



Environment Audit

2022-23



St. Xavier's College, Mahuadanr

(Affiliated to Nilamber-Pitamber University, Medininagar)

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Environment Audit



About the Project

The working details of the assignment are as follows -

Project: Environment Audit

Segment: Educational Building

Site: Mahuadanr

Duration: 3rd April 2023- 15th April 2023

External Audit Members

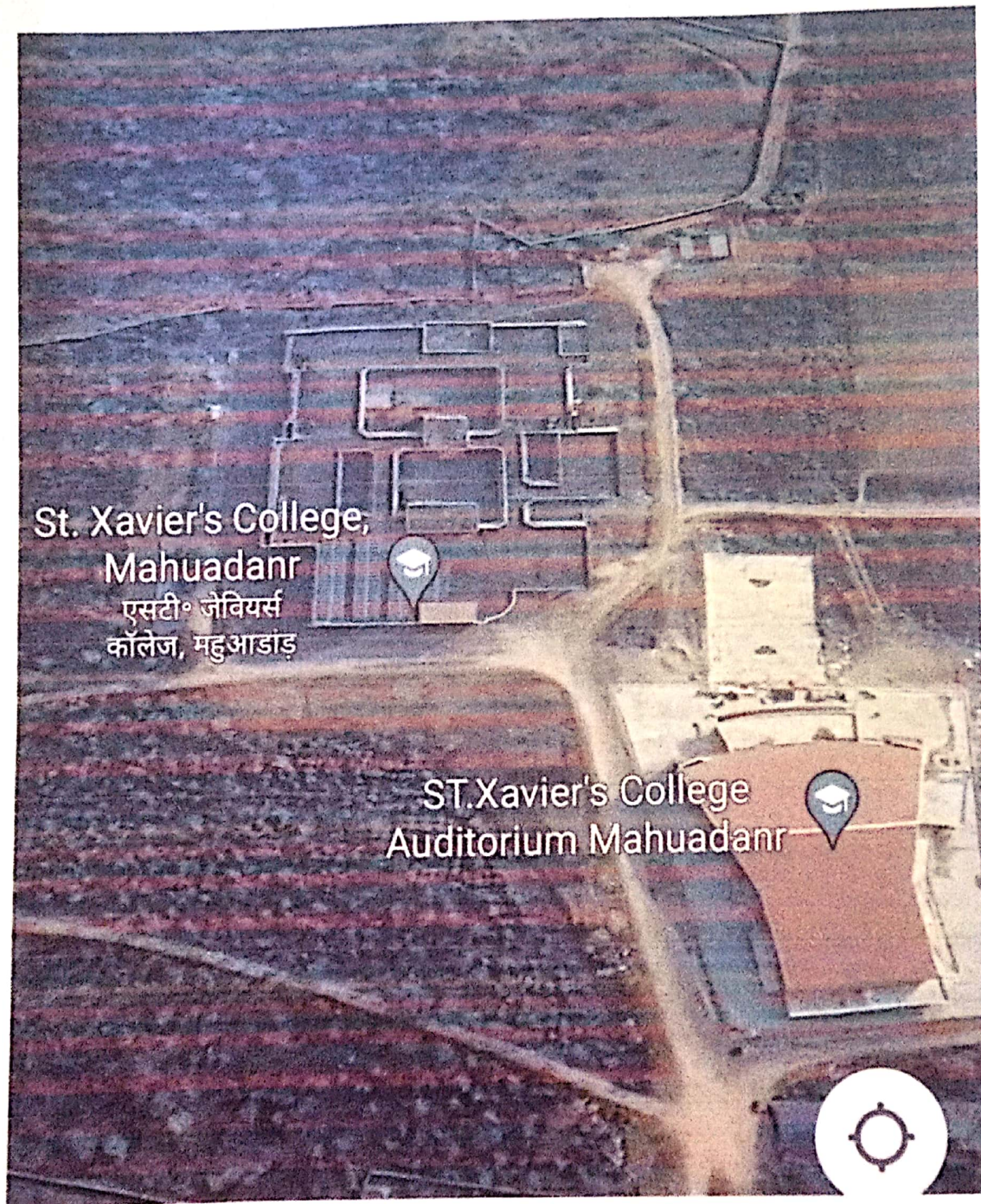
Dr. Rajeev Ranjan Shrivastava	Assistant Professor Department of Geography St. Xavier's College, Ranchi
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Internal Audit Members

Dr.M.K Jose	Principal St.Xavier's College ,Mahuadanr
Miss. Shephali Prakash	Assistant Professor Department of Geography St.Xavier's College Mahuadanr
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Miss.Rozy Sushmita Tirkey	Assistant Professor Department of Geography St.Xavier's College Mahuadanr

Location of the Facility

The educational Institute is located at 49C+HGF, Rajdanda, Mahuadanr – 822119, Jharkhand in latitude 23.4189 N and Longitude 84.1213 E. Location on map is depicted below.



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DISCLAIMER

Environment Audit Team has prepared this report based on primary data collected from the different areas of the college. All reasonable care has been taken in its preparation; details contained in this report have been compiled in good faith based on information gathered.



Principal
St. Xavier's College
Mahuadanr

Principal
St. Xavier's College
Mahuadanr

Prepared by:
Environment Audit Team SXCM

Environment Audit

Environmental audit or green audit is a general term that reflects various kinds of evaluations intended to identify environmental compliance and management system, implementation gaps, along with related **corrective actions**. It aims to analyze environmental practices within and outside of the concerned sites, which will have an impact on the eco-friendly ambience. It is a useful tool to determine how and where the most energy or water resources are being used; and can then considerations be given on how to implement changes and make savings. It can also be used to determine the type and volume of waste, which can be used for a recycling project or to improve waste minimization plan. It can create health consciousness and promote environmental awareness, values, and ethics. It imparts a better understanding of green impact on campus to staff and students.

Need for Environmental Audit – The institutional self-enquiry is a natural and necessary outgrowth of a quality educational institution. Thus, it is imperative that SXCM evaluates its own contributions toward a sustainable future. As environmental sustainability is becoming an increasingly important issue for the nation, the role of higher educational institutions in relation to environmental sustainability is more prevalent. The rapid urbanization and economic development at local, regional, and global level has led to several environmental and ecological crises. On this background, it becomes imperative to adopt the system of the “Green Campus” for the Institutes which will lead to sustainable development and at the same time reduces a sizable amount of atmospheric carbon dioxide from the environment.

The National Assessment and Accreditation Council, New Delhi (NAAC) has made it mandatory that all Higher Educational Institutions should submit an annual Green Audit Report. Moreover, it is part of Corporate Social Responsibility of the Higher Educational Institutions to ensure that they contribute

Environmental Policy

St. Xavier's College, Mahuadanr, is firmly committed to the principles of sustainability. The College recognizes that its activities impact upon the environment and on the wider community through its routine internal operations, its infrastructural development, and its influence on the wider community.

- The College acknowledges a responsibility for, and a commitment to the protection of the environment at all levels.
- The college will endeavor to do more than the relevant environmental legislation and is committed to environmental performance improvement.

The college will:

- Seek to integrate environmental issues into all relevant aspects of the University's teaching and research activities.
- In conjunction with local, national, and other agencies promote and raise awareness of good environmental management policies and practices to staff students and other stakeholders across the University.
- Promote a purchasing policy which favors, wherever possible, those products and services which cause the least harm to the environment.
- Seek to reduce the consumption of primary raw materials (including fossil fuels, water and energy) and promote energy efficient, low carbon measures, and recyclable and renewable components.
- Implement sound, long term waste management strategies to reduce overall waste production and increase the recycled component of the waste stream.
- Encourage and facilitate sustainable modes of transport to and fro.
- Maintain the grounds and buildings of the college in an environmentally sensitive way, seeking to protect and enhance natural habitats and biodiversity.

OBJECTIVES AND SCOPE

The broad aims/benefits of the environmental-auditing system would be

1. To examine the current practices, which can impact on environment such as of resource utilization, waste management, vermin compost, water harvesting etc.
2. To establish baseline data or compare the past trends and predict future impacts
3. To identify and analyze significant environmental issues.
4. To recommend possible measures for improvement and highlight best practices
5. Setup goal, vision, and mission for environment practices in campus.
6. Establish and implement Environment Awareness programmes in various departments.
7. Continuous assessment for betterment in performance in environment.
8. Developing an environmental ethic and value systems in young people
9. Development of ownership, personal and social responsibility for the College campus and its environment.

BENEFITS OF ENVIRONMENT AUDIT TO EDUCATIONAL INSTITUTIONS

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

1. It would help to protect the environment in and around the campus.
2. Recognize the cost saving methods through waste minimization and energy conservation.
3. Empower the organization to frame a better environmental performance.
4. It portrays good image of institution through its clean and green campus.

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

EXECUTIVE SUMMARY

A nation's growth starts from its educational institution, where the ecology is thought as a prime factor of development associated with environment. A clean and healthy environment aids effective learning and provides a conducive learning environment. Educational institutions, now-a – days, are becoming more sensitive to environmental factors and more concepts are being introduced to make them eco-friendly. To preserve the environment within the campus, various viewpoints are applied by several educational institutes to solve their environmental problems such as promotion of the energy savings by installing more efficient electronics and electrical equipment, proper segregation and recycle of waste, water use reduction, water harvesting and conservation etc. The activities pursued by the college can also create a variety of adverse environmental impacts.

The purpose of this Environment Audit was to ensure that the practices that are followed by the institution are in compliance in accordance to NAAC. This audit was initiated by us to inspect the environmental practices and environmental awareness and management of the environment inside the campus. Its emphases on water usage, waste recycling, correct waste segregation into dry, wet, and hazardous waste, the energy consumption from solar panel, maintains water quality that is safe to consume on the campus. The promotional activities done by the facilities including the tree plantation and other relevant works related to in the field of sustainability was done.

SXCM has already done internal green assessment and annual reports published for continual improvements; Audit criterion is environmental cognizance, waste minimization and management, biodiversity conservation, water conservation, energy conservation and environmental legislative compliance by the campus. The audit report contains observations and recommendations for improvement of environmental consciousness

CONCEPT

The term 'Environmental audit' means differently to different people. Terms like 'assessment', 'survey' and 'review' are also used to describe similar activities. Furthermore, some organizations/institutions believe that an 'environmental audit' addresses only environmental matters, whereas others use the term to mean an audit of health, safety, and environment-related matters. Although there is no universal definition of Environmental Audit, many leading companies/institutions follow the basic philosophy and approach summarized by the broad definition adopted by the International Chambers of Commerce (ICC) in its publication of Environmental Auditing (1989). Environmental Audit is systematic, documented, periodic and objectives evaluation of how well environmental organization, management and equipment are performing, with the aim of helping safeguard from the harmful environment.

The ICC defines Environmental auditing as:

"A management tool comprising a systematic, documented, periodic and objective evaluation of how well environmental organization, management and equipment are performing with the aim of safe guarding the environment and natural resources in its operations/projects."

The outcome of Environmental Audit should be established with concrete evidence that the measures undertaken and facilities in the institution cater to the safeguarding of the Environment.

INTRODUCTION

St. Xavier's college, Mahuadanr aims at producing awareness about the environment consciousness. The institute takes initiatives to organize different events of green practices to percolate the knowledge amongst students, teachers, and non-teaching staff. This green message being transferred along with its practical dimensions among the families, societies and thereby to the stakeholders forms a chain and network to spread the message at large. College is also aimed at giving solution to the different burning topics related to the environment, its awareness as well as its protection. As the government is taking initiatives to sensitize mass with environment protection, newer concepts are being introduced to make college eco-friendly.

To create and conserve the environment within the campus and to solve the environmental problems such as promotion of the energy savings, energy conservation, water reduction, water

harvesting, solid waste management, and minimizing the use of plastic, etc. is one of the prime objectives of the college.

Environment audit report is one such initiative that has been introduced to make the educational institute environmentally sustainable and active in spreading the education about the same. It is a tool to assess general practices implemented by the organization in terms of the impact on environment. The report also aims to spread the awareness on the adverse practices that are responsible for the degradation of the environment and how strongly the institute is involved in curtailing those practices. It helps in recognizing the need of a college to work around the year for environment sustainability. Thus, Environment audit forms the base line survey to decide for the green policy.

ENVIRONMENT AUDIT: THE NEED OF THE HOUR

Environment auditing is the process of identifying and determining whether institutions practices are eco-friendly and sustainable. Traditionally, we are good and efficient users of natural resources. But over the period excess use of resources like water becomes habitual for everyone especially, in common areas. Now, it is necessary to check whether we are handling resources carefully? Environment audit regulates all such practices and gives an efficient way of natural resource utilization. In the era of climate change and resource depletion it is necessary to verify the processes and convert it in to green and clean one. Environment audit provides an approach for it. It also increases overall consciousness among the people working in institution towards an environment.

GOALS OF ENVIRONMENT AUDIT

Our college has conducted an environment audit with specific goals as:

1. Identification and documentation of environment practices followed by college.
2. Identify strength and weakness in environment practices.
3. Analyse 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 risks.
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.

OVERVIEW OF INSTITUTE

St. Xavier's College, Mahuadanr is primarily a Christian Minority College committed to the educational and spiritual traditions of the Hazaribag Jesuits Education Society (HJES) and to the ideal of liberal education with the development of the tribal population of different religions in view. The ambition of the college is to inspire students to learn, lead and serve in the constantly diversifying and changing world. The college has been granted temporary affiliation from the Ministry of Human Resource Development, Jharkhand Government (cf: 5/S1-12/2011-881 dated 17/08/2011) as well as Nilamber-Pitamber University, Medininagar (NPU/R/1103/2011 dated 02/09/2011).

St. Xavier's College, Mahuadanr located in Latehar district of Jharkhand State and affiliated to the Nilamber Pitamber University, Medininagar, Palamu is the only institution of higher learning in the tribal dominated backward sector of this region. Established in 2011 in 24.46 acres of land under its possession it is located amid the nature's exotic scenic beauty. The college is owned and managed by the Hazaribag Jesuits. The college has is also been certified by ISO 9001:2015.



The most valuable investment any educational institutions can make is "Nurturing Future Leaders". With the continuous rise in expectation of essential leadership standards, St. Xavier's College, Mahuadanr torch bearers have taken a responsibility for this investment to nurture the Next-Gen leaders with a vision to bridge the existing skill gap. With a firm step forward to attain an academic excellence, several Centers of Excellence, computer labs, and Skill oriented programmes have been set up at St. Xavier's College in association with the skilled Professors and other Local technicians.

The College believes that its primary stakeholders are the students. All aspects of education focus on the core values of contributing to national development while fostering global competencies

among students.

Though the College is situated in a thickly populated Tribal belt, it admits students from all social milieus and empowers them through intensive mentoring and counseling to face the challenges of life and become responsible and sensitized citizens of the country.



