



**Shobhit
University**

EDUCATION EMPOWERS



Top 101-125 Band
in Pharmacy

CRITERION 7 - INSTITUTIONAL VALUES AND BEST PRACTICES

7.1.6 QUALITY AUDITS ON ENVIRONMENT AND ENERGY REGULARLY UNDERTAKEN BY THE INSTITUTION AND ANY AWARDS RECEIVED FOR SUCH GREEN CAMPUS INITIATIVES: 1. GREEN AUDIT 2. ENERGY AUDIT 3. ENVIRONMENT AUDIT 4. CLEAN AND GREEN CAMPUS RECOGNITIONS / AWARDS 5. BEYOND THE CAMPUS ENVIRONMENTAL PROMOTION ACTIVITIES

To reduce enormous use of paper and printing the ensure data, sign and a seal by the Competent Authority for all the papers, we have used the Class-3 Digital Signatures where a Registration Authority i.e. Dr. Mahipal Singh, Registrar of our University authenticate the documents and responses claimed in this pdf file.



SHOBHIT UNIVERSITY, Gangoh

[Notified by Government of U.P. Act No.3 of 2012, Established u/s 2(f) of UGC Act 1956]

Adarsh Institutional Area, Babu Vijendra Marg,
Gangoh, Distt. Saharanpur - 247341, UP

35
YEARS
OF ACADEMIC
EXCELLENCE





Babu Vijendra Marg, Adarsh Institutional
Area Gangoh, Distt. Saharanpur (U.P.)
247341, India
Tel: +91 7830810052
E-mail: registrargangoh@shobhituniversity.ac.in
U.: www.sug.ac.in

Green Audit Report and Environment Audit Report

GREEN & ENVIRONMENT AUDIT REPORT

Year 2023-24



Shobhit University Gangoh (SUG)

(Established by UP Shobhit University Act No. 3, 2012)
Adarsh Institutional Area, Babu Vijendra Marg, Gangoh,
Distt. Saharanpur, Uttar Pradesh - 2473411
Email: registrargangoh@shobhituniversity.ac.in



Prepared By:

*Interglobal Business Process Private Limited,
Guwahati, Assam, India.*

Contents

Overview	3
Introduction	5
About the University	7
Vision, Mission and Core Values	9
Methodology & Procedure	11
Observations	12
a. Water Management	12
b. Energy Management	20
c. Waste Management	25
d. Green Area	28
e. Campus Landscape	32
Recommendations	35
Conclusion	37
Acknowledgement	38
Certificate	39

Overview

Sustainable nature refers to the practice of maintaining the Earth's ecosystems, biodiversity, and natural resources in a way that meets current human needs without compromising the ability of future generations to benefit from the same. It emphasizes harmony between human activities and the environment, ensuring the long-term health of our planet. Nature provides essential resources such as clean air, water, food, and raw materials, along with intangible benefits like climate regulation and cultural inspiration. However, unsustainable practices, including deforestation, pollution, and overexploitation of natural resources, threaten these systems, leading to biodiversity loss, climate change, and ecosystem degradation.

Promoting sustainable nature involves protecting and restoring natural habitats, conserving biodiversity, and adopting practices that reduce environmental impact. Initiatives like afforestation, responsible land use, and wildlife conservation programs are key to preserving the balance of ecosystems. Similarly, sustainable agriculture, renewable energy, and reducing pollution are critical measures to mitigate human-induced damage.

Individuals also play a crucial role in sustaining nature by adopting eco-friendly habits such as reducing waste, conserving water, planting trees, and supporting sustainable products. Education and community engagement are vital in fostering an appreciation for the environment and inspiring collective action toward its preservation.

At its core, sustainable nature is about recognizing that humanity is interconnected with the environment. By valuing and protecting the natural world, we ensure not only the survival of countless species but also the resilience and well-being of our own future. It is a commitment to living in harmony with the Earth, cherishing its resources, and safeguarding its beauty and vitality for generations to come.

Since many educational institutions utilize a lot of resources and release waste into the environment, the idea of an eco-campus is employed to make them more sustainable worldwide. It is imperative that these fundamental environmental issues and the associated patterns be addressed right away. This audit was conducted in order to verify that the campus's practices adhere to the Green Policy.

Green auditing of higher education institutions is required by Criterion VII of the seven requirements outlined in the standards for recognized schools to submit the mandatory annual Internal Quality Assurance Report (IQAR). Water conservation, tree planting, waste management, paperless work, and alternative energy are just a few of the many aspects of Green Campus that it works on. Given this, the audit's particular objective was to evaluate the effectiveness of the environmental sustainability

management control system and the degree to which the pertinent departments follow all applicable laws, regulations, and standards.

In order to learn more about the resources on campus and the resource use habits of the students and staff, a questionnaire survey was first administered. To assess the quality of the soil and water, samples were collected from multiple locations on campus and subjected to a battery of tests. Data gathering was followed by counting, sorting, and analysis. Finally, a report outlining the environmental management plan's advantages, disadvantages, and suggestions on the environmental concerns on campus is available.

An important procedure for evaluating an institution's environmental performance is a green audit of universities, which looks at sustainability and resource utilization. This thorough analysis focuses on a number of topics, including carbon footprint, biodiversity, waste management, water management, and energy use. The audit allows the university to pinpoint areas where it may lessen its environmental effect and encourage eco-friendly behavior. Green audits serve to raise awareness of environmental stewardship among staff, instructors, and students in addition to promoting the prudent use of resources. Universities can endeavor to become more sustainable organizations, supporting environmental preservation and harmonizing with global sustainability objectives, by putting the suggestions made by a green audit into practice. Additionally, this procedure improves the institution's standing and attracts stakeholders and students who care about the environment.

Introduction

Green audits, also known as environmental audits, are assessments that help us identify implementation flaws in environmental compliance and management systems and the associated remedial measures. Green audits are a useful tool for determining the type and amount of waste produced, where the most energy or water resources are being consumed, and how changes might be made to save money. It can raise awareness of health issues and promote ethics, values, and environmental concern. All things considered, it is essential in helping employees and students better comprehend the green impact on campus.

