



Kirori Mal College,
University of Delhi, Delhi 110007

ENVIRONMENT AUDIT REPORT

BY

EHS ALLIANCE SERVICES

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Certificate –Environment Audit



CERTIFICATE No. EHSAC2118

CERTIFICATE

M/s Kirori Mal College,

University of Delhi, Delhi 110007

Has been assessed by us for the comprehensive study of environmental impact on institutional working framework to fulfill the requirement of

Environment Audit

The environment protection initiatives carried out by the University have been verified on the report submitted and was found to be satisfactory.

The efforts taken by administration, faculty, students at the campus and local community/adopted villages in the area of environment health and sanitation, greenery, waste management, and energy conservation are highly appreciated and commendable.

Date of Audit: 27 Aug, 2021


Puneet Kaushik
For EHS Alliance Services

A circular purple stamp with the text "EHS ALLIANCE SERVICES" around the perimeter and a small star at the bottom.

EHS Alliance Services

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Acknowledgement

EHS Alliance Services audit team thanks to the management of Kirori Mal College, University of Delhi for assigning this important work of Environment Audit. We appreciate the co-operation of our team for the completion of the study.

Our special thanks are due to:

- Prof. Vibha Singh Chauhan – Principal
- Prof. Shiv Kumar Kaushik – Vice Principal
- Prof. Anita Kamra Verma – Environment Audit Coordinator
- Mr. Ram Sunil Kumar Lalji – Assistant Professor – Member IQAC

We are also thankful to the staff members for giving us the necessary inputs to carry out this very vital exercise of Environment Audit, who were actively involved while collecting the data and conducting field measurements.



Disclaimer

EHS Alliance Services Environment Audit Team has prepared this report for Kirori Mal College, University of Delhi based on input data submitted by the representatives of the campus complemented with the best judgment capacity of the expert team.

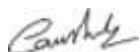
While all sensible care has been taken in its preparation, details contained in this report have been compiled in good faith based on information gathered.

It is further informed that the conclusions have arrived following best estimates and no representation, warranty or undertaking, express or implied is made and no responsibility is accepted by Audit Team in this report or for any direct or consequential loss arising from any use of the information, statements or forecasts in the report.

If you wish to distribute copies of this report external to your organisation, then all pages must be included.

EHS Alliance, its staff and agents shall keep confidential all information relating to your organisation and shall not disclose any such information to any third party, except that in the public domain or required by law or relevant accreditation bodies. EHS Alliance staff, agents and accreditation bodies have signed individual confidentiality undertakings and will only receive confidential information on a 'need to know' basis.

Vijay Singh
Lead Auditor



Puneet Kaushik
EHS Consultant & Lead Auditor EMS

Context and Concept

In India, the process for environmental audit was first mentioned under the Environment Protection Act, 1986 by the Ministry of Environment of forests on 13th March 1992. As per this act, every person owning an industry or performing an operation or process needs legal consent and must submit an environmental report or statement.

The National Assessment and Accreditation Council, New Delhi (NAAC) has made it mandatory from the academic year 2019–20 onwards that all Higher Educational Institutions should submit an annual Green, Environment and Energy Audit Report. Moreover, it is part of the Corporate Social Responsibility of the Higher Educational Institutions to ensure that they contribute towards the reduction of global warming through Carbon Footprint reduction measures.

In view of the NAAC circular regarding environment auditing, the college management decided to conduct an external environment assessment study by a competent external professional auditor headed by Dr Anita Kamra Verma, Program Co-ordinator, DBT Star College Scheme, Kirori Mal College, University of Delhi.

The term 'Environmental audit' or 'Green audit' means differently to different people. Terms like 'assessment', 'survey' and 'review' are also used to describe similar activities. Furthermore, some organizations 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 Green 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 intending to safeguard the environment and natural resources in its operations/projects."

The outcome of the audit should be established with concrete evidence that the measures are undertaken and facilities in the institution are under green auditing. This audit focuses on the Green Campus, Waste Management, Water Management, Air Pollution, Energy Management & Carbon Footprint etc. being implemented by the institution. The concepts, structure, objectives, methodology, tools of analysis, objectives of the audit are discussed below.

Introduction

Nature is a very precious gift for all life forms. Disturbance in nature causes environmental Problems increasing day by day due to the development of urbanization and industrialization on earth. Unplanned utilization of resources planet facing tremendous pressure resulting temperature is increasing. Therefore, there is an urgent need to planning for the consumption of the resources sustainably to conserve natural resources for the future generation.

Sustainable development is becoming popular in the world for saving the earth. Utilizing resources judiciously can save the earth's precious resources. Measurement of environmental components is the most effective step to conserve and protect natural resources.

Environmental auditing had begun in the early 1970s with the provision of civil lawsuits for non-compliance with environmental regulations. Environment auditing involves on-site visits, collection of samples, performing analyses, and report results to competent authorities. Industry, the corporate world is initiating auditing for saving natural resources. Academic institutions also can contribute to the preservation and conservation of resources within their premises.

In thin "Environment Audit" report would help everyone to think about preserving resources, show a willingness to learn their importance, adopt steps to minimize resource use and set an example for others to follow the path of eco-friendly practices to achieve the goal of sustainable development. Effective implementation of environmental auditing helps in minimization of environmental risks at a low cost.



Overview of Kirori Mal College

The beginnings of Kirori Mal College are deeply connected with the becoming of India as a nation. Its roots go back to 1951 when it was established as Nirmala College by the American Jesuits. Coming into existence so close to the partition of the country, the college represented in many ways, the anguish as well as the hopes of the times. It was situated in an evacuee building in the crowded, commercial area of Qutub Road in Old Delhi. In July 1954, the college with the name Kirori Mal College was established and was allotted land on the fringes of the University Enclave better known as the North Campus. The first President of the Indian Republic, Dr Rajendra Prasad, laid the foundation stone of the present college building in the summer of 1955, thus certifying the priority the Government of India accorded to the establishment and the flowering of this institution. With generous funds from both the Government of India (ensured by the then Education Minister Mr Humayun Kabir) and the Seth Kirori Mal Charitable Trust along with the tireless strivings of the famous architect duo Anand Apte and Jhabwala, a wild, stinking, hitherto uninhabitable tract of land was transformed into an impressive and imposing premises of a new, modern, secular institution of higher learning within the span of one year.