St.Xavier's College imparts education to Undergraduates in the following Departments:

- ☐ **Department of Botany**
- ☐ **Department of Chemistry**
- ☐ **Department of Commerce**
- ☐ **Department of Economics**
- ☐ **Department of English**
- ☐ **Department of Geography**
- ☐ **Department of Hindi**
- ☐ **Department of History**
- ☐ **Department of Kurukh**

- ☐ Department of Mathematics
- ☐ Department of Physics
- ☐ Department of Political Science
- ☐ Department of Zoology

COURSE OFFERED

I. Bachelor of Arts (Hons.)

1. Economics
2. English
3. Hindi
4. History
5. Political Science
6. Geography
7. Kurukh

II. Bachelor of Commerce (Commerce)

Accounts

III Bachelor of Science (Hons)

1. Botany
2. Chemistry
3. Mathematics
4. Physics

Note: All undergraduate degree courses shall be taught in three years, semester mode.

FUNCTIONS OF ENVIRONMENTAL AUDIT

Environmental Audit - Questionnaire (As per ISO 19011)

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

Institutions:

Waste Minimization and Recycling – Segregation of Dry waste and Wet waste Dustbins. Greening, Clean Air, Energy Conservation, Water Conservation, Environmental Legislative, General Practices

Where is the campus located?

The campus is in Mahuadanr block, Latehar District.

Which of the following are available in your institute?

1	Garden area	Available
2	Play ground	Available
3	Kitchen	Available
4	Toilets	Available
5	Garbage or Waste Store Yard	Available
6	Laboratory	Available
7	Canteen	Available
8	Hostel Facility	Available for Girls
9	Guest House	Available
10	Yoga Practice Hall	Available

Environmental Legislative Compliance

1	Are you aware of any environmental Laws pertaining to different aspects of environmental management?	Yes
2	Does your institute have any rules to protect the environment? List possible rules you could include	We have banned single use plastic. Their environment policy includes awareness, and environmental conservation efforts through Eco-Club. All undergraduates are studying the Paper of Environmental Sciences, prescribed by UGC.
3	Does Environmental Ambient Air Quality Monitoring conducted by the Institute?	NA
4	Does Water and Wastewater Quality monitoring conduct by the Institute?	Yes
5	Does stack monitoring of DG sets conducted by the Institute?	No
6	Is any warning notice, letter issued by State Government bodies?	No
7	Does any Hazardous waste generate by the Institute?	No
8	Does any Bio medical waste generate by the Institute? If yes explain its category and disposal method	No

General

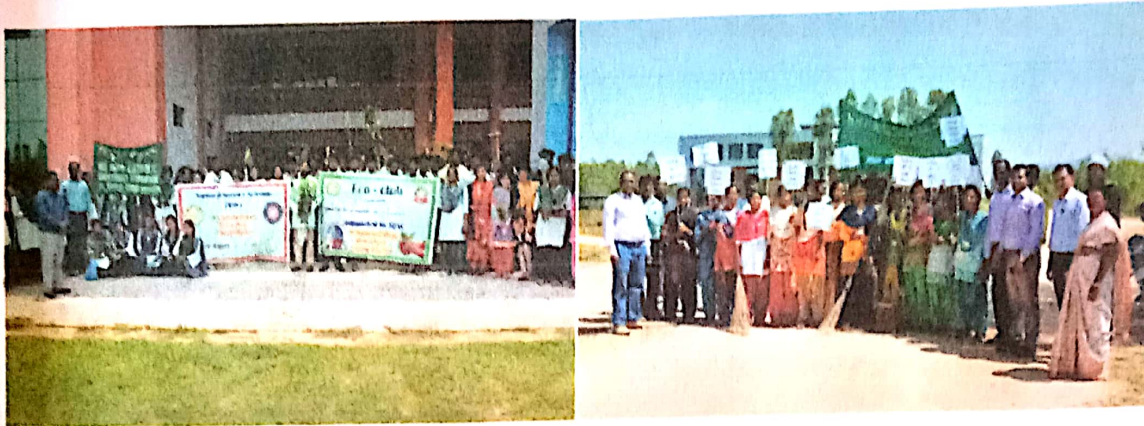
1	Are you aware of any environmental Laws pertaining to different aspects of environmental management?	Yes
2	Does your institute have any rules to protect the environment? List possible rules you could include.	Yes, there is some rules like banned single use plastic. The Environmental Policy includes awareness and environmental conservation.
3	Does housekeeping schedule in your campus?	Yes, Swatch Bharat movement
4	Are students and faculties aware of environmental cleanliness ways? If Yes Explain	Yes, periodically pollution reduction, plantation, energy conservation awareness campaigns carried out by the institute.
5	Does Important Days Like World	Yes

	Environment Day, Earth Day, and Ozone Day etc. eminent in Campus?	
6	Does Institute participate in National and Local Environmental Protection Movement?	Yes, Swatch Bharat Abhiyan by students at campus. All Environmental Awareness Program.
7	Does Institute have any Recognition/certification for environment friendliness?	Yes – Green Champion District Award
8	Does Institute use renewable energy?	Yes
9	Does Institution conduct a Green/environmental audit of its campus?	Yes
10	Has the institution been audited / accredited by any other agency such as NABL, NABET, TQPM, NAAC etc.?	Yes, NAAC grade B

Best Practices/Initiatives for Environment

1	Renewable Energy	Solar energy converters installed in the campus as alternate source of energy. The production capacity of these is 2100 KWH per year
2	Biodiversity Conservation Flora and fauna conservation	We have lush green campus which provides habitat to various species.
3	Tree Plantation Drives More than two Drives Annually as well as Every Guest is honoured by Tree Plantation at Campus.	Yes, periodically the plantation drives by students and staff of campus.
4	Ground Water Recharge 2 units of Rain Water Harvesting System.	Yes, 100% recharge of the rain water
5	Pollution Reduction Personal Vehicles (Students) not allowed at campus	Reduction in Air Pollution through vehicular emission.
6	E Waste Management Collection of e-waste	E waste is sent to the authorized recyclers for adequate disposal
7	Solid Waste Management Lifting of garbage from campus on alternate day by local authority	Yes, different mechanisms for proper disposal and recycling of e-waste, plastic waste, biodegradable waste and MSW
8	Adoption of Village/society	Yes
9	Water Conservation	Yes, water saving push taps fitted in the drinking water zone and the toilets to avoid the wastage

THE FUNCTIONS OF ENVIRONMENTAL AUDIT ARE



To provide the necessary information on how well the management systems are performing to keep pace with sustainable level of development.

- To provide performance evaluation of working facilities of institution and its effect in the surrounding.
- To improve an organization's compliance with environmental legislation and regulations such as air emission standards, effluent standards, and waste management standard.
- To prevent damage and the tendency for environmental damage
- To improve resource use through reduction in material use, to minimize wastes and to identify recycling opportunities.
- To provide an up-to-date environmental data to the inspecting authority.
- To improve production safety and health.
- To identify needs, strength, and weakness.
- To review the implementation of policies.
- To assess environmental performance.

AIMS OF THE STUDY

The main aim of environmental audit at the grass root level is to succeed in making individuals and communities understand the complex nature of environment and work in this area to make it better; Further, to acquire knowledge, values, attitudes, and practical skills to participate in responsible and effective way in anticipating and solving social problems and in the management of the quality of the

environment. Its aim is to identify liabilities and to review management system. It helps to identify needs, strengths, and weaknesses.

The main objectives of carrying environmental audit are:



Awareness: To help the social groups and individuals to acquire knowledge of pollution and environmental degradation in order to improve environmental standards. It provides information to the public. It promotes environmental awareness. The awareness also develops the personal and social responsibility for the campus and its environment among people.

Knowledge: To help social groups and individuals to acquire knowledge of environment beyond the immediate environment including distant environment. The knowledge and better understanding of environment develop an environmental ethics and value system in young people.

Attitude: To help social group and individuals to acquire a set of values for environmental protection. It results in reduction in resource use and reduces waste.

Skills and Capacity Building: To help social groups and individuals to develop skills required for making discrimination in form, shape, sound, touch habits and habitats. Further, to develop ability to draw unbiased inferences and conclusions.

Participation: To provide social groups and individuals with an opportunity to be actively involved at all levels in environmental decision making.

Others: Environmental audit is done to safeguard the environment and minimize risk to human health. It determines how well the environmental management information system and equipment are performing. It helps in verifying compliance with the relevant national, local, or other laws and regulations. It contributes in minimizing human exposure to risks from environmental, health and safety

problems.

THE AREAS PRACTICED BY THE COLLEGE

Waste Minimization:

The college started Waste Minimization programme in different areas of its functioning. The one sided printed papers are used for internal use of the office .

Plastic free green campus is maintained. Different wastes bins are kept in the college campus to bring awareness among the students to differentiate and drop the waste materials. The degradable, non-degradable wastes are differentiated. Wastes are put in a vermin compost tank to form manure for the plants. Hazardous materials and wastes generated on campus range from soiled and oily rags to toxic. Laboratory wastes are handled by a trained faculty and staff

The Eco-club of the college takes initiative in the reuse of the waste water and to save water. Institution has also taken initiative to collect the waste water of the canteen into an open tank which can further be used for plants. E-waste such as old computers and its peripherals are not thrown into the Campus. On the contrary we donate the same to the nearby schools or exchange the old ones with new system.

Greening:



Trees are the foremost source for producing oxygen in the environment and they also help to reduce the level of CO₂. As the world is facing the problem of global warming, it is the need of the hour to reduce the temperature by means of planting more trees. Our college organizes various tree plantation programs during the month of July and August in the college campus and surrounding villages through Eco- club and other committees of the college. The plantation program includes planting of various indigenous species of ornamental and medicinal plants.

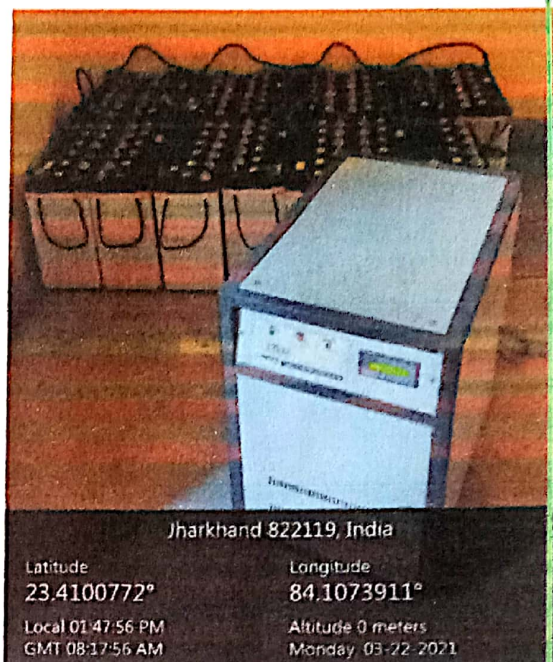
Energy Conservation:

Energy conservation refers to efforts made to reduce energy consumption. Energy conservation can be achieved through increased efficient energy use, in conjunction with decreased energy consumption and reduced consumption from conventional energy sources. Because energy conservation can result in increased financial capital, environmental quality, national security, and human comfort. In this regard, the College also is taking new initiative for power saving. The classrooms have been furnished with many windows. The class hours have been set from 9 am to 2.30 pm, in view of avoiding excessive use of lights, fans etc. Total energy consumption is calculated to be 20,500 KWH per year. All the departments and common facility centers are equipped with

CFL lamps. Approximately 338 CFLs (Capacity) have been counted during survey. Besides this, solar energy converters are also installed in the campus as alternate source of energy. The production capacity of these is 2100 KWH per year. Equipment's like Computers are used with power saving mode. The Campus administration also runs switch-off drill on regular basis. In science departments like Physics, Chemistry, Mathematics, Botany and Zoology electricity is shut down after class hours, which is one of the important green practices for energy conservation.

Rainwater Harvesting and Water Conservation Method

A precious resource, and although it flows freely from the tap, it is not infinite. Green campus lawns, clean cafeteria plates, and even air-conditioned dorms don't happen without using lots of water. As major institution, colleges are serious users of water and although some do not yet recognize the need to conserve water, many of them do. In fact, college campuses are home to some of the most innovative ideas for water conservation, implementing water management technology and smart conservation policies and more.



The College has taken several good initiatives to attain these objectives. We have a water reservoir (pond) within the college campus. The total area covered by the water reservoir is around 35 decimals. There are only a few concrete zones, thus it means that college campus is naturally permitting the rainwater to absorb and thus maintains the underground water level. During the survey, no 'loss of water has been observed, either by leakage, or by outflow of water from overhead tanks. The data collected from all the departments is examined and verified. On an average the total use of water in the college is 8000 Liters per day. Also, a rainwater-harvesting unit is under construction for storing rainwater and use. This is one of the extraordinary steps taken towards water conserving. The rainwater harvesting strengthens the water supply to the campus lakes as well as enhance water level of wells in the campus through ground water recharging process. Two number of Modern rain water harvesting system are available. Water Pond is used for storage of water.



General Practices:

Environmental Awareness Programs

The local people are given awareness about importance of keeping the environment clean and to preserve nature by preventing deforestation. Thus, an eco-friendly environment can be created which provides pure air for all.



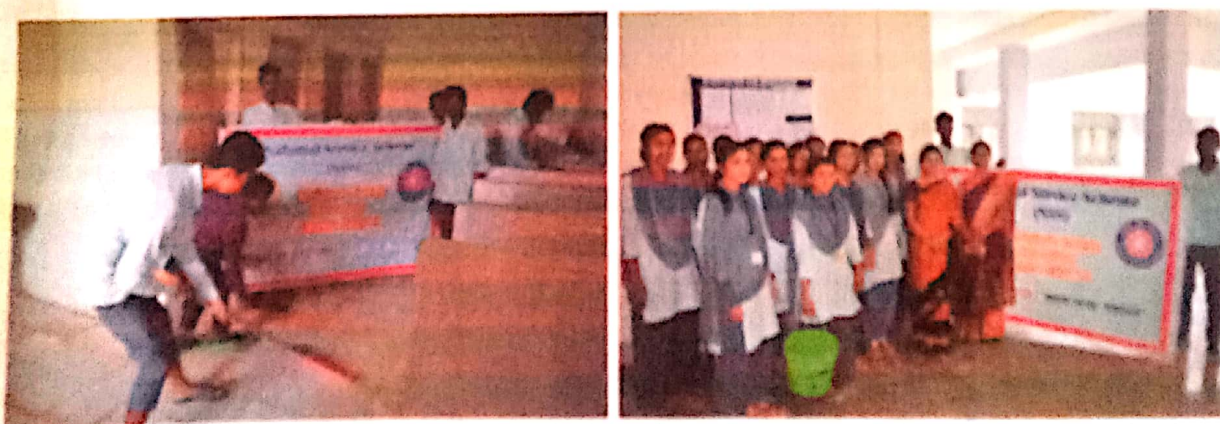
Plantation Program

Various tree plantation programs are being organized throughout the year and World Environment Day (5th June), Van Mahotsav Day (1st July to 7th July) in the college campus and surrounding villages through Eco- club and other committees of the college. The plantation program includes planting of various indigenous species of ornamental and medicinal plants.



Swachh Bharat Abhiyan (S. B. A.)

Cleaning of the campus is done on regular basis through Swachh Bharat Abhiyan with slogan One Step towards Cleanliness. The students enlighten the village people with the message of Swachh Bharat through speeches generating awareness and bringing about a behavior change regarding sanitation practices, cultural programs, remove open defecation practices, management of solid and liquid waste management, Rallies & cleaning of common places in collaboration with the villagers.