Need for green audit

Higher education institutions' role in environmental sustainability is growing in importance as environmental sustainability becomes a more pressing issue for countries. Adopting the Green Campus strategy for the institutions that would promote sustainable development becomes crucial in this context. Additionally, it removes a significant amount of carbon dioxide from the atmosphere.

Green Audit falls under the seventh criterion of the National Assessment and Accreditation Council (NAAC), an autonomous Indian organization that grants accreditation based on the results submitted at the time of accreditation. All higher education institutions are required by NAAC to submit a Green Audit Report every year. Furthermore, ensuring that higher education institutions use carbon footprint reduction techniques to help mitigate global warming is part of their social responsibility.

Objectives of the audit

- **Assess Resource Utilization:** Evaluate the efficient use of natural resources such as energy, water, and raw materials.
- **Identify Environmental Impact:** Analyze the organization's environmental footprint, including waste generation and carbon emissions.
- **Promote Sustainability:** Encourage eco-friendly practices and sustainable development within the organization.
- **Enhance Energy Efficiency:** Identify opportunities for energy conservation and the use of renewable energy sources.
- **Reduce Waste:** Develop strategies to minimize waste production and improve waste management practices.
- **Ensure Compliance:** Verify adherence to environmental laws, regulations, and standards.
- **Increase Awareness:** Educate stakeholders about the importance of environmental stewardship and sustainable practices.

- **Biodiversity Protection:** Evaluate and enhance efforts to protect and promote local biodiversity.
- **Improve Water Management:** Optimize water use and reduce wastage through conservation measures.
- **Foster Green Initiatives:** Encourage initiatives such as tree planting, sustainable landscaping, and pollution control measures.
- **Monitor Progress:** Establish benchmarks for environmental performance and track improvements over time.
- **Enhance Institutional Reputation:** Demonstrate commitment to sustainability to stakeholders and the community.

Green audits assist institutions in reducing their environmental impact and supporting the global sustainability agenda by achieving these goals.

About the University

Shobhit University believes in strategic growth as envisaged in our mission and vision, to impart quality education through vertical and horizontal integration. It strives to become a world class university, with a global perspective, that educates the future leaders of the world. Therefore, the challenge before the University is to remain in the forefront of cutting-edge knowledge and to follow the best international practice(s) in academics. Shobhit University aspires to make academic issues and commitments as the key concerns of the young generation and thereby, make a significant contribution to the academic developments wherever they are in the world.

By the fostering of quality education, research and innovation, the University endeavour to empower youth. Inspired by talent that is regularly enriched and driven by innovation is the guiding philosophy of Shobhit University's enlightened community. The University translates its vision into reality on the path of achieving excellence in engineering, technology and management, based on the fundamentals of 21 century education to conform and serve basic human needs, for overall development and inclusive growth.



Shobhit University, Gangoh, Saharanpur has been notified by the Government of Uttar Pradesh vide Shobhit Vishwavidhayalaya, Uttar Pradesh Adhiniyam, 2011 (U.P. Act No.3 of 2012) passed by Uttar Pradesh Legislature and assented by the H.E. Governor of Uttar Pradesh. Shobhit University, Gangoh was established by the legislative bill of Uttar Pradesh Government vide Shobhit University Uttar Pradesh Act, 3 in 2012. It has since emerged as one of the very few universities that are rural-based in the sense they are deeply entrenched in the rural ambience of culture, environment, market and aspirations while technologically resting on the great shift on the continuum of Tradition and Modernity. Today, the University has become a people's own institution, and offers programs that are based on local needs in the areas of Ayurveda, Engineering, Management, Pharmacy, Law, Education,

Agriculture, Bio-technology, Bio-medical Engineering, Arts and Humanities, Naturopathy and Yoga, Paramedical Studies, and many other short durations Skill Development Programs.

The University was created in the midst of nature. The lush green campus is well-equipped with cutting-edge infrastructure to facilitate academic, cultural, and sporting activities. Student centricity is the university's basic value, and all activities, whether curricular, co-curricular, or extra-curricular, are meant to help students grow and develop. The Shobhit University, Gangoh today presents not only its geographical rural character with immensely green surroundings, and pollution-free environment and simplicity of life, but also the rural-ness of its various courses and course additions. Youth and the population aspire for the University and the latter works for them in this sylvan part of North-western Uttar Pradesh where the villages see higher education face to face with open buds of swaying crops.

Vision, Mission and Core Values

Vision

The Shobhit University will be internationally recognized as a premier Indian University with a global perspective that educates leaders who will fashion a more humane and just world.

Mission

The core mission of the University is to promote learning in Indian tradition with international outlook. The University offers undergraduate, graduate, research scholars and professional students, the knowledge and skills needed to succeed as persons and professional in niche technical areas, and the values and sensitivity necessary to be men and women for others.

The University will distinguish itself as a diverse, socially responsible learning community of high-quality scholarship and academic rigor, sustained by Indian ethics & values. The University will draw from the cultural, intellectual and economic resources of the nation to enrich and strengthen its educational programmes.

Core Values

The University's core values include a belief in and a commitment to advancing:

- The Indian tradition that views faith and reason as complementary resources in the search for truth and authentic human development, and that welcomes persons of all faiths as fully contributing partners to the University.
- The freedom and the responsibility to pursue truth and follow evidence to its conclusion.
- Learning as a humanizing, social activity rather than a competitive exercise.
- A common good that transcends the interests of particular individuals or groups; and reasoned discourse rather than coercion as the norm for decision making.
- Diversity of perspectives, experiences and traditions as essential components of a quality education in our global context.
- Excellence as the standard for teaching, scholarship, creative expression and service to the University community.
- Social responsibility in fulfilling the University's mission to create, communicate and apply knowledge to a world shared by all people and held in trust for future generations.
- The moral dimension of every significant human choice: taking seriously how and who we choose to be in the world.

- The full, integral development of each person and all persons, with the belief that no individual or group may rightfully prosper at the expense of others.
- A culture of service that respects and promotes the dignity of every person.

