GREEN AUDIT REPORT

Allenhouse Institute of Technology, Rooma, Kanpur

Quality Audits on Environment & Energy

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OVERVIEW

Under the umbrella of the **Superhouse Education Foundation, Kanpur,** the **Allenhouse Institute of Technology, Kanpur** started in year 2009. Four Bachelor of Technology (B. Tech) programmes offered by the Institute, with 300 students enrolled per year.

Eco-friendly practises are practised at AIT. It has a long history of adopting environment friendly methods such as routine planting and upkeep of those plants. The campus environment is improved and is more sustainable thanks to the land usage, which leaves around 30% of the total area as open space and plantations.

INTRODUCTION TO GREEN AUDIT

The process of conducting a "green audit" includes systematically identifying, quantifying, recording, reporting and analysing elements of environmental variety at organisations. It attempts to examine environmental practises following at the site. A green audit can be a beneficial tool for a college to identify how and where the most energy, water and other resources are being used. It may also be used to estimate trash amount, which is useful for recycling projects or for enhancing waste minimization plans.

It can enhance environmental awareness, ethical behaviour, and health consciousness. It gives staff and students a view of green campus. It is essential that the college assess its own contributions to a sustainable future. Higher educational institutions are progressively playing a role in environmental sustainability. Numerous environmental and ecological problems have been caused by the rapid urbanisation and economic development at the local, regional levels.

In light of this, it is crucial for institutions that will drive sustainable development to implement the Green Campus system in order to protect the environment and cut back significantly on atmospheric carbon dioxide.

An annual Green Audit Report is required by National Assessment and Accreditation Council, New Delhi (NAAC). Additionally, it is a component of the higher education institutions' corporate social responsibility to make sure that they take steps to reduce their carbon footprint.

OBJECTIVES

The Green Audit of an institution is utmost important for the institution's self-evaluation, as it represents the institution's contribution in reducing the current environmental issues. Since its starting, Allenhouse Institute of Technology has made attempts to maintain a clean campus. The current green audit's goal is to identify, quantify, characterise and prioritise the environmental sustainability framework in accordance with the laws, policies and standards that are relevant. The following are the primary goals of doing a green audit:

1. **Improving environmental standards**
2. **Reduction and reuse of resources available**
3. **Environmental education through Curriculum**
4. **Developing environmental ethics and value systems in students**

Name of Members	Designation/ Department
Dr. Dev Singh	Dean/Applied Science
Mr. Anurag Chaturvedi	Assistant Professor/Civil Engineering
Mr. Vibhanshu Uttam	Assistant Professor/ Mechanical Engineering
Mr. Abhishek Dwivedi	Assistant Professor /Electronics & Communication
Mr. Amit Kumar Sinha	Assistant Professor/Electrical & Electronics Engineering
Mrs. Richa Mishra	Assistant Professor/Computer Science Engineering

Table 1: Audit Participants

METHODOLOGY

A green audit of **Allenhouse Institute of Technology** was conducted to make sure that the campus's procedures adhered to the organization's Green Policy. The approach consists of:

1) Physical inspection of the campus by audit team
2) Observation and review of the documentation
3) Interviewing key persons
4) Recommendations

FINDINGS OF GREEN AUDITING

The AIT has adopted the 'Green Campus' system for environmental conservation and sustainability. There are main three pillars i.e.

1) Minimum Carbon foot print
2) Positive impact on inhabitant's health and performance.
3) 100% graduates demonstrating environmental literacy.

The aim is to reduce CO2 emission, energy use in campus while creating atmosphere where students can learn and stay healthy.