WORLD WATER DAY

“IMPORTANCE OF WATER RESEOURCES AND ITS CONSERVATION AND MANAGEMENT”

22nd March, 2023

In collaboration with Department of Geography, Eco Club of St. Xavier's College, Mahuadant, was conducted a program on World Water Day on the topic entitled **“Importance of Water Resources and its conservation and management”** on 22nd March 2023 (Wednesday) at 01:00 pm. The main objective of this event was to aware students about the importance of water resources and enhanced the knowledge of the students about the conservation and management of water. The availability of fresh water resources is very scanty. We should use the water in our daily life optimum, judicious, and wisely.

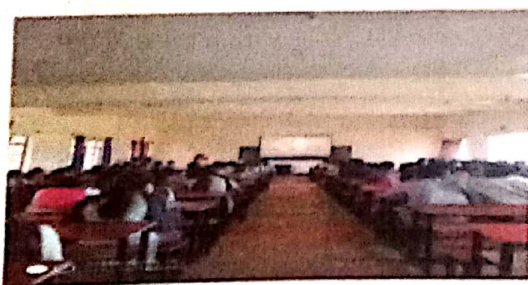


OZONE DAY CELEBRATION

“OZONE FOR LIFE”

SXCM, CH
16th September, 2022

Eco Club in collaboration with the Department of Geography, St. Xavier's College, Mahuadant, has conducted Ozone Day on the topic entitled **“Ozone Day Celebration with the Sloan Ozone for Life”** on 16th September 2022 (Friday) at 01:30 pm. Several commonly used chemicals have been found to be extremely damaging to the ozone layer. The main objective of this awareness programme was to aware the students to protect the ozone layer by taking measures to control total global production and consumption of substances that deplete it.



RIVER CLEANLINESS DRIVE

Rampur River, Mahuadanr

10th November 2022

On 10th of November, Eco Club of St. Xavier's College Mahuadanr visited Rampur River for cleanup drive under the guidance of Ass. Prof. Shephali Prakash and Asst. Prof. Dr Hariful Hoque. The main objective of this drive was not only to reduce pollution but by sorting neighbourhood trash and recycling as much as possible – can help to teach residents about recycling and about activities that will reduce the neighbourhood's carbon print.

Students collected the plastics in one place and then burned them. Students also together with the help of each other have cleaned the place. Students with faculty staffs went to picnic spot. People whoever have went there before have left the place dirty with plastics and other unwanted thing. Students learned a lesson to clean water to stay physically healthy and prevent disease cause lack of adequate water, sanitation, and hygiene. They learned by protecting and restoring rivers, they can play a critical role in bending the biodiversity curve. Rivers are precious sources of fresh drinking water for people across the world.



EARTH DAY

“BEAUTIFUL EARTH AS A HABITAT FOR ALL”
SXCM, CH,

In collaboration with the department of Geography, St. Xavier's College, Mahuadanr, Eco Club was conducted a program on the topic entitled **“Beautiful Earth as a Habitat for All”** on the occasion of earth day. The main objective of this event was to aware about the demonstrate support for environmental protection and raise awareness about the climate change, global warming and disaster management. Assistant Professor Dr. Md Areful Hoque explained that day by day our earth temperature is increasing due to global warming. The percentage of forest cover in the world has also decreasing due to various causes of natural and anthropogenic activities. In every city of the world now facing of air pollution, water pollution, noise pollution, scarcity of clean water etc. By taking part in earth day activities, students can make positive impact on the environment and contribute towards a more sustainable future.



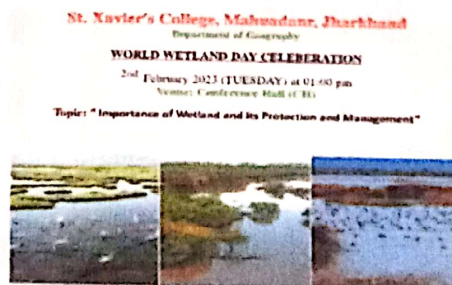
WORLD WETLAND DAY

"IMPORTANCE OF WETLANDS AND ITS PROTECTION AND MANAGEMENT"

SXCM, CH AND RAJDANDA VILLAGE, MAHUADANR

2nd February, 2023

Eco Club of St. Xavier's College, Mahuadanr, conducted World Wetland Day on the topic entitled **"Importance of Wetlands and its protection and management"** on 2nd February 2023 (Tuesday). Nearly 90% of the world's wetland have been degraded since the 1700s, and we are losing wetland three times faster than forests. It is urgent that we raise national and global awareness about wetland in order to reverse their rapid loss and encourage actions to conserve and restore them. At the end of this event all the students along with faculty members went for cleaning of Rajdanda seasonal river and various wetlands of that regions.



ENVIRONMENTAL AWARENESS PROGRAMME

Theme- Ecosystem Restoration

Date-18/1/2023

The Department of Geography had organised an environmental awareness programme in Adarshnagar village. Assistant Professor Keerti Minj described the importance of preservation of seeds. It was advised that seeds of trees such as mango, guava, papaya etc. should not be thrown away anywhere, they should be planted or spread in farm areas so that new plants will grow. It will help in conservation of seeds and be beneficial for other people also. Students had given a message of preserving seeds 'Jahan hariyali, wahan khushali'. Through this strong slogan, everyone appreciated those who were present there. It is extremely important that everyone tries to be more environmentally aware in order to promote the sustainable development of our planet.

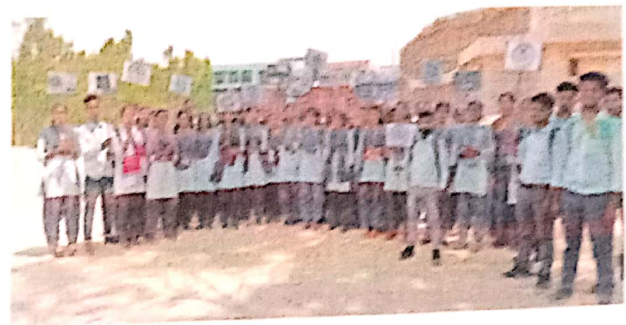


Plastic Free Awareness Campaign

On 7th February 2023

Department of Geography successfully conducted plastic free awareness campaign in the campus. The main objective of this awareness program was to create a healthy, clean, pollution-free and sustainable campus. UGC has requested colleges to reduce the use of Plastic on Campus. This awareness programme **impactfully** done in order to avoid single use of plastics. This campaign was conducted under supervision of Asst.Prof Keerti Minj and Asst Prof- Shephali Prakash. Students took it upon themselves to bring about a revolution and make the campus plastic free zone by collecting plastic and waste and cleaning the campus.

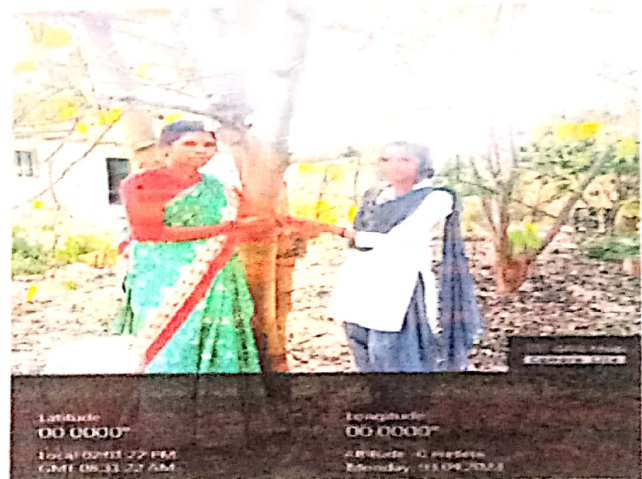




Students "Tie Rakhi" to Trees, promoting 'Save Trees, Save Life'

Gurgotoli, Mahuadanr
3rd April, 2023

Department of Geography, St. Xavier's college Mahuadanr has successfully completed Tie Rakhi to Trees at Gurgotoli village of Mahuadanar on 3rd April, Monday 2023, under the Xaverian Week programme. The main objective of this event was to raise awareness about the protection of trees from illegal cutting, forest fires and save the environment. A near about 15 students has participated in event. The participants' students tied sacred threads to the plants having heritage, medicinal value and aesthetic value. They included Tulsi, Mahua, Mango, Neem, Camphor, Peepal, Banyan, Seesham, Mahogany and many more. By this activity students expressed their affection and harmony towards nature, tool pledge to protect and conserve the nature and its resources for cleaner, greener and healthier prospect.



CONCLUSION AND RECOMMENDATIONS:

Environmental audit involved extensive consultation with all the campus team, interactions with key personnel on wide range of issues related to Environmental aspects. St. Xavier's College has Environmental Committee for sustainable use of resources. Overall, 60% of college campus is for landscaping. The audit has identified several observations for making the campus premise more environmentally friendly. The recommendations are also mentioned with observations for campus team to initiate actions. The audit team opines that the overall site is maintained well from environmental perspective. There are no major observations but few things are important to initiate urgently are waste, increase in the number of rainwater harvesting tanks; and periodic inspection of building's housekeeping and environment policy. Further, rainwater pits can be prepared at appropriate places identified and restoration activities may be initiated to sustain the health of ponds and wetlands in and around the campus.

Recommendations

- Formation of Environment Policy and communicated to all faculties and other staff members.
- Increase in Environmental promotional activities for spreading awareness at campus.
- Display of environment awareness posters should be there in the prominent areas of campus.
- Specific waste management plans should be adopted to manage solid waste in the campus, with the assistance of State Swachta Mission and use of plastic carry bags, disposal cup, plate and flex boards should be banned inside the college.
- For managing organic wastes, biogas plants may be commissioned at the hostels, canteens, and staff quarters. The wastes generated can be used for promoting organic farming activities within the campus and the products can be used in hostels and canteens, with a plan to ensure the availability of organic food in the canteen and hostels for future.
- The public lights within the campus may be run with solar panels

Action Taken Report

Formation and Communication of Environment Policy:

Established a comprehensive Environment Policy outlining the college's commitment to environmental sustainability and responsibility.

Communicated the Environment Policy to all faculties and staff members through workshops, meetings, and electronic communication channels to ensure understanding and adherence.

Increase in Environmental Promotional Activities:

Expanded environmental promotional activities on campus to raise awareness and encourage sustainable practices among students, faculty, and staff.

Organized workshops, seminars, and awareness campaigns focusing on various environmental issues, such as waste management, water conservation, and biodiversity preservation.

Display of Environment Awareness Posters:

Installed environment awareness posters in prominent areas of the campus, including corridors, common areas, and student lounges, to educate and inspire individuals to adopt environmentally friendly behaviors.

Rotated posters periodically to maintain interest and visibility, ensuring continuous reinforcement of environmental messages.

Adoption of Specific Waste Management Plans:

Collaborated with State Swachta Mission to develop and implement specific waste management plans tailored to the campus's needs.

Implemented measures to ban the use of plastic carry bags, disposable cups, plates, and flex boards within the college premises, promoting the use of eco-friendly alternatives.

Utilization of Solar Panels for Public Lighting:

Installed solar panels to power public lights within the campus, reducing reliance on conventional energy sources and lowering carbon emissions.

Conducted regular maintenance and monitoring of solar panel systems to ensure optimal performance and maximize energy efficiency.

Name and Signature of the Environment Audit Team

External Audit Members

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St. Xavier's College, Ranchi

Rajiv R. Shrivastava

Dr. Md Mainul Sk
Assistant Professor
Department of Geography
Rajendra University, Bolangir, Odisha

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St. Xavier's College, Mahuadanr

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Environment Audit 2022-2023



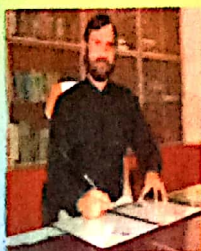
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Environment Audit

2021-22



St. Xavier's College, Mahuadanr

(Affiliated to Nilamber-Pitamber University, Medininagar)

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Environment Audit



About the Project

The working details of the assignment are as follows

Project: Environment Audit

Segment: Educational Building

Site: Mahuadanr

Duration: 3rd April 2022 - 15th April 2022

External Audit Members

Dr. Rajeev Ranjan Shrivastava	Assistant Professor Department of Geography St. Xavier's College, Ranchi.
Dr. Md Mainul SK	Assistant Professor Department of Geography Rajendra University, Bolangir, Odisha

Internal Audit Members

Dr.M.K Jose	Principal St.Xavier's College ,Mahuadanr
Mrs. Keerti Minj	Assistant Professor Department of Geography St.Xavier's College Mahuadanr
Miss. Shephali Prakash	Assistant Professor Department of Geography St.Xavier's College Mahuadanr
Miss. Enid Captain Kandulnia	Assistant Professor Department of Geography St.Xavier's College Mahuadanr

Location of the facility

The educational Institute is located at 49C+HGF, Rajdanda, Mahuadanr – 822119, Jharkhand in latitude 23.4189 N and Longitude 84.1213 E. Location on map is depicted below.



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DISCLAIMER

Environment audit team has prepared this report based on primary data collection from the different areas of the college. All reasonable care has been taken in this preparation; details contained in this report have been complied good faith based on information gathered.



Principal
St. Xavier's College
Mahuadanr

Principal
St. Xavier's College
Mahuadanr

Prepared by:
Environment Audit Team SXCM

Environment Audit

Environmental audit or green audit is a general term that reflects various kinds of evaluations intended to identify environmental compliance and management system, implementation gaps, along with related corrective actions. It aims to analyze environmental practices within and outside of the concerned sites, which will have an impact on the eco-friendly ambience. It is a useful tool to determine how and where the most energy or water resources are being used; and can then considerations be given on how to implement changes and make savings. It can also be used to determine the type and volume of waste, which can be used for a recycling project or to improve waste minimization plan. It can create health consciousness and promote environmental awareness, values, and ethics. It imparts a better understanding of green impact on campus to staff and students.

Need for Environmental Audit – The institutional self-enquiry is a natural and necessary outgrowth of a quality educational institution. Thus, it is imperative that SXCM evaluates its own contributions toward a sustainable future. As environmental sustainability is becoming an increasingly important issue for the nation, the role of higher educational institutions in relation to environmental sustainability is more prevalent. The rapid urbanization and economic development at local, regional, and global level has led to several environmental and ecological crises. On this background, it becomes imperative to adopt the system of the “Green Campus” for the Institutes which will lead to sustainable development and at the same time reduces a sizable amount of atmospheric carbon dioxide from the environment.

The National Assessment and Accreditation Council, New Delhi (NAAC) has made it mandatory that all Higher Educational Institutions should submit an annual Green Audit Report. Moreover, it is part of Corporate Social Responsibility of the Higher Educational Institutions to ensure that they contribute towards the reduction of global warming through Carbon Footprint reduction measures.

Environmental Policy

St. Xavier's College, Mahuadanr, is firmly committed to the principles of sustainability. The College recognizes that its activities impact upon the environment and on the wider community through its routine internal operations, its infrastructural development, and its influence on the wider community.

- The College acknowledges a responsibility for, and a commitment to the protection of the environment at all levels.
- The college will endeavor to do more than the relevant environmental legislation and is committed to environmental performance improvement.

