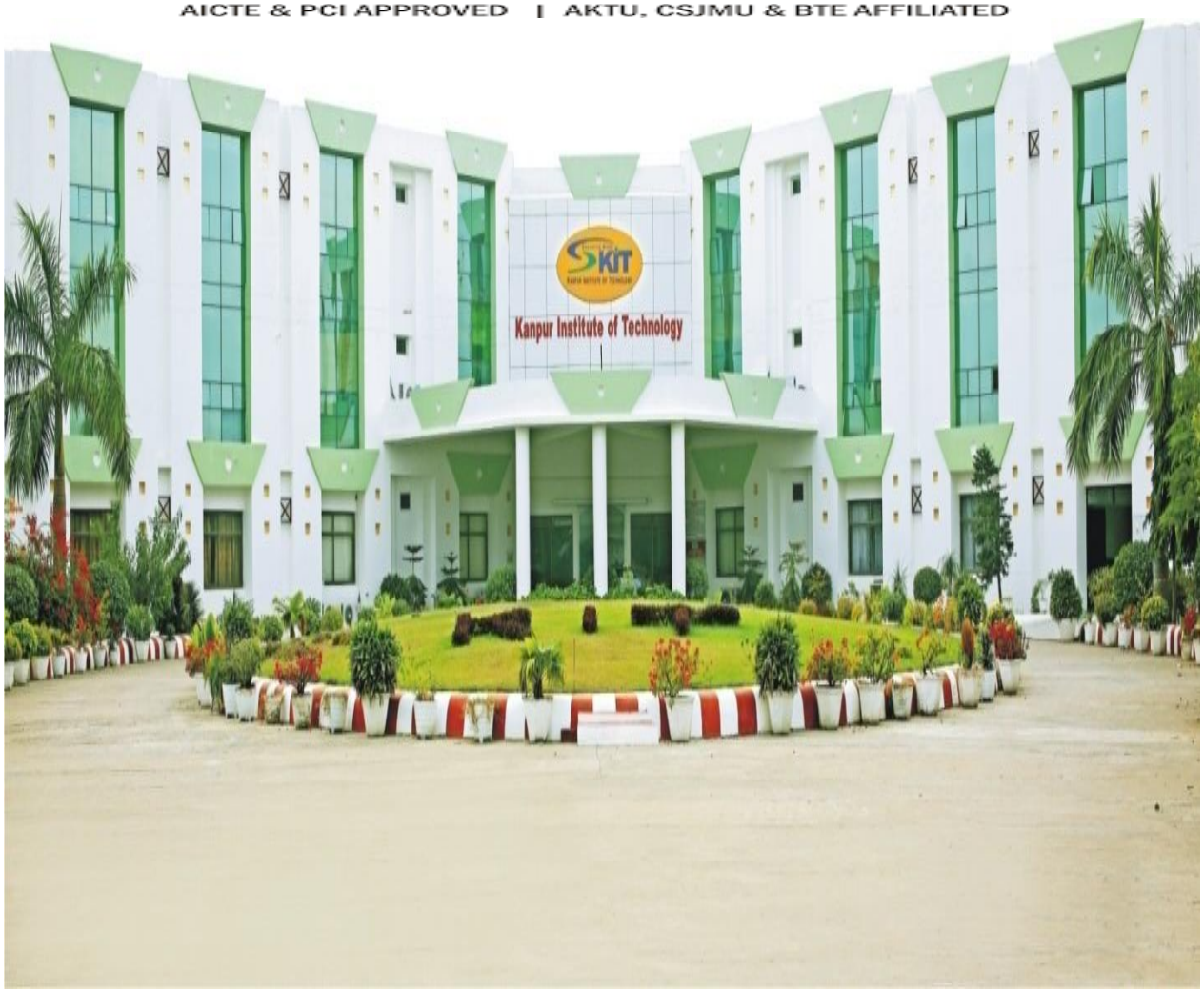
REPORT ON

“A PRIMARY SURVEY OF GREEN AUDIT AT KIT”