Strategic Initiative

The following initiatives are key to the University's achieving the recognition as a premier Indian University:

- Recruit and retain a diverse faculty of outstanding teacher scholars and a highly qualified, service-oriented staff, all committed to advancing the University's Vision, Mission and Values.
- Enroll, support and graduate a diverse student body, which demonstrates high academic achievement, strong leadership capability, concern for others and a sense of responsibility for the weak and the vulnerable.
- Provide an attractive campus environment and the resources to promote learning throughout the University:
 - Learning resources that enhance curriculum and support scholarship
 - Technology solutions to enhance learning and improve service
 - Facilities to support outstanding educational programmes.

Methodology & Procedure

A green audit is a systematic, documented, and comprehensive process aimed at evaluating the environmental practices and sustainability performance of an organization, institution, or facility. It assesses how effectively resources such as energy, water, and materials are being utilized, identifies potential areas of improvement, and ensures compliance with environmental regulations.

The primary goal of a green audit is to promote eco-friendly practices, minimize environmental impacts, and enhance sustainability. It involves analyzing various aspects, including waste management, energy conservation, water usage, biodiversity, and carbon footprint. By identifying inefficiencies, a green audit provides actionable recommendations to optimize resource use, reduce costs, and contribute to environmental preservation.

In educational institutions, green audits often extend to creating awareness among students and staff about sustainability and instilling a sense of responsibility towards the environment. Ultimately, a green audit serves as a roadmap for organizations to achieve their sustainability goals and align with global efforts to combat climate change.

On-site Visit

The Green Audit Team conducted an on-site field inspection. The visit's primary goal was to assess the university's green cover status, waste management practices, energy conservation programs, etc. During the visits, the water and air samples were collected. Air samples from several locations on campus were collected, as were water samples from the borewell. As required by normal protocols, the material was collected, preserved, and analyzed in a scientific manner.

Focus Group Discussion

The management and employees participated in focus groups discussing a range of Green Audit-related subjects. The main goal of the discussion was to evaluate institutional and local attitudes and awareness regarding environmental issues.

Energy and trash management

The audit team looked into the university's waste generation, disposal, and treatment facilities as well as its energy consumption patterns with the help of teaching and non-teaching personnel, students, an administrative officer, a building management engineer, and an electrical supervisor. A comprehensive questionnaire survey method was used for the monitoring.

In order to provide an overview of the current state of campus environment management, the assessment covered the following subjects:

- Water management
- Energy Conservation
- Waste management
- Green area management
- Environmental Monitoring

Observations

At Shobhit University Gangoh (SUG), green audits start with an evaluation of the university's green cover, which is followed by waste management strategies, energy-saving initiatives, etc. The team kept an eye on various university facilities, identified various utility and appliance types (lights, taps, toilets, refrigerators, etc.), measured usage per item (e.g., watts indicated on the appliance or measuring water from a tap), and identified pertinent consumption patterns (e.g., frequency of use of an appliance) and their effects. Interviews with faculty and staff were conducted to learn more about the general characteristics, frequency of use, and utilization of specific equipment. Data was collected in areas like water use, waste, energy, greening, and carbon footprint. University documents and documentation were thoroughly analyzed to explain the data gathered through surveys and discussions. Environmental samples, including water and soil, were collected and assessed from several locations on campus.

a. **Water Management**

Water management involves the strategic planning, development, distribution, and optimal use of water resources to meet the needs of people, agriculture, industries, and ecosystems. As a vital resource, water sustains life and underpins economic and environmental systems. Effective water management is essential to address challenges such as water scarcity, pollution, and climate change. It encompasses various practices, including rainwater harvesting, wastewater recycling, efficient irrigation methods, and the adoption of technology to monitor and regulate usage. By balancing demand with sustainable supply, water management not only ensures access to clean water for current needs but also protects aquatic ecosystems and preserves this precious resource for future generations. Promoting community awareness and government policies aimed at conservation are crucial in achieving global water security.

There is clean, well-maintained water available for drinking. Watercoolers are located throughout the building blocks and can be accessed from any floor of the university. Water samples were collected from the university campus and their quality characteristics were investigated. Color, odor, turbidity, dissolved oxygen, acidity, alkalinity, chloride, hardness, pH, conductivity, total dissolved solids, and salinity are among the primary parameters investigated. The findings are presented in the recommendations part of this study.



(Drinking water facility available in the campus)

i. Rainwater Harvesting

Rainwater harvesting is the process of collecting, storing, and utilizing rainwater for various purposes, offering a sustainable solution to water scarcity. This technique involves capturing rainwater from rooftops, paved areas, or land surfaces and storing it in tanks, underground reservoirs, or natural aquifers. It reduces dependency on conventional water sources, alleviates pressure on groundwater reserves, and helps manage urban flooding by reducing runoff. Rainwater harvesting is cost-effective, environmentally friendly, and promotes self-sufficiency in water use. In regions with irregular rainfall, it provides a reliable alternative for agricultural irrigation, household needs, and industrial applications. By embracing rainwater harvesting, communities can enhance water availability, conserve resources, and contribute to a more sustainable future. Rainwater collection technologies are being used to replenish the groundwater level. Soaking pits are offered at several sites throughout campus. Rooftop water is collected and stored in recharge wells. Stormwater drains direct rainfall from paved areas into wells for recharge. Each year, the recharge wells are manually cleaned.



