



Miranda House
UNIVERSITY OF DELHI



ENVIRONMENT AUDIT REPORT

2022-2023

PREPARED BY
EHS ALLIANCE SERVICES



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CERTIFICATE



AUDIT CERTIFICATE

PRESENTED TO

MIRANDA HOUSE

GC Narang Road, University Enclave, New Delhi, 110007

Has been assessed by EHS Alliance Services for the comprehensive study of environmental impacts on institutional working framework to fulfill the requirement of

ENVIRONMENT AUDIT

ACADEMIC YEAR 2022-23

The environment legal compliances and initiatives carried out by the Institution have been verified in the report submitted and were found to be satisfactory.

The efforts taken by management and faculty towards environment and sustainability are highly appreciated and noteworthy.

AUDITOR SIGNATURE



03.10.2023

DATE OF AUDIT

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ACKNOWLEDGEMENT

EHS Alliance Services would like to thank the management of Miranda House for assigning this important work of Environment Audit. We appreciate the co-operation to the teams for completion of assessment.

First of all, we would like to thank **Prof. Bijayalaxmi Nanda - Principal** for giving us an opportunity to evaluate the environmental performance of the campus.

We would also like to thank **Dr. Saloni Bahri - Audit Coordinator and Convener, IQAC** for her continuous support and guidance, without which the completion of the project would not have been possible. We are also thankful to other staff members who were actively involved while collecting the data and conducting field measurements.

We are also thankful to

Dr. Monika Tomar	Ex-Officio Member, IQAC
Dr. Deepali	Convener, Garden Committee
Dr. Rekha Kumari	Convener, MH Vatavaran



DISCLAIMER

EHS Alliance Services Audit Team has prepared this report for Miranda House based on input data submitted by the representatives of college 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 are 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.

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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.

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A handwritten signature in blue ink, appearing to read 'J. Das'.

Signature

LEAD AUDITOR



CONCEPT AND CONTEXT

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 a 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 Corporate Social Responsibility of the Higher Educational Institutions to ensure that they contribute towards the sustainable environment.

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.

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 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 Environment 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.”

This audit focuses on the environment legal compliances and implementation of rules defined by MoEFCC or state pollution control board. The concepts, structure, objectives, methodology, tools of analysis, and objectives of the audit are discussed below.



INTRODUCTION

All living things are tremendously fortunate to have nature as a gift. Disturbances in nature give birth to environmental issues. These are expanding every day as a result of the planet's growing urbanization and industrialization. Our earth is under tremendous pressure from unplanned resource use, which is also raising global temperatures quickly. Thus, resource utilization needs to be planned sustainably in order to protect natural resources for future generations.

Globally, sustainable development is gaining popularity as a means of protecting the environment. The earth's valuable resources can be preserved by using resources wisely. The best way to preserve and safeguard natural resources is to measure environmental components.

Environmental auditing began 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 reporting 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.

This "Environment Audit" report will assist everyone in considering how to protect resources, demonstrating a readiness to understand their value, taking action to reduce resource consumption, and serving as a role model for others by adopting eco-friendly behaviors in order to fulfill the objective of sustainable development. Environmental risks can be reduced at a reasonable cost by implementing environmental audits effectively.



OVERVIEW OF THE COLLEGE

Miranda House, a college for women, located in the University of Delhi campus, is a premier women's institution. It was established in 1948 by the then Vice Chancellor, Sir Maurice Gwyer. Lady Edwina Mountbatten laid its foundation stone on March 7 in the same year. Originally designed by renowned architect Walter George, Miranda House is built in warm red brick with cool and spacious corridors. The College shares an architectural affinity with other colonial educational institutions of the country. In the past six decades, as the College has grown, several other buildings have been added in consonance with its original design. Special efforts are on to preserve the heritage of its pristine architectural glory.



Miranda House offers liberal education in social sciences, humanities and basic sciences to more than 3500 students. The faculty, renowned for its meritorious basis profile and versatile talent, is dedicated to the cause of liberal education. Through their three years at Miranda, our students develop a sense of social responsibility, intellectual rigour, and practical knowledge. They learn communication, analytical and problem-solving skills, and a demonstrated ability to apply their education to our complex and diverse world. The College has always maintained high academic standards. More significantly, it has provided students an enabling and creative environment to freely develop and express views that help them respond to changes in society.



The College has always maintained high academic standards. More significantly, it has provided students an enabling and creative environment to freely develop and express views that help them respond to changes in society. Being on the University campus, its proximity to other colleges facilitates the participation of Miranda students in several inter-college events, both academic and cultural. Those who will make the College hostel their home for the next three years have the privilege of residing in one of the most beautiful residential buildings on the University campus. The institution's philosophy is guided by a pedagogy that encourages the students to explore new domains, to critically examine the world around them and to question stereotypes.

The Legacy... traditions and institutional values

MH has a rich legacy. Established at dawn of independence it provided a unique opportunity to young women for quality higher education. They set for themselves high goals and ideals. They worked for a new society in which women would enjoy equal opportunity with men in professional and public fields. In this, they were abetted by the founding faculty who were independent minded, and belonged to the select group of highly educated women in independent India with a deep concern for quality of education they imparted. They were also charged with a spirit of adventure, steeped in idealism, and committed to women empowerment and the task of building a nation. Proud of their mission as early pioneers, they worked with single-minded devotion in setting the Miranda traditions. These attributes of total dedication have contributed in a large measure to the position of distinction occupied by the college. Over near seven decades of its existence, the college has grown from strength to strength, continuing to provide an atmosphere of high academic excellence and rich cultural activities to its students. The college has established a niche for itself amongst the globally recognized premiere institutions of higher learning.