Estd. 2004

KANPUR INSTITUTE OF TECHNOLOGY

AICTE & PCI APPROVED | AKTU, CSJMU & BTE AFFILIATED



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About The College

Since its inception in 2004, Kanpur Institute of Technology has been successfully shouldering the monumental responsibility of producing capable technocrats and managers. Run by a team of visionary and motivated IIT alumni, KIT is counted among the top rated technical institutes of North India. Kanpur Institute of Technology runs B.Tech, M.tech, MBA, MCA, BFA and BFAD courses. The institute is affiliated to AKTU Lucknow, under the college code 165. The courses are approved by the All India Council for Technical Education (AICTE).

The institute is ISO 9001:2008 certified for it's up to the mark quality systems and best practices in technical and professional education. The institute is very easily accessible; it is located in Rooma, on Kanpur – Allahabad Highway, 6 Kilometers away from Ramadevi round over.

Kanpur Institute of Technology proudly boasts of a sprawling and lush green campus with elegant buildings and state-of-the-art infrastructure, it has qualified, experienced and dedicated faculty for various courses, always ready to help the students in understanding the concepts related their area of study. Kanpur Institute of Technology has a highly impressive placement track record, with students getting placed in various MNCs at good annual packages.

The institute fulfills its promise of academic excellence. Every year, Kanpur Institute of Technology produces university rank holders in various streams. The students are given exposure to various skills development programs during the course of their study at KIT. This helps them to gain an edge over others and prove themselves better for placement opportunities. The institute leaves no stone

unturned to provide the best and conducive study environment to the students. Laboratories studded with modern equipments, computer centers, fully Wi-Fi campus, video lecture rooms, projector based air conditioned classes, air conditioned seminar halls are just a glimpse of the facilities that the students get at KIT, add to it the personal attention showered by the teachers to explain the intricate concepts to the students in the most lucid way.

Last but not the least; the institute shall continuously strive for maintaining excellence in higher technical and professional education, through a student centric approach, aiming to bring out the best in them and transforming the students into industry ready professionals.

CAMPUS INFRASTRUCTURE

The sprawling lush campus spreads over 15 acres of landscape with Total Built up Area: 39702 m2 lodged with all modern amenities and basic infrastructure to run the professional courses in Engineering & Management domains

The campus has separate hostels for boys and girls. The Wi-Fi campus has a library and a student activity centre for co-curricular and extracurricular activities. The institute has three academic & and administrative block. Apart from there are Lecture Theatre, AC Fitted Class Rooms, Tutorial Rooms, Faculty Rooms, Office for the HODs, Director's office, administrative office, registrar's office, maintenance office, etc.

The library is having more than 400 sitting capacity with air conditioned rooms. It is fully automated with LibSys (Release 5.0 LAN Version with web OPAC) software in order to provide references service to its students, faculty members and staff members. Now permitted users can access our library through internet/intranet. All the books are bar coded it subscribes many more National/international journals in print form, 22 magazines and 13 newspapers. A rich collection (2984) of CDs, DVDs & Project works is also available for its users. The books in the library are classified according to the Dewey Decimal Classification Scheme 22nd edition and catalogued in MARC-21 format and in manual form both by AACR-2.

The computer centre is well equipped with all latest software and technologies. Presently the Department has 16 labs, all centrally air-conditioned with the capacity of 600 students. The campus is well equipped with Wi-Fi connectivity.

INTRODUCTION

The green audit aims to analyze environmental practices within and outside the university campuses, which will have an impact on the eco-friendly atmosphere. Green 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 green 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 green audit.

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, 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? 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 in to 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.

GOALS OF GREEN AUDIT

The Institute has conducted a green audit with specific goals as:

1. Identification and documentation of green practices followed by the Institute.

2. Identify strength and weakness in green 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.

OBJECTIVES OF GREEN 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 green practices in campus.

4. Establish and implement environment management in various departments.

5. Continuous assessment for betterment in performance in green

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. 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 green campus. Finally, it will help to built positive impression for through green initiatives the upcoming NAAC visit.