The college will:

- Seek to integrate environmental issues into all relevant aspects of the University's teaching and research activities.
- In conjunction with local, national, and other agencies promote and raise awareness of good environmental management policies and practices to staff students and other stakeholders across the University.
- Promote a purchasing policy which favors, wherever possible, those products and services which cause the least harm to the environment.
- Seek to reduce the consumption of primary raw materials (including fossil fuels, water and energy) and promote energy efficient, low carbon measures, and recyclable and renewable components.
- Implement sound, long term waste management strategies to reduce overall waste production and increase the recycled component of the waste stream.
- Encourage and facilitate sustainable modes of transport to and from.
- Maintain the grounds and buildings of the college in an environmentally sensitive way, seeking to protect and enhance natural habitats and biodiversity.

OBJECTIVES

The broad aims/benefits of the environmental-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 education and 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 values in young people.

SCOPE

- Material management savings and alternatives.
- Energy management and savings.
- Water management and economy of use.
- Waste generation, management, and disposal.

EXECUTIVE SUMMARY

SXCM has already done internal green assessment and annual reports published for continual improvements; Audit criterion is environmental cognizance, waste minimization and management, biodiversity conservation, water conservation, energy conservation and environmental legislative compliance by the campus. The audit report contains observations and recommendations for improvement of environmental consciousness.

The purpose of this Environment Audit was to ensure that the practices that are followed by the institution are in compliances in accordance to NAAC. This audit was initiated by us to inspect the environmental practices and environmental awareness and management of the environment inside the campus. Its emphases on water usage, waste recycling, correct waste segregation into dry, wet, and hazardous waste, the energy consumption from solar panel, maintains water quality that is safe to consume on the campus. The promotional activities done by the facilities including the tree plantation and other relevant works related to in the field of sustainability was done.

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. Audit criterion as follows:

- Environmental cognizance
- Waste minimization and management
- Biodiversity conservation
- Water conservation
- Energy conservation and
- Environmental legislative compliance by the campus.

CONCEPT

Environmental auditing is a management tool designed to provide information on environmental performance to the right people at the right time. This audit encompasses all kinds of activities related to environmental measures of an organisation.

An environmental Audit provides an assessment of the environmental performance of a business or organization. The audit reveals details about the activities of a company and its compliance with environmental regulations. Audit information is presented to the management team and employees.

An environmental audit is a systematic examination to assess a company's environmental responsibility. It aims to identify environmental compliance, verify environmental responsibility implementation gaps whether they meet stated objectives, along with related corrective actions.

The audit examines the potential hazards or risks posed by the company. Areas examined may include company environmental policies and procedures, energy use practices, recycling, waste, conservation, and pollution. Then, the company can use the results to determine what changes need to be made for compliance.

An environmental audit evaluates and quantifies the environmental performance. It identifies compliance problems or management system implementation issues. Broad definition adopted by the International Chambers of Commerce (ICC) in its publication of Environmental Auditing (1989).

The ICC defines Environmental auditing as:

"A management tool comprising a systematic, documented, periodic and objective evaluation of how well environmental organization, management and equipment are performing with the aim of safeguarding the environment and natural resources in its operations/projects."

The outcome of Environmental Audit should be established with concrete evidence that the measures undertaken and facilities in the institution cater to the safeguarding of the Environment.

INTRODUCTION

Environmental auditing is an attempt to provide information on the environmental performance of a college, and thus include environmental issues in the decision-making process.

An environmental audit assesses the nature and extent of harm to the environment caused by the activities, wastes or noise from a particular college. It must be independent, objective, credible and transparent in order to be successful. Audits should be regular and ongoing.

A Nation's growth starts from its educational institutions, where the ecology is thought as a prime factor of development associated with environment. Educational institutions now a days are becoming more sensitive to environmental factors and more concepts are being introduced to make them eco-friendly. To preserve the environment within the campus, various viewpoints are applied by the several educational institutes to solve their environmental problems such as promotion of the energy savings, recycle of waste, water reduction, water harvesting etc. The activities pursued by colleges can also create a variety of adverse environmental impacts.

Environmental auditing is a process whereby an organization's environmental performance is tested against its environmental policies and objectives. As a part of such practice, internal environmental audit is conducted to evaluate the actual scenario at the campus. It is a useful tool for a college to determine how and where they are using the most energy or water or resources the college can then consider how to implement change and make savings. It can also be used to determine the type and volume of waste, which can be used for a recycling project or to improve waste minimization plan. It can also create health consciousness and promote environmental awareness, values and ethics. It provides staff and students better understanding of green impact on campus.

Environmental audit promotes financial savings through reduction of resource use. It gives an opportunity for the development of ownership, personal and social responsibility for the students and teachers. Thus, it is imperative that the college evaluate its own contributions toward a sustainable future. As environmental sustainability is becoming an increasingly important issue for the nation, the role of higher educational institutions in relation to environmental sustainability is more prevalent. A clean and healthy environment aids effective learning and provides a conducive learning environment. There are various efforts around the world to address environmental education issues.

ABOUT THE COLLEGE

St. Xavier's College, Mahajan is primarily a Christian Minority College committed to the educational and spiritual traditions of the Hazaribagh Jesuits Education Society (HJES) and to the ideal of liberal education with the development of the tribal population of different religions in view. The ambition of the college is to inspire students to learn, lead and serve in the constantly diversifying and changing world. The college has been granted temporary affiliation from the Ministry of Human Resource Development, Jharkhand Government (cf: 5/S1-12/2011-881 dated 17/08/2011) as well as Nilamber-Pitamber University, Medininagar (NPU/R/1103/2011 dated 02/09/2011).

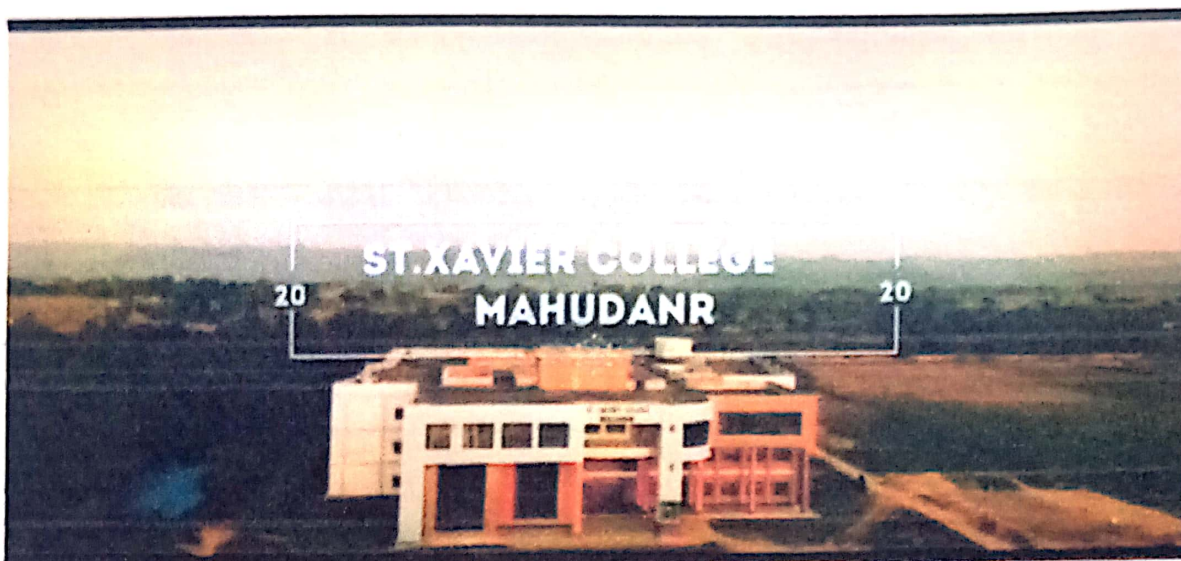
St. Xavier's College, Mahuadanr located in Latehar district of Jharkhand State and affiliated to the Nilamber Pitamber University, Medininagar, Palamau is the only institution of higher learning in the tribal dominated backward sector of this region. Established in 2011 in 24.46 acres of land under its possession it is located amid the nature's exotic scenic beauty. The college is owned and managed by the Hazaribagh Jesuits. The college has also been certified by ISO 9001:2015.

Photo

The most valuable investment any educational institution can make is "Nurturing Future Leaders". With the continuous rise in expectation of essential leadership standards, St. Xavier's College, Mahuadanr torch bearers have taken a responsibility for this investment to nurture the Next-Gen leaders with a vision to bridge the existing skill gap. With a firm step forward to attain an academic excellence, several Centers of Excellence, computer labs and Skill oriented programmes have been set up at St. Xavier's College in association with the skilled Professors and other Local technicians.

The College believes that its primary stakeholders are the students. All aspects of education focus on the core values of contributing to national development while fostering global competence among students. Though the College is situated in a thickly populated Tribal belt, it admits students from all social milieus and empowers them through intensive mentoring and counselling to face the challenges of life and become responsible and sensitized citizens of the country.

AERIAL VIEW OF COLLEGE



LAYOUT OF COLLEGE PLAN

St. Xavier's College imparts education to *Undergraduates* in the following Departments:

- Department of Botany
- Department of Chemistry
- Department of Commerce
- Department of Economics
- Department of English
- Department of Geography
- Department of Hindi
- Department of History
- Department of Kurukh
- Department of Mathematics
- Department of Physics
- Department of Political Science
- Department of Zoology

COURSES OFFERED

I. Bachelor of Arts (Hons.)

1. Economics
2. English
3. Hindi
4. History
5. Political Science
6. Geography
7. Kurukh

II Bachelor of Commerce

1. Accounts

III Bachelor of Science (Hons.)

1. Botany
2. Chemistry
3. Mathematics
4. Physics

Note: All undergraduate degree courses shall be taught in three years, semester mode.

FUNCTIONS OF ENVIRONMENTAL AUDIT

The functions of environmental audit are:

To provide the necessary information on how well the management systems are performing to keep pace with sustainable level of development.

- To provide performance evaluation of working facilities of institution and its effect in the surrounding.
- To improve an organization's compliance with environmental legislation and regulations such as air emission standards, effluent standards and waste management standard.
- To prevent damage and the tendency for environmental damage
- To improve resource use through reduction in material use, to minimize wastes and to identify recycling opportunities.
- To provide an up-to-date environmental data to the inspecting authority.
- To improve production safety and health.
- To identify needs, strength and weakness.
- To review the implementation of policies.
- To assess environmental performance.

AIMS OF THE STUDY

The main aim of environmental audit at the grass root level is to succeed in making individuals and communities understand the complex nature of environment and work in this area to make it better; Further, to acquire knowledge, values, attitudes, and practical skills to participate in responsible and effective way in anticipating and solving social problems and in the management of the quality of the environment. Its aim is to identify liabilities and to review management system. It helps to identify needs, strengths and weaknesses.

The main objectives of carrying environmental audit are:

- **Awareness:** To help the social groups and individuals to acquire knowledge of pollution and environmental degradation in order to improve environmental standards. It provides information to the public. It promotes environmental awareness. The awareness also develops the personal and social responsibility for the campus and its environment among people.



- **Knowledge:** To help social groups and individuals to acquire knowledge of environment beyond the immediate environment including distant environment. The knowledge and better understanding of environment develop an environmental ethics and value systems in young people.



- **Attitude:** To help social group and individuals to acquire a set of values for environmental protection. It results in reduction in resource use and reduce waste.
- **Skills and Capacity Building:** To help social groups and individuals to develop skills required for making discrimination in form, shape, sound, touch habits and habitats. Further, to develop ability to draw unbiased inferences and conclusions.
- **Participation:** To provide social groups and individuals with an opportunity to be actively involved at all levels in environmental decision making.



- **Others:** Environmental audit is done to safeguard the environment and minimize risk to human health. It determines how well the environmental management information system and equipment are performing. It helps in verifying compliance with the relevant national, local or other laws and regulations. It contributes in minimizing human exposure to risks from environmental, health and safety problems.

THE AREAS PRACTICED BY THE COLLEGE

a) Waste Minimization:

The college started Waste Minimization programme in different areas of its functioning. The one sided printed papers are used for internal use of the office .

- Plastic free green campus is maintained. Different wastes bins are kept in the college campus to bring awareness among the students to differentiate and drop the waste materials. Wastes are put in a vermin compost tank to form manure for the plants. Hazardous materials and wastes generated on campus range from soiled and oily rags to toxic. Laboratory wastes are handled by a trained faculty and staff.

The Eco-club of the college takes initiative in the reuse of the waste water and to save water. Institution has also taken initiative to collect the waste water of the canteen into an open tank which can further be used for plants. E-waste such as old computers and its peripherals are not thrown into the Campus. On the contrary we donate the same to the nearby schools or exchange the old ones with new system.

b) Greening:

Trees are the foremost source for producing oxygen in the environment and they also help to reduce the level of CO₂. As the world is facing the problem of global warming, it is the need of the hour to reduce the temperature by means of planting more trees. Our college organizes various tree plantation programs during the month of July and August in the college campus and surrounding villages through Eco- club and other committees of the college. The plantation program includes planting of various indigenous species of ornamental and medicinal plants.



(c) Energy Conservation:

Energy conservation refers to efforts made to reduce energy consumption. Energy conservation can be achieved through increased efficient energy use, in conjunction with decreased energy consumption and reduced consumption from conventional energy sources. Because energy conservation can result in increased financial capital, environmental quality, national security, and human comfort. In this regard, the College also is taking new initiative for power saving. The classrooms have been furnished with a large number of windows. The class hours have been set from 9 am to 2.30 pm, in view of avoiding excessive use of lights, fans etc. Total energy consumption is calculated to be 20,500 KWH per year. All the departments and common facility centers are equipped with CFL lamps. Approximately 338 CFLs (Capacity) have been counted during survey. Besides this, solar energy converters are also installed in the campus as alternate source of energy. The production capacity of these is 2100 KWH per year. Equipment's like Computers are used with power saving mode. The Campus administration also runs switch-off drill on regular basis. In science departments like Physics, Chemistry, Mathematics, Botany and Zoology electricity is shut down after class hours, which is one of the important green practices for energy conservation.



(d) Water Conservation:

A precious resource, and although it flows freely from the tap, it is not infinite. Green campus lawns, clean cafeteria plates, and even air-conditioned dorms don't happen without using lots of water. As major institution, colleges are serious users of water and although some don't yet recognize the need to conserve water, many of them do. In fact, college campuses are home to some of the most innovative ideas for water conservation, implementing water management technology and smart conservation policies and more.

The College has taken several good initiatives to attain these objectives. We have a water reservoir (pond) within the college campus. The total area covered by the water reservoir is around 35 decimals. There are only a few concrete zones, thus it means that college campus is naturally permitting the rainwater to absorb and thus maintains the underground water level. During the survey, no loss of water has been observed, either by leakage, or by outflow of water from overhead tanks. The data collected from all the departments is examined and verified. On an average the total use of water in the college is 8000 Liters per day. Also, a rainwater-harvesting unit is under construction for storing rainwater and use. This is one of the extraordinary steps taken towards water conserving.



(e) General Practices:

Environmental Awareness Programs:

The local people are given awareness about importance of keeping the environment clean and also to preserve nature by preventing deforestation. Thus, an eco-friendly environment can be created which provides pure air for all.



Plantation Program:

Various tree plantation programs are being organized throughout the year in the college campus and surrounding villages through Eco- club and other committees of the college. The plantation program includes planting of various indigenous species of ornamental and medicinal plants.