Being a college established and maintained by the University, Miranda House has a special place among the women's colleges of the University of Delhi. Its location in the heart of the University Campus, and its close interaction with the various Departments of the University and other campus colleges gives it a unique advantage. Although a women's college, it is not a cloister. It welcomes interaction with other colleges and educational organizations across the country, actively engaging both men and women in all its extramural activities, competing with the best on equal terms.

The extremely distinguished list of alumnae imparts a sense of confidence and immense pride in students. They view themselves as torchbearers of great traditions. All this propels them to often



explore uncharted territory, think unfettered, and bend traditions in a bid to create a better world, especially for women.



MISSION

The stated mission of the college is to provide

- a stimulating active learning environment attracting young women with exceptional desire to make a difference to the world
- highest quality liberal arts and basic science education through distinctive academic programmes that instill rigour in the pursuit of knowledge
- culturally sensitive inclusive environment upholding core values of respect for diversity
- enriching co-curricular activities linking education to the world of work and communities
- dedicated and responsive faculty of scholars to assist each student fulfill aspirations and reach milestones
- competencies for new domains of knowledge and the future of work in a globally connected world
- early mentoring for leadership instilling the capacity to explore new ideas, take the intellectual risk, and usher paradigm change



VISION

The Upanishadic maxim in the college logo “Swadhyayann pramaditavyam” enshrines Miranda House’s understanding of what education must accomplish and steers students towards introspection and self-learning.

Miranda House envisions a world where women have their rightful place and are given due recognition as leaders to reach top positions in all sectors of human endeavour. To give shape to this vision, Miranda House continually reaffirms and embraces its responsibility to build on its historic legacy of leadership in the education of women. It remains strongly committed to addressing issues of gender in all their complexity and preparing young women to:

lead professionally successful lives enriched by the love of learning
build personally fulfilling lives radiating integrity and strength of character
sustain purposeful engagement with the world with an open mind and balanced perspective
develop an understanding of their duty to nation and nation-building
meet with confidence the challenges they will encounter in their lives
flourish in a different cultural milieu in an increasingly interconnected world
uphold the core institutional values of respect for diversity, inclusiveness, and humanism
to emerge as leaders charged with new ideas and the capacity to make a difference.

Facilities in the campus

Amenities at Miranda provide far more than academic and administrative facilities on campus. It is dedicated to providing students with an exceptional infrastructure for learning as well as facilities for simplifying the procurement of fundamental skills. To accomplish this goal, Miranda House offers the following:

LIBRARY: The Miranda House Library was established on 7th March 1948 and the first book was accessioned on 22nd July 1948. The foundation stone of the present building was laid by Smt. Indira Gandhi, then Prime Minister of India on 7th March 1973. The Miranda House Library preserves and provides access to a rich and enduring source of knowledge to inform, inspire and engage its users in their intellectual and creative endeavors by the well-known motto "Right Document to the Right Reader at the Right Time". It takes pride in fulfilling this inherent mission to the hilt. MH has common Digital Resource Centres with a cluster of 80 computers on LAN.



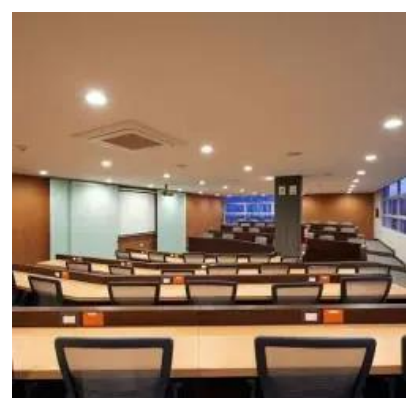
SMART CLASSROOMS: The total of 110 formal lecture spaces provide comfortable seating for 2200 students in regular classes with the potential for easily accommodating another 10% at any time. Nearly all lecture venues have neatly arranged custom designed, comfortable desks and benches with shelves for bags; teacher table and chair.

- Green Ceramic Board for use with dust-free chalk or White Board for use with marker pens.
- Roof mounted Projector, and a pull-down white display screen for multimedia projection.
- Custom-designed Lecterns facility to link laptop to multimedia projector.
- Extra power outlets on front wall for flexible usage of the room.
- Air-conditioning was considered essential.



AUDITORIUM: Miranda House has an Auditorium with seating capacity of 450 in the Main Hall. As one of the oldest constructions in the college, it is part of the college building that was designed by Walter George. The architecture is unique. The Miranda House Auditorium and its stage bring alive nostalgic memories and are of historic importance.

MINI-AUDITORIUM: Miranda House has a Mini Auditorium with AC a seating capacity 170 Seating arrangement in steps for a clear visibility of all seated in there. Large windows with beautiful sight of green coverage around the auditorium. Is used to conduct Seminars, Conferences, Certificate Courses, Workshops, Lectures, and Training Programs.



