



# **MIRANDA HOUSE**

**UNIVERSITY OF DELHI**

## **ENVIRONMENT AUDIT REPORT**

**2023-2024**

---



Prepared by  
**EHS ALLIANCE**



# TABLE OF CONTENT

---

<b>CERTIFICATE .....</b>	<b>2</b>
<b>ACKNOWLEDGEMENT .....</b>	<b>3</b>
<b>DISCLAIMER .....</b>	<b>4</b>
<b>CONCEPT AND CONTEXT .....</b>	<b>5</b>
<b>INTRODUCTION.....</b>	<b>6</b>
<b>OVERVIEW OF THE COLLEGE .....</b>	<b>7</b>
<b>AUDIT PARTICIPANTS.....</b>	<b>12</b>
<b>EXECUTIVE SUMMARY .....</b>	<b>13</b>
<b>WASTE MANAGEMENT .....</b>	<b>13</b>
<b>ENERGY CONSERVATION .....</b>	<b>15</b>
<b>WATER AND WASTEWATER MANAGEMENT .....</b>	<b>17</b>
<b>AIR QUALITY MANAGEMENT .....</b>	<b>19</b>
<b>ENVIRONMENT LEGISLATIVE COMPLIANCE .....</b>	<b>20</b>
<b>GENERAL INFORMATION .....</b>	<b>21</b>
<b>RECOMMENDATIONS.....</b>	<b>25</b>
<b>CONCLUSION.....</b>	<b>26</b>
<b>REFERENCES.....</b>	<b>26</b>
<b>ANNEXURE I – ENVIRONMENTAL RECOGNITION AND COMPLIANCE.....</b>	<b>27</b>
<b>ANNEXURE II – PHOTOGRAPHS OF ENVIRONMENTAL INITIATIVES .....</b>	<b>28</b>



# CERTIFICATE



# CERTIFICATE

PRESENTED TO

## MIRANDA HOUSE UNIVERSITY OF DELHI

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 2023-24

The environment legal compliances and initiatives carried out by the institution have been verified on 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.

SIGNATURE



23.08.2024  
DATE OF AUDIT

EHS ALLIANCE SERVICES, PLOT A-72, SURYA VIHAR, GURUGRAM, 122001  
WWW.EHSALL.IN | BUSINESS@EHSALL.IN | EHSALLIANCE@GMAIL.COM



# 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 are also thankful to **Prof. Saloni Bahri, Audit Coordinator and Convener IQAC, Miranda House** 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 Nisha Vashistha  
Prof. Rekha Kumari  
Dr E. Geetanjali

*Coordinator, UBA*  
*Convenor, MH Vatavaran*  
*Convenor, Garden Committee*



**World**  
**Environment**  
**DAY**



# 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.

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.

A handwritten signature in blue ink, appearing to read 'H. 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, 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, the 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 the 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.



Miranda House holds a unique position among the University of Delhi's women's colleges since it was founded and is run by the university. It has a distinct benefit due to its central placement on campus and its close proximity to other campus colleges and the university's many departments. It is not a cloister, despite being a women's institution. It actively involves both men and women in all of its extracurricular activities, allowing them to compete with the finest on an equal basis and fostering relationships with other universities and educational institutions around the nation.

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 capacity to explore new ideas, take 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 provide students with an exceptional infrastructure for learning as well as facilities for simplifying the procurement of fundamental skills. To accomplish the 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 endeavours 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.



**Library**



**Smart Class room**



**Auditorium**

**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 features a small auditorium with air conditioning and 170 seats that are arranged in steps so that everyone can see each other. The theater has large windows that provide a lovely view of the surrounding greenery. is utilized to hold training programs, seminars, conferences, workshops, lectures, and certificate courses.