OBJECTIVES OF THE STUDY

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, policies, and standards. The main objectives of carrying out Green Audit:

- To raise awareness among students towards the environment and its sustainability.
- To secure the environment and cut down the threats posed to human health by analyzing the pattern and extent of resource consumption and use in the campus.
- To establish baseline data to assess future sustainability issues by avoiding the interruptions in an environment today as it requires more effort and cost to manage the consequences in the future.
- Ensuring preventive care to reduce/eliminate the cost of corrective care.

OBJECTIVES 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

METHODOLOGY

In order to perform a green audit, the methodology included different tools such as preparation of questionnaire, a physical inspection of the campus, observation, and review of the documentation, interviewing key persons and data analysis, measurements, and recommendations. The study covered the following areas to summaries the present status of environmental management on the campus:

- Water management
- Energy Conservation
- Waste management
- E-waste management
- Green area management

WATER MANAGEMENT

This indicator addresses water consumption, water sources, irrigation, appliances, and fixtures. A water audit is an on-site survey and assessment to determine the water use and hence improving the efficiency of its use.

OBSERVATIONS

The study observed that the Tube well and underground water is only sources of water on campus and in the hostels. Water is used for drinking purpose, toilets, and gardening. The wastewater from the RO water purifier is used for gardening purpose. During the survey, no loss of water is observed, neither by any leakage nor by the overflow of water from overhead tanks.

Rainwater harvesting units are also functional for recharging groundwater level.

RECOMMENDATIONS

- In campus small scale/medium scale/ large scale reuse and recycle of the water system is necessary.
- Minimize wastage of water and use of electricity during the water filtration process, if used, such as RO filtration process and ensure that the equipment used for such usage is regularly serviced.
- Ensure that all cleaning products used by campus staff have a minimal detrimental impact on the environment, i.e. they are biodegradable and non-toxic, even where this exceeds the Control of Substances Hazardous to Health (COSHH) regulations.
- Gardens should be watered by using drip/sprinkler irrigation system to minimize water use.

ENERGY CONSERVATION

This indicator addresses energy consumption, energy sources, energy monitoring, lighting, appliance, natural gas, and vehicles. Energy use is clearly an important aspect of campus sustainability and thus requires no explanation for its inclusion in the assessment.

OBSERVATIONS

Energy source utilized by the campus is electricity only. The entire campus including common facility centers are equipped with LED lamps and LED tube lights, except a few locations. Besides this, solar panels are also installed on the campus as an alternative renewable source of energy.

RECOMMENDATIONS

- In campus premises electricity should be shut down from the main building supply after occupancy time, to prevent power loss due to eddy current.
- It is preferable to purchase electricity from a company that invests in new sources of renewable and carbon-neutral electricity.
- Installation of LED lamps instead of CFL and replacing the old tube lights with the new LED tubes.
- 5–star rated Air Conditioners, Fans and CFLs should be used.
- Cleaning of tube-lights/bulbs to be done periodically, to remove dust over it.

WASTE MANAGEMENT

This indicator addresses waste production and disposal of different wastes like paper, food, plastic, biodegradable, construction, glass, dust, etc. and recycling. Furthermore, solid waste often includes wasted material resources that could otherwise be channeled into better service through recycling, repair, and reuse. Solid waste generation and management is a burning issue. Unscientific handling of solid waste can create threats to everyone. The survey focused on volume, type and current management practice of solid waste generated on the campus.

OBSERVATIONS

Waste generation from tree droppings and lawn management is a major solid waste generated in the campus. The waste is segregated at source by providing separate dustbins for dry and wet waste materials. There is a separate system for the disposal of excessive food from the college mess.

RECOMMENDATIONS

- Reduce the absolute amount of waste that is produced from the academic blocks, canteen and hostels.
- Make full use of all recycling facilities.
- Provide sufficient, accessible and well-publicized collection points for recyclable waste, with responsibility for recycling clearly allocated.
- Important and confidential papers after their validity to be sent for pulping.
- Vermi-composting should be adopted.

