

GREEN AUDIT REPORT

2024-2025



**SHAHEED UDHAM SINGH GOVERNMENT
COLLEGE, MATAK-MAJRI, INDRI, KARNAL,
HARYANA**

(Affiliated to Kurukshetra University Kurukshetra, Haryana)

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INTRODUCTION

The rapid environmental degradation at local, regional and global level is leading us to global “Environmental poverty”. Stabilization of human population, adoption of environmentally sound and sustainable technologies, reforestation and ecological restoration are crucial elements in creating an equitable and sustainable future for all humans in harmony with nature and natural resources. The Green Auditing is a systematic, documented, periodic, and objective review by regulated entities of facility operations and practices related to meeting environmental requirements. It is a programme of assessing environmental performance of any institution in a programmed and systematic way. In this different type of interactions between any operation and surroundings are examined by a regulated system opted by the institution.

Audit is a systematic and objective study.

1. Audit team obtains and evaluates the available evidences.
2. The evidences collected, examined and evaluated by the audit team.
3. The green audit team communicates the goal and objective of the programme to the interested users and stakeholders.

The Shaheed Udham Singh Government College, Matak Majri, Indri, Karnal is a premier institution of Department of Higher Education, Haryana and is located in the village Matak Majri of Karnal district. The college is spread over 10 acres of land and providing education to approx. 1400 students in various UG and PG programmes. The college campus is lush green covered with large trees, shrubs and a number of herbaceous plants. The environmental committee of the college always encourage the students and staff to increase the greenery in the campus. The students of NSS, Red Cross and Red-ribbon club and of other committees of the college always participate in the extensive plantation programmes to create environmental awareness and conservation of biodiversity among the students and in the society. From the day of its establishment, the college has been providing quality education to the rural students in and around Karnal,

Kurukshetra and Yamuna Nagar districts of Haryana. For the protection and conservation of environment, a committee has been formed in the college. As per suggestions made by IQAC, environment committee is entrusted with the responsibility to do the Green Audit.

OBJECTIVES

The main objectives of Green/ Environmental Audit in Academic Institution are:

- To understand the awareness of employees and learners towards environmental conservation
- To recognize the initiative taken by organization towards environmental conservation
- To understand and recognize the effects of an organization on the environment and vice versa
- To ensure that the natural resources are utilized properly as per national policy of environment
- To study waste minimization and safe disposal of waste particularly hazardous wastes
- Initiatives for water and energy conservation

Contribution and participation by various stakeholders in the environmental conservation and management

- To diagnose and find out solutions for the environmental problems
- To facilitate the stakeholders with different aspects of disaster management

SCOPE AND GOAL OF GREEN/ ENVIRONMENTAL AUDITING

The Government of India through its National Environment Policy in 2006 has made mandatory for every organization to conduct green audit / environmental audit in order to ensure a clean and healthy environment within and outside the organization. It also helps in effective learning and provides a conducive learning environment. In the present time, efforts are taking place around the world in order to

address various environmental issues. Green auditing is one among them for educational institutions. Green auditing helps organization to understand various environmental issues of the organization and identify existing lacuna or gap towards meeting the objective of National Environmental Policy and thus, to plan accordingly.

THE PROCESS:

General Steps:

- Systematic and Comprehensive data collection and documentation with physical evidence.
- Independent evaluation of regulatory requirements and standards.
- Systematic and comprehensive management and improvement of existing infrastructure and process.

Methodology

- An environmental audit has three phases - pre-audit stage, audit stage and post-audit stage, accordingly the environmental audit was conducted

Pre Audit Stage

The pre audit activities include the following:

1. The sites / area /division that are to be audited need to be determined and selected.
2. The members were informed of the date of the audit enabled them to adjust and become used to the concept.
3. The audit scope were identified. The members were consulted when establishing the scope.
4. The audit plan was designed in such a way that it accommodated changes based on information gathered during the audit and effective use of resources.
5. Audit team and assignment of responsibility were established.
6. The required documents were collected. This facilitated the auditors' investigations on the sites.

7. The background information on the facility including the facility organization, layout and processes, and the relevant regulations and standards, were collected.
8. The background information on the site's historical uses, and the location of soil and groundwater contamination were collected.

Audit Stage

- The sites / area /division that are to be audited were selected and information on the facilities available were collected and compiled.

Post-Audit Stage

The Post-Audit Stage includes the production of the final report, prepare action plan to overcome the flaws and to keep a watch on the action plan.