(Rainwater harvesting facility in SUG campus)

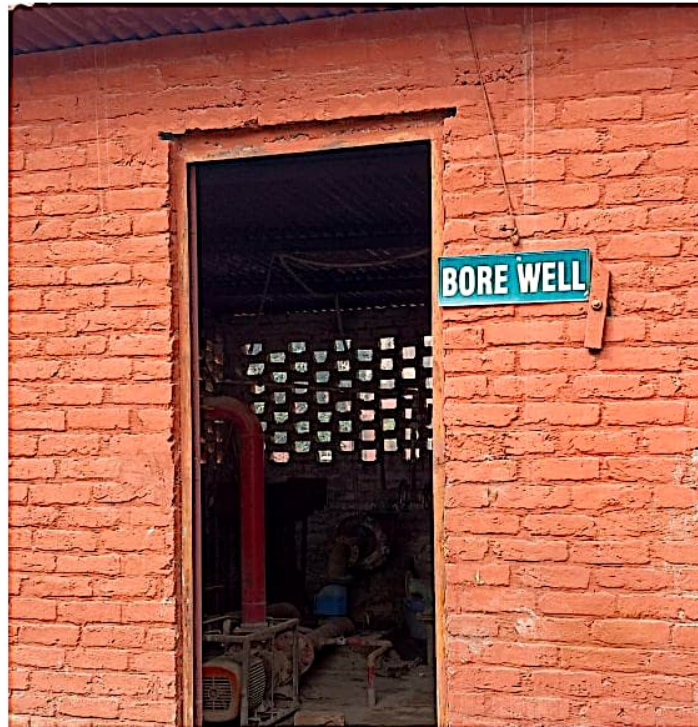


(Rainwater harvesting soaking pits in the campus)

ii. Borewell/Open well Recharge

The borewell may be the most often used water source. These are wells that are drilled far into the earth to access aquifers, which are layers of rock or soil that contain water. Water is usually extracted by borewells from "confined deep aquifers," which are subterranean rock layers where water is held under pressure between rock fissures. Water seeping through the rock layers over many years, maybe even centuries, creates these aquifers. Borewells are a vital instrument for supplying the increasing water demands of both urban and rural communities since they are outfitted with pumps to draw water. However, excessive and uncontrolled borewell drilling can result in ecological imbalances, decreased water quality, and groundwater depletion. To guarantee long-term groundwater availability

and stop environmental deterioration, sustainable borewell management—which includes routine monitoring, recharge systems, and adherence to drilling regulations—is essential.



(Several Borewells available in the university campus for water facility)



(Borewell and water supply network in the campus)

There is a borewell facility on campus that provides water to the university. Water is pumped out of the well and utilized each day. The water distribution system on the university campus is excellent. The Nagar Nigam also provides water. On campus, water is used for drinking, restrooms, and landscaping. The waste water from a RO water filter is used in horticulture. No water loss, leak, or overflow was seen during the survey from any source, especially the above tank. Data from every department is gathered, reviewed, and verified.

iii. Tanks/Bunds

An overhead water tank is a raised structure designed to store and supply water at a consistent pressure for residential, commercial, or industrial use. Elevated tanks utilize gravity to distribute water efficiently across different areas, making them an integral part of water supply systems. They are typically constructed using materials like reinforced concrete, steel, or plastic and are designed to resist weather conditions and structural stress. Overhead water tanks help manage fluctuating water demands, maintain a steady supply during peak usage times, and serve as a backup during water shortages. Proper maintenance, including regular cleaning and structural inspections, is essential to ensure water quality and the tank's longevity, making it a reliable component of sustainable water management systems.



(Multiple overhead water tanks on the rooftop for seamless water supply)

An elevated storage tank used for distributing and storing water for residential, commercial, or industrial purposes is called an overhead water tank. These tanks are usually positioned high, either on rooftops or on specifically built towers, so that water may serve buildings or the surrounding region by gravity through pipelines. In areas where water availability varies or where water pressure needs to be controlled, they are crucial for preserving a steady flow of water.



(Multiple overhead water tanks on the rooftop for seamless water supply)



(Water tank in the university campus)

iv. Waste water recycling

Wastewater recycling is the process of treating used water from households, industries, and agriculture to make it suitable for reuse. This sustainable practice helps conserve freshwater resources, reduce environmental pollution, and meet the growing demand for water in water-scarce regions. Recycling wastewater involves processes like filtration, sedimentation, and disinfection to remove contaminants, making it safe for applications such as irrigation, industrial processes, and even potable water in some cases.



(Waste water recycling facility in the university campus)

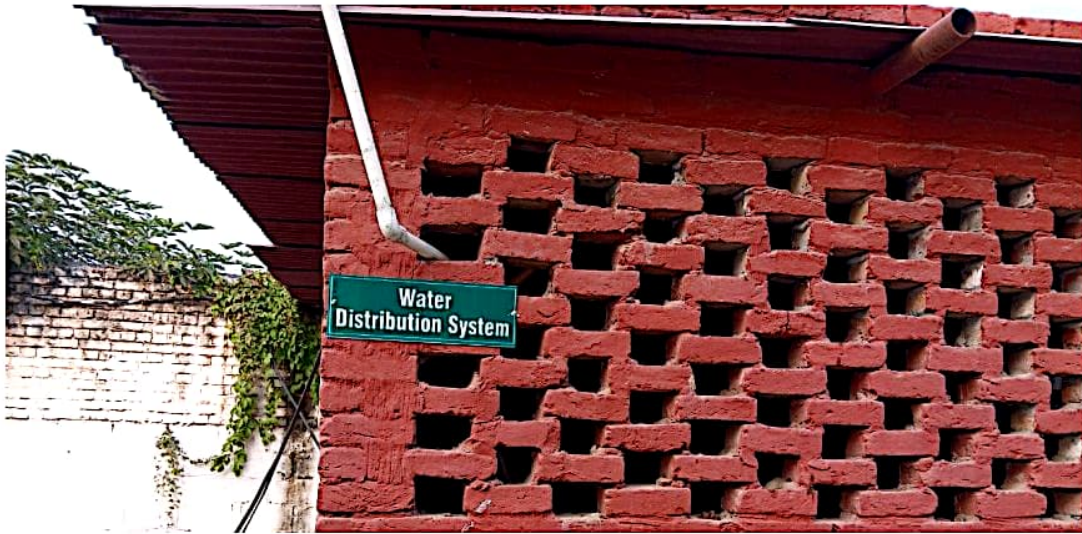
By integrating wastewater recycling into water management systems, communities and industries can reduce their ecological footprint, lower water treatment costs, and contribute to a circular water economy. It is a vital step toward sustainable development and ensuring long-term water security.