SEMINAR HALL: The Seminar Hall has a seating capacity of 125. It has a high-quality sound system, wall-mounted speakers, conference table mikes, roving mikes, lapel microphone, provision for recording; Roof-mounted high luminosity projection system.



MH hosts several cultural events in its outdoor spaces like the open-air theatre, 2 arcades, cafeteria lawns, front lawns, sports ground, hostel lawns, etc. The bank foyer is periodically used for exhibitions and help desks for events. The Heritage Hall and the Student Activity Center are exquisite learning studios used extensively for organizing indoor music concerts, dance, theatre, workshops, exhibitions of photographs, paintings, art installations, prestigious public lectures, and panel discussions. They are innovatively used for baithak-style gatherings.

SPORTS FACILITY: Miranda House has a Sports Ground. Facilities exist for a wide range of indoor as well as outdoor sports. The college has 14 Sport Teams and competitively participates in Archery, Athletics, Ball Badminton, Basketball, Chess, Cross-country, Netball, Power Lifting, Table Tennis, Taekwondo, Tennis, Weight Lifting, Volleyball and Yoga

FITNESS CENTRE: MH has an active Physical Education Department that inspires the college community to work on a fitness regime and organizes several intra-college sports events, morning sessions on aerobics, yoga, recreational games, an annual sports festival, and freshers' cross-country race.

The college has an air-conditioned multigym with free weight and cardio training equipment like treadmills, cross-training gears, and bicycles. It also has 2 open gyms.

MH has a large sports ground comprising a competitive netball area of 30.5m x 15.25m, a badminton court of 13.4m x 6.1m, and an archery area of 10m x 25m. The sports ground also hosts all athletics sports like field events and flat races.

MH is the only college that has an Outdoor Bounce Back Shock Proof Surface Basketball Court with a dimension of 26m x 14m.

It has a tennis court with a synthetic surface with a dimension of 23.77m x 10.97m, husky mats with 25mm thickness for taekwondo and martial arts competition with an arena of 10m x 10m.

MH provides facilities for chess as well.

The college offers a One one-month certificate Course titled Foundations of Yogasana to motivate students to pursue Yoga daily for the manifestation of physical, mental, emotional, and spiritual wellness.

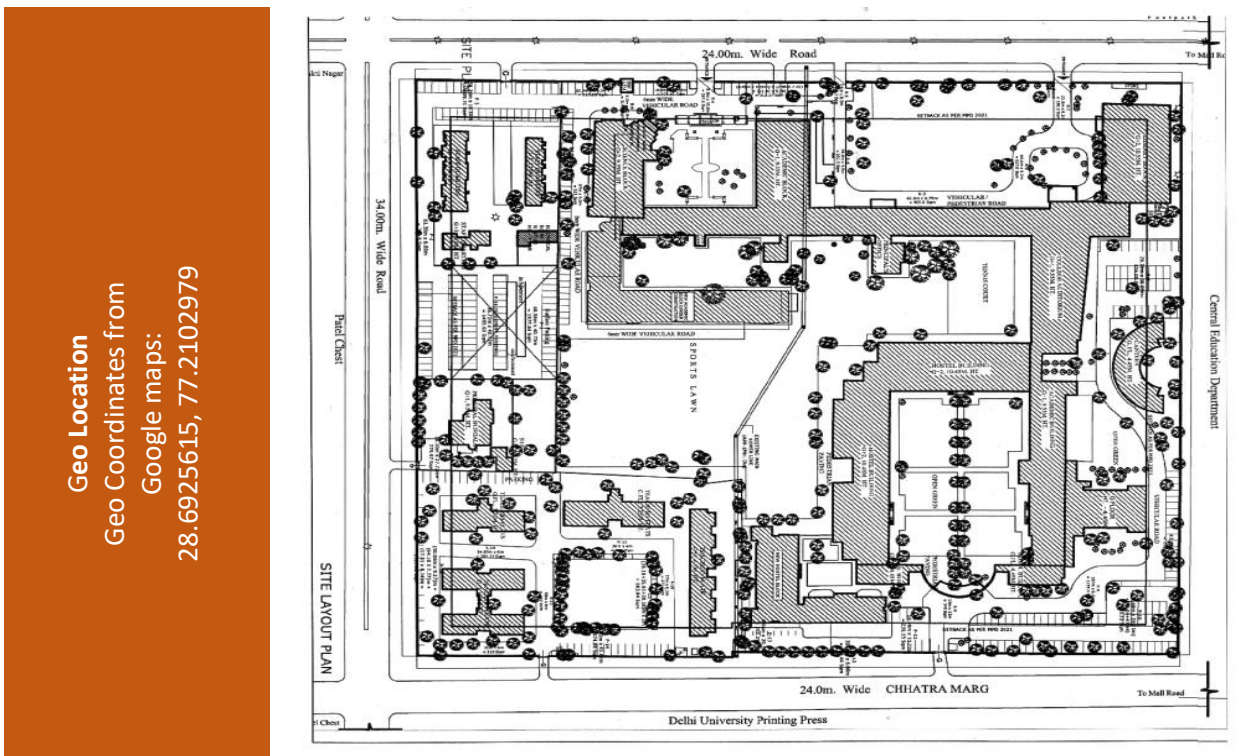


CAFETERIA: The cafeteria has been aesthetically renovated and is furnished with custom-designed furniture. It includes a well-ventilated open kitchen for the preparation of certain food items, with chimney hoods above burner stoves. Utmost hygiene is maintained at the food counters, dedicated storage spaces for grocery, cookware crockery and cutlery and dishwashing area. An additional large

room adjoining the main hostel kitchen and opening into the cafeteria complex is used for preparation work and most of the heavy-duty cooking. Water supply for cooking and drinking purposes is from the Hostel Reverse Osmosis Water Purification Plant.