PROCEDURE FOLLOWED

- The green audit report collection data was divided into four sub-themes under the guidance of the green audit committee and various groups of committee collected data on the assigned topics. The assigned topics were as follows:
 - **Analysis of Air quality management.**
 - **Analysis of Water management**
 - **Analysis of Energy management**
 - **Analysis of Waste management**

All the data required for the green audit was collected and accordingly a report was formulated.

Land Use System

The Shaheed Udham Singh Government College, Matak Majri, Indri Karnal is located in village Matak Majri of District Karnal in Haryana geographically lies between 29.869863° N and 77.059807° E. It is 162 Kms from Delhi and 113 Kms from Chandigarh. The institution has a total land area of sixteen hectares for the purpose of creating infrastructure required for the

development of various Offices/ Departments of the college. The total buildup area of the college is 2.50 acre which includes Academic/ Administrative building, computer lab, toilets, classroom, common room, canteen, roads and parking area. The remaining 8.86 acre area includes the park/garden, plantation area and forest green cover etc. (Table 1).



Google map image of the college

Table 1. Land Use Data

Sr No	Category	Area (acre)
1	Build up Area (Include Roads)	2.50
2	Green Cover Area (forest patch, Park, Plantations Area)	8.86
	Total Area	11.36

Green Audit Report

The base of any green audit is that its findings are supported by documents and verifiable information. The audit process seeks, on a sampled basis, to track past

actions, activities, events, and procedures to ensure that they are carried out according to systems requirements and in the correct manner.

The objectives of the green audits can be attained only if they are carried out at defined intervals and their results can illustrate improvement or change over time.

Although green audits are carried out using policies, procedures, documented systems and objectives as a test, there is always an element of subjectivity in an audit. The essence of any green audit is to find out how well the environmental organization, environmental management and environmental equipment are performing. Each of the three components are crucial in ensuring that the organization's environmental performance meets the goals set in its green policy. The individual functioning and the success of integration always play a role in the degree of success or failure of the organization's environmental performance.

1. Analysis of Air quality management

Burning of fossil fuels is the main source and cause of carbon dioxide release to the atmosphere the different sources of carbon dioxide emitted to our college are vehicles, refrigerator, air conditioners, computers etc. There are more than 150 different type of vehicle (Cars, Scooty and bikes, cycles etc.) in college campus.

Green initiatives to reduce carbon footprint:

In total, based on our data collected, there are approximately 1200 plants in the college campus. These plants in college release a lot of oxygen in the campus and maintaining healthy environment in the college. Being situated in the urban area, our college is exposed to various atmospheric pollutants from vehicles as well as by other external means. Also the institution organizes various programmes to create awareness among students in the campus and involve them in maintaining eco-friendly environment. College in each academic year organizes various awareness programs through NSS, RRC, YRC and other clubs. Under the Swachh Bharat Abhiyan, the students are always advised to make proper use of dustbins for neat, clean and green campus. The Environment Club of the college monitors the cleanliness of the campus.

List of eco-friendly activities going on in the campus

- Planting and caring of trees in and around the campus.
- Timely disposal of wastes from the campus.

- Celebration of important days like World Environment Day
- Campus is cleaned as plastic free by various camps

College has a herbal botanical garden area for greater control over the growing environment of plants. Students will be benefited academically by knowing various key factors like temperature, levels of light and shade, irrigation, fertilizer application, and atmospheric humidity) affecting growth of the plants .



2. Analysis of Water management

Water is a key driver and is an important component in the development of Biodiversity, Agriculture, Humans as well as the Economy. With recent experiences across the world and in India also, the water scarcity and

security is emerging issues. Our college is also fully devoted for the conservation of water by adopting various procedure for maintaining and recharging underground water level.

Rain water harvesting structures and utilization in the campus:

1. In the college campus, 2 rain water recharging wells are installed at suitable locations for rain water harvesting. The run off rain water of the college building is channelized to the wells for the ground water recharge.
2. The instructions are given to students about the importance of water harvesting.
3. College staff and students were instructed not to waste water unnecessarily.

a) Water

❖ Main water uses in the campus Garden, Lab Cleaning, Canteen, Drinking, Toilets, Bathrooms, Washing, Office uses

❖ Water cooler with drinking water filtration is installed (2 numbers).

❖ Number of urinals and toilets – 60

❖ Number of bathrooms – 12

❖ Number of water taps – 35

❖ Water taps in laboratories - 40

❖ Number of wells – 1 tube well

❖ Number of water tanks for water storage -10

Water Audit

Thousands of liters of water are used per day by the college for its different uses. The main source of water is ground water. Water from the public water supply is not utilized.