Kirori Mal College today stands at the cusp between the past and the future. While it retains inspiring facets of its proud history, with an equally sharp gaze it looks ahead, assimilating the exciting world of new knowledge as it unfolds in front of it, holding the promise an experience seeped with exhilarating learning and holistic growth for all those who enter its portals.

This college believes in providing the students an environment rich in knowledge and supportive of their extracurricular interests. The college encourages a quest for knowledge that is rooted in an ethical understanding of the world that we inhabit and this enthusiasm for learning along with a desire to evolve into socially responsible beings is reflected not only in the academic atmosphere but also visible in the field of extra-curricular activity. Their tradition of excellence in theatre, art and music only adds

to the richness of the academic fabric of the college. You will encounter the unique combination of social activism, creativity and learning in every discipline and every corner of this institution.



Over the years, the college has built up an impressive array of academic facilities such as a fully computerized library, a state of the art computer center and an active placement cell. Their endeavor is to make individuals more mature, responsible and socially aware.

Kirori Mal College imparts education to Undergraduates in the following programmes:

B.A. (Programme)

B.A. (Programme) with Bengali

B.Com

B.Com. (Hons.)

B.A. (Hons.)

- B.A. (H) Economics
- B.A. (H) English
- B.A. (H) Geography
- B.A. (H) Hindi
- B.A. (H) History
- B.A. (H) Political Science
- B.A. (H) Sanskrit
- B.A. (H) Urdu
- Political Science and History
- Economics and Political Science
- Political Science and Philosophy
- History and Economics
- Philosophy and History
- Economics and Philosophy
- Bengali Disc. and Political Science

- Bengali Disc. and History
- English Disc. and Political Science
- Hindi Disc and Political Science

B.Sc. Physical Sciences

B.Sc. Physical Sciences with Computer Science Option

B.Sc. Life Science

B.Sc. Applied Physical Sciences (Analytical Chemistry)

B.Sc. (Hons.)

- B.Sc. (H) Botany
- B.Sc. (H) Chemistry
- B.Sc. (H) Physics
- B.Sc. (H) Mathematics
- B.Sc. (H) Statistics
- B.Sc. (H) Zoology

Kirori Mal College - Vision and Mission

VISION

The college aims to have an impact on society through constant innovation in education, research, creative solutions, and entrepreneurship and to develop excellent leadership through hard work and creativity. College also wants to create an outstanding educational experience for students focused on profound disciplinary knowledge; problem solving; leadership, communication, and interpersonal skills; and physical and mental well-being.

MISSION

Their mission is to enhance performance and effectiveness of the institution and to build capacity through effective linkages with Institutions of Higher Education. The institution needs infrastructural strengthening and technological support for creating research environment. They also need to apply holistic quality standards for teaching learning and research. Student-teachers should be provided opportunities for self-learning, reflection, assimilation and articulation of new ideas

CORE VALUES

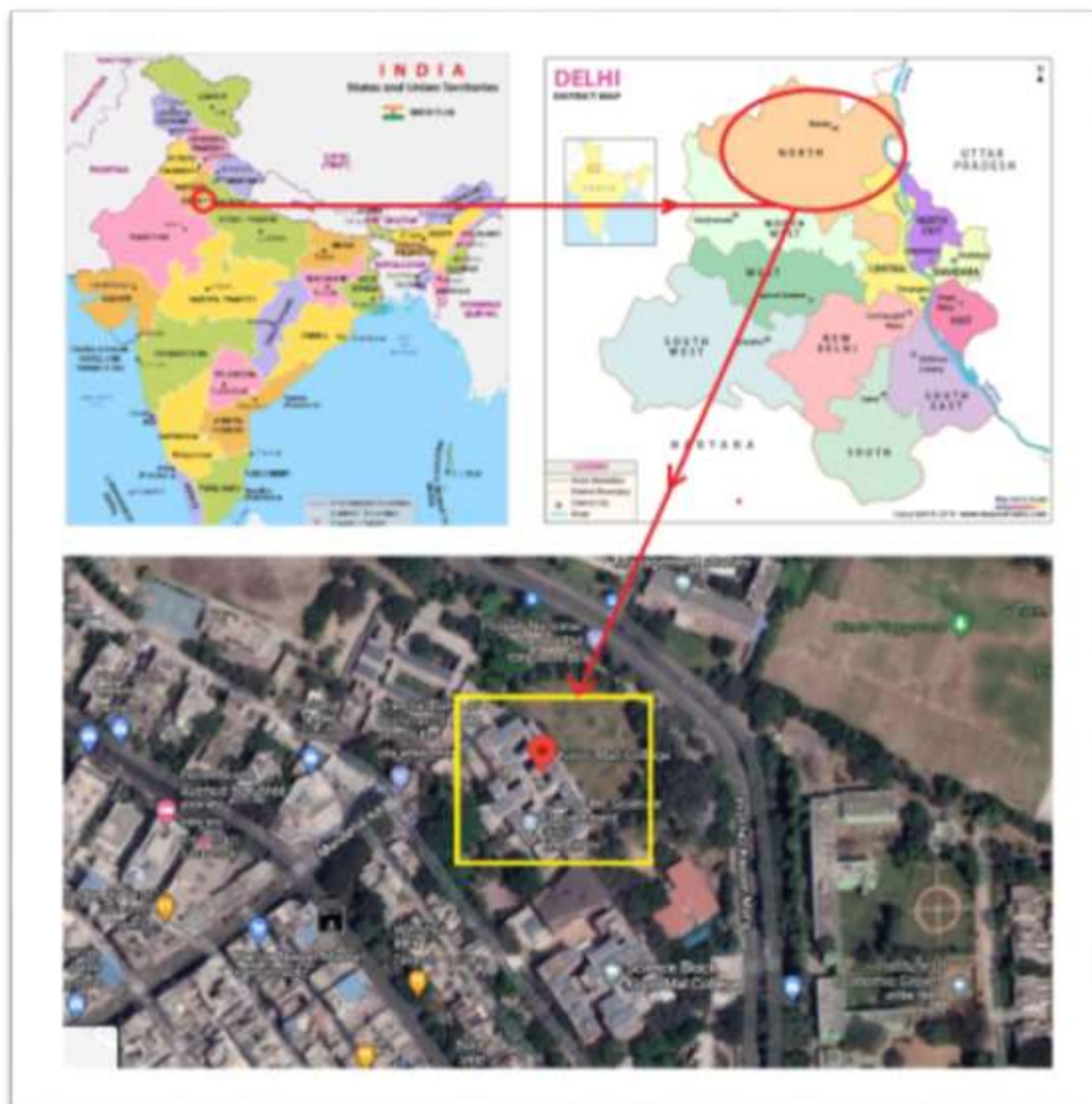
Excellence: The College aims to provide an outstanding setting to their faculty, staff, and students to flourish. Innovative solution is as the application of better solutions that meet new requirements, unarticulated needs, or existing needs in our society.