E-WASTE MANAGEMENT

E-waste can be described as consumer and business electronic equipment that is near or at the end of its useful life. This makes up about 5% of all municipal solid waste worldwide but is much more hazardous than other waste because electronic components contain cadmium, lead, mercury, and Polychlorinated biphenyls (PCBs) that can damage human health and the environment.

OBSERVATIONS

E-waste generated in the campus is very less in quantity. The administration conducts awareness programs regarding E-waste Management with the help of various departments. The E-waste and defective item from the computer laboratory are being stored properly. The institution has decided to contact approved E-waste management and disposal facility in order to dispose of E-waste in a scientific manner.

RECOMMENDATIONS

- Recycle or safely dispose of white goods, computers and electrical appliances.
- Use reusable resources and containers and avoid unnecessary packaging where possible.
- Always purchase recycled resources where these are both suitable and available.

GREEN AREA MANAGEMENT

This includes the plants, greenery, and sustainability of the campus to ensure that the buildings conform to green standards. This also helps in ensuring that the Environmental Policy is enacted, enforced and reviewed using various environmental awareness programs.

OBSERVATIONS

The campus is located in the vicinity of many trees (species) to maintain the biodiversity. Various tree plantation programs are being organized at the institute campus. This program helps in encouraging an eco-friendly environment which provides pure oxygen within the institute and awareness among students. The plantation program includes various types of indigenous species of ornamental and medicinal wild plant species.

An herbal garden has been created on the campus for encouraging the Ayurveda system of medicine.

RECOMMENDATIONS

- Review periodically the list of trees planted in the garden, allot numbers to the trees and keep records. Assign scientific names to the trees.
- Promote environmental awareness as a part of course work in various curricular areas, independent research projects, and community service. Create awareness of environmental sustainability and take actions to ensure environmental sustainability.
- Ensure that an audit is conducted annually and action is taken on the basis of audit report, recommendation and findings.
- Celebrate every year 5th June as ‘Environment Day’ and plant trees on this day to make the campus more Green.
- Indoor plantation to inculcate interest in students, Bonsai can be planted in the corridor to bond a relationship with nature.
- The green library should be established.

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.

AUDIT DETAILS OF PLANTS AT KIT

1. FLOWERING TREES		
SNO	**NAME**	**QUANTITY**
1	PLUMERIA (GULACHIN)	5
2	SHAMI PLANT (CHUI-MUI)	1
3	OLEANDER (KANER)	300
4	PEREGRINA (JAGRUPA)	15
5	HIBISCUS (DESI GUDHAL PINK)	20
6	TECOMA STANS (CHAURI-CHAURA)	30
7	MADAGASCAR (SADABAHAR)	100
8	BOUGAINVILLEA (KAGAJ KE FOOL)	40
9	CRAPE JASMINE (DOUBLE CHANDINI)	25
10	KULENDRA (KULENDR)	12
11	BOTTLE BRUSH (CHEEL)	2
12	NEIRUM OLEADER (KANER VARIGATER)	6
13	ARABIAN JASMINE (BELA)	
	FLOWERING TREE TOTAL	**556**

2. FRUIT BEARING TREES		
S.NO.	**NAME**	**QUANTITY**
1	GUAVA (AMRUD)	30
2	MANGO (AAM)	7
3	TAMARIND (IMLI)	1
4	GOOSEBERRY (AWALA)	2
5	SUGAR APPLE (SHARIFA)	3
6	POMEGRANATE (ANAAR)	5
7	BLACKBERRY (JAAMUN)	12
8	MULBERRY (SHAHTOOT)	4
9	CARISSA CARANDAS (KURANDA)	1
	FRUIT BEARING TREE TOTAL	**65**

3. PLANT SHEET		
S. NO.	**NAME**	**QUANTITY**
1	MYLANTA (MALANTA)	20
2	SNEAK PLANT (NAAGDON)	1000
3	BETEL TREE (SUPARI PALM)	40
4	LIVISTONA CHINESE (CHINA PALM)	30
	PLANTSHEET TOTAL	**1090**

