution at construction stage and operation stage by developing adequate green belt.	Yes
L	Mitigation measures for noise pollution by isolation of noise generation activities	Yes
M	Disaster management plan	Yes
N	Fire protection system	Yes

Activity Photographs