Swatch Bharat Abhiyan:

Cleaning of the campus is done on regular basis through Swatch Bharat Abhiyan. The students enlighten the village people with the message of Swatch Bharat through speeches, cultural programs, Rallies & cleaning of common places in collaboration with the villagers.

Science Exhibition:

Through science exhibition, the students and the staff have portrayed the importance of protection of environment and wild life. Many demonstrations have presented the richness of the surrounding of the college i.e., greenery, hills, rivers, waterfalls etc. among these displays, hydroelectric production have been common since some waterfalls such as Lodhi-falls have been visited by students very often.



Award
Green Champion Award



10. CONCLUSION

Environmental audit involved extensive consultation with all the campus team, interactions with key personnel on wide range of issues related to Environmental aspects. St. Xavier's College has Environmental Committee for sustainable use of resources. Overall, 60% of college campus is for landscaping. The audit has identified several observations for making the campus premise more environmentally friendly. The recommendations are also mentioned with observations for campus team to initiate actions.

The audit team opines that the overall site is maintained well from environmental perspective. There are no major observations but few things are important to initiate urgently are waste management records by monthly inventory of hazardous waste, rainwater harvesting recharge; and periodic inspection of building's housekeeping and environment policy.

- Environment Policy to be adopted by the College Campus.
- Internal inspection system should be developed for various aspects of environment available in campus.
- Waste Management plan should be prepared for the campus.
- Display of environment awareness poster should be there in the prominent areas of campus.

RECOMMENDATION

- Plantation of additional native species- local species are more sustainable as it supports local eco-system of plants, birds, insects. It also improves the soil texture and improves ground water table too.
- Environmental legislative compliance by the campus- Adopting environmental compliance and audit recommendations is important aspects which should be reviewed every year for continual improvement of campus.
- Student awareness programs for eco-friendly efforts by institute- while adopting environment friendly approach; main stake holders including students and teachers should be made aware holders including students and teachers should be made aware by college by continuous awareness programs throughout the year.
- Exploring possibilities of biogas- Converting as there is some food waste generated, it should be converted into cooking gas and liquid manure can be used for gardening purpose by diluting it with water. This will convert waste into a valuable resource.
- Converting complete lighting into LED lighting- Converting all the lights to LED's reduces straight power consumption by minimum 65%-70%. Also, it has better life and better light intensity.

Action Taken Report

Plantation of Additional Native Species:

Identified suitable areas on campus for the plantation of additional native species, considering factors such as soil conditions, sunlight exposure, and existing ecosystem dynamics.

Conducted a survey to determine the most appropriate native species to plant, taking into account their compatibility with local ecosystems and their ability to enhance biodiversity.

Implemented a systematic planting schedule and engaged students, faculty, and staff in the planting process to foster a sense of ownership and stewardship over the new green spaces.

Student Awareness Programs for Eco-Friendly Efforts:

Organized a series of student awareness programs throughout the year to promote eco-friendly efforts and environmental stewardship.

Collaborated with student organizations, academic departments, and environmental experts to design and deliver engaging and informative awareness sessions, workshops, and events.

Encouraged student participation in eco-friendly initiatives such as waste reduction, recycling, energy conservation, and sustainable transportation.

Converting Complete Lighting into LED Lighting:

Procured and installed LED lights in all applicable areas, prioritizing high-traffic areas and spaces with high energy consumption.

Monitored energy usage and conducted periodic evaluations to measure the impact of the LED lighting conversion on energy efficiency and cost savings.

Name and Signature of the Green Audit Team

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St. Xavier's College, Ranchi.

Rajeev R. Shrivastava

Dr. Md Mainul SK

Assistant Professor

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Rajendra University, Bolangir, Odisha

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St. Xavier's College, Mahuadanr

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Assistant Professor

Department of Geography

St. Xavier's College, Mahuadanr

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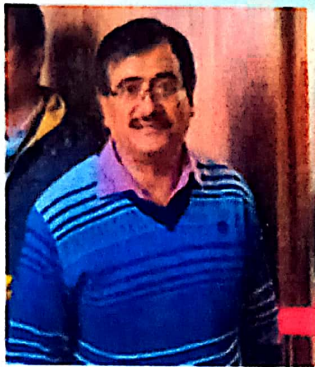
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enid

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Environmental Audit Report 2021-22



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Environment Audit

2020-21



St. Xavier's College, Mahuadanr

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Environment Audit



About The Project

The working details of the assignment are as follows

Project: Environment Audit

Client: St. Xavier's College Mahuadarn

Segment: Educational Building

Site: Mahuadarn

Duration: 3rd April 2021- 15th April 2021

External Audit Numbers

Dr. Rajeev Ranjan Shrivastava	Assistant Professor Department of Geography St. Xavier's College, Ranchi.
Dr. Mohammad Taufique	Assistant Professor Department of Geography Aligarh Muslim University, Uttar Pradesh

Internal Audit Members

Dr.M.K. Jose	Principal St.Xavier's College ,Mahuadarn
Mrs Keerti Minj	Assistant Professor Department of Geography St.Xavier's College Mahuadarn
Miss Archana Jha	Assistant Professor Department of Geography St.Xavier's College Mahuadarn

Location of the Facility

The educational Institute is located at 49C+HGF, Rajdanda, Mahuadanr – 822119, Jharkhand in latitude 23.4189 N and Longitude 84.1213 E. Location on map is depicted below.



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Principal
St. Xavier's College
Mahuadanr

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St. Xavier's College
Mahuadanr

Prepared by:
Environment Audit Team SXCM

Environment Audit

Environmental audit or green audit is a general term that reflects various kinds of evaluations intended to identify environmental compliance and management system, implementation gaps, along with related corrective actions. It aims to analyze environmental practices within and outside of the concerned sites, which will have an impact on the eco-friendly ambience. It is a useful tool to determine how and where the most energy or water resources are being used; and can then considerations be given on how to implement changes and make savings. It can also be used to determine the type and volume of waste, which can be used for a recycling project or to improve waste minimization plan. It can create health consciousness and promote environmental awareness, values, and ethics. It imparts a better understanding of green impact on campus to staff and students.

Need for Environmental Audit – The institutional self-enquiry is a natural and necessary outgrowth of a quality educational institution. Thus, it is imperative that SXCM evaluates its own contributions toward a sustainable future. As environmental sustainability is becoming an increasingly important issue for the nation, the role of higher educational institutions in relation to environmental sustainability is more prevalent. The rapid urbanization and economic development at local, regional, and global level has led to several environmental and ecological crises. On this background, it becomes imperative to adopt the system of the “Green Campus” for the Institutes which will lead to sustainable development and at the same time reduces a sizable amount of atmospheric carbon dioxide from the environment.

The National Assessment and Accreditation Council, New Delhi (NAAC) has made it mandatory that all Higher Educational Institutions should submit an annual Green Audit Report. Moreover, it is part of Corporate Social Responsibility of the Higher Educational Institutions to ensure that they contribute towards the reduction of global warming through Carbon Footprint reduction measures.

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- Promote a purchasing policy which favours, wherever possible, those products and services which cause the least harm to the environment.
- Seek to reduce the consumption of primary raw materials (including fossil fuels, water and energy) and promote energy efficient, low carbon measures, and recyclable and renewable components.
- Implement sound, long term waste management strategies to reduce overall waste production and increase the recycled component of the waste stream.
- Encourage and facilitate sustainable modes of transport to and fro.
- Maintain the grounds and buildings of the college in an environmentally sensitive way, seeking to protect and enhance natural habitats and biodiversity.

Scope and Objectives

A clean and healthy environment aids effective learning and provides a conducive learning environment. Environment audit is the most efficient and ecological way to manage environmental problems. It is a kind of professional care which is the responsibility of everyone who is a part of economic, financial, social, environmental factor. It is necessary to conduct environment audit in college campus because students become aware of the environment and its advantages to save the planet and they become good citizen of our country. Thus, Environment audit becomes necessary at the college level.

The broad aims/benefits of the environmental-auditing system would be

- To create a green campus
- To create a Plastic free campus and evolve health consciousness among the stakeholders.
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The purpose of this Environment Audit was to ensure that the practices that are followed by the institution are in compliance in accordance to NAAC. This audit was initiated by us to inspect the environmental practices and environmental awareness and management of the environment inside the campus. Its emphasis on water usage, waste recycling, correct waste segregation into dry, wet, and hazardous waste, the energy consumption from solar panel, maintains water quality that is safe to consume on the campus. The promotional activities done by the facilities including the tree plantation and other relevant works related to in the field of sustainability was done.

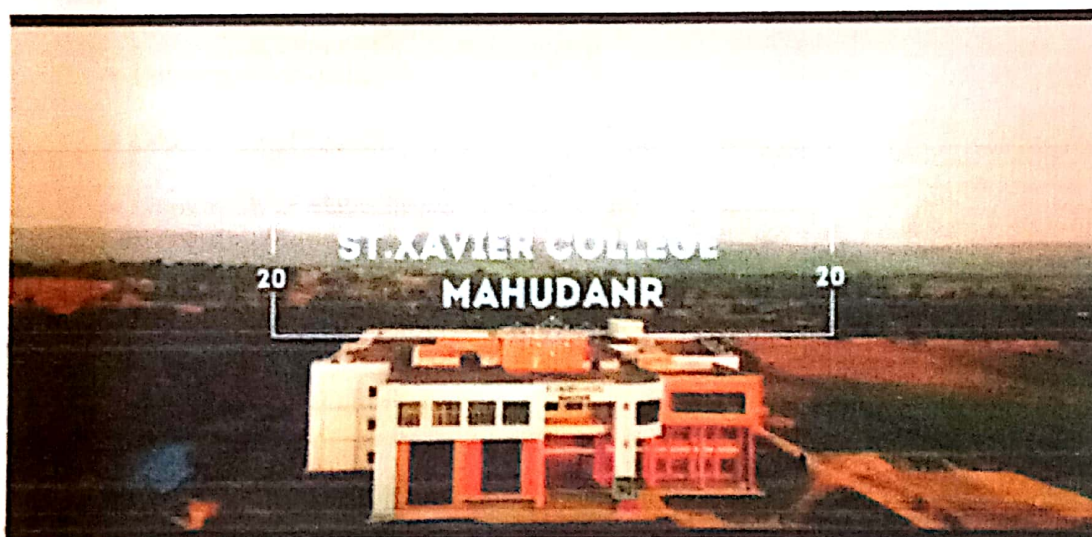
SXCM has already done internal green assessment and annual reports published for continual improvements; Audit criterion is environmental cognizance, waste minimization and management, biodiversity conservation, water conservation, energy conservation and environmental legislative compliance by the campus. The audit report contains observations and recommendations for improvement of environmental consciousness.

ABOUT THE INSTITUTION

St. Xavier's College, Mahuadanr is primarily a Christian Minority College committed to the educational and spiritual traditions of the Hazaribag Jesuits Education Society (HJES) and to the ideal of liberal education with the development of the tribal population of different religions in view. The ambition of the college is to inspire students to learn, lead and serve in the constantly diversifying and changing world. The college has been granted temporary affiliation from the Ministry of Human Resource Development, Jharkhand Government (cf: 5/S1-12/2011-881 dated 17/08/2011) as well as Nilamber-Pitamber University, Medininagar (NPU/R/1103/2011 dated 02/09/2011).

St. Xavier's College, Mahuadanr located in Latehar district of Jharkhand State and affiliated to the Nilamber Pitamber University, Medininagar, Palamau is the only institution of higher learning in the tribal dominated backward sector of this region. Established in 2011 in 24.46 acres of land under its possession it is located amid the nature's exotic scenic beauty. The college is owned and managed by the Hazaribag Jesuits. The college has is also been certified by ISO 9001:2015.

Aerial View of the College



The most valuable investment any educational institution can make is "Nurturing Future Leaders." With the continuous rise in expectation of essential leadership standards, St. Xavier's College, Mahuadanr torch bearers have taken a responsibility for this investment to nurture the Next-Gen leaders with a vision to bridge the existing skill gap. With a firm step forward to attain an academic excellence, several Centers of Excellence, computer labs and Skill oriented programmes have been set up at St. Xavier's College in association with the skilled Professors and other Local technicians. The College believes that its

primary stakeholders are the students. All aspects of education focus on the core values of contributing to national development while fostering global competence among students. Though the College is situated in a thickly populated Tribal belt, it admits students from all social milieus and empowers them through intensive mentoring and counselling to face the challenges of life and become responsible and sensitized citizens of the country.

LAYOUT OF COLLEGE PLAN

St. Xavier's College imparts education to *Undergraduates* in the following Departments:

- Department of Botany
- Department of Chemistry
- Department of Commerce
- Department of Economics
- Department of English
- Department of Geography
- Department of Hindi
- Department of History
- Department of Kurukh
- Department of Mathematics
- Department of Physics
- Department of Political Science
- Department of Zoology

COURSES OFFERED

I Bachelor of Arts (Hons.)

1. Economics
2. English
3. Hindi
4. History

5. Political Science
6. Geography
7. Kurukh

II Bachelor of Commerce

1. Accounts

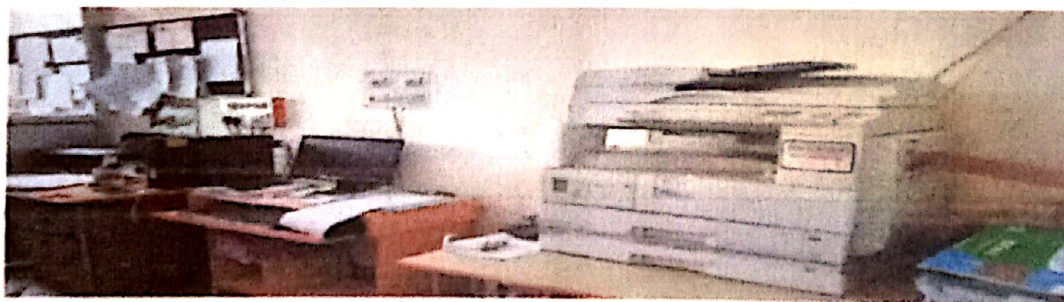
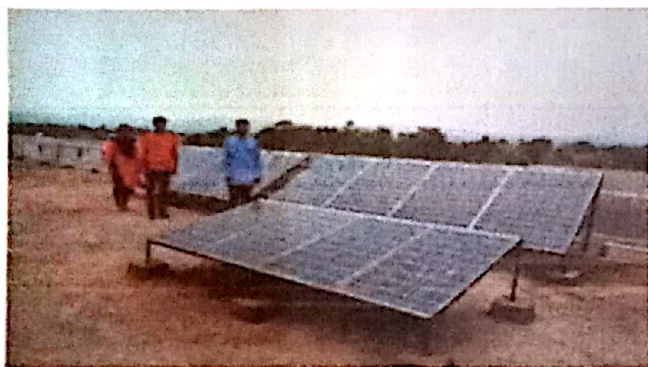
III Bachelor of Science (Hons.)