HOSTEL: The hostel designed by the renowned architect Walter George, with the foundation stone laid by Lady Edwina Mountbatten, lends to the college a historical charm and a sense of legacy. It is laid out in an aesthetically designed quadrangle enclosing well-kept gardens paced out by a majestic bottle palm-lined pathway. The long corridors, the dining hall with a high arched ceiling, and stonework balconies add to its charm.





AUDIT PARTICIPANTS

Name	Designation
Prof. Bijayalaxmi Nanda	Principal
Dr. Saloni Bahri	Convenor, IQAC
Prof. Monika Tomar	Ex-Officio Member, IQAC
Dr. Pushpa Singh	Member, IQAC
Dr. Hena Oak	Member, IQAC
Dr. Simran Jit	Member, IQAC
Dr. Neeru Yadav	Member, IQAC
Dr. Sujata Sengupta	Member, IQAC
Ms. Manavi	Member, IQAC
Mr. Vir Singh	Section Officer, Admin.
Mr. Joyti Prakash	Admin.
Mr. Sudhir Aggarwal	Section Officer, Accounts
Mr. Shiv Kumar	Site Engineer

On behalf of EHS Alliance Services

Name	Position	Qualifications
Dr. Uday Pratap	Lead Auditor	<i>Ph.D., PDIS, QCI – WASH, Lead Auditor ISO 14001:2015</i>
Ms. Pooja Kaushik	Co-Auditor	<i>M.Sc., Field Expert, PGCCC, QCI – WASH</i>

EXECUTIVE SUMMARY

The environment audit is a moment in time where the performance of the campus in terms of adhering to relevant environmental laws and regulations is evaluated. Even though the audit serves as a useful baseline, it almost instantly becomes outdated if no system is in place to keep track of environmental compliance. Our strategy to support a green campus is to instill sustainable value systems in students so they can apply what they have learned and carried with them into their future endeavors. This will guarantee that environmental and sustainable practices become ingrained in all of the nation's institutions and organizations. 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 third environment audit of college for doing their bit towards environmental protection and environmental awareness at 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 audit. This audit report contains observations and recommendations for improvement of environmental consciousness.



WASTE MANAGEMENT

TYPE OF WASTE ON COLLEGE CAMPUS

To create effective waste management plans, college first need to know the type of waste being generated at the campus. Below, we have compiled a list of various kinds of waste commonly generated on institutional campus:

1. **FOOD WASTE** - College campus generates food waste. The average mess and canteen generates 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 trays, find it unappealing once they sit down and dutifully scrape it into the garbage. Immediate attention is given to the food waste minimization techniques.
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. And shipments of necessary items throughout the year are likely to arrive in recyclable plastic and cardboard packaging. The same is recycled through a paper recycling machine.
3. **STUDENT CLOTHES AND HOUSEWARES** - As we have mentioned above, many students find it more convenient to throw away their clothes and dorm furnishings at the end of the year than donate or recycle them. As we have mentioned above, many students find it more convenient to throw away their clothes and dorm furnishings at the end of the year than donate or recycle them. NSS, UBA and MH Vatavaran regularly organize old clothes collection drives with NGO and organizations such as WWF-India.
4. **E-WASTE** - Electronics from students and faculties form a large portion of a campus's e-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 have received upgrades over the years. Discarded student electronics often become part of a campus's waste stream as well. The college has well-established recycling programs and tie-ups with external agencies.
5. **CHEMICAL WASTE** - Chemical waste on a college 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. The Department of Chemistry conducts laboratory experiments with waste minimization techniques and processes.

6. **MAINTENANCE WASTE** - In the maintenance department, spent paints, solvents, adhesives and lubricants all form potentially hazardous waste. Because they are difficult to recycle, spent incandescent light bulbs usually become landfill waste. Spent fluorescent light bulbs, which contain small amounts of mercury, typically require special handling because of the environmental and health risks they pose.
7. **BIOLOGICAL WASTE** - Biological waste from laboratories will require special handling and disposal as per BMW Rules, 2016. Miranda House has installed a number of furnaces to manage laboratory waste at different labs.
8. **FURNITURE** - Furniture waste on a college campus has a couple 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 junk dealer.
9. **BOOKS/MAGAZINES/NEWSPAPERS** - Books accounted for solid waste generation and institutions often generate tons of textbook waste. As courses upgrade to new editions, they may end up throwing their newly obsolete textbooks into the garbage if donation programs cannot use them. Students of Miranda House donate their text books and notes to junior students, or else are auctioned to reseller. Various departments and societies of the college regularly hold old book collection drives in collaboration with various NGOs.
10. **C & D WASTE** - Expansion of campus building and renovation works result a significant amount of construction and demolition waste that should be either used for backfilling or disposed off through an authorized dumping site by CPCB/SPCB.
11. **SOLID WASTE** - The College is managing solid waste by providing via composting and waste sending to municipal corporations on daily basis for further disposal.
12. **HORTICULTURE WASTE** – The college campus has lavished greenery and grounds that result in significant horticulture waste which is managed by an in-house composting system.