Activity	Average use per activity (litres)	Number of activity /day	water use/ person / day (litres)	Number of persons using water	Total water consumption / day (litres)

Washing hands and face	1L	1 times a Day	1L	700	700
Toilet flush	6-20	Once	10L	800	4000
Drinking (cup)	0.25	twice	0.5L	600	300
Washing dishes	20L	twice	100L	10	200
Garden use	4	once		2	800
Cooking (average)	3	once	5L	20	100
Lab uses	6	once	5L	200	600
Total Water Usage					6600



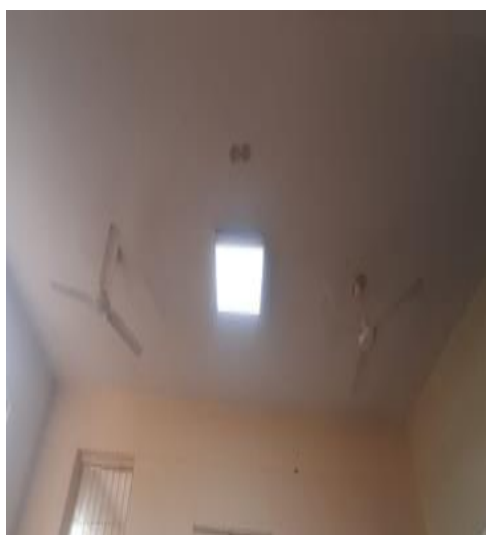
3. Analysis of Energy Management.

The college is well equipped with electricity supply. The departments possess computers, printers etc.

b) Energy Utilization

Appliances	Wattage per appliance	Average hours used daily	Number of appliance
Computers and laptops	80	5	100
Air conditioners	5275	3	7

Photocopiers	1650	2	14
LED lights	40	5	80
Incandescent bulbs/Flood light	200	6	73
Fans	65	3	258
Inverters	1060	6	6
CCTV DVR	30	24	9
Refrigerator	450	3	03
Microwave Oven	850	2	2
Induction Plate	1600	2	1
Tracing Table	120	1	1
RO (water)	50	2	4



Energy saving methods adopted in the college:

- The electric switches and equipment's turn off when not in use
- Installation of energy efficient light-emitting diode (LED) bulbs instead of incandescent and CFL bulbs
- Regular maintenance of appliances and replace old appliances.
- During working hours, all computers and electronic equipment's used in power saving mode.
- During daylight, lights can be switched off

College administration is trying to install solar panel to full fill the energy demands of the institution and all formalities regarding the installation of the Solar system have been completed on the behalf of the College.

Analysis of Waste management

Wastes cannot be avoided in any environment. Wastes can be classified as Biodegradable and Non-biodegradable wastes. Biodegradable wastes include food wastes which can be easily decomposed by the bacteria in soil. But non-biodegradable wastes are those which cannot be degraded by any organism and remain as such for many years. Much amount of waste is generated from the college campus. A waste management system is a process of 3R (Reduce, Reuse and Recycle).

Waste Management

A. Waste management system

1. The plastic prohibition awareness programmes are conducted time to time.
2. The hazardous waste from chemistry labs are properly disposed off.
3. The acid batteries and electronic instruments are disposed periodically from the lab.
4. Dustbins are provided at each floor entrance, near the stairs, in outside area of the college campus.
5. In the college campus vermi compost pits and physical compost pit for biological waste i.e. leaf litter are operational.
6. Waste management club/ Campus beautification club for disposal of waste for maintaining cleanliness.
7. The unused computer sets are disposed of periodically.
8. The running UPS batteries are recharged and repaired as and when required.
9. Rain water harvesting and RO water plants are installed in the college.

The waste generated from the chemistry lab and other laboratories is disposed of in the following manner

The expired liquid chemicals drained carefully with continuous flow of water into the sink. Solid chemical waste container diluted with water and drained off with continuous flow of water into the sink. The acid and alkali waste are neutralized first and then drained out. The glass waste must be carefully handled and disposed of as regular glass waste.