Respect: Research should be intended for at solutions aimed best for people, communities and the environment.

Inclusiveness: They aim to create a research environment that supports, represents, embraces and engages members of diverse community and background and gender.

Integrity: Integrity is critical for the institutional effectiveness. College aims to pursue the utmost level of personal, intellectual, academic, financial and operational integrity in the community.

Kirori Mal College Location



Geo Coordinates from Google maps: 28.6830334, 77.2077194

Audit Objectives and Scope

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

- To systematically identify the environmental aspects and components within the campus
- To quantify, record and analyse the identified aspects and components of environmental diversity of the campus.
- To deduce the impact of the environmental practices caused within and outside of the concerned campus.
- To establish baseline data or compare the past trends and predict future impacts
- To recommend possible measures for improvement and highlight best practices

Audit Participants

| <i>On behalf of Kirori Mal College:</i> | |
|---|---------------------------------------|
| Name | Position/Department |
| Prof. Vibha Singh Chauhan | Principal, Kirori Mal College |
| Prof. Shiv Kumar Kaushik | Vice Principal, Kirori Mal College |
| Prof. Anita Kamra Verma | Professor – Department of Zoology |
| Dr. M. Ramananda Singh | Associate Professor, Coordinator IQAC |
| Mr. Shri Krishan | Caretaker |

| <i>The audit was conducted on behalf of EHS Alliance Services:</i> | | |
|--|-----------------|---|
| Name | Position | Qualification |
| Mr. Vijay Singh | Lead Auditor | M.Sc. M.Tech, PGDISM, Lead Auditor ISO 14001:2015, OHSAS 18001:2007, BEE Energy Auditor |
| Dr. Uday Pratap | Co-Auditor | Ph.D , Lead Auditor ISO 14001:2015, EnMS, PDIS, QCI - WASH |

General Information of Kirori Mal College

Basic Information

Does any Environmental Audit conduct earlier?

No, This is the first time a systematic way of monitoring their environmental eminence initiative was taken by the college for environment protection.

What is the total permanent population of the Institute?

| Population | Male | Female | Total |
|--------------------|------|--------|-------|
| Students | 3283 | 1743 | 5026 |
| Teachers | 117 | 89 | 206 |
| Non-Teaching Staff | 63 | 13 | 76 |
| Total | 3463 | 1845 | 5308 |

What is the total number of working days of your campus in a year?

There are two Hundred (200) working days in a year.

Where is the campus located?

The campus is located in the North Campus of the university in New Delhi, India

Which of the following are available in your institute?

| | |
|-----------------------------|---|
| Garden area | Available |
| Playground | Available |
| Kitchen | Available |
| Toilets | Available |
| Garbage Or Waste Store Yard | Available |
| Laboratory | Available |
| Canteen | Available |
| Hostel Facility | Yes, Boys hostel only (Total 190, but now 4 students are there) |
| Guest House | No |

Which of the following are found near your institute?

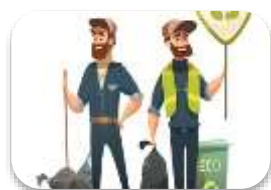
| | |
|-------------------------------|--------------------------------------|
| Municipal dump yard | Not in the vicinity of the institute |
| Garbage heap | No Garbage heaps |
| Public convenience | Yes, public convenience is available |
| Sewer line | 1 km sewer line within the campus |
| Stagnant water | No stagnant water |
| Open drainage | No |
| Industry - (Mention the type) | No |
| Bus / Railway/Metro station | Nearby campus |
| Market / Shopping complex | Yes |

Executive Summary

The environment 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. Our approach to promoting a Green Campus is to inculcate sustainable value systems among the students so that they carry the learning's and practices them in their future. This will ensure that Sustainability and Environmental practices get embedded in all the institutions and organisations in the country.

A Green Campus is a place where environmentally friendly practices and education combine to promote sustainability in the campus which ultimately offers an institution the opportunity to take the lead in redefining its environmental culture and developing new paradigms by creating sustainable solutions to environmental, social and economic needs of the mankind.

This is the very first environment audit of the university for doing their bit towards environmental protection and environmental awareness at the local and global front. Audit criterion is environmental cognizance, waste minimization and management, biodiversity conservation, water conservation, energy conservation and environmental legislative compliance by the campus. A questionnaire is used during the audit. This audit report contains observations and recommendations for the improvement of environmental consciousness.



Waste Management



Greening Campus



Energy Conservation



Water & Wastewater Management



Air Quality Management



Biodiversity Conservation



Legislative Compliance

Waste Management

Types of Waste on Campus

To create effective waste management plans, the campus first needs to know the types of waste they produce. Below, we have compiled a list of various kinds of waste commonly generated on institutional campus:

- 1. Food Waste** – Campus generates food waste. The average mess and canteen generate approximately <10 kg of food waste a day. The reasons for food waste on an educational campus may be over purchasing food to ensure a sufficient supply and then throwing it away, especially in all hostel messes where plentiful stores are essential. And in the cafeteria or hostel mess, students may pile food onto their ample trays, find it unappealing once they sit down and dutifully scrape it into the garbage. Immediate attention is given to food waste minimization techniques. College has poster for 'Zero Food Waste' in the mess and canteen.
- 2. Recyclable Paper, Cardboard, Plastic, Glass and Cans** -Campus tends to produce vast quantities of these recyclables. Even in the digital age, many students, professors and staff members still prefer handwritten notes and end up with piles of unwanted paper once their courses and projects are complete. The snacks so essential to late-night studying or socializing tend to come in recyclable plastic, glass or aluminium containers. And shipments of necessary items throughout the year are likely to arrive in recyclable plastic and cardboard packaging. Quantitative analysis should be carried out to reduce waste in the coming academic sessions. The Jagruti group collects waste paper and exchanges it for fresh usable paper.
- 3. Student Clothes and Housewares** - As we have mentioned above, many students find it more convenient to donate their clothes and dorm furnishings at the end of the year . The college has adopted a donation camp in the summer and winter seasons to help needy people.
- 4. E-Waste** - Student and facility electronics often form a large portion of a campus's waste —As campus continually upgrade their computing facilities and office computers to keep up with the latest technology, the old computers have to go somewhere. So do old printers, phones, copy machines and other electronics that receive upgrades over the years.
Discarded student electronics often become part of a College's waste stream as well. Students may throw away old phones, TVs, tablets, laptops and printers, along with cords and other accessories. Recycling is a much more eco-friendly option — the metals in old electronics often have a high reuse value.
- 5. Chemical Waste** - Chemical waste on campus may come from numerous sources. Campus laboratories generate waste chemicals, as do cleaning services. The detergents used in campus laundry rooms eventually become waste as well. Much of these chemical substances are hazardous waste under Manufacture, Storage and

Import of Hazardous Chemicals Rules, 1989 and must undergo specific disposal processes according to state environmental rules and regulations.

6. **Maintenance Waste** - In the maintenance department, spent on paints, solvents, adhesives and lubricants all form potentially hazardous waste. Because they are difficult to recycle, spent on incandescent light bulbs usually become landfill waste. Spent on fluorescent light bulbs, which contain small amounts of mercury, typically require special handling because of the environmental and health risks they pose. Usually, KMC gives the C&D waste to Municipal authorized contractors to dispose it.
7. **Furniture** - Furniture waste of the campus has a couple of different sources. The campus itself may also get rid of old furniture as it modernizes its classrooms, cafeterias, computer labs and study spaces. Annually sold to a junk dealer.
8. **Books/Magazines/Newspapers** - Books accounted for solid waste generation and college often generate textbook waste.
9. **Municipal Solid Waste** - The College is managing solid waste by agreement with Gurugram based state waste management facility, in-house composting system (vermicomposting) and conventional composting in 17 postable bags.
10. **Horticulture Waste** - College campus has lavish greenery and grounds that results from significant horticulture waste which is managed by an in-house composting system.



Greening the Campus

The college has 15700 Sq. Meter areas are developed as Gardens. The average duration of 2-4 Hours' spends by students during winters. An independent horticulture department is maintaining the landscaping of the campus. There are a total of 14 staff deployed in

horticulture. Annually, a Tree Plantation Drive is organized by campus. Total 50 trees and 100 hedge plants planted in last Financial Year with more than 70% survival rate. In campus, saplings are distributed to Students and visitors on various occasions. Various Trees are Planted and owned by Visitors as well as students. Indoor plants are also maintained by the campus to reduce indoor pollution. A herbal garden is also maintained by garden committee. The Nameplates are also displayed near the plants. The details of greenery are given below:

| Details | Count |
|-------------------|------------|
| Trees | 779 |
| Hedge Plants | 916 |
| Ornamental Plants | 1644 |
| Grass Cover | 3.87 Acres |



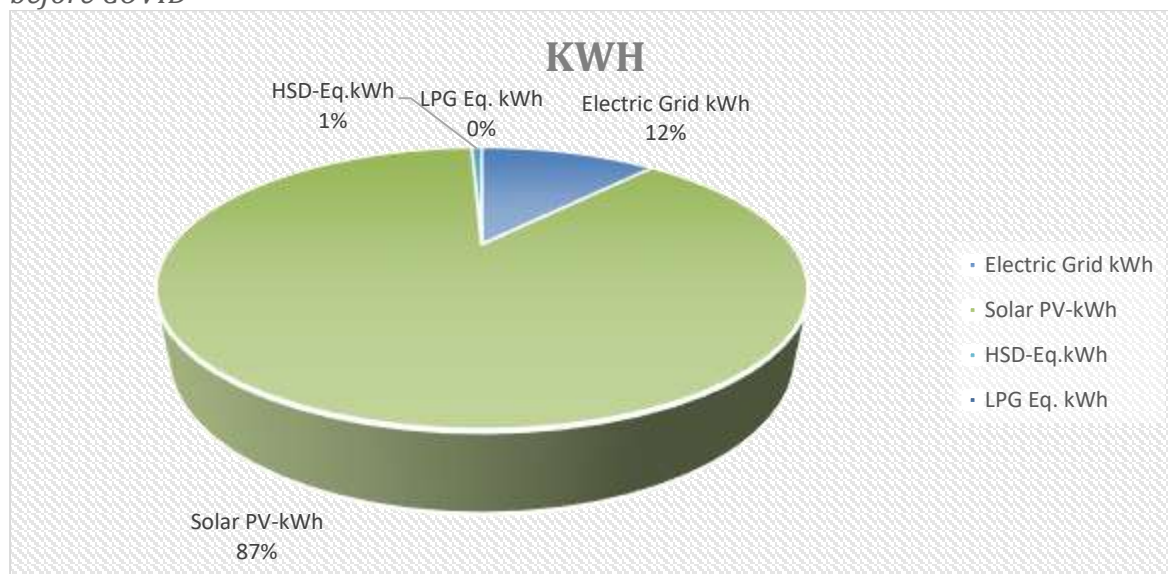
Above pictogram shows Indoor plants in campus helps to provide good quality air

Energy Conservation

| Energy Share | kWh | Percentage |
|-------------------|--------|------------|
| Electric Grid kWh | 34227 | 11.78% |
| Solar PV-kWh | 254310 | 87.54% |
| HSD-Eq.kWh | 1972.8 | 0.68% |

| | | |
|---|---|-------------|
| List ten ways that you use energy in your institute. (Electricity, LPG, firewood, others). Using this list, try to think of ways that you could use less energy every day. | Electricity is saved by the use of CFL/LED bulbs for illumination; LPG saves by the use of Pressure cookers for cooking food. | |
| Are there any energy-saving methods employed in your institute? If yes, please specify. If no, suggest some | Yes, a Renewable source of energy through a solar plant (240+60 KW) is operational. | |
| How many CFL/LED bulbs have your institute installed? | 60 % of Total Conventional bulbs are replaced by LED/CFL Lights. Management is in process of changing tube lights. | |
| Do you run “switch off” drills at the institute? | Yes | |
| Are your computers and other equipment’s put on power-saving mode? | Yes, In Practice | |
| Does your machinery (TV, AC, Computer, weighing balance, printers, etc.) run on standby modes most of the time? If yes, how many hours? | Yes, approx. 6 hours | |
| LPG Eq. kWh | 0 | 0% |
| Total -kWh | 290509.8 | 100% |