ENERGY CONSERVATION

- 1. 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.**

A. Electricity

- *Lights, Fans, Air conditioners*
- *Lab equipment*
- *Computers in labs, faculty rooms & offices*
- *Electrical Appliances in Pantry*

B. LPG

- *Cafeteria and hostel mess*

Ways to use less energy

- *Replacing the conventional bulbs to LEDs*
- *Solar PV installed on building roofs*
- *Use of natural light when possible*
- *Use large appliances together to reduce energy use.*
- *Cleaning of Filters on regular basis and replace them whenever needed.*
- *Sealing cracks and gaps and leaks and adding insulation which leads to saving energy up to 10% on heating and cooling.*
- *Insulate the room spaces*
- *Turn off the switch on the socket after use.*

- 2. Are there any energy-saving methods employed in your institute? If yes, please specify. If no, suggest some**

- *Electricity is saved by use of LED bulbs for illumination.*
- *In the Canteen, LPG is saved by use of pressure cookers for cooking food but in the pandemic time, the canteen was non-operational.*
- *Switch off fans and lights when not in use*
- *Solar heaters are installed in the hostel.*
- *Various energy conservation awareness programs for students and staff*
- *Keep the computers and ACs on power-saving mode.*
- *Renewable source of energy through 7 KW solar panel is operational*

- 3. How many CFL/LED bulbs has your institute installed?**

Approx. 60 % of Total Conventional bulbs and tube lights are replaced by LED Lights.



4. Do you run “switch off” drills at the institute?

Yes

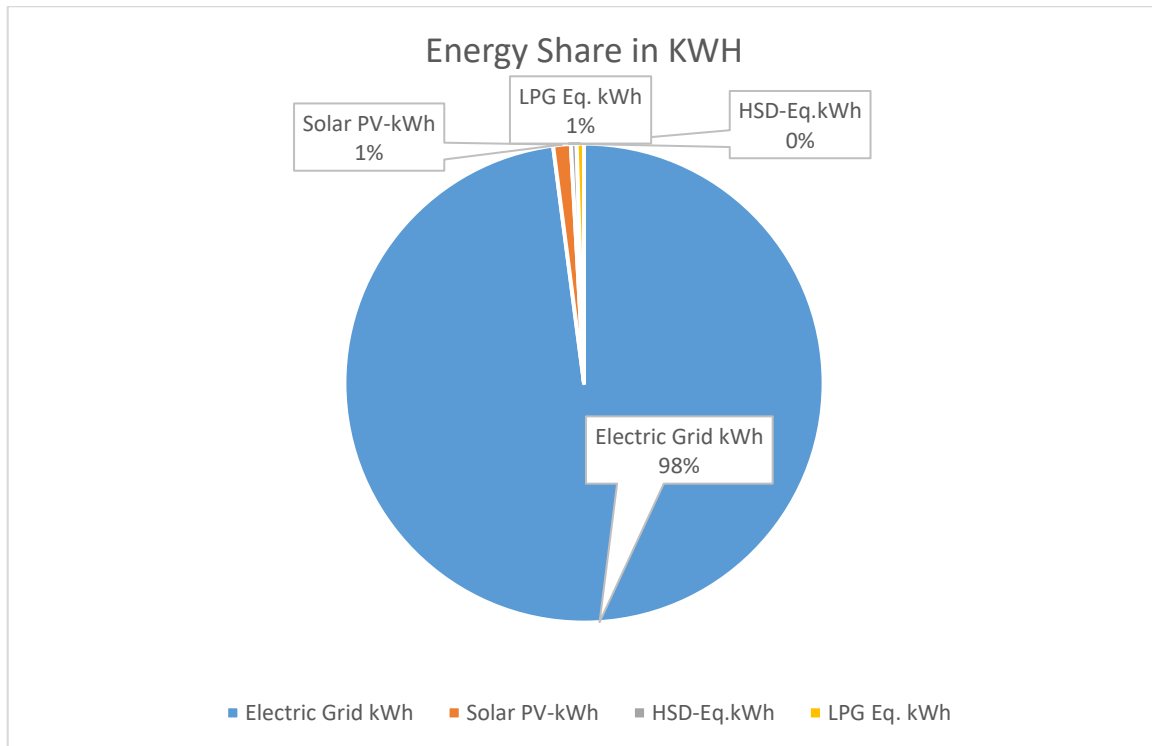
5. Are your computers and other equipment put in power-saving mode?