Implementing wastewater recycling on university campuses is a crucial initiative to promote sustainability and efficient resource management. Campuses generate significant amounts of wastewater from hostels, cafeterias, laboratories, and other facilities, which can be treated and reused for non-potable purposes such as irrigation, toilet flushing, and cooling systems.

v. Water bodies and distribution system

A water distribution system is a network of facilities intended to deliver water to customers for use in homes, businesses, or agriculture from a treatment plant or source (such as a reservoir, well, or tank). In order to satisfy the demands of the institution, this system guarantees the efficient, safe, and sufficient delivery of water. To ensure a steady water supply and pressure, it consists of a number of parts, including storage tanks, pumps, pipelines, and valves. An effective water distribution system has no dead ends because the main, sub-mains, and branch lines are all interconnected. While the main

water line runs through a central area, the sub-mains branch out at right angles and the branch lines connect to the sub-mains.



(Well managed water distribution system in the university campus)



(Water supply network in the university campus)

Recommendations:

- Regular supervision drills should be planned, and overflow needs to be watched over and managed.
- To minimize water consumption, gardens should only be watered with drip or sprinkler irrigation systems; university staff should only use cleaning solutions that have a minimal negative impact on the environment because they are non-toxic and biodegradable, particularly when this goes beyond the Control of Substances Hazardous to Health (COSHH) guidelines.
- Reusing and recycling water should increase and additional installation of waste water treatment facility in the campus.
- Cut down on the quantity of water lost throughout the reverse osmosis procedure.
- Make sure that the water management equipment is maintained current and in good operating order.

b. Energy Management

Energy management refers to the strategic process of monitoring, controlling, and conserving energy within an organization, facility, or system. Its goal is to ensure the efficient use of energy resources while minimizing costs, environmental impacts, and carbon emissions. This involves practices such as conducting energy audits, implementing energy-efficient technologies, optimizing processes, and utilizing renewable energy sources like solar or wind power.

Effective energy management is crucial for reducing reliance on fossil fuels, promoting sustainability, and achieving energy security. It also includes raising awareness among stakeholders about the importance of energy conservation and integrating smart systems, such as sensor-based controls and energy analytics, for real-time monitoring and optimization.

For institutions and industries, energy management not only improves operational efficiency but also enhances their reputation as environmentally responsible entities. By prioritizing energy management, organizations contribute to global efforts to combat climate change while reaping economic and environmental benefits.

This audit covers natural gas, lighting, appliances, energy sources, energy monitoring, and vehicles. Since energy use is clearly a major factor in campus sustainability, there is no need to explain why it is included in the assessment. The audit also included an analysis of the use of green alternative energy sources.

i. Solar System

A solar system, in the context of energy, refers to a setup that captures sunlight and converts it into usable electricity or heat through solar panels or collectors. It is a renewable and sustainable energy solution that reduces dependency on fossil fuels, lowers energy costs, and minimizes carbon emissions. Technology that captures solar energy and transforms it into heat or power is known as a solar energy system.



(Solar panels on the rooftop of the university)



(Solar based energy system in the SUG campus)



(Solar panels on the rooftop of the university)

Since solar energy is among the most plentiful and environmentally friendly renewable energy sources, it is essential to international initiatives to lessen dependency on fossil fuels and fight climate change. Applications for solar energy systems include heating, electricity, and even power for certain operations in commercial, industrial, and residential settings.

ii. Biogas Plant

A biogas plant is a facility designed to produce biogas through the anaerobic digestion of organic waste, such as agricultural residue, animal manure, food waste, and sewage. This process involves the breakdown of organic matter by microorganisms in the absence of oxygen, generating biogas—a mixture of methane and carbon dioxide—which can be used as a renewable energy source for cooking, heating, electricity generation, or even as vehicle fuel. The by-product of this process, known as digestate, is a nutrient-rich fertilizer that can be used in agriculture.



(Biogas plant present in the university campus)

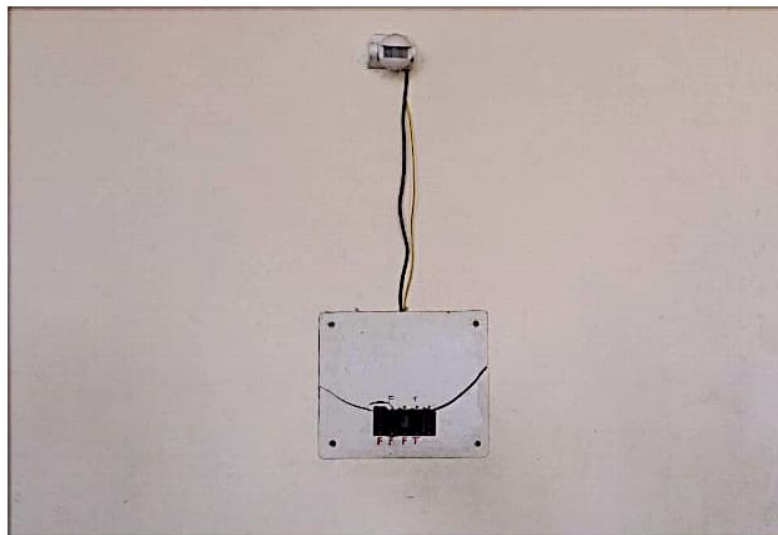


(Biogas plant in the university campus)

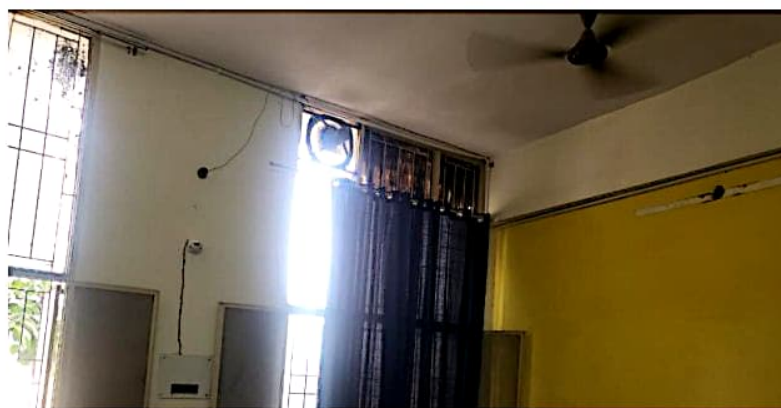
Biogas plants contribute to sustainable waste management by reducing landfill waste and greenhouse gas emissions while providing a clean and renewable energy source. They also support rural development by offering decentralized energy solutions and promoting a circular economy. Implementing biogas plants on campuses, farms, and urban centers is a practical step toward achieving energy self-sufficiency and environmental sustainability.