Note: * Above data is showing less than actual values because of the pandemic situation. The electricity consumption was less compared to fully functional campus before COVID



| Energy Savings potential -Annual -Solar PV-Installed system | | | |
|---|------------------------------|----------|------|
| S.No | Description | Quantity | Unit |
| 1 | Capacity of installed system | 300 | KW |
| 2 | Annual target of generation | 3,75,000 | kWh |
| 3 | Actual generation | 2,54,310 | kWh |
| 4 | Loss of Generation | NIL | kWh |
| 5 | Tariff of Electricity | 8.5 | unit |

| | | | |
|---|--------------------------|----------------|-----|
| 6 | Annual savings in Energy | 20,34,480 | INR |
| 7 | Investment | Nil | |
| | Pay Back | Instant | |

Water and Wastewater Management

| | |
|--|---|
| List uses of water in your institute | Basic use of water in campus: Drinking - 127.39 kl/month Gardening - 1378.20 kl/month Hostel - 27 kl/month Kitchen and Toilets - 1007.99 kl/month Others - 378.10 kl/month Total = 2918.68 kl/month |
| How does your institute store water? Are there any water-saving techniques followed in your institute? | There are overhead and underground water tanks for the storage of water and boosting within the College campus. Saving Techniques <ul style="list-style-type: none"> • Avoid overflow of water controlled valves are provided in water supply system. • Close supervision for water supply system. • Sprinklers usage for gardening and grass cover • Water Conservation awareness for new students |
| Locate the point of entry of water and the point of exit of wastewater in your institute. Entry and Exit- | Entry- Water comes from Delhi Jal Board (MCD) and additionally 2 bore well connections are there Exit- From the kitchen, laundry, mess, laboratories, bathrooms by covered drainage |
| Write down ways that could reduce the amount of water used in your institute | Basic ways: <ul style="list-style-type: none"> • Close the taps after usage • Maintenance and monitoring of valves in supply system to avoid overflow, leakage and spillage • Water Conservation awareness for new students |
| Does your institute harvest rainwater? | Ten Modern rainwater storage underground tanks are available. |
| Is there any water recycling System? | Not available |

Air Quality Management

| | |
|---|--|
| Are the Rooms in Campus are Well Ventilated? | Yes, as per National Building Code, guidelines |
| Window Floor ratio of the Rooms | Very Good, ample daylight utilization |
| What is the ownership of the | There si no college owned vellele |

| | | | | | |
|--|--|------|------|-------|-------|
| vehicles used by your campus? | | | | | |
| Provide details of school-owned vehicles? | Buses | Cars | Vans | Other | Total |
| No. of vehicles | 0 | 0 | 0 | 0 | 0 |
| No. of vehicles more than five years old | 0 | 0 | 0 | 0 | 0 |
| PUC done | Yes | Yes | Yes | Yes | Yes |
| Specify the type of fuel used by your campus's vehicles | Diesel-0, Petrol - 0, CNG - 0 | | | | |
| Air Quality Monitoring Program | No | | | | |
| Details of DG Sets in campus | Yes, 2 Numbers of DG Set; The capacities of DG's are (250 & 450) KVA. All have acoustic enclosure canopy and stack height. | | | | |

Air Pollution Mitigation

The campus encourages the students to use public transport. There is no vehicle movement allowed within the campus, except for goods and service movement periodically.

The parking of staff vehicles is allowed at a designated space within the campus. Hence, air pollution due to vehicular movement is negligible. Paved roads and vegetation help in reducing dust pollution to a large extent. Burning of waste within the campus is strictly banned.

Biodiversity Conservation

Promoting biodiversity at the College campus provides students with educational, hands-on opportunities to make positive environmental impacts. Hanging birdhouses, planting wildflower gardens. Birds and Squirrels are commonly found in campus. A variety of birds species and other flora and fauna are available but these are not harmful to humans so institute doing their bit for its conservation. 6-7 Dogs are found in campus with full vaccinated, other stray animals are not inside the camps due to the hard fencing of premises.

Environmental Legislative Compliance

| | |
|---|--|
| Are you aware of any environmental Laws pertaining to different aspects of environmental management? | Yes, faculty members and the administrative team is well aware of national environmental laws. |
| Does your institute have any rules to protect the environment? List possible rules you | Yes, innovative initiatives are being taken by campus to reduce pollution and go green. |

| | |
|--|--|
| could include. | |
| Does Environmental Ambient Air Quality Monitoring conducted by the Institute? | No. |
| Does Environmental Water and Wastewater Quality monitoring conducted by the Institute? | Not Yet. |
| Does stack monitoring of DG set conducted by the Institute? | Yes, by NABL approved Laboratory. |
| Is any warning notice, letter issued by state government bodies? | Not Any, Half Yearly Compliance report submitted to statutory bodies. |
| Does any Hazardous waste generated by the Institute? | Yes, e-waste, waste oil, plastic waste are managed by MOU with an approved external agency |

BEST PRACTICES FOR GREEN INITIATIVES

All the staff is well included in environmental awareness programmes and campaigns

- Kirori Mal College is the very first college in Delhi University for organize FDP (Faculty Deveelopment Program) on '**Environment Audit**' topic.
- **Renewable Energy** - The solar plant of 240KW + 60KW is fully functional
- **Solid Waste Management** – Currently managing with Municipal Corporation.
- **Adoption of Village** – CER (Social Environment Responsibility) for promoting environmental sanitation and public health in the locality, nearby Delhi Chnadrawal is adopted by the college for Swachchata Abhiyan and for teaching the students og the village upto class 12th.
- **Water Conservation** – College has majority of water purifires and only few RO wastewater is used for plant gardening in, 50 KLD plant construction is in progress
- **Paper Conservation** - College has a strict policy for two sides Xerox and printing
- All the dogs are vaccinatated or neuterized periodically by the college.
- College has MoU signed with third party authorised vendor for Paper recycle and MBW. College has incinirators installed in girls common room, and hostels.