Yes approximately 5-6 hours, also college switch off the mains

6. 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. 5-6 hours

Energy Share	kWh	Percentage
Electric Grid kWh	832534.00	97.93
Solar PV-kWh	10080.00	1.19
HSD-Eq. kWh	3288.00	0.39
LPG Eq. kWh	4188.00	0.49
Total -kWh	850090.00	100





WATER AND WASTEWATER MANAGEMENT

1. List uses of water in your institute

Basic use of water in campus:

Drinking – 141.91 KL/month

Gardening – 186.24 Kl/month

Kitchen and Toilets – 1121.36 KL/month

Others – 205.66 KL/month

Hostel – 972 KL/Month

Total = 2627.16 KL/Month

2 How does your institute store water? Are there any water saving techniques followed in your institute?

Total available water storage of the college is 192500 liters

Sl. No	Storage Type	Capacity	Quantity	Total (in Ltr)
1	Over Head Tank	500	75	37500
2	Over Head Tank	1000	19	19000
3	Over Head Tank	2000	3	6000
4	Over Head Tank	3000	1	3000
5	Under Ground Tank (Fire Tank)	5000	3	15000
6	Under Ground Tank	34000	3	102000
7	Under Ground Head Tank	10000	1	10000
	Total Storage Capacity			192500

Saving Techniques

- Avoid overflow of water-controlled valves are provided in water supply system.
- Close supervision for the water supply system.
- Push taps are installed for water conservation
- Water Conservation awareness for new students
- Sprinklers usage for gardening and grass cover

3. Locate the point of entry of water and point of exit of wastewater in your institute. (Entry and Exit)

Entry - Water comes from Municipal Corporation (Delhi Jal Board)

Exit- From Canteen, Toilets, Hostel, Bathrooms and Labs through covered drainage which is connected to municipal sewage



4. Write down ways that could reduce the amount of water used in your institute

Basic ways:

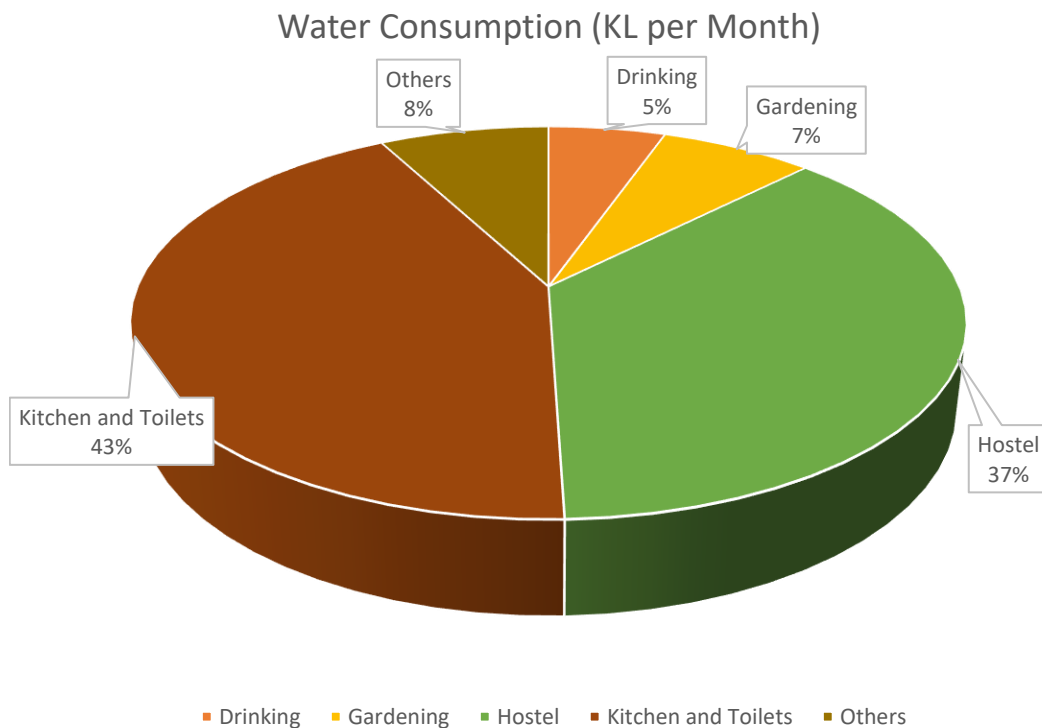
- Close the taps after usage
- Water Conservation awareness for new students
- Maintenance and monitoring of valves in the supply system to avoid overflow, leakage and spillage
- Sensor-based taps and push tap are installed to save water
- Push tap are installed to save water

5. Does your institute harvest rainwater?

College is collecting rain water in a large underground storage tank with capacity of 2 lacs litres. The stored water in this tank is used for gardening purposes

6. Is there any water recycling System?

Yes. The college has a small-scale hydroponics unit where grey water from the hostel mess is used for growing plants.





AIR QUALITY MANAGEMENT

1. Are the Rooms in Campus Well Ventilated?

Yes, as per National Building Code, guidelines

2. Window Floor ratio of the Rooms?

Very Good, ample daylight utilization because of big windows.

3. What is the ownership of the vehicles used by your campus?

There are no college owned vehicles.