1. Botany
2. Chemistry
3. Mathematics
4. Physics

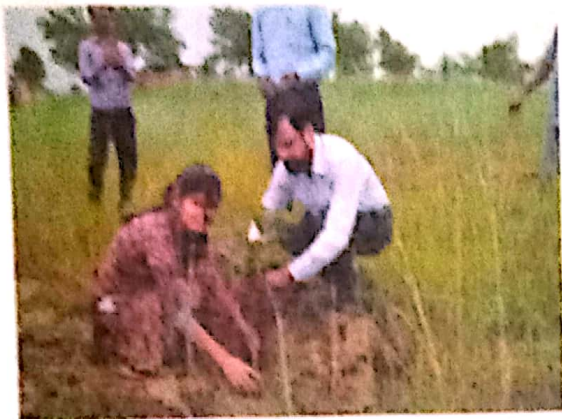
Note: All undergraduate degree courses shall be taught in three years, semester mode.

Best Practices / Initiatives for Environment

Renewable Energy – The College is taking new initiative for power saving. Solar Panel installed at SXCM. A clean source of energy is utilized at campus. In this regard, the classrooms have been furnished with many windows. The class hours have been set from 9 am to 2.30 pm, in view of avoiding excessive use of lights, fans etc. Total energy consumption is calculated to be 20,500 KWH per year. All the departments and common facility centers are equipped with CFL lamps. Approximately 338 CFLs (Capacity) have been counted during survey. Besides this, solar energy converters are also installed in the campus as alternate source of energy. The production capacity of these is 2100 KWH per year. Equipment's like Computers are used with power saving mode. The Campus administration also runs switch-off drill on regular basis. In science departments like Physics, Chemistry, Mathematics, Botany and Zoology electricity is shut down after class hours, which is one of the important green practices for energy conservation.



Biodiversity Conservation – Flora and Fauna, College has lush green campus which provides habitat to various species. Varieties of trees and plants, the fruits which grows is filled with massive nutrients and antioxidants like Sal, Mahua, Jamun, Eucalyptus, Bamboo etc. and birds like Koel, Wood pecker, Bulbul, Pigeon etc.



Tree plantation Drive - Various tree plantation programs are being organized throughout the year in the college campus and surrounding villages through Eco- club and other committees of the college. The plantation program includes planting of various indigenous species of ornamental and medicinal plants. Plant Distribution Program is practiced by the college. Saplings are distributed to the visitors and guest at various occasions. The college has staff [Gardeners] working to maintain the greenery of the campus.



Water Conservation – One of the most important components of a sustainable campus is the assessment of the water quality to determine whether the water is fit for human consumption for the employees, students, and everyone else on the campus. The college has 3 borewells and water is taken from the borewells for consumption. The water quality test that takes place in regular interval, considers the water from the borewell. Majority consumption of water has been found from the washrooms present in all the floors and canteen of the campus. Water saving push taps fitted in the drinking water zone and the toilets to avoid the wastage. One of the Significant works that SXCM, follows in order to provide a sustainable environment is by waste water recycling. Institution has also taken initiative to collect the waste water of the canteen into an open tank which can further be used for plants.

With recent experiences across India and all-over Jharkhand, groundwater depletion has been an important issue, and thus the college, SXCM also has taken up these innovative and modern techniques of having Rainwater harvesting, in which the water is recharged back to the reservoir from where we have consumed. The average amount of rainfall in this area varies from 150-180 cm per year. Rainwater harvesting is practiced on the college. To meet the minimum needs for daily water usage inside the campus, the college's use of rainwater harvesting is very useful. We have a water reservoir (pond) within the college campus. The total area covered by the water reservoir is around 35 decimals. During the survey, no loss of water has been observed, either by leakage, or by outflow of water from overhead tanks. The data collected from all the departments is examined and verified. On an average the total use of water in the college is 8000 Liters per day. The college is aware of the management and conservation practices of water and looks forward to saving and recharging water back to the ground.

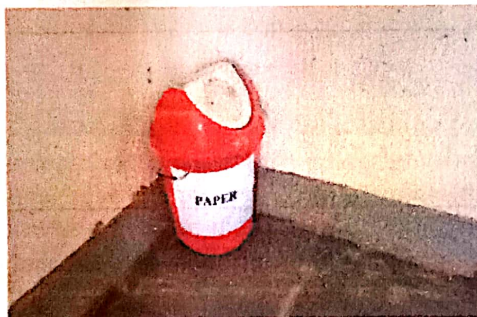


Waste Minimization - The college spans over 24 acres and has a total strength of degree students, respective teaching, and administrative staff. The working hours of the college is from about seven hours which includes a lunch break. Post working hours, the hostel is active with students and administrative staff. The administrative effort of managing such a large area and people is therefore considerable. Among various requirements the waste management & minimization has been according high priority to maintain hygienic and to always keep the area clean and tidy.

The various types of waste generated in the campus are:

Solid Waste - One of the key requirements in creating an eco-friendly campus has always been trash management and efficient disposal of waste. A proper end-to-end solution includes the collection and Safeway final disposal of waste. It has been noted that SXCM has exhibited environmental awareness and knowledge of appropriate methods and practises for disposing of solid waste. To ensure adequate segregation and safe disposal, there are numerous dustbins located throughout the campus, and staff, students, and authorities are under strict orders to place waste into appropriate separated bins. Dustbins have been erected across the campus to separate waste into dry, wet, and reject categories. Plastics, cardboard, and other dry garbage are examples. Food scraps, vegetable peels, and garden debris (such as leaves, twigs, etc.) are all included in the category of wet waste. Sanitary napkins and other biomedical and biohazardous garbage can be found outside the restrooms.

College follows the Ministry of Environment and Climate Change's 2016 Solid Waste Management Rules, which provide for the proper segregation of waste.

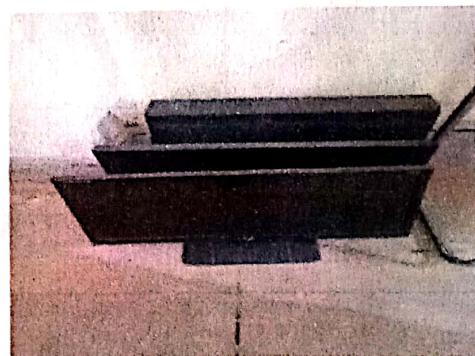


Liquid Waste - Liquid waste is the term used to describe the waste produced by restrooms. The SXCM is taking steps to ensure that the liquid waste from the urinals is not dumped into the nearby water body in a hazardous way. There are 2 Septic Tanks on the campus where urinal waste is dumped.



Bio Medical Waste - The discussion during audit, it was known that, no such use of Biomedical Waste is being generated in the campus.

E- Waste Management - Electronic garbage from the college campus has been properly collected. In the image below, you can see that a significant amount of electronic waste that was gathered from different departments has been deposited in a room to ensure that the e-waste is correctly handled by an end-to-end waste management firm.



General Practices – Eco Club Committee – The Eco-club of the college takes initiative to promote environmental awareness programmes among all sections of the society. To impart knowledge, inculcate compassion among the students and people towards environment and sensitize children on issues related to environment and development.



Swatch Bharat Abhiyan- Cleaning of the campus is done on regular basis through Swatch Bharat Abhiyan. The students enlighten the village people with the message of Swatch Bharat through speeches, cultural programs, Rallies & cleaning of common places in collaboration with the villagers.



Environmental Awareness Programs

The local people are given awareness about importance of keeping the environment clean and to preserve nature by preventing deforestation. Thus, an eco-friendly environment can be created which provides pure air for all.



Plantation Program

Various tree plantation programs are being organized throughout the year in the college campus and surrounding villages through Eco- club and other committees of the college. The plantation program includes planting of various indigenous species of ornamental and medicinal plants



Science Exhibition

Science exhibition are organized to present the scientific innovations, ideas, and projects made by the students. The main purpose is to provide the opportunity to the students to showcase their creative ideas so that their creativity can be nurtured well.



Conclusion and Recommendation

Thus St. Xavier's College is giving top priority to Eco Friendly activities. The audit has identified several observations for making the campus premise more environment friendly. With these eco- friendly activities our students are respecting nature and trying their best to protect the environment and natural resources which is fulfilling the objective of "Protecting Nature" of higher education. The recommendations are also mentioned with observations for campus team to initiate actions:

Formation of Environment Policy and communicated to all faculties and

Reduction in use of paper work by go digital system

Increase in Environmental promotional activities for spreading awareness

Segregation of the waste into bio- degradable and non – bio degradable.

Plastic Free Campus or Say No to Plastic

Opportunities for Improvements

- Conduct more awareness program and group discussions on environmental education.
- Conduct more save energy awareness program for students and staff.
- Observe a power saving day every year.
- Employment of more solar panels and other renewable energy sources

Action Taken Report

Opportunities for Improvements:

Conducted a thorough assessment to identify areas for improvement across various aspects of campus operations, including energy consumption, waste management, water conservation, and environmental education.

Established action plans and implementation strategies to address identified opportunities for improvements, with clear goals and timelines.

Awareness Programs and Group Discussions on Environmental Education:

Organized regular awareness programs and group discussions on environmental education, covering topics such as climate change, biodiversity conservation, sustainable living practices, and the importance of environmental stewardship.

Collaborated with faculty members, environmental experts, and student organizations to design and deliver engaging and informative sessions that raise awareness and promote environmental literacy among students and staff.

Save Energy Awareness Programs:

Conducted targeted awareness programs on energy conservation for students and staff, highlighting the importance of saving energy, reducing carbon footprint, and adopting energy-efficient practices in daily routines.

Distributed educational materials, such as brochures, posters, and digital resources, to reinforce key messages and provide practical tips for energy conservation.

Observance of Power Saving Day:

Instituted an annual Power Saving Day event to raise awareness about energy conservation and promote collective action to reduce energy consumption.

Organized special activities, competitions, and campaigns on Power Saving Day to engage the campus community and encourage participation in energy-saving initiatives.

Expansion of Renewable Energy Sources:

Expanded the deployment of solar panels and other renewable energy sources on campus to reduce reliance on conventional energy sources and mitigate environmental impact.

Conducted feasibility studies and assessments to identify suitable locations for the installation of additional solar panels and explored opportunities for integrating other renewable energy technologies, such as wind and biomass, into campus infrastructure.

Name and Signature of the Green Audit Team

External Audit Members

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Assistant Professor

Department of Geography

St. Xavier's College, Ranchi

Rajeev R. Shrivastava

Dr. Mohammad Taufique

Assistant Professor

Department of Geography

Aligarh Muslim University, Uttar Pradesh

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Keerti Minj

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Habib Ali Mridha

Assistant Professor

Department of Geography

St. Xavier's College, Mahuadanr

H. A. Mirdha

Tony Pandanathji



External Audit Members

Environmental Audit Report 2020-21



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Environment Audit

2019-20



St. Xavier's College, Mahuadanr

(Affiliated to Nilamber-Pitamber University, Medininagar)

Website: www.sxcm.co.in

Email: sxcmdanr@gmail.com, mkjosesj@gmail.com

Environment Audit



About The Project

The working details of the assignment are as follows

Project: Environment Audit

Client: St. Xavier's College Mahuadarn

Segment: Educational Building

Site: Mahuadarn

Duration: 3rd April 2020- 15th April 2020

External Audit Numbers

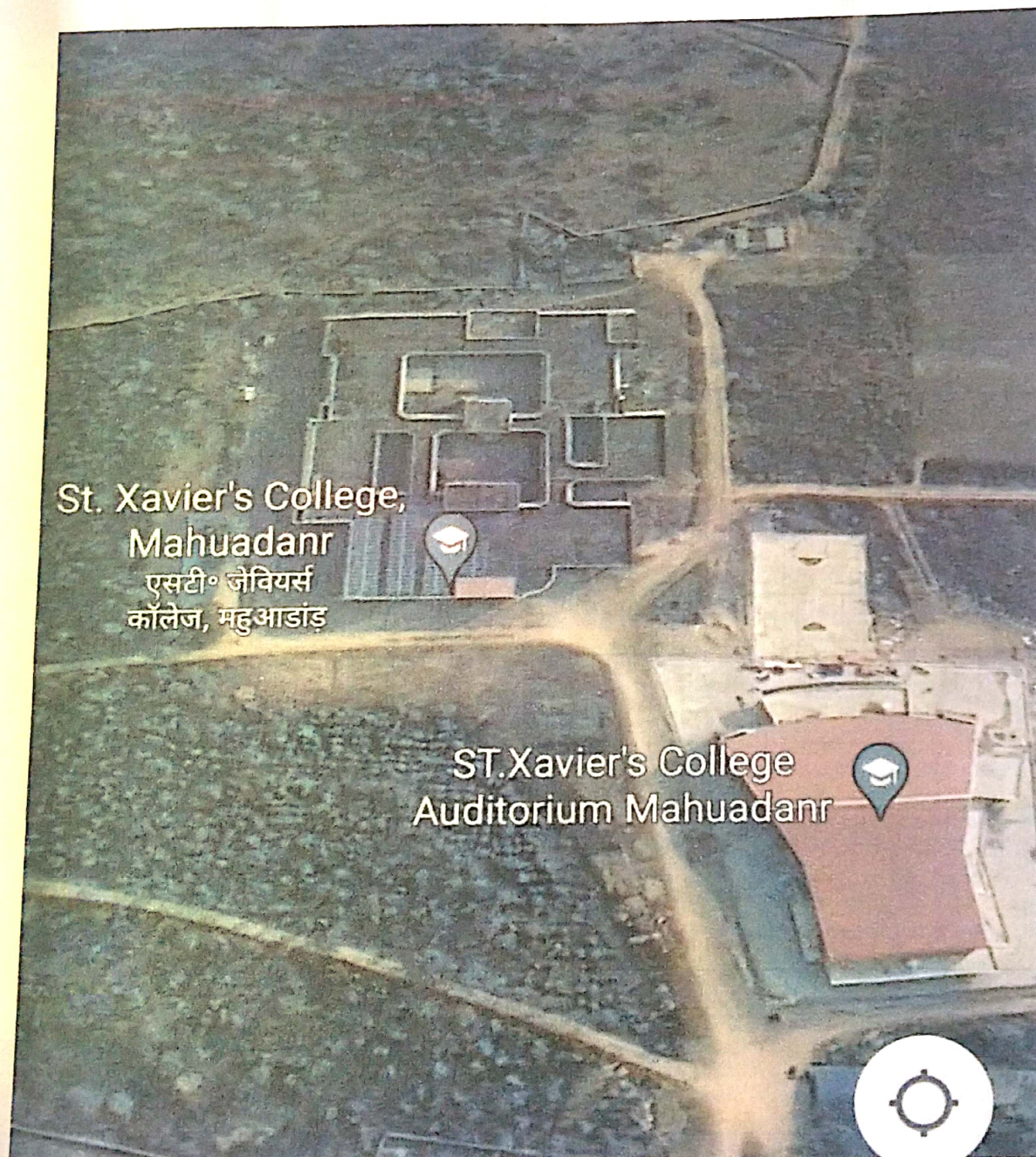
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CONCEPT

The term 'Environmental audit' means differently to different people. Terms like 'assessment', 'survey' and 'review' are also used to describe similar activities. Furthermore, some organizations/Institutions believe that an 'environmental audit' addresses only environmental matters, whereas others use the term to mean an audit of health, safety and environment-related matters. Although there is no universal definition of Environmental Audit, many leading companies/institutions follow the basic philosophy and approach summarized by the broad definition adopted by the International Chambers of Commerce (ICC) in its publication of Environmental Auditing (1989).