iii. Sensor Based Energy Conservation

A sensor-based energy conservation system is a smart technology designed to optimize energy usage by automatically adjusting energy consumption based on real-time data. These systems rely on various sensors, such as motion, temperature, light, and occupancy sensors, to monitor and control energy use in buildings, industrial settings, or homes. For example, motion sensors can automatically turn off lights or adjust heating and cooling when a room is unoccupied, while light sensors can regulate artificial lighting based on ambient natural light levels.



(Sensor based control of Fan and Lighting in the classroom of the university)



(Sensor based control of Fan and Lighting in the university campus)

By responding to changing conditions, sensor-based systems reduce energy wastage, improve operational efficiency, and lower utility costs. Additionally, they contribute to environmental sustainability by minimizing energy consumption and reducing carbon footprints. These systems are particularly valuable in commercial and institutional settings, such as offices, schools, and factories, where energy use is high and varied. The integration of smart technologies and data analytics further enhances the precision and effectiveness of these systems, making them an essential component of modern energy management strategies.

iv. LED bulbs

LED (Light Emitting Diode) lights are a highly energy-efficient lighting solution that significantly contributes to energy conservation. Unlike traditional incandescent or fluorescent bulbs, LED lights consume much less electricity while providing the same or even better illumination. This is due to their ability to convert a larger portion of energy into light, rather than heat, making them more efficient and longer-lasting.



(LED bulbs are used for lighting in the university campus)



(LED lighting in the classroom of the university)

LEDs have a lifespan that is several times longer than conventional bulbs, reducing the frequency of replacements and minimizing waste. Additionally, their low energy consumption leads to lower electricity bills and a reduction in greenhouse gas emissions, helping organizations and households decrease their carbon footprint. In commercial, industrial, and residential applications, the widespread adoption of LED lighting can result in substantial energy savings and contribute to environmental sustainability. LED lighting can reduce energy bills by up to 75% compared to traditional lighting systems. By switching to LED lights, institutions, businesses, and consumers can play a significant role in promoting energy conservation while benefiting from lower costs and improved lighting quality.

c. Waste Management

Waste management on university campuses is a critical aspect of fostering sustainability and environmental responsibility among students, staff, and faculty. It involves the systematic collection, disposal, recycling, and reduction of waste generated from various campus activities such as academic programs, cafeterias, dormitories, and events. Effective waste management strategies include the implementation of recycling programs, composting organic waste, and promoting the reduction of single-use plastics. Additionally, universities can adopt waste segregation practices, ensuring that recyclable materials, hazardous waste, and non-recyclables are appropriately sorted and processed.

Educational institutions have a unique opportunity to lead by example, encouraging students to engage in eco-friendly habits and raise awareness about the importance of waste reduction. Green initiatives such as zero-waste policies, awareness campaigns, and sustainability-driven research projects can inspire a culture of environmental stewardship. By prioritizing efficient waste management, universities contribute to reducing their ecological footprint, conserving resources, and creating a cleaner, greener campus for future generations.

i. Solid Waste Management

Solid waste management involves the collection, transportation, processing, recycling, and disposal of solid waste materials. This is a critical process for maintaining cleanliness, promoting public health, and minimizing environmental pollution. Solid waste includes household trash, industrial waste, commercial waste, and construction debris, which, if not managed properly, can lead to harmful effects on ecosystems, air quality, and water sources.

Effective solid waste management encompasses strategies such as waste reduction, waste segregation at the source, recycling, composting, and the proper disposal of non-recyclable materials. Technologies such as waste-to-energy plants, landfills, and incineration are employed to handle waste that cannot be reused or recycled. Furthermore, educating communities about waste reduction, the importance

of recycling, and sustainable consumption habits plays a crucial role in minimizing waste generation at the individual and organizational levels. Vermi composting is an eco-friendly process of recycling organic waste into nutrient-rich compost using earthworms. This method involves the breakdown of kitchen scraps, agricultural waste, and other organic materials by earthworms, which digest the matter and produce castings (worm manure) that are highly beneficial for soil health. The resulting vermi compost is rich in essential nutrients, microorganisms, and organic matter, making it an excellent natural fertilizer for plants and gardens.



(Solid waste segregation available at multiple places in the university campus)



(Vermi compost facility inside the university campus)

ii. Liquid Waste Management

Liquid waste management involves the collection, treatment, and disposal of wastewater generated from different laboratories and cafeteria of by university. In addition to reducing pollution, effective liquid waste management conserves water, protects ecosystems, and promotes sustainable development. By investing in efficient treatment systems and promoting awareness of responsible waste disposal practices, communities can significantly reduce the negative impact of liquid waste on both public health and the environment. Proper management of liquid waste is crucial to prevent contamination of water bodies, soil, and the environment, as untreated or poorly treated liquid waste can contain harmful chemicals, pathogens, and toxins that pose significant health risks.



(Waste water recycling at the university campus)

iii. e-Waste Management

E-waste management refers to the process of collecting, recycling, and disposing of electronic devices and components in an environmentally responsible manner. With the rapid advancement of technology, electronic products such as smartphones, computers, televisions, and batteries have become obsolete more quickly, leading to an increase in electronic waste. Improper disposal of e-waste can result in harmful chemicals, such as lead, mercury, and cadmium, leaching into the environment, causing soil and water contamination and posing health risks to humans and wildlife.