4. OTHERS		
S. NO.	**NAME**	**QUANTITY**
1	ASHOK (ASHOK)	500
2	JACARANDA (NEELI GULMOHAR)	400
3	DOUBLE HIBISCUS (GUDHAL DOUBLE)	1000
4	FICUS	1000
5	LYTHACEAE(SAONI)	100
6	MURRAYA PANICULATA (MANOKAMINI)	400
7	IXORA COCCINEA (IXORA DOUBLE)	40
	OTHERS TOTAL	**3440**

5. SHADOWED TREES		
S. NO.	**NAME**	**QUANTITY**
1	NEEM	40
2	ARKULAS	10
3	KADAM BURFLOWER	15
4	GODMOHAR	25
5	AMILTAAS	30
6	KANER DESI	300
7	PIPAL	4
8	PAKADIYA	2
9	BANYAN (BARGAD)	1
10	CHITTWAN	10
	SHADOWED TREES TOTAL	**437**

6. MEDICINAL TREES		
S. NO.	**NAME**	**QUANTITY**
1	GULMARG	2
2	ASHWGANDHA	2
3	BASIL (TULSI)	10
4	MORPANKH	2
5	HARSHRINGAR	4
6	MEHNDI	4
7	BEL	4
8	ARJUN	2
9	DHTURA	2
10	AJUBI	50
11	ALEOVERA	10
	MEDICINAL TREES TOTAL	**92**

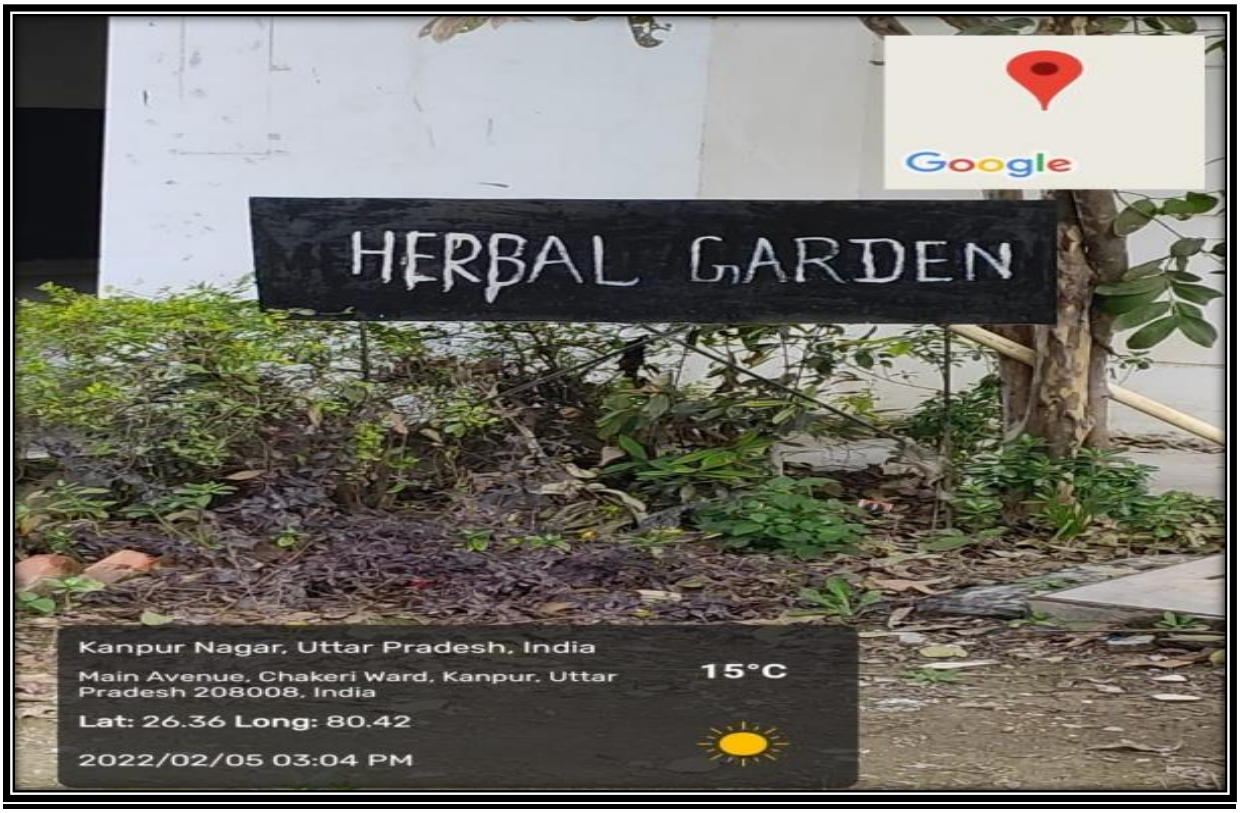
7. SEASONAL TREES		
S. NO.	**NAME**	**QUANTITY**
1	NAURANG	1000
2	KOCHIYA	500
3	GINIYA	40
4	KASMUS	100
5	FOTOILAKA	12
6	NAUBIJIYA	10
SEASONAL TREES TOTAL		**1662**