4. Provide details of Institute-owned vehicles?

NA

5. PUC done?

NA

6. Specify the type of fuel used by your campus's vehicles

NA

8. Air Quality Monitoring Program (If, Any)

No



ENVIRONMENT LEGISLATIVE COMPLIANCE

1. Are you aware of any environmental Laws Pertaining to different aspects of environmental management?

Yes, MH follows following laws pertaining to different aspects of environmental management

- 1) Segregation and recycling of Waste (Solid Waste Management Rules 2016)*
- 2) De-concretization of trees (National Green Tribunal Act, 2010)*
- 3) Protection of trees on campus (Delhi Preservation of Tree Act, 1994, National Green Tribunal Act,10)*
- 4) Reduce Noise on campus (Noise pollution (regulation and control) rule, 2000)*
- 5) Reduce single use of plastic, and recycling of plastic (Plastic Waste Management Rules, 2016)*
- 6) Recycling of electronic waste (e-waste Management and Handling Rules 2011)*

2. Does your institute have any rules to protect the environment? List possible rules you could include.

*Periodic Plantation drives are conducted throughout the academic year.
Ban on single-use plastic.
Biodegradable waste management through the Composting unit.
Water and energy conservation posters are displayed on the notice boards and in the classrooms for general awareness amongst the students and faculty. In addition, MH Vatavaran regularly organizes various activities to raise awareness towards water and energy conservation.*

3. Does Environmental Ambient Air Quality Monitoring conducted by the Institute?

No

4. Does Environmental Water and Wastewater Quality monitoring conducted by the Institute?

No

5. Does stack monitoring of DG sets conducted by the Institute?

No

6. Is any warning notice, or letter issued by state government bodies?

No

7. Does any Hazardous waste generated by the Institute?

No



GENERAL INFORMATION

1. Does your institute have any rules to protect the environment? List possible rules you could include.

- *Periodic Plantation drive*
- *Ban on single-use plastic*
- *Biodegradable waste management through Composting pit*
- *Water and energy conservation through posters*

2. Are students and faculties aware of environmental cleanliness ways? If Yes Explain

Yes. Miranda House creates awareness through ECO Club activities, Webinars, and cleanliness drives in the community.

3. Does Important Days Like World Environment Day, Earth Day, and Ozone Day etc. eminent in Campus?

Yes. Important national and international days such as World Environment Day, Ozone Day, Earth Day, World water day, World wetland Day, Earth hour and more are celebrated by students and faculty within the campus.

4. Does Institute participate in National and Local Environmental Protection Movement?

Yes, college participated in following activities

- *MH actively participates in Clean India 2.0 and Mission Life activities in various villages, including Dhirpur, Burari, and Azadpur.*

5. Does Institute have any Recognition or certification for environment friendliness?

- *Miranda House and MH Vatavaran has successfully completed the District Eco-SDG Championship 2023, conducted by APEX SDG and has been awarded "District EcoSDG Champion -2023 with Outstanding Performing Grade "S" for North Campus, Delhi District.*
- *Letter Of Association signed between Miranda House, University of Delhi And Bottles for Change Programme, CSR, Bisleri International Pvt Ltd. On 27 September, 2023. Purpose: "To inculcate civic sense among students and educate on responsible disposal of plastics for recycling from the campus thus achieve zero plastic waste to landfill."*

7. Does Institution conduct a green or environmental audit of its campus?

This is the third external audit carried out by the college.



INITIATIVES CARRIED OUT BY COLLEGE

➤ **Solid Waste Management**

- Systematically engage with the 3Rs of environment friendliness (Reduce, Reuse and Recycle).
- Collect paper waste produced on campus and recycle in recycling plant
- Reduce use of paper by supporting digitization of attendance and internal assessment records.
- Reduce requirement of printed books by updating the e-books and e-journals collection of the college library.
- Take initiatives to spread awareness amongst students about food wastage and ways of minimizing it
- The habit of reusing and recycling non-biodegradable products
- Organizing workshops for students on solid waste management.
- There is ban on single use plastic and plastic crockery in the campus.
- College has installed sanitary waste disposal facility by installing incinerator as per CPCB guidelines for the management of sanitary waste -As per Solid Waste Management Rules, 2016

➤ **Liquid Waste Management**

- Maintain leak proof water fixtures.
- Minimize the use of water by constructing more Indian style toilets instead of western style toilets.
- Continued employment of a caretaker to take immediate steps to stop anywater leakage through taps, pipes, tanks, toilet flush etc.
- Reuse of wastewater generated by the Reverse Osmosis (RO) system in washrooms.

➤ **E-waste Management**

- College has a separate storeroom for the safe storage of electronic waste. After a certain interval of time college disposes of the E-waste to concerned agencies through the auction process.

➤ **Rain water harvesting**

- The college has a rainwater harvesting system for better groundwater recharge. The stored water in this tank can be used for gardening purposes.

➤ **Renewable Energy**

- The college has also installed solar PV (10 KW) on the rooftop of building.
- The College is using solar lights for street lights.
- The college believes in using cleaner energy such as LED lighting.

➤ **Air Pollution Reduction**

- Personal Vehicles (Students) are not allowed in the campus



RECOMMENDATIONS

- Eco-friendly parameters should be included in the purchase of articles and goods for the campus.
- Car-pooling practices can be adopted by campus to minimise air pollution.
- The periodic maintenance schedule for solar PV, and rainwater harvesting to achieve optimised efficiencies.
- Environmental Monitoring i.e. Stack Monitoring of DG sets, Water monitoring, air quality monitoring need to be conducted periodically (as per SPCB).
- Agreements with third-party authorized vendors should be made for different types of waste management, such as BMW, paper waste, Plastic waste, etc.
- Reduce carbon emissions by reducing LPG and diesel consumption
- Water metering records should be in practice for water auditing and balancing.
- Borewell permission should be taken from CGWA.