Effective e-waste management involves several key steps: reducing e-waste generation by extending the life of electronics through repair and reuse, recycling valuable materials like metals and plastics, and safely disposing of hazardous components. Specialized e-waste recycling centers play a crucial role in extracting precious materials and ensuring that toxic substances are handled appropriately. Public awareness campaigns, government regulations, and corporate responsibility programs are essential in promoting responsible e-waste disposal and recycling practices.

The management of e-waste is one of the primary objectives of sustainability, which the university is committed to. E-waste is sorted into non-reusable and reusable items. Proper maintenance and minor

repairs performed by the university's technical experts can extend the lifespan of electronic equipment. Computers, radios, TVs, phones, printers, fax machines, motherboards, memory chips, compact discs, cartridges, and other electronic debris are all properly recycled. Repurchase possibilities are preferred over buying new equipment in order to upgrade technology. The electronic trash generated by equipment that cannot be recycled or reused is disposed of centrally through authorized vendors.



(e-Waste management facility in the university campus)

v. Waste Recycling System

Shobhit university encourages sustainable waste management on campus by reducing, reusing, and recycling garbage at all levels of the organization. The school takes care to use recycled materials whenever feasible and to reduce the amount of hazardous waste on campus. The university aims to decrease the quantity of paper consumed by promoting double-sided printing, leveraging online resources, and applying other efficient technologies. The university very effectively recycle the waste generated in the campus. The solid waste is segregated and send to the compost pit, and the other types of solid wastes are disposed off safely. The liquid recycling system is used for watering the plants in the university campus.

d. Green Area

A green campus refers to a university environment that prioritizes sustainability, resource conservation, and environmental responsibility. It integrates eco-friendly practices into campus operations, infrastructure, and academic activities to reduce the institution's carbon footprint and promote a healthy, sustainable future. A green campus incorporates energy-efficient buildings, renewable energy sources like solar and wind power, water conservation strategies such as rainwater harvesting and wastewater recycling, and waste management systems that emphasize recycling and

composting. In addition to physical infrastructure, a green campus focuses on fostering awareness and educating students, faculty, and staff about sustainable living practices. Initiatives like campus-wide tree planting, promoting sustainable transportation (e.g. battery powered vehicle, carpooling etc.), and encouraging zero-waste events play a vital role in creating an environmentally conscious community.

By adopting green campus practices, universities can reduce their environmental impact, conserve resources, and set an example for students and future generations in terms of responsible environmental stewardship. These efforts not only contribute to a healthier planet but also prepare students to become leaders in sustainability and environmental innovation.

i. Restricted entry of automobiles in the campus

The institution encourages employees and students to drive vehicles with pollution check stickers in order to reduce carbon emissions and environmental pollution. All vendors are prohibited from entering the campus and park their vehicles at the entrance.



(Posters are placed at different places on restriction of automobiles in the campus)



(e-Rickshaws ply inside the campus for last mile connectivity)

A battery-powered rickshaw is an eco-friendly, electric vehicle designed to replace traditional fuel-powered rickshaws used for short-distance transportation inside the university campus. These rickshaws run on rechargeable batteries instead of gasoline or diesel, making them a cleaner alternative that produces zero emissions during operation. The use of electric rickshaws helps reduce air pollution, decrease noise pollution, and lower greenhouse gas emissions, contributing to cleaner and more sustainable urban environments.

ii. Use of Bicycles

Students ride bikes as a way to get around campus and in the resident halls, which helps to cut down on pollution. It protects the environment and prevents pollution.

iii. Pedestrian friendly pathways

Car parking is offered at the main entrance of the university. Staff and students feel comfortable walking along the pedestrian-friendly walkways since, with a few exceptions, the campus is car-free. The interior roads, which have lighting and trees as borders, are kept in good shape by the campus maintenance committee. The institution has covered pathways for the benefit of both teachers and students. Wheelchair users can utilize the paved paths.



(Pathways for connectivity between different blocks of the university)

iv. Ban of use of plastic

Implementing a ban on the use of plastic on university campuses is a vital step towards promoting sustainability and minimizing environmental damage. Plastic waste, especially single-use plastics like

bottles, bags, and utensils, is one of the leading contributors to pollution in landfills, oceans, and ecosystems. By banning plastic, universities can significantly reduce the amount of plastic waste generated on campus, encouraging the use of eco-friendly alternatives such as reusable containers, biodegradable products, and sustainable packaging.

The initiative not only helps reduce the university's carbon footprint but also aligns with global efforts to combat plastic pollution and promote a circular economy. A plastic-free campus creates an opportunity to educate students and staff about environmental responsibility, instilling habits that extend beyond the university setting. Campaigns, awareness programs, and the availability of sustainable alternatives like water refill stations and compostable materials can help foster a culture of sustainability.



(Posters are displayed around the university to stop using plastic)

By enforcing a plastic ban, universities play a pivotal role in protecting the environment, conserving natural resources, and setting a positive example for the community. This move also demonstrates a commitment to achieving the United Nations Sustainable Development Goals (SDGs), particularly those focused on responsible consumption, waste management, and environmental protection.



(Posters showing ban of plastic pasted at important places of the university)

e. Campus Landscape

The landscape of a university campus plays a significant role in shaping the aesthetic appeal, functionality, and environmental sustainability of the institution. A well-designed campus landscape integrates green spaces, outdoor seating areas, walking paths, gardens, and trees, providing a tranquil environment that enhances the well-being of students, staff, and visitors. It serves as a space for relaxation, social interaction, recreation, and outdoor learning, contributing to the overall campus experience.



(Lush green campus at Shobhit University Gangoh)



(Trees are marked and taken care of properly to maintain green campus)



(Incorporation of natural elements, sustainable design principles, and eco-friendly practices in SUG)



(SUG campus promotes environmental sustainability, supports biodiversity, and improves the overall well-being of students, faculty, and staff)



(Trees on a campus play a crucial role in creating a healthy, sustainable, and aesthetically pleasing environment. They provide a range of ecological, social, and educational benefits that contribute to the overall well-being of the campus community)

In addition to its aesthetic and recreational value, a thoughtfully planned campus landscape also plays an important role in environmental sustainability. Planting trees and incorporating greenery can improve air quality, reduce urban heat islands, enhance biodiversity, and contribute to stormwater management. The use of native plants, xeriscaping (low-water landscaping), and sustainable design practices can help minimize resource consumption and support local ecosystems.