OBSERVATIONS

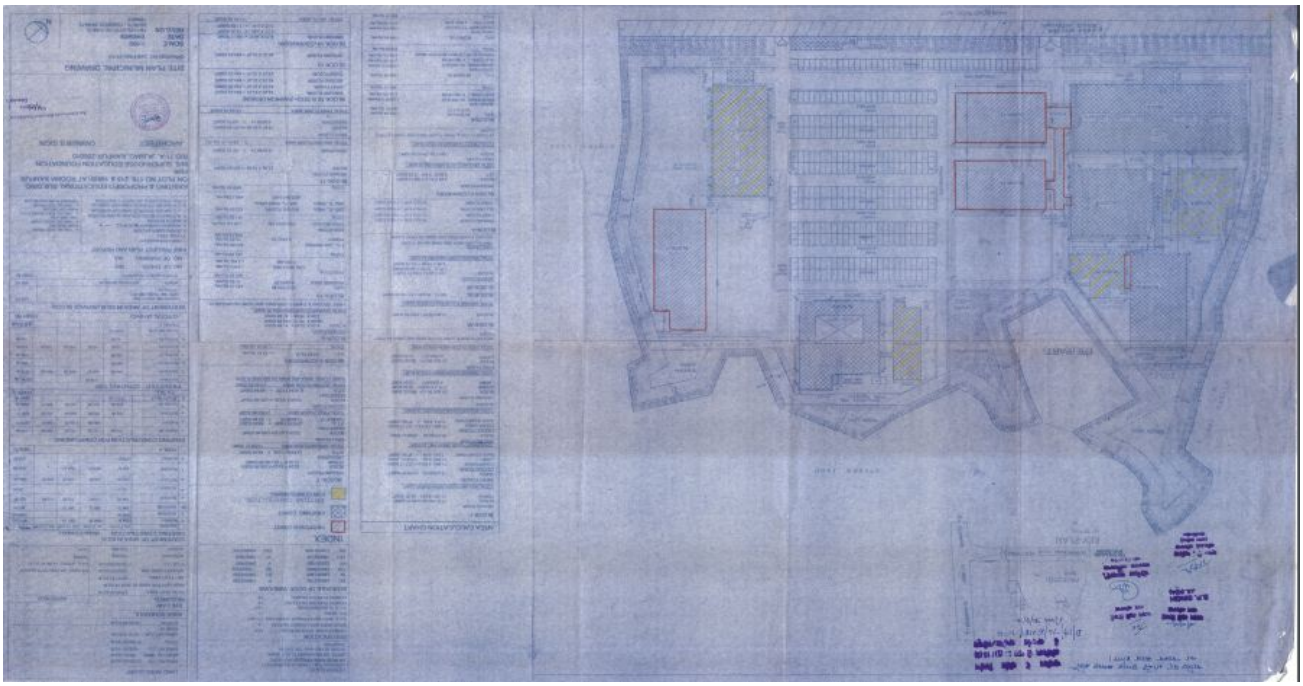


Fig 1. Site Plan of Allenhouse Institute of Technology

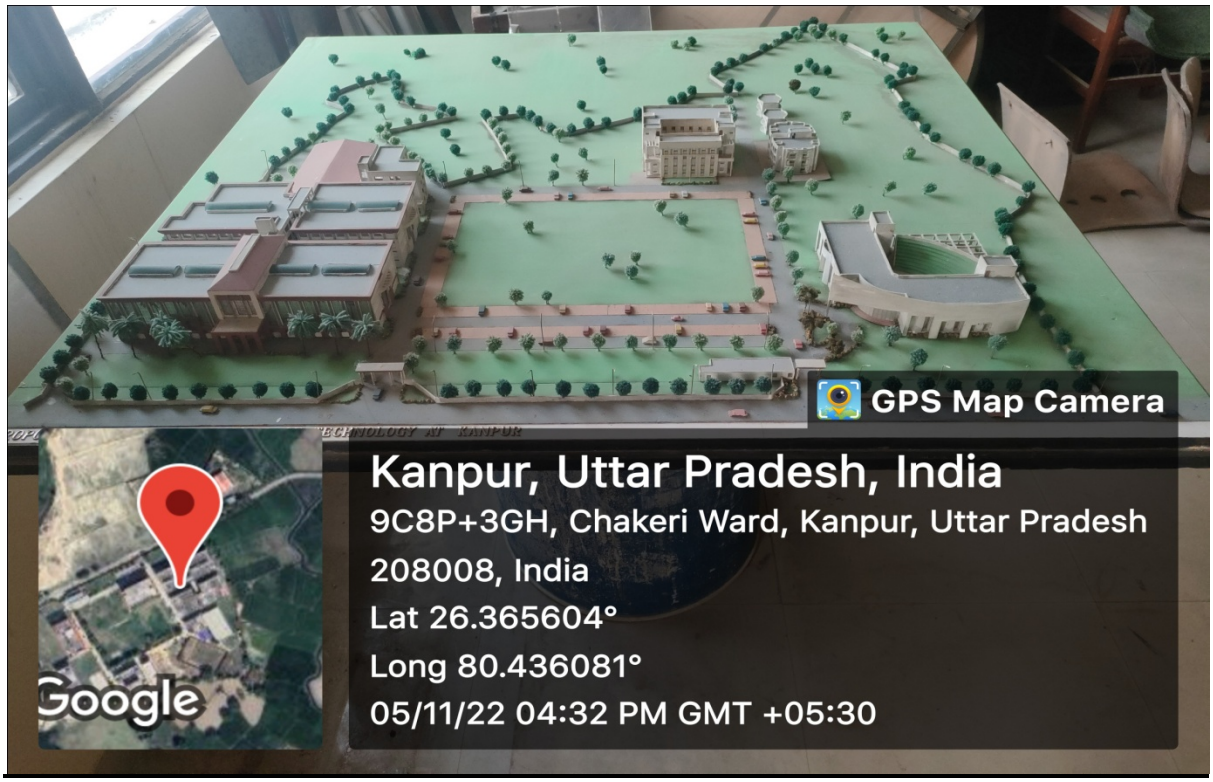


Fig 2. Layout of Allenhouse Institute of Technology

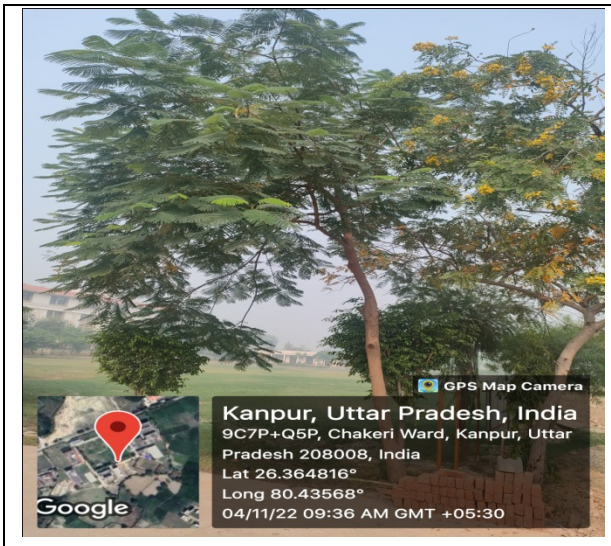
CATEGORIES OF LAND USE	AREA (IN ACRES)
OPEN SPACE	2.25
BUILT UP AREA	2.86
TOTAL AREA	5.11

Table 2 : Land use data of Allenhouse Institute of Technology

TREE DIVERSITY

The region is diverse with various tree species. These trees were planted in various time periods through various plantation programmes. The trees have improved the quality of life for everyone in the area, benefiting not only the college community but also the general public by improving air quality, preserving soil, conserving water, reducing climate change, and regulating the climate by reducing the effects of the sun, rain, and wind.

The energy of the sun is absorbed and filtered by leaves, keeping things cool in the summer. Monkeys consume flowers and fruits. Insects and birds enjoy nectar. Large planted trees that provide shade have been shown to reduce noise, dust in the area surrounding the campus. As a result, the college has been contributing significantly to the preservation of the environment on the entire campus and in the area around it.



Photographs 1. Tree's diversity in college campus

FAUNAL DIVERSITY

The faunal Diversity of AIT campus has been studied and documented as below –

FAUNAL GROUP	NAMES
INSECTS	Bees, Scarlet dragonfly, Grasshoppers etc.
REPTILES	Squirrels, Mouse, Snake, Lizard eyc.
BIRDS	Crows, Sparrows, Peacock, Crane etc.
MAMMALS	Monkeys, Dogs, Cats, etc