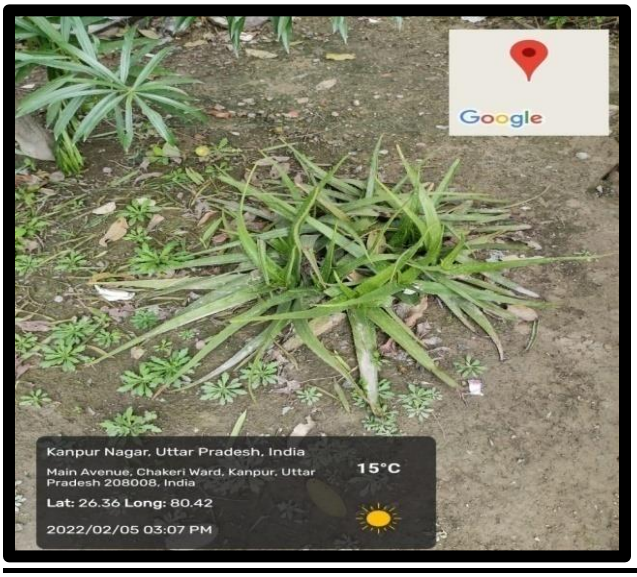
8. GARDEN PLANTS		
	NAME	**QUANTITY**
1	EROKERIA	7
2	KAROTAN	8
3	SHAINERIA	8
4	DISTIMELR	8
5	LALINA	7
6	SAFLORA	8
7	KLOROMA	7
8	EKLIFA	8
9	FICUS VERIGATOR	8
10	STAR LIGHT	8
GARDEN PLANTS TOTAL		**77**
GRAND TOTAL		**7763**

PLANT DIVERSITY AT KIT

FLOWERING TREES

HERBAL GARDEN AT KIT





LANDSCAPE

PLANTATION AT KIT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GPS Map Camera
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SUMMARY

Green Audit is one of the important tools to check the balance of natural resources and its judicial 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.

Kanpur Institute of Technology has conducted a “Green Audit” in the academic year2021-2022.

The main objective to carry out green audit is to check the green practices followed by KIT and to conduct a well-defined audit report to understand whether the KIT is on the track of sustainable development.

Conclusions

Considering the fact that KIT is predominantly an educational institute, there is significant environmental research done both by faculty and students. Environmental awareness initiatives are substantial. The installation of solar panels and a rainwater harvesting system are noteworthy. Besides, an environmental awareness program initiated by the administration shows how the campus is going green. Few recommendations are added to curb the menace of waste management using eco-friendly and scientific techniques. This may lead to the prosperous future in the context of Green Campus & thus sustainable environment and community development.

As part of a green audit of campus, we carried out the environmental monitoring of campus including Illumination and Ventilation of the classroom. It was observed that Illumination and Ventilation are adequate considering natural light.

RECOMMENDATIONS

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

1) An environmental policy document has to be prepared with all the recommendations and current practice carried by KIT.

2) 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.

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

4) Install a water meter to record water usage in the college KIT premises.