Recommendations

- ✿ Electrical Safety Audit is highly recommended with Thermography.
- ✿ College should adopt water reuse practices, including proposed STP
- ✿ Provide sanitary waste disposal facility by following the CPCB guidelines for the management of sanitary waste -As per Solid Waste Management Rules, 2016.
- ✿ More messages should be displayed at various locations to Aware the Peoples about Energy Savings. The use of Natural Lights and Natural Ventilation should be promoted. College should run a Conservation awareness campaign by student
- ✿ All stakeholders of the college, including students, teaching, and non-teaching members should be equally motivated and sensitized about the significance of environmental protection.
- ✿ Environmental parameters should be included in purchase policy to achieve a cradle to grave approach for sustainability.

Conclusion

This audit involved extensive consultation with all the campus team, interactions with key personnel on a wide range of issues related to Environmental aspects. The Kirori Mal College, University of Delhi has an Eco Club - Bhoomi for awareness campaigns, activities and sustainable use of resources.

Overall 28% of the college campus is for landscaping. The audit has identified some observations for making the campus premise more environmental friendly. The recommendations are also mentioned with observations for the college campus team to initiate actions.

The audit team opines that the overall site is maintained well from an environmental perspective. The major observations that are important to initiate urgently is electrical safety audit for the existing electrical infrastructure.

References

- **The Environment [Protection] Act - 1986 (Amended 1991) & Rules-1986 (Amended 2010)**
- **The Petroleum Act: 1934 - The Petroleum Rules: 2002**
- **The Central Motor Vehicle Act: 1988 (Amended 2011) and The Central Motor Vehicle**
- **Rules:1989 (Amended in 2005)**
- **Energy Conservation Act 2010.**
- **The Water [Prevention & Control Of Pollution] Act - 1974 (Amended 1988) & the Water (Prevention & Control of Pollution) Rules - 1975**
- **The Air [Prevention & Control Of Pollution] Act - 1981 (Amended 1987) The Air (Prevention & Control of Pollution) Rules - 1982**
- **The Gas Cylinders Rules - 2016 (Replaces the Gas Cylinder Rules - 1981**
- **E-waste management rules 2016**
- **Electrical Act 2003 (Amended 2001) / Rules 1956 (Amended 2006)**
- **The Hazardous Waste (Management and Handling and Trans-boundary Movement) Rules, 2008 (Amended 2016)**
- **The Noise Pollution Regulation & Control rules, 2000 (Amended 2010)**
- **The Batteries (Management and Handling) rules, 2001 (Amended 2010)**
- **Relevant Indian Standard Code practices**

Transparency of Green Audit Report

Environment audit report is one of the useful means of demonstrating an organization's commitment to openness and transparency. If an Organisation believes it has nothing to hide from its stakeholders, then it should feel confident enough to make its green audit reports freely available to those who request them. As a basic rule, green audit reports should be made available to all stakeholders.

ANNEXURE

Green Initiatives photographs and certificates



Nursery, Herbal Garden and Playground of campus



Sorting and Trimming work done by horticulture team



Composting pit and vermi-Composting in the campus



Lush Green Campus



Well ventilated and clean campus



Environment Awareness Posters



International Yoga Day Celebration



International Yoga Day Celebration



Kirori Mal College
University of Delhi
Under the aegis of DBT Star College Scheme in collaboration with
Pandit Madan Mohan Malviya National Mission on Teachers & Training (PMMNMTT)
Mizoram University, Aizwal

One Week Online-Faculty Development Program
on
Environmental Audit
28th June - 2nd July, 2021





About Kirori Mal College

Kirori Mal College is an institution of academic excellence, established in 1954, provides students an environment rich in knowledge and supportive of their extracurricular interests. The college encourages a quest for knowledge that is rooted in an ethical understanding of the world that we inhabit and this enthusiasm for learning along with a desire to evolve into socially responsible beings. College takes pride in its past achievements and looks to the future with great hope and determination. Kirori Mal College has been accredited an 'A' grade with 3.54 CGPA by the NAAC.

About Mizoram University

Mizoram University, established by an act of Parliament, became functional in July, 2001. During the last 19 years of its existence, the University has made great strides in terms of infrastructure, academic programs, manpower and support services. University has been accredited an 'A' grade by the NAAC and ranks amongst the top 100 Universities in India as assessed by the NIRF.

About the FDP

FDP is being organized under the aegis of the Pandit Madan Mohan Malviya National Mission on Teachers and Teaching Program, Ministry of Human Resource Development, Government of India & DBT Star College Scheme. We invite faculty members and research scholars from colleges and universities across the country to register and participate in this program. The program consists of 2 sessions, Session I from 10 am - 4 pm, and Session II from 2-5 pm, and Lunch Break in between. Lectures will be of 60 minutes duration each, spread over 5 days. This FDP is an effort to enrich the participants on the importance of environment impact assessment. Environment audit encompasses analysis of pollution being generated or will be generated and completion of annual estimate. The FDP will highlight waste management and minimizations, energy and environmental Legislatives, protection and management of environment. Faculty members of all disciplines who are interested in Research and Innovations are welcome to attend the FDP.