❖ Total Stakeholders –	1600 (Student + staff + guests)
❖ Study rooms –	36 (20 Classrooms +16 Labs)
❖ Staff rooms -	1
❖ Office rooms –	3
❖ E-wastes-	computers, electrical and electronic parts – Disposal by selling
❖ Plastic waste-	disposal by the procedure adopted by state and district administration
❖ Solid wastes –	Damaged furniture, paper waste, paper plates, and food wastes – to Municipal waste collection canters
❖ Chemical wastes –	Laboratory waste
❖ Waste water –	washing, urinals, and bathrooms in soak pits
❖ Dustbin	15

CONCLUSION AND FULL LIST OF RECOMMENDATIONS

The green audit assists in the process of testing performance in the environmental arena and is fast becoming an indispensable aid to decision making in a college. The green audit reports assist in the process of attaining an eco-friendly approach to the sustainable development of the college. Hope that

the results presented in the green auditing report will serve as a guide for educating the college community on the existing environment related practices and resource usage at the college as well as spawn new activities and innovative practices. A 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 context of Green Campus and thus sustainable environment and community development. It has been shown frequently that the practical suggestions, alternatives, and observations that have resulted from audits have added positive value to the audited organisations. An outside view, perspective and opinion often helps staff who have been too close to problems or methods to see the value of alternative approaches. A green audit report is a very powerful and valuable communications tool to use when working with various stakeholders who need to be convinced that things are running smoothly and systems and procedures are coping with natural changes and modifications that occur.

Common Recommendations

- ❖ Adopt an environmental policy for the college.
- ❖ Establish a purchase policy for environmentally friendly materials.
- ❖ Introduce UGC Environmental Science course to all students.
- ❖ Conduct more seminars and group discussions on environmental education.
- ❖ Students and staff should be encouraged to solve local environmental issues.
- ❖ Establish more efficient water, waste and energy management systems

Criteria Wise Recommendations

Water

- Remove damaged taps and install sensitive taps is possible.
- Drip irrigation for gardens and vegetable cultivation can be initiated.
- Establish rain water harvesting systems for each building.
- Establish water treatment systems.
- Awareness programs on water conservation to be conducted.
- Install display boards to control over exploitation of water.

Energy

- Employment of solar panels and other renewable energy sources.
- Conduct more save energy awareness programs for students and staff.
- Replace computers and TVs with LED monitors.
- More energy efficient fans should be replaced.
- Observe a power saving day every year.
- Automatic power switch off systems may be introduced.

Waste

- Establish a functional bio gas plant.
- Solid waste treatment system to be established.
- Practice of waste segregation to be initiated.
- Establish a plastic free campus.

Green Campus

- Trees in the campus should be named scientifically.
- Create more space for planting.
- Grow potted plants at both veranda and class rooms.
- Create automatic drip irrigation system during summer holidays.
- Not just celebrating environment day but making it a daily habit.
- Beautify the college building with indoor plants
- Providing funds to nature club for making campus more green
- Encouraging students not just through words, but through action for making the campus green
- Conducting competitions among departments for making students more interested in making the campus green.

Various awareness programmes will be helpful to motivate all the staff members for optimized sustainable use of available resources. The long term goal of the environmental audit program is to collect baseline data of environmental parameters and resolve environmental issue

FOLLOW UP ACTION AND PLANS

Green Audits are exercises which generate considerable quantities of valuable management information. The time and effort and cost involved in this exercise is often considerable and in order to be able to justify this expenditure, it is important to ensure that the findings and recommendations of the audit are considered at the correct level within the organization and that action plans and implementation programs result from the findings. Audit follow up is part of the wider process of continuous improvement. Without follow-up, the audit becomes an isolated event which soon becomes forgotten in the pressures of organizational priorities and the passing of time.

Next Audit

In order to promote continuous improvement, it is recommended to conduct the next green auditing in the future annually for making campus more ecofriendly. Green audit report is one of the useful means of demonstrating an organization's commitment to openness and transparency. If an organization believes it has nothing to hide from its stakeholders, then it should feel confident enough to make its green audit reports freely available to those who request them. As a basic rule, green audit reports should be made available to all stakeholders.

Acknowledgements:

We are highly thankful to Director General, Higher Education Department, Haryana for providing each and every financial support for making college campus lust green and environment friendly. We thank all the participants of the green auditing team especially students, faculty and non-teaching staff who took pain along with us to gather data through survey. We also thank the staff who helped us during the document verification.