Table 3: Faunal Diversity Data

WATER AUDIT

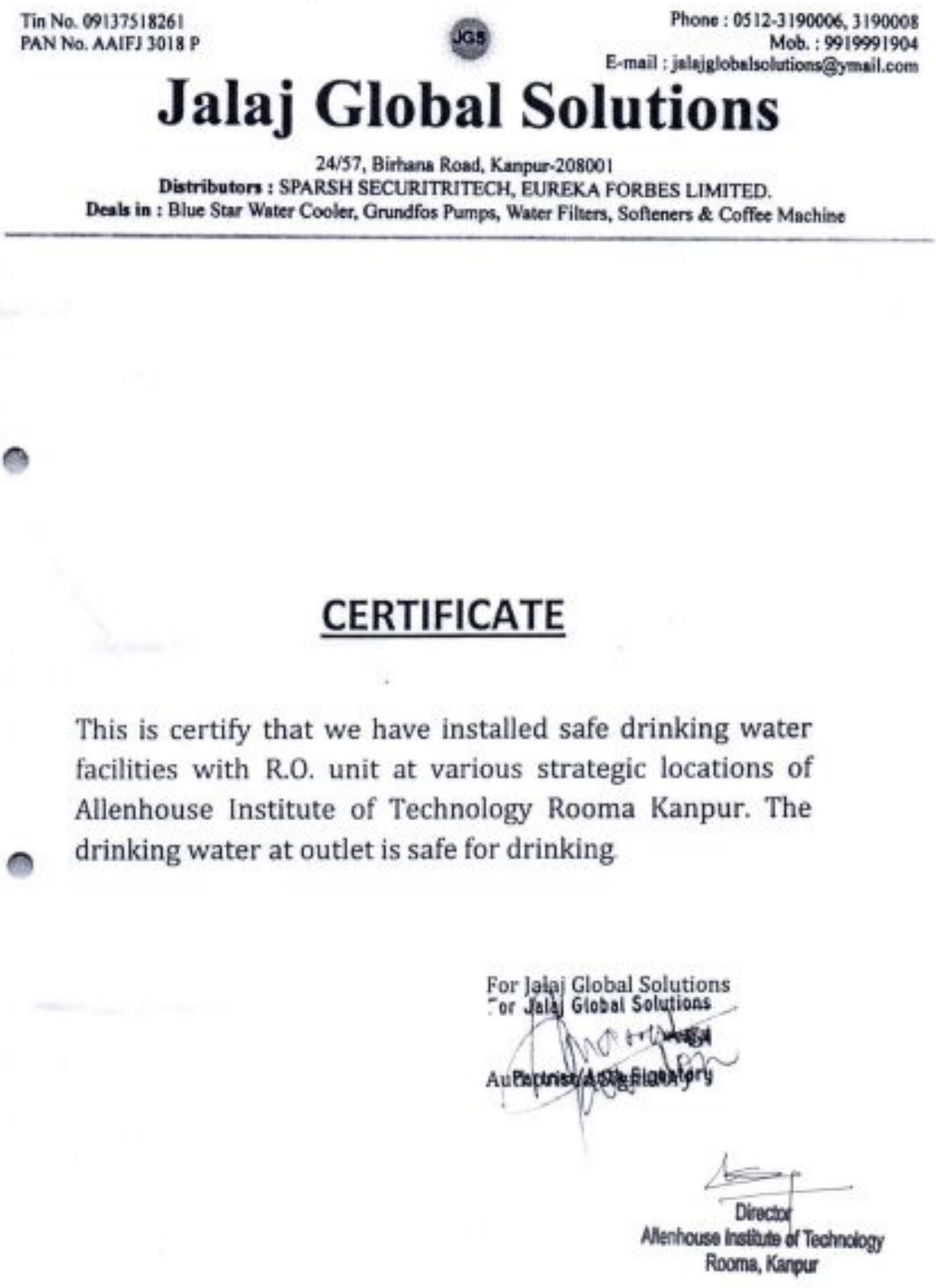
- Facilities of raw water intake through bore wells and municipal water supply.
- Rain water Harvesting (RWH) facility is provided near Block A of the campus.