The ICC defines Environmental auditing as:

"A management tool comprising a systematic, documented, periodic and objective evaluation of how well environmental organization, management and equipment are performing with the aim of safeguarding the environment and natural resources in its operations/projects."

The outcome of Environmental Audit should be established with concrete evidence that the measures undertaken and facilities in the institution cater to the safeguarding of the Environment.

INTRODUCTION

A Nation's growth starts from its educational institutions, where the ecology is thought as a prime factor of development associated with environment. Educational institutions now a days are becoming more sensitive to environmental factors and more concepts are being introduced to make them eco-friendly. To preserve the environment within the campus, various viewpoints are applied by the several educational institutes to solve their environmental problems such as promotion of the energy savings, recycle of waste,

water reduction, water harvesting etc. The activities pursued by colleges can also create a variety of adverse environmental impacts.

Environmental auditing is a process whereby an organization's environmental performance is tested against its environmental policies and objectives. As a part of such practice, internal environmental audit is conducted to evaluate the actual scenario at the campus. It is a useful tool for a college to determine how and where they are using the most energy or water or resources; the college can then consider how to implement changes and make savings. It can also be used to determine the type and volume of waste, which can be used for a recycling project or to improve waste minimization plan. It can also create health consciousness and promote environmental awareness, values and ethics. It provides staff and students better understanding of green impact on campus.

Environmental audit promotes financial savings through reduction of resource use. It gives an opportunity for the development of ownership, personal and social responsibility for the students and teachers. Thus it is imperative that the college evaluate its own contributions toward a sustainable future. As environmental sustainability is becoming an increasingly important issue for the nation, the role of higher educational institutions in relation to environmental sustainability is more prevalent. A clean and healthy environment aids effective learning and provides a conducive learning environment. There are various efforts around the world to address environmental education issues.

OVERVIEW OF INSTITUTE

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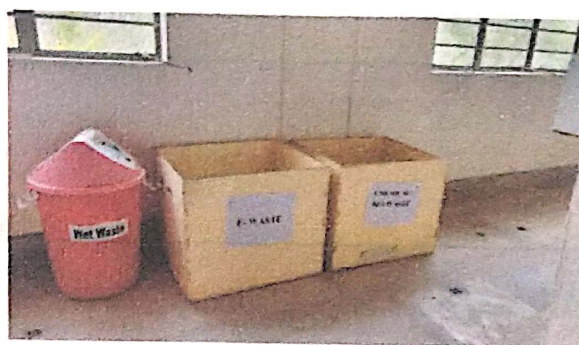
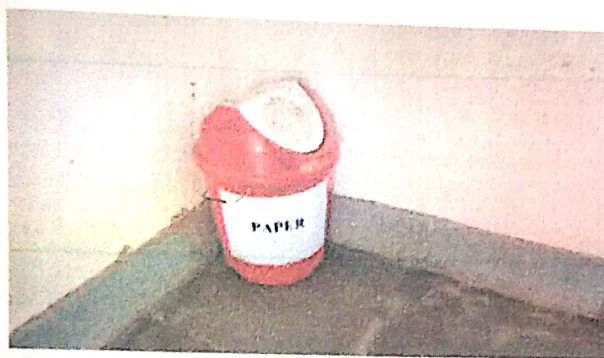
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The Eco-club of the college takes initiative in the reuse of the waste water and to save water. Institution has also taken initiative to collect the waste water of the canteen into an open tank which can further be used for plants. E-waste such as old computers and its peripherals are not thrown into the Campus. On the contrary we donate the same to the nearby schools or exchange the old ones with new system.



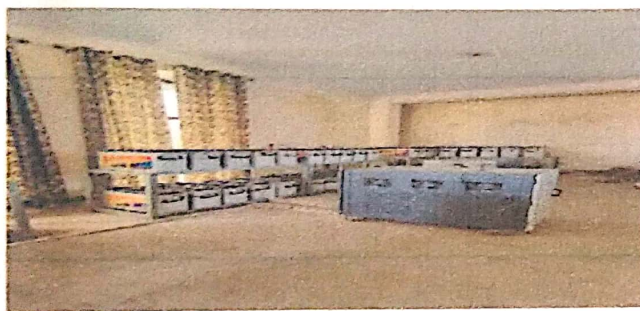
(b) Greening:

Trees are the foremost source for producing oxygen in the environment and they also help to reduce the level of CO₂. As the world is facing the problem of global warming, it is the need of the hour to reduce the temperature by means of planting more trees. Our college organizes various tree plantation programs during the month of July and August in the college campus and surrounding villages through Eco- club and other committees of the college. The plantation program includes planting of various indigenous species of ornamental and medicinal plant



(c) Energy Conservation:

Energy conservation refers to efforts made to reduce energy consumption. Energy conservation can be achieved through increased efficient energy use, in conjunction with decreased energy consumption and reduced consumption from conventional energy sources. Because energy conservation can result in increased financial capital, environmental quality, national security, and human comfort. In this regard, the College also is taking new initiative for power saving. The classrooms have been furnished with a large number of windows. The class hours have been set from 9 am to 2.30 pm, in view of avoiding excessive use of lights, fans etc. Total energy consumption is calculated to be 20,500 KWH per year. All the departments and common facility canters are equipped with CFL lamps. Approximately 338 CFLs Capacity) have been counted during survey. Besides this, solar energy converters are also installed in the campus as alternate source of energy. The production capacity of these is 2100 KWH per year. Equipment's like Computers are used with power saving mode. The Campus administration also runs switch-off drill on regular basis. In science departments like Physics, Chemistry, Mathematics, Botany and Zoology electricity is shut down after class hours, which is one of the important green practices for energy conservation



(d) Water Conservation:

A precious resource, and although it flows freely from the tap, it is not infinite. Green campus lawns, clean cafeteria plates, and even air-conditioned dorms don't happen without using lots of water. As major institution, colleges are serious users of water and although some don't yet recognize the need to conserve water, many of them do. In fact, college campuses are home to some of the most innovative ideas for water conservation, implementing water management technology and smart conservation policies and more.

The College has taken a number of good initiatives to attain these objectives. We have a water reservoir (pond) within the college campus. The total area covered by the water reservoir is around 35 decimals. There are only a few concrete zones, thus it means that college campus is naturally permitting the rainwater to absorb and thus maintains the underground water level. During the survey, no loss of water has been observed, either by leakage, or by outflow of water from overhead tanks. The data collected from all the departments is examined and verified. On

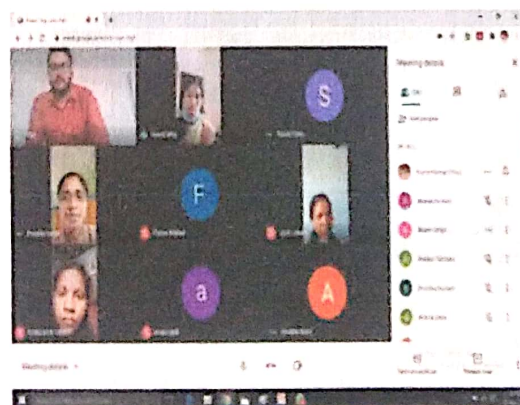
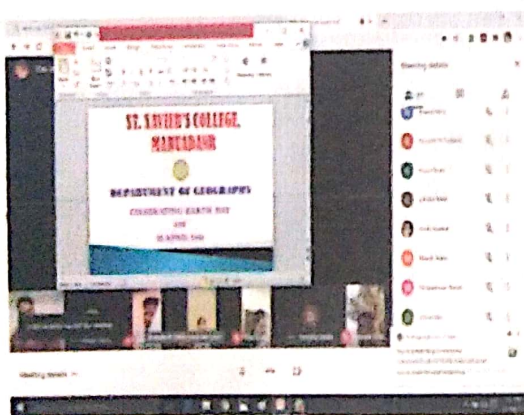
an average the total use of water in the college is 8000 Liters per day. Also, a rainwater-harvesting unit is under construction for storing rainwater and use. This is one of the extraordinary steps taken towards water conserving.



(e) General Practices:

- **Environmental Awareness Programs**

The local people are given awareness about importance of keeping the environment clean and also to preserve nature by preventing deforestation. Thus, an eco-friendly environment can be created which provides pure air for all.



• Plantation Program

Various tree plantation programs are being organized throughout the year in the college campus and surrounding villages through Eco- club and other committees of the college. This plantation program was conducted during covid time online via zoom app.

The students were motivated to take it as a national drive and to promote tree planation from home, which is more valuable since it involves personal initiative. The students showed great eagerness and vigour even amid lockdown



• Other Social Responsibilities

Due to Covid Pandemic all the administrative staff with Principal of the college were visited nearby village of the college, to donate rice and masks to the needy children and people of that area. This was indeed a noble cause where there has been involvement of administrative staff. This might provide relief to poor families affected by the pandemic, especially as another surge is being witnessed in covid-19 cases.



CONCLUSION AND RECOMMENDATIONS:

Environmental audit involved extensive consultation with all the campus team, interactions with key personnel on wide range of issues related to Environmental aspects. St. Xavier's College has Environmental Committee for sustainable use of resources. Overall, 60% of college campus is for landscaping. The audit has identified several observations for making the campus premise more environmentally friendly. The recommendations are also mentioned with observations for campus team to initiate actions.

The audit team opines that the overall site is maintained well from environmental perspective.

There are no major observations but few things are important to initiate urgently are waste management records by monthly inventory of hazardous waste, rainwater harvesting recharge; and periodic inspection of building's housekeeping and environment policy.

- Environment Policy to be adopted by the College Campus.
- Installation RO in college campus.
- Waste Management plan should be prepared for the campus.
- Display of environment awareness posters should be there in the prominent areas of campus.

Action Taken Report:

Implementation of Environment Policy:

Developed and adopted an Environment Policy outlining the college's commitment to environmental sustainability and responsible stewardship of natural resources.

Established clear objectives and targets aligned with the policy to guide environmental initiatives and activities on campus.

Communicated the Environment Policy to all stakeholders, including students, faculty, staff, and visitors, to promote awareness and encourage participation in environmental conservation efforts.

Installation of RO Systems:

Installed Reverse Osmosis (RO) systems in strategic locations across the college campus to provide safe and clean drinking water to students, faculty, and staff.

Conducted regular maintenance and servicing of RO systems to ensure optimal performance and water quality.

Development of Waste Management Plan:

Prepared a comprehensive Waste Management Plan for the campus to address the collection, segregation, recycling, and disposal of waste materials.

Implemented initiatives to reduce waste generation, promote recycling and composting, and ensure proper disposal of hazardous and non-hazardous waste.

Conducted training sessions and workshops for campus community members to raise awareness about waste management practices and encourage participation in waste reduction efforts.

Display of Environment Awareness Posters:

Installed environment awareness posters in prominent areas of the campus, including corridors, common areas, and student lounges, to educate and inform individuals about environmental issues and conservation practices.

Designed posters with visually appealing graphics and concise messaging to attract attention and promote engagement.

Rotated posters periodically to maintain interest and relevance, and updated content to reflect current environmental themes and initiatives.

Name and Signature of the Environment Audit Team

External Audit Members

Dr. Rajeev Ranjan Shrivastava
Assistant Professor
Department of Geography
St. Xavier's College, Ranchi

Rajeev R. Shrivastava

Dr. Mohammad Taufique
Assistant Professor
Department of Geography
Aligarh Muslim University, Uttar Pradesh

Dr. M. Taufique

Internal Audit Members

Dr. Fr. M.K. Jose SJ
Principal
St. Xavier's College, Mahuadanr

[Signature]

Mrs. Keerti Minj
Assistant Professor
Department of Geography
St. Xavier's College, Mahuadanr

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Miss Archana Jha
Assistant Professor
Department of Geography
St. Xavier's College, Mahuadanr

A. Jha

Tommy Pendanathoj

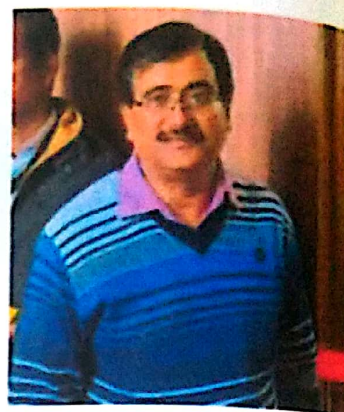


Environmental Audit Report 2019-20



Dr. Mohammad Taufique
Assistant Professor
Department of Geography
Aligarh Muslim University,
Aligarh, Uttar Pradesh , India

External Audit Members



**Dr. Rajeev Ranjan
Shrivastava**
Assistant Professor
Department of Geography
St. Xavier's College, Ranchi
Jharkhand, India

St. Xavier's College, Mahaudanr, Latehar-822119, Jharkhand

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Ph: 9508440233, 6207249298, 7762974328



Environment Audit

2018-19



St. Xavier's College, Mahuadanr

(Affiliated to Nilamber-Pitamber University, Medininagar)

Website: www.sxcm.co.in

Email: sxcmdanr@gmail.com, mkjosesj@gmail.com

Environment Audit



ABOUT THE PROJECT

The working details of the assignments are as follow-

Project: Environment Audit

Client: St. Xavier's College Mahuadanr

Segment: Educational Building

Site: Mahuadanr

Duration: 3rd April 2019-15 April 2019

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Location of the Facility

The educational Institute is located at 49C+HGF, Rajdanda, Mahuadanr – 822119, Jharkhand in latitude 23.4189 N and Longitude 84.1213 E. Location on map is depicted below.



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DISCLAIMER

Environment Audit Team has prepared this report based on primary data collected from the different areas of the college. All reasonable care has been taken in its preparation; details contained in this report have been compiled in good faith based on information gathered.



Principal
St. Xavier's College
Mahuadanr

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Prepared by:
Environment Audit Team SXCM

Environment Audit

Environmental audit or green audit is a general term that reflects various kinds of evaluations intended to identify environmental compliance and management system, implementation gaps, along with related corrective actions. It aims to analyze environmental practices within and outside of the concerned sites, which will have an impact on the eco-friendly ambience. It is a useful tool to determine how and where the most energy or water resources are being used; and can then considerations be given on how to implement changes and make savings. It can also be used to determine the type and volume of waste, which can be used for a recycling project or to improve waste minimization plan. It can create health consciousness and promote environmental awareness, values, and ethics. It imparts a better understanding of green impact on campus to staff and students.

Need for Environmental Audit – The institutional self-enquiry is a natural and necessary outgrowth of a quality educational institution. Thus, it is imperative that SXCM evaluates its own contributions toward a sustainable future. As environmental sustainability is becoming an increasingly important issue for the nation, the role of higher educational institutions in relation to environmental sustainability is more prevalent. The rapid urbanization and economic development at local, regional, and global level has led to several environmental and ecological crises. On this background, it becomes imperative to adopt the system of the “Green Campus” for the Institutes which will lead to sustainable development and at the same time reduces a sizable amount of atmospheric carbon dioxide from the environment.

The National Assessment and Accreditation Council, New Delhi (NAAC) has made it mandatory that all Higher Educational Institutions should submit an annual Green Audit Report. Moreover, it is part of Corporate Social Responsibility of the Higher Educational Institutions to ensure that they contribute towards the reduction of global warming through Carbon Footprint reduction measures.