Annexure 1

Flora of Shaheed Udham Singh Govt College, matak Majri, Indri Karnal

S. No.	Botanical Name	Common Name	Family	Use
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1.	<i>Acacia nilotica</i>	Babool	Fabaceae	Antioxidant,antimicrobial, Antipyretic and antiinflammatory action
2.	<i>Aegle marmelos</i>	Bael patra	Rutaceae	used in chronic diarrrohea,dysentry and peptic ulcer
3.	<i>Azadirachta indica</i>	Neem	Meliaceae	used as Antimalarial,antibacterial, antiviral,in various skin diseases
4.	<i>Bauhinia variegate</i>	Kachnar	Fabaceae	used as food and medicine
5.	<i>Callistemon lanceolatus</i>	Bottle brush	Myrtaceae	Used as water accent, anticough,antibronchitis and insecticide
6.	<i>Caryota urens</i>	Fish tail palm	Arecaceae	Antiinflammatory,antimal arial,analgesic,antioxidant
7.	<i>Cassia fistula</i>	Amaltas	Fabaceae	used in ayurvedic medicines
8.	<i>Cassia tora</i>	Chakunda	Fabaceae	Used in treaeating skin deseases
9.	<i>Dalbergia sissoo</i>	Sheesham	Fabaceae	timber high quality
10.	<i>Delonix regia</i>	Gulmohar	Fabaceae	Antibacterial,antidiabetic, antidiarrheal,antiinflamma tory
11.	<i>Elaeocarpus ganitrus</i>	Rudraksh	Elaeocarpaceae	Manages high B.P., asthma,mentaldisorders,di abetes
12.	<i>Eucalyptus</i>	Safeda	Myrtaceae	oil used as insect repellent and antimicrobial activity
13.	<i>Ficus carica</i>	Fig	Moraceae	cures diabetes,highcholesterol,and skin diseases
14.	<i>Ficus racemosa</i>	Gular	Moraceae	used in diabetes,liverdisorders,dia rrhea,inflammatory conditions
15.	<i>Ficus religiosa</i>	Peepal	Moraceae	sacred tree,used in asthama,diabetes,epilepsy,

				inflammatory disorder
16.	<i>Ficus virens</i>	Pilkhan	Moraceae	used as food and medicine
17.	<i>Hibiscus rosa sinensis</i>	China rose	Malvaceae	antiinflammatory properties and used in skin care products
18.	<i>Livistona chinensis</i>	Fan Palm	Arecaceae	Anticancer agent, antiproliferative and antiangiogenic properties
19.	<i>Mangifera indica</i>	Mango	Anacardiaceae	used as food and medicine
20.	<i>Manilkara zapota</i>	Chikku	Sapotaceae	Rich in dietary fibre, vitamins and minerals and support digestion and immune system
21.	<i>Melia azedarach</i>	Deg	Meliaceae	Timber high quality
22.	<i>Moringa oleifera</i>	Sahjan	Moringaceae	Rich source of vitamins, mineral, amino acids, cures diabetes, liver, antimicrobial.
23.	<i>Morus alba</i>	Mulberry	Moraceae	food for silkworm
24.	<i>Nerium oleander</i>	Kaner	Apocynaceae	Ornamental plant
25.	<i>Pinus sp.</i>	Cheer	Pinaceae	Important source of Turpentine

Annexure 2

Fauna of Shaheed Udham Singh Govt College, matak Majri, Indri Karnal

S. No.	Phylum	Class	Name
1.	Arthropoda	Insecta	<i>Mantis</i>
2.	Arthropoda	Insecta	<i>Periplaneta</i>
3.	Arthropoda	Insecta	<i>Lepisma</i>
4.	Arthropoda	Insecta	<i>Apis</i>
5.	Arthropoda	Insecta	<i>Polistes</i>

6.	Arthropoda	Insecta	<i>Calopteryx</i>
7.	Arthropoda	Insecta	<i>Culex</i>
8.	Arthropoda	Insecta	<i>Anopheles</i>
9.	Arthropoda	Insecta	<i>Musca</i>
10.	Arthropoda	Dilopoda	<i>Scolopendra</i>
11.	Chordata	Amphibia	<i>Bufo</i>
12.	Chordata	Amphibia	<i>Rana</i>
13.	Chordata	Reptilia	<i>Hemidactylus</i>
14.	Chordata	Reptilia	<i>Calotes</i>
15.	Chordata	Reptilia	<i>Varanus</i>
16.	Chordata	Reptilia	<i>Lycodon</i>
17.	Chordata	Reptilia	<i>Ptyas</i>
18.	Chordata	Reptilia	<i>Eryx</i>
19.	Chordata	Reptilia	<i>Naja</i>
20.	Chordata	Reptilia	<i>Bungarus</i>
21.	Chordata	Reptilia	<i>Viper</i>
22.	Chordata	Aves	<i>Dicrurus</i>
23.	Chordata	Aves	<i>Lanius</i>
24.	Chordata	Aves	<i>Argya</i>