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. Overall, 75% of college campus is for landscaping. Miranda House is dedicated to promote the environment management and conservation in the campus and community. The audit has identified some suggestions for making the campus premise more environment friendly. The recommendations and suggestions are mentioned for campus to initiate actions.

The audit team opines that the overall site is well-maintained from environmental perspective. The recommendations in this report highlight many ways in which the college can work to improve its actions and become a more sustainable institution.

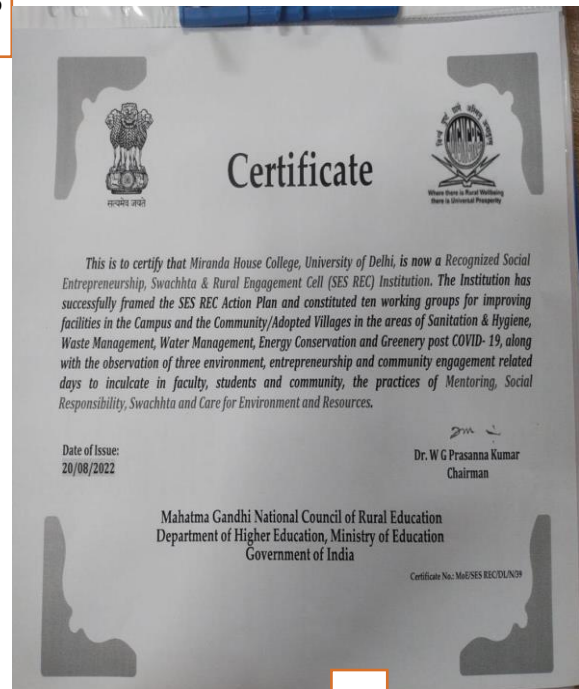


REFERENCES

- **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**

ANNEXURE I – ENVIRONMENTAL RECOGNITION AND COMPLIANCE

Recognition Certificates



ANNEXURE II – PHOTOGRAPHS OF ENVIRONMENTAL INITIATIVES



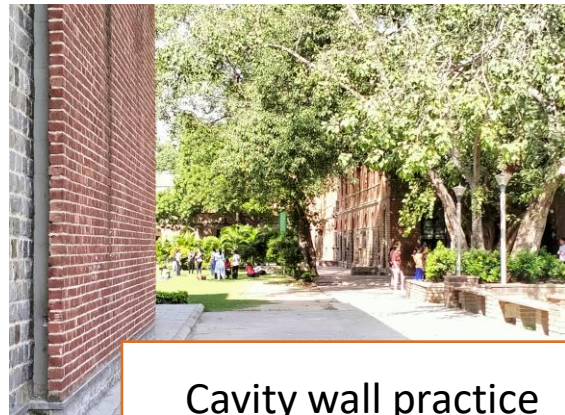
Composting



Wastepaper recycling



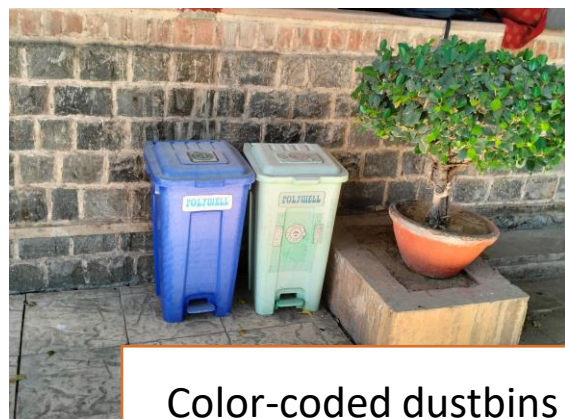
Solar Panel installed on building roof



Cavity wall practice



Soundproof silent generators



Color-coded dustbins



Hydroponics



MH EcoSouvenir Shop



World Environment Day



Plantation Drive



Cleanliness Drive conducted by MH Vatavaran



Solar Water Heater

Cleanliness Drive conducted by MH Vatavaran



Sprinklers for water conservation



Nakshatra Vanam



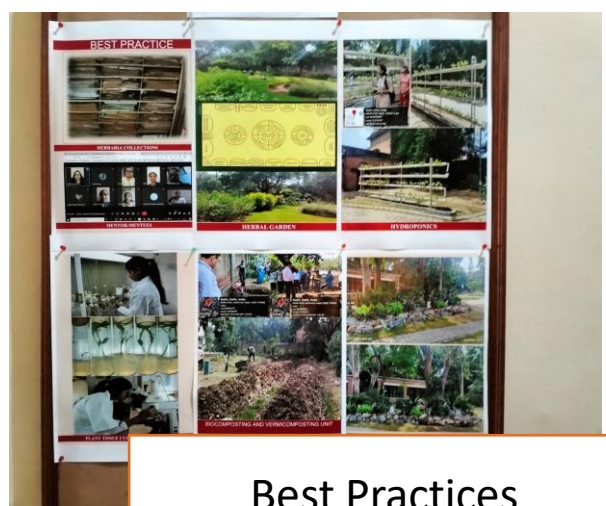
Rainwater storage tank



Indoor plants



Lab Waste disposal



Best Practices

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