Prof. Vibha S. Chauhan
Principal
Kirori Mal College
University of Delhi, Delhi

Prof. K.R.S Sambasiva Rao
Vice Chancellor
Mizoram University
Aizwal

One Week Online-Faculty Development Program on Environmental Audit

| <u>Monday, 28th June, 2021</u> | <u>Tuesday, 29th June, 2021</u> | <u>Wednesday, 30th June, 2021</u> | <u>Thursday, 1st July, 2021</u> | <u>Friday, 2nd July, 2021</u> |
|--|--|--|---|---|
| <p>Session I: 10:00-1:00pm</p> <p>Inaugural session</p> <ul style="list-style-type: none"> • 9:30 am: "Welcome" Prof. V.S. Chauhan, Principal, KMC. • 9:45 am: "Inauguration of FDP" Prof. Sambasiva Rao, VC, Mizoram University. • 10:00 am: "Air Pollution: Causes, Prevention and Way Forward" Prof. Vibha Chauhan, DG, TERI. • 11:00 am: "Life Cycle Assessment and Environmental Audit" Prof. Mohanraj Ranganathan, Head of Department, Dept. of Environmental Management, Bharathidasan University. <p>Lunch Break 1:00-2:00 pm</p> <p>Session II: 2:00-5:30 pm</p> <ul style="list-style-type: none"> • 2:00 pm: "Environment Monitoring and Audit" Mr. Manoj Rathore, ESO, Impact Investment. • 3:00 pm: Introduction of participants • 4:00 pm: "Environment legislation" Dr. Anil Kumar, Ex-Director, Department of Environment, Govt. of Delhi | <p>Session I: 10:00-1:00 pm</p> <ul style="list-style-type: none"> • 10:00 am: "Economic Evaluation of Ecosystem Services: A Case Study" Dr. D.R. Baxi, Environment Officer, KSCPB. • 11:00 am: "Pollution control", Dr. Anil Kumar, Ex-Director, Environment, GNCTD • 12:00 noon: "Water Auditing- A Tool for Water Conservation" Ms. Kishiksha Bhatt, Additional Director, FICCI, Delhi <p>Lunch Break 1:00-2:00 pm</p> <p>Session II: 2:00-5:30 pm</p> <ul style="list-style-type: none"> • 2:00 pm: "Environmental Product" Dr. Anil P. Joshi, Founder, Haryana Environmental studies Conservation Organization (HESCO). • 3:00 pm: "Environmental Audit: CAG's Perspective" Mr. Sanjay Kumar Jha, IASAS, DG, Audit (Environment & Scientific Department), CAG office • 4:30 pm: Mr. Sanjay Kumar Jha | <p>Session I: 10:00-1:00 pm</p> <ul style="list-style-type: none"> • 10:00 am: "Environmental Audit for the Educational Institutions" Mr. Prasad Kanchil, Founder Director, EES Alliance Services • 11:00 am: "Environment Impact Assessment" Ms. Shreya Chakra, Project Consultant, AECOM • 12:00 noon: "Ecosystem Restoration" Mr. Sachin Kumar Sharma, ex-GM, NTPC <p>Lunch Break 1:00-2:00 pm</p> <p>Session II: 2:00-5:30 pm</p> <ul style="list-style-type: none"> • 2:00 pm: "Industry Sustainability" Prof. Vandana Mishra, Environmental Studies, DU. • 3:00 pm: "Environmental Audit and Life Cycle Assessment -A Case Study of Coffee Processing Industry" Prof. A.K. Nema, IIT, New Delhi • 4:00 pm: "Climate Change Quiz" Dr. Bharan Chopra. | <p>Session I: 10:00-1:00 pm</p> <ul style="list-style-type: none"> • 10:00 am: "Benefits of Environmental Audit" Dr. M. Dwarkanath, • 11:00 am: "Role of Chartered Accountants in Environmental Audit" CA. Amarjit Chopra, Ex-President, ICAI. • 12:00 noon: "Environment Audit of Air Pollution Control Systems" Mr. M.A Pathil, Sr. Director, FICCI, Delhi. <p>Lunch Break 1:00-2:00 pm</p> <p>Session II: 2:00 - 5:30 pm</p> <ul style="list-style-type: none"> • 2:00pm: "Audit of Water Issue", Mr. Manish Raj • 3:00 pm: "Carbon Sequestration and Auditing: Methods, Scope and Prospects" Dr. Ratul Bhatiya, Department of Botany, University of Delhi • 4:00 pm: Activity/Assignment | <p>Session I: 10:00-1:00 pm</p> <ul style="list-style-type: none"> • 10:00 am: "Environmental Audit programme in India: Role of Educational Institutes" Dr. M. Dwarkanath, Ex-Director, DST, Govt. of Puducherry • 11:00 am: "Environmental Clearance w.r.t. Megaprojects" Mr. J. S. Kanyarota, Member Secretary, CPCB, New Delhi. • 12 noon: "Environmental Management A Comprehensive Study of Industrial Sector" Dr. S. Krishna Bharathi, TU, Rheinland Middle East office, Dubai. <p>Lunch Break 1:00-2:00 pm</p> <p>Concluding Session</p> <ul style="list-style-type: none"> • 3:00 pm: "enviroging- necessary Audits for Sustainability & Climate Resilience in Cities" Dr. Anamita Roychowdhury, Executive Director, Centre for Science & Environment. • 4:00 pm: "Rejuvenation of Rivers and Related Ecosystems" Mr. Rajiv Ranjan Mishra, DG, National Mission on Clean Ganga. • 4:45 pm: "Closing Remarks" Prof. Lokanath Mishra, Director, FDC, Mizoram University. • 5:00 pm: "Vote of Thanks" Prof. Anita K. Verma, Program Coordinator, DBT Star College Scheme, KMC. |

KMC is the first college in DU to organize FDP on Environment Audit



Kirori Mal College
University of Delhi
NAAC accredited A+ grade with 3.54 CGPA
Department of Botany & Zoology
(under the aegis of DBT Star College Scheme)

World Environment Day

Celebrations
Date: 5th June, 2021
Timing: 11:00 am onwards

- ❖ Slogan Writing Competition
- ❖ T-Shirt Designing Competition
- ❖ Environment Quiz

Last Date for Registration: 4th June, 2021
Registration Link: <https://forms.gle/pufuBHAZ2hGDdABL9>
Meeting link: <http://meet.google.com/zcr-vnxy-dfv>

Principal
Prof. Vibha Singh Chauhan
Program Coordinator
Dr. Anita Kamra Verma
Subject Coordinator
Dr. Renu Kathpalia

Organizing Team
Department of Botany
Dr. Vibha G. Checker
Dr. Yamal Gupta
Department of Zoology
Dr. Anjali Kumar
Dr. Rana Samad





World Environment Day
5th June, 2021

Rules & Regulations

- Participants has to be present 15 minutes before the commencement of activity.
- The participant must be an undergraduate student.
- Individual participation in all events.
- Participants can participate in all the three events.
- The competition is open to all streams of undergraduate courses.
- The participants have to unmute and switch on camera to present their work.

Slogan writing & T-Shirt Designing
Topic: Ecosystem Restoration

- The participant must submit their work at damtar_act@kmc.du.ac.in
- The participant will be disqualified if copied work is submitted.
- A4 size submissions in pdf format will be accepted.
- Participants can submit their work in Hindi or English.
- Last day of submission is 4th June 2021.