Environmental Policy

St. Xavier's College, Mahuadanr, is firmly committed to the principles of sustainability. The College recognizes that its activities impact upon the environment and on the wider community through its routine internal operations, its infrastructural development, and its influence on the wider community.

- The College acknowledges a responsibility for, and a commitment to the protection of the environment at all levels.
- The college will endeavor to do more than the relevant environmental legislation and is committed to environmental performance improvement.

The college will:

- Seek to integrate environmental issues into all relevant aspects of the University's teaching and research activities.
- In conjunction with local, national, and other agencies promote and raise awareness of good environmental management policies and practises to staff students and other stakeholders across the University.
- Promote a purchasing policy which favours, wherever possible, those products and services which cause the least harm to the environment.
- Seek to reduce the consumption of primary raw materials (including fossil fuels, water and energy) and promote energy efficient, low carbon measures, and recyclable and renewable components.
- Implement sound, long term waste management strategies to reduce overall waste production and increase the recycled component of the waste stream.
- Encourage and facilitate sustainable modes of transport to and fro.
- Maintain the grounds and buildings of the college in an environmentally sensitive way, seeking to protect and enhance natural habitats and biodiversity.

Scope and Objectives

A clean and healthy environment aids effective learning and provides a conducive learning environment. Environment audit is the most efficient and ecological way to manage environmental problems. It is a kind of professional care which is the responsibility of everyone who is a part of economic, financial, social, environmental factor. It is necessary to conduct environment audit in college campus because students become aware of the environment and its advantages to save the planet and they become good citizen of our country. Thus, Environment audit becomes necessary at the college level.

The broad aims/benefits of the environmental-auditing system would be

- To create a green campus
- To create a Plastic free campus and evolve health consciousness among the stakeholders.
- To enhance the alertness for environmental guidelines and duties
- Benchmarking for environmental protection initiatives.
- Developing an environmental ethic and value systems in youngsters.
- Curriculum enrichment through practical experience
- Sustainable use of natural resource in the campus.

Executive Summary

A nation's growth starts from its educational institution, where the ecology is thought as a prime factor of development associated with environment. A clean and healthy environment aids effective learning and provides a conducive learning environment. Educational institutions, now-a – days, are becoming more sensitive to environmental factors and more concepts are being introduced to make them eco-friendly. To preserve the environment within the campus, various viewpoints are applied by several educational institutes to solve their environmental problems such as promotion of the energy savings by installing more efficient electronics and electrical equipment, proper segregation and recycle of waste, water use reduction, water harvesting and conservation etc. The activities pursued by the college can also create a variety of adverse environmental impacts.

The purpose of this Environment Audit was to ensure that the practices that are followed by the institution are in compliance in accordance to NAAC. This audit was initiated by us to inspect the environmental practices and environmental awareness and management of the environment inside the campus. Its emphases on water usage, waste recycling, correct waste segregation into dry, wet, and hazardous waste, the energy consumption from solar panel, maintains water quality that is safe to consume on the campus. The promotional activities done by the facilities including the tree plantation and other relevant works related to in the field of sustainability was done.

SXCM has already done internal green assessment and annual reports published for continual improvements; Audit criterion is environmental cognizance, waste minimization and management, biodiversity conservation, water conservation, energy conservation and environmental legislative

CONCEPT

The term 'Environmental audit' means differently to different people. Terms like 'assessment', 'survey' and 'review' are also used to describe similar activities. Furthermore, some organizations/institutions believe that an 'environmental audit' addresses only environmental matters, whereas others use the term to mean an audit of health, safety and environment-related matters. Although there is no universal definition of Environmental Audit, many leading companies/institutions follow the basic philosophy and approach summarized by the broad definition adopted by the International Chambers of Commerce (ICC) in its publication of Environmental Auditing (1989).

The ICC defines Environmental auditing as:

"A management tool comprising a systematic, documented, periodic and objective evaluation of how well environmental organization, management and equipment are performing with the aim of safeguarding the environment and natural resources in its operations/projects."

The outcome of Environmental Audit should be established with concrete evidence that the measures undertaken and facilities in the institution cater to the safeguarding of the Environment.

INTRODUCTION

A Nation's growth starts from its educational institutions, where the ecology is thought as a prime factor of development associated with environment. Educational institutions now a days are becoming more sensitive to environmental factors and more concepts are being introduced to make them eco-friendly. To preserve the environment within the campus, various viewpoints are applied by the several educational institutes to solve their environmental problems such as promotion of the energy savings, recycle of waste, water reduction, water harvesting etc. The activities pursued by colleges can also create a variety of adverse environmental impacts.

Environmental auditing is a process whereby an organization's environmental performance is tested against its environmental policies and objectives. As a part of such practice, internal environmental audit is conducted to evaluate the actual scenario at the campus. It is a useful tool for a college to determine how and where they are using the most energy or water or resources; the college can then consider how to implement changes and make savings. It can also be used

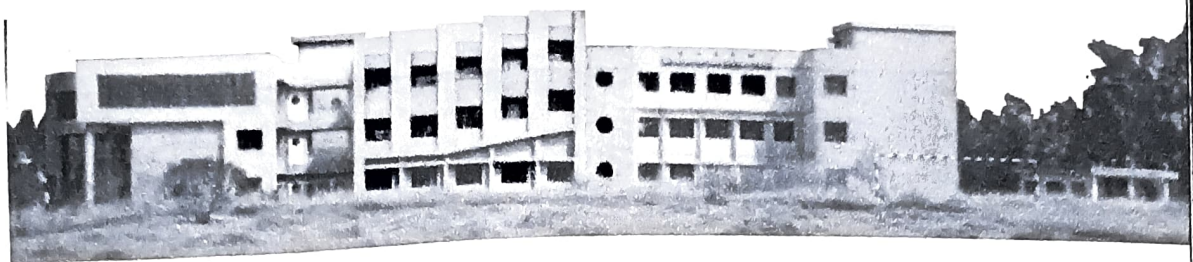
to determine the type and volume of waste, which can be used for a recycling project or to improve waste minimization plan. It can also create health consciousness and promote environmental awareness, values and ethics. It provides staff and students better understanding of Green impact on campus.

Environmental audit promotes financial savings through reduction of resource use. It gives an opportunity for the development of ownership, personal and social responsibility for the students and teachers. Thus, it is imperative that the college evaluate its own contributions toward a sustainable future. As environmental sustainability is becoming an increasingly important issue for the nation, the role of higher educational institutions in relation to environmental sustainability is more prevalent. A clean and healthy environment aids effective learning and provides a conducive learning environment. There are various efforts around the world to address environmental education issues.

OVERVIEW OF INSTITUTE

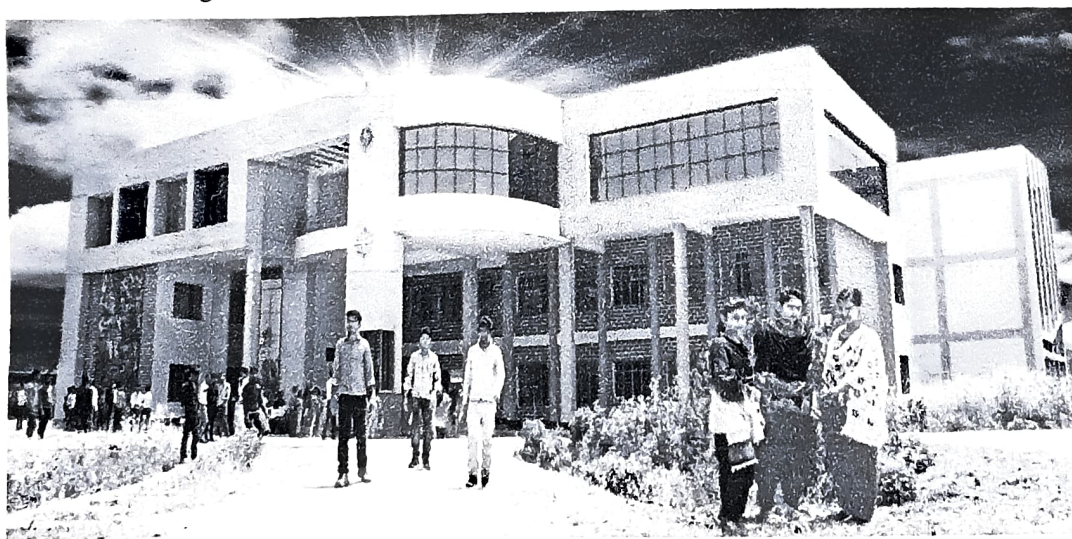
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The college started Waste Minimization programme in different areas of its functioning. The one sided printed papers are used for internal use of the office .

Plastic free green campus is maintained. Different wastes bins are kept in the college campus to bring awareness among the students to differentiate and drop the waste materials. The degradable, non-degradable wastes are differentiated. Wastes are put in a vermin compost tank to form manure for the plants. Hazardous materials and wastes generated on campus range from soiled and oily rags to toxic. Laboratory wastes are handled by a trained faculty and staff

The Eco-club of the college takes initiative in the reuse of the waste water and to save water. Institution has also taken initiative to collect the waste water of the canteen into an open tank which can further be used for plants. E-waste such as old computers and its peripherals are not thrown into the Campus. On the contrary we donate the same to the nearby schools or exchange the old ones with new system.



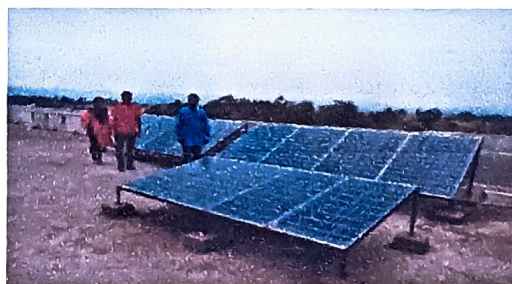
b) Greening:

Trees are the foremost source for producing oxygen in the environment and they also help to reduce the level of CO₂. As the world is facing the problem of global warming, it is the need of the hour to reduce the temperature by means of planting more trees. Our college organizes various tree plantation programs during the month of July and August in the college campus and surrounding villages through Eco- club and other committees of the college. The plantation program includes planting of various indigenous species of ornamental and medicinal plants.



(c) Energy Conservation:

Energy conservation refers to efforts made to reduce energy consumption. Energy conservation can be achieved through increased efficient energy use, in conjunction with decreased energy consumption and reduced consumption from conventional energy sources. Because energy conservation can result in increased financial capital, environmental quality, national security, and human comfort. In this regard, the College also is taking new initiative for power saving. The classrooms have been furnished with a large number of windows. The class hours have been set from 9 am to 2.30 pm, in view of avoiding excessive use of lights, fans etc. Total energy consumption is calculated to be 20,500 KWH per year. All the departments and common facility centers are equipped with CFL lamps. Approximately 338 CFLs (Capacity) have been counted during survey. Besides this, solar energy converters are also installed in the campus as alternate source of energy. The production capacity of these is 2100 KWH per year. Equipment's like Computers are used with power saving mode. The Campus administration also runs switch-off drill on regular basis. In science departments like Physics, Chemistry, Mathematics, Botany and Zoology electricity is shut down after class hours, which is one of the important green practices for energy conservation.



(d) Water Conservation:

A precious resource, and although it flows freely from the tap, it is not infinite. Green campus lawns, clean cafeteria plates, and even air-conditioned dorms don't happen without using lots of water. As major institution, colleges are serious users of water and although some don't yet recognize the need to conserve water, many of them do. In fact, college campuses are home to some of the most innovative ideas for water conservation, implementing water management technology and smart conservation policies and more.

The College has taken a number of good initiatives to attain these objectives. We have a water reservoir (pond) within the college campus. The total area covered by the water reservoir is around 35 decimals. There are only a few concrete zones, thus it means that college campus is naturally permitting the rainwater to absorb and thus maintains the underground water level. During the survey, no loss of water has been observed, either by leakage, or by outflow of water from overhead tanks. The data collected from all the departments is examined and verified. On an average the total use of water in the college is 8000 Liters per day. Also, a rainwater-harvesting unit is under construction for storing rainwater and use. This is one of the extraordinary steps taken towards water conserving.



(e) General Practices:

Environmental Awareness Programs:

The local people are given awareness about importance of keeping the environment clean and also to preserve nature by preventing deforestation. Thus, an eco-friendly environment can be created which provides pure air for all.



Plantation Program:

Various tree plantation programs are being organized throughout the year in the college campus and surrounding villages through Eco- club and other committees of the college. The plantation program includes planting of various indigenous species of ornamental and medicinal plants.



Swatch Bharat Abhiyan:

Cleaning of the campus is done on regular basis through Swatch Bharat Abhiyan. The students enlighten the village people with the message of Swatch Bharat through speeches, cultural programs, Rallies & cleaning of common places in collaboration with the villagers.



Science Exhibition:

Through science exhibition, the students and the staff have portrayed the importance of protection of environment and wild life. Many demonstrations have presented the richness of the surrounding of the college i.e. greenery, hills, rivers, waterfalls etc. among these displays, hydroelectric production have been common since some waterfalls such as Lodh-falls have been visited by students very often.



CONCLUSION AND RECOMMENDATIONS

Environmental audit involved extensive consultation with all the campus team, interactions with key personnel on wide range of issues related to Environmental aspects. St.Xavier's College has Environmental Committee for sustainable use of resources. Overall, 60% of college campus is for landscaping. The audit has identified several observations for making the campus premise more environmentally friendly. The recommendations are also mentioned with observations for campus team to initiate actions.

The audit team opines that the overall site is maintained well from environmental perspective.

There is no major observations but few things are important to initiate urgently are waste management records by monthly inventory of hazardous waste, rainwater harvesting recharge;and periodic inspection of building's housekeeping and environment policy.

- Environment Policy to be adopted by the College Campus.
- Water Meter should be installed and maintain the inventory of ground water extraction resource bore well.
- Stack height of DG set should be as per DG Rules
- Storage of chemicals like; paints, gums resins, oils, lubricants, acids etc. in designated place and safety/warning signs should be displayed.
- Internal inspection system should be developed for various aspects of environment available in campus
- Waste Management plan should be prepared for the campus.
- Display of environment awareness posters should be there in the prominent areas of campus.

Action Taken Report

Safe Storage of Chemicals:

Implemented a system for the safe storage of chemicals such as paints, gums, resins, oils, lubricants, and acids in designated areas.

Installed safety and warning signs to alert personnel about the presence of hazardous materials and promote safe handling practices.

Development of Internal Inspection System:

Conducted regular inspections and audits to identify potential environmental risks and ensure timely corrective actions.

Preparation of Waste Management Plan:

Developed a comprehensive waste management plan for the campus to minimize waste generation, promote recycling and reuse, and ensure proper disposal of waste materials.

Implemented segregation at the source and established procedures for the safe handling, storage, and disposal of different types of waste.

Display of Environment Awareness Posters:

Installed environment awareness posters in prominent areas of the campus to educate and inform students, faculty, and staff about environmental issues, conservation practices, and the college's commitment to sustainability.

Organized awareness campaigns and events to further promote environmental awareness and encourage active participation in environmental initiatives.

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Environmental Audit Report 2018-19



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