Parameter/ WHO Permissible Level	Observed Value		Methodology
	Sample 1	Sample 2	
Colour	Clear	Clear	
pH / 6.5-6.8	6.7	6.8	pH meter
Turbidity/ 5-10NTU	7	6	Turbidity meter
Conductance / 0.4 mS cm^{-1}	1200	1000	Conductivity meter
Fe /0.30 ppm	0.3	0.3	Spectroscopy
Na/200 ppm	180	210	Flame photometer
K/ 12 ppm	13	14	Flame photometer
Mg/ 30 ppm	35	40	Titrimetric
Ca/ 75 ppm	100	120	Titrimetric
F^- / 1.5 ppm	0.5	0.8	Spectroscopy
Cl^- / 250 ppm	50	40	Titrimetric
NO_3^- / 50 ppm	45	45	Spectroscopy
So_4^-/ 250ppm	280	270	Turbidity meter

Table 4 Water Analysis Report

Sample 1: Block **"A"** Water Well

Sample 2: Boys Hostel water well



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CERTIFICATE

This is certify that we have installed safe drinking water facilities with R.O. unit at various strategic locations of Allenhouse Institute of Technology Rooma Kanpur. The drinking water at outlet is safe for drinking

For Jalaj Global Solutions
For Jalaj Global Solutions
Authorised Signatory

Director
Allenhouse Institute of Technology
Rooma, Kanpur

Fig3: Water quality certification

NOISE LEVEL IN AIT CAMPUS

1) It is encouraged that the majority of the students, who are from the local city, use the college's bus services.
2) It is strongly urged that students who drive their own vehicles adhere to the speed limits and refrain from horning inside the campus.
3) Noise pollution of highway did not harm the learning environment, as the buildings are nearly about 300 meters away from the Highway road.

WASTE DISPOSAL AUDIT

With smart initiatives like our Think Green Campus Model, Waste Management is helping colleges achieve a higher environmental performance. By reusing or recycling we are contributingto the conservation of natural resources, saving energy and helping to protect the environment, reducing landfill.

We will also reduce our impact on the environment by minimizing the carbon emissions associated with both disposing of old products and obtaining new ones. AIT adopts environment friendly practices and takes necessary actions such as – energy conservation, waste recycling etc. The solid waste generated in the college campus is taken to the community bin for recycling and disposal.

Type of Waste	Disposal Method	Remarks
Solid Waste		
I. Bio-degradable a. Organic Waste	Mass collection of organic waste will be dumped into the composed pit	Decomposed organic matter will be used as manure to the plants in the campus.
b. Inorganic waste : Chemicals, glass	Earthen pits	Precautions have been taken while disposing
c. Domestic waste	Cattle feeding	Collected from Hostels, Canteen.
d. Electrical waste : Tube lights, bulbs, wires, electrical stoves	Collected in separate bins	
e. News Papers, waste papers, blue books	Sold for recycling	Collected by local Municipal authorities.
f. Furniture scraps	Store room	----------
g. Resins : Fuel, oil, Greece	Earthen pits	----------
II. Non-Bio- degradable a. Sanitary Waste	Incinerator	Provided to block A
b. Plastic Waste	Dust bins	Collected by municipality
III. Scrap equipments	Stores	Collectively sold .

Table 5 : Waste Management

Photograph 2 : Women Sanitary Incinerator in block A of campus

ENIVRONMENTAL QUALITY AUDIT

- Programs have been undertaken by the institute for plantation. The green belt is also maintained to reduce the pollution level by decreasing the carbon dioxide level.
- Every year on June 5th World Environmental Day (WED) will be celebrating by inviting a special guest to elaborate impact of healthy environment on human life among students and staffs.
- As a part of curriculum, university has incorporated environmental related subjects to have environmental education.
- Generated Solid wastes like waste papers, Blue books, vegetable matter and miscellaneous are systematically dumped into a earthen pit for natural decomposition instead of burning, thereby reduction in co_2 has achieved.

Photograph 3: Plantation activity at college campus.

HEALTH AUDIT

- Heath camps are organized by institute on regular intervals for routine health checkup of faculty and students.
- Blood donation camp also been conduct every year by Allenhouse Institute of Technology.
- Institute also organizes various health awareness sessions for the women of adjacent villages.

Photograph 4: Eye Health camp

Photograph 5 : Health check-up of villagers

Photograph 6: Women health awareness camp organized by Allenhouse Institute of Technology on World Population day

RENEWABLE ENERGY AUDIT

- Solar panel of 80Kw capacity has been installed in the campus to reduce carbon foot print and get clean energy.

Photograph 7: Solar Panel set up for clear energy

- Rain water Harvesting (RWH) facility is provided inside the campus to maintain the ground water level.

Photograph 8: Rain water harvesting unit in campus