Quiz
Topic: Environment

- Participants must switch on their camera and mic while answering.
- Depending on the number of participants there would be a screening round done through google form (if required).
- Decision of the judges will be final.
- Use of unfair means or surfing net is prohibited and may lead to disqualification.

Last Date for Registration: 4th June, 2021
Registration Link: <https://forms.gle/pufuBHAZ2hGDdABL9>
Meeting Link: <http://meet.google.com/zcr-vnxy-dfv>

World Environment Day Celebration



Kirori Mal College
University of Delhi
NAAC accredited A+ grade with 3.54 CGPA
Department of Botany And Zoology
under the aegis of DBT Star College Scheme

Cordially invites to celebrate

Session I: 12 noon
i) Poster Competition
Topic: Impact of lockdown due to Covid-19 on Environment

Session II: 1.00 pm
ii) Minute Mania
Topic: My Earth my Responsibility
A Showcase of Talent
iii) Quiz

Last Date for Registration: 21st April, 2021
Registration Link: <https://forms.gle/ZwvQh8xXDVDYwQT29>
Platform: Zoom Meeting
Link will be shared with all registered participants

Organizing Team

| | |
|----------------------|-------------------|
| Zoology: | Botany: |
| Dr. Gauri Garg | Dr. Archana Singh |
| Dr. Haren Ram Chiary | Dr. Saloni Malik |





Attractive Awards



Save Earth

Principal
Prof. Vibha Singh Chauhan
Program Coordinator
Dr. Anita Kamra Verma
Subject Coordinator
Dr. Renu Kathpalia

Earth Day Celebration by KMC

KIRORI MAL COLLEGE
DEPARTMENT OF BOTANY AND ZOOLOGY
UNIVERSITY OF DELHI
AN AAC ACCREDITED A+ GRADE WITH 5.04 CGPA
(UNDER THE AEGIS OF OBT STAR COLLEGE SCHEME)

TWO-DAYS WORKSHOP FOR STUDENTS
on
Carbon Sequestration & Solid Waste Management
A Perspective

Date: 5th – 6th November, 2020
Time: 4:00-6:00 pm

❖ Solid Waste management – Dr. Lata
❖ Technological interventions in carbon and solid waste management – Dr. Ratul

Registration Link: <https://forms.gle/3uH1aMsEymBZDsTb7>

Convenors:
Dr. Rajni Gupta, Department of Botany
Dr. Sanjivita Das, Department of Zoology

Patron: Prof. Vibha S Chauhan, Principal
Program Coordinator: Dr. Anita K. Verma, Department of Zoology
Subject Coordinator: Dr. Renu Kathpalia, Department of Botany

Fig. 3: Different methods for Carbon history
Source: Raven et al., 2010

Environment Awareness Workshop

WASTE PAPER RECYCLING AGREEMENT

This Agreement is made and entered into on this day 22nd August 2020 by and between:

JAAGRUTI® Waste Paper Recycling Services, (Working name of Paper Recycling Services being provided under "Bhaarti Consultancies Pvt. Ltd", a Company incorporated under the Companies Act, 1956 with *Corporate Identification Number (CIN): U74140DL2018PTC205497) and having its registered office at KD 312, Panchpura, Delhi-110034, and Waste Paper Collection and Segregation Facility at 5-3 Basement, Shopping Centre-1, Mansarovar Garden, Delhi 110015, represented through its Directors, Mr. Vivek Mehta and Mr. Vanadha Mehta, and hereinafter referred to as "JAAGRUTI"

AND

Kirori Mal College, a college affiliated to University of Delhi and having its campus at Maurice Nagar, North Campus, Delhi-110007, and hereinafter referred to as "KMC"

Whereas, KMC association with JAAGRUTI is an association that is non-mandatory in nature and JAAGRUTI has expertise and experience in recycling the waste paper.

Whereas, KMC is desirous to engage with JAAGRUTI to recycle the waste paper.

Now, therefore, the Parties hereto, in consideration of the premises and of covenants and undertakings herein contained, mutually agree as follows:

- The grades of paper given by KMC to JAAGRUTI for recycling, would broadly include the following:
 - Office Grade: Notepads/Notebooks/Ruled Writing paper, Answer Sheets, Printed/Photocopied Documents on A4 and A3 Sheets, Books, Letterheads, White Envelopes.
 - Magazine Grade: Magazines, Journals, Brochures and Catalogues
 - Newspaper Grade: Old Newspapers, Shredded Office Grade Paper, Old Records (SUBJECT TO RECYCLABILITY POTENTIAL)

Note: Cardboard, coloured chart paper, laminated paper, mica-shredded paper & wrt, very old and/or contaminated paper is unfit for recycling

- JAAGRUTI shall pickup Waste Paper free of cost from KMC premises. But, the pickup frequency of waste paper from KMC premises shall be decided and shall depend on the quantities of waste paper generated by KMC.
- This collected waste paper will be brought to JAAGRUTI premises for proper segregation and sorting.

SMS

Membership No. 140001120

AGREEMENT FOR BMW SERVICES

This initial agreement dated 18th day of September 2020 hereby, signed/signed on 23rd day of Aug 2020

BETWEEN

M/s. SMS Water Grace BMW Pvt. Ltd, represented by Mr. Prabal Prasad Singh Jadon, Sr. Manager, at Sewage Treatment Plant, Delhi Jal Board Complex, Minto, New Delhi-110041.

AND

Shri. Anita Verma, Lectr. Kirori Mal College, Delhi-110007

D-7

(Herein after referred to as the GENERATOR) represented by Dr. Anita Verma 9818721222

The term condition would be remain as mentioned in the initial agreement, except

The rates would be charged Rs. 3000/- Three Thousand and 00/- Per Month for Collection, Transportation, Treatment and Safe Disposal of Bio Medical Waste for 100 Bed Strength, Subject to the condition of Weight limit of 500 kg. Charges will be extra @ Rs. 20/- per kg. The agreement is renewed for period from 1st Sept 2020 to 31st Aug 2021

SMS WATER GRACE BMW Pvt. Ltd.

Authorized Signatory

Health Care Unit

Authorized Signatory

Scanned with CamScanner

MOU of BMW services and Waste paper Recycling

***** END OF THE REPORT *****