By fostering a connection with nature, a university campus landscape also provides opportunities for students to engage in environmental stewardship and sustainability initiatives. The inclusion of community gardens, green roofs, and spaces dedicated to environmental education can further reinforce the university's commitment to sustainability. Ultimately, a well-maintained and thoughtfully designed campus landscape not only contributes to a beautiful and healthy campus but also supports the university's mission of environmental responsibility and community engagement.

Recommendations

A green environment audit provides an evaluation of an institution's environmental practices, helping identify areas for improvement and establishing a roadmap for achieving sustainability goals. Based on the findings of the audit, here are several recommendations for universities or organizations looking to enhance their green practices:

- Energy Efficiency Improvements
 - Upgrade to energy-efficient lighting (e.g., LED lights) across campus.
 - Implement smart energy management systems to monitor and reduce energy consumption in buildings.
 - Invest in renewable energy sources, such as solar panels or wind turbines, to decrease dependence on non-renewable power.
- Water Conservation
 - Install water-efficient fixtures (e.g., low-flow faucets and toilets) in all campus buildings.
 - Promote rainwater harvesting and water recycling systems in a much better way to reduce potable water usage.
 - Educate campus members on water conservation practices through campaigns and signage.
- Waste Management and Reduction
 - Implement a comprehensive waste segregation program to ensure that recyclables, compostables, and landfill waste are properly sorted.
 - Encourage the reduction of single-use plastics by providing reusable alternatives and banning plastic on campus.
 - Set up campus-wide composting initiatives for organic waste and integrate vermi-composting practices.
- Sustainable Landscaping
 - Incorporate native plant species in landscaping to reduce water and maintenance needs.
 - Promote green roofs, community gardens, and urban farming projects for food production and increased green cover.
 - Implement sustainable lawn care practices, such as reduced pesticide use and organic fertilizers.
- Sustainable Transportation

- Encourage walking, biking, and the use of electric vehicles (EV) by providing bike racks, EV charging stations, and pedestrian-friendly paths.
 - Develop carpooling initiatives or public transportation programs to reduce the campus's carbon footprint.
 - Implement policies that promote sustainable transportation, such as discounted transit passes for students and staff.
- Sustainable Purchasing Policies
- Adopt green procurement policies that prioritize environmentally friendly products and services (e.g., recycled paper, eco-friendly cleaning products).
 - Source food locally and sustainably, supporting campus dining services that provide organic and plant-based options.
- Green Certification and Standards
- Seek green building certifications like LEED (Leadership in Energy and Environmental Design) for campus infrastructure.
 - Regularly monitor and evaluate the campus's sustainability performance and set measurable environmental goals.
- Education and Awareness
- Organize sustainability workshops, seminars, and training programs for students, faculty, and staff to promote green practices.
 - Integrate sustainability into the academic curriculum to encourage research, awareness, and active participation in environmental initiatives.

By adopting these recommendations, universities can significantly improve their environmental performance, contribute to a sustainable future, and serve as models of environmental stewardship for their communities.

Conclusion

Meetings with important employees and extensive team talks on a range of environmental-related subjects are part of this audit. At Shobhit University Gangoh (SUG), resource conservation is emphasized in every department and school. Shobhit University Gangoh has more than 70% of its space dedicated to landscaping. The University considers the environmental impact of the majority of its operations and works hard to act in an environmentally responsible manner. The study's recommendations offer further strategies for the university to enhance its operations and transform into a more ecologically conscious establishment. It's critical to start a few things, including placing more conservation awareness signage throughout campus. Along with water and energy conservation, we also strongly support raising awareness of the 3R (Reduce, Reuse, and Recycle) to 5R (Refuse, Reduce, Reuse, Repurpose, and Recycle) principles among students, staff, and local communities.

Acknowledgement

We are grateful that the administration and committee members of Shobhit University Gangoh (SUG) gave us this prestigious green auditing project. We also sincerely appreciate the university staff's cooperation in providing the necessary resources and assistance during the audit. The successful completion of this audit was made possible by their kind assistance.

For Interglobal Business Process Private Limited.



(Lead Auditor)

Certificate



CERTIFICATE OF REGISTRATION

This is to Certify that
The Environmental Management System of

SHOBHIT UNIVERSITY

ADARSH INSTITUTIONAL AREA, BABU VIJENDRA MARG,
GANGOH, DISTT. SAHARANPUR-247341,
UTTAR PRADESH, INDIA

has been assessed and found to be in accordance with the
requirements of the system standard

ISO 14001:2015

For the scope of activities described below

PROVIDING EDUCATION COURSES FOR UNDERGRADUATE, POSTGRADUATE, RESEARCH PROGRAMS IN THE AREA OF ENGINEERING, MANAGEMENT, HEALTH SCIENCES, ALLIED HEALTH SCIENCES, LAW, PHARMACY, EDUCATION, AGRICULTURE AND CERTIFICATION IN SKILL DEVELOPMENT COURSES, EXTENSION ACTIVITIES, TRAINING AND ADMINISTRATIVE SUPPORT ACTIVITIES.

Certificate No : EIBPK1183

Issue Date : 31/07/2024
Expiry Date : 30/07/2027

1st Surveillance Audit due on : 30/06/2025
2nd Surveillance Audit due on : 30/06/2026

Validity of this certificate is subject to successful completion of surveillance audit on or before due date,
in case surveillance audit not conducted this certificate shall be suspended



DIRECTOR

Interglobal Business Process Private Limited

PNB Complex, Harabala Road, Ulubari, Guwahati: 781007, Assam, India
Email: info@interglobalcertifications.com

Authenticity and status of this certificate can be verified at www.interglobalcertification.com or scan the barcode

This certificate is the property of Interglobal Business Process Pvt. Ltd. and should be returned to IBP in case of non compliance of the certification procedure.