**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 Centre 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***



***Sports ground***



***Cafeteria***

**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.

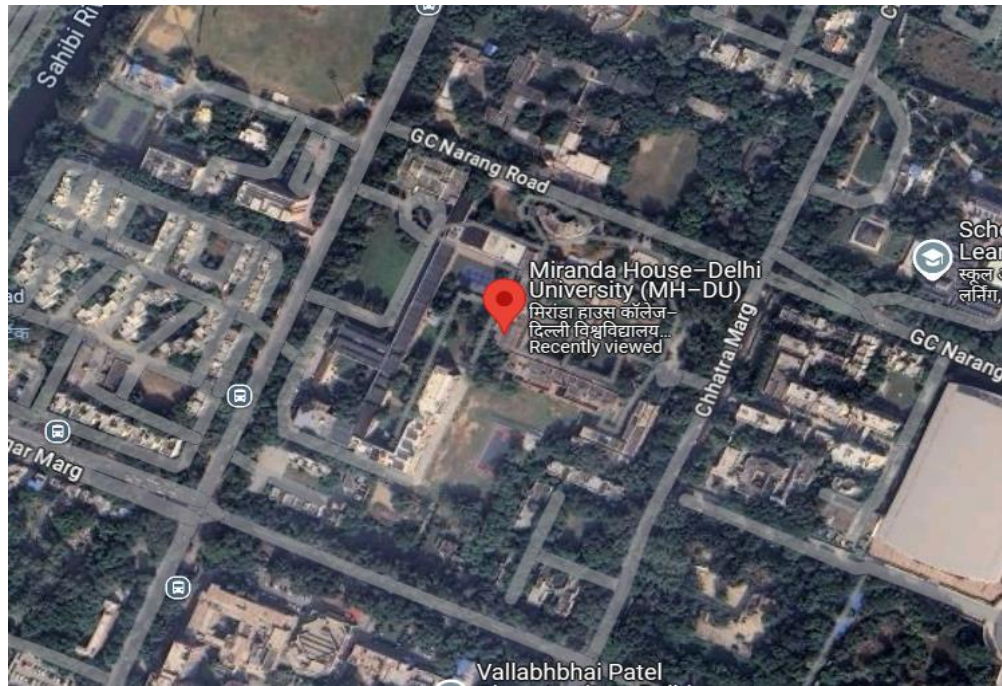
The college has an air-conditioned multigym with free weight and cardio training equipment like treadmills, cross-training gears, and bicycles. It also has 2 open gyms.

**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.



Geo Location  
Geo Coordinates from  
Google maps:  
28.6926942, 77.2102438



## AUDIT PARTICIPANTS

Name	Designation
Prof. Bijayalaxmi Nanda	Principal
Prof. Saloni Bahri	Coordinator, IQAC
Dr Nisha Vashistha	Coordinator, UBA
Prof. Pushpa Singh	Member, IQAC
Dr. E. Geetanjali	Convener, Garden Committee
Prof. Hena Oak	Member, IQAC
Dr Simran Jit	Member, IQAC
Dr Neeru Yadav	Member, IQAC
Dr Sujata Sengupta	Member, IQAC
Ms. Manavi Jain	Member, IQAC
Mr. Veer Singh	AO, Admin
Mr. Sudhir Aggarwal	AO, Admin
Mr. Joyti Prakash	Section Officer, Admin.
Mr. Shiv Kumar	Site Engineer
Ms. Neelam Thukral	Sr. Assistant
Mr. Deepak Bharti	Jr. Assistant
Mr. Mukesh Kumar	Accounts Team

On behalf of EHS Alliance Services

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



# 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 endeavours. 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 fourth 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. Food from the hostel mess and is converted to compost along with garden litter.
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 paper generated on campus is recycled at the Paper Recycling Unit at Miranda Teck Park. . Miranda House has signed an MoU with Bisleri Bottles for Change for recycling of PET bottles.

3. **STUDENT CLOTHES AND HOUSEWARES** - As previously stated, many students find that discarding their clothing and dorm furniture at the end of the year is more convenient than recycling or donating them. Along with NGOs like WWF-India, NSS, UBA, and MH Vatavaran frequently host collection drives for used clothing. In partnership with NGOs such as Goonj, MH Vatavaran arranges clothing donation campaigns. To encourage staff and students to donate used clothing, the college hosts several drives throughout the year.
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 e-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 the 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 following the principles of Green Chemistry involving waste minimization techniques and procedures.
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 is not producing such kind of waste.
8. **FURNITURE** - Furniture waste on a college 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 junk dealer.
9. **BOOKS/MAGAZINES/NEWSPAPERS** - Books account 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 textbooks and notes to junior students or else are auctioned to the reseller. Various departments and societies of the college regularly holds 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, Smart boards, Exhaust fans, water cooler and air coolers
- Lab equipment
- Computers in labs, faculty rooms & offices
- Electrical Appliances in Pantry

### B. LPG

- Cafeteria and hostel mess

### Ways to use less energy

- Turn off the switch on the socket after use.
- Replacing the conventional bulbs to LEDs
- Using energy efficient appliances
- Solar PV installed on building roofs
- Solar lights are also used
- 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

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
- Switching off fans and lights when not in use
- Various energy conservation awareness programs for students and staff
- Keeping the computers and ACs on power-saving mode.
- Renewable source of energy through 7 kWp solar panel is operational

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

MH is in process of replacing the conventional bulbs and tube lights with 20W LED Lights. In total 1246 LED lights been installed but still there are 1433 36W tube lights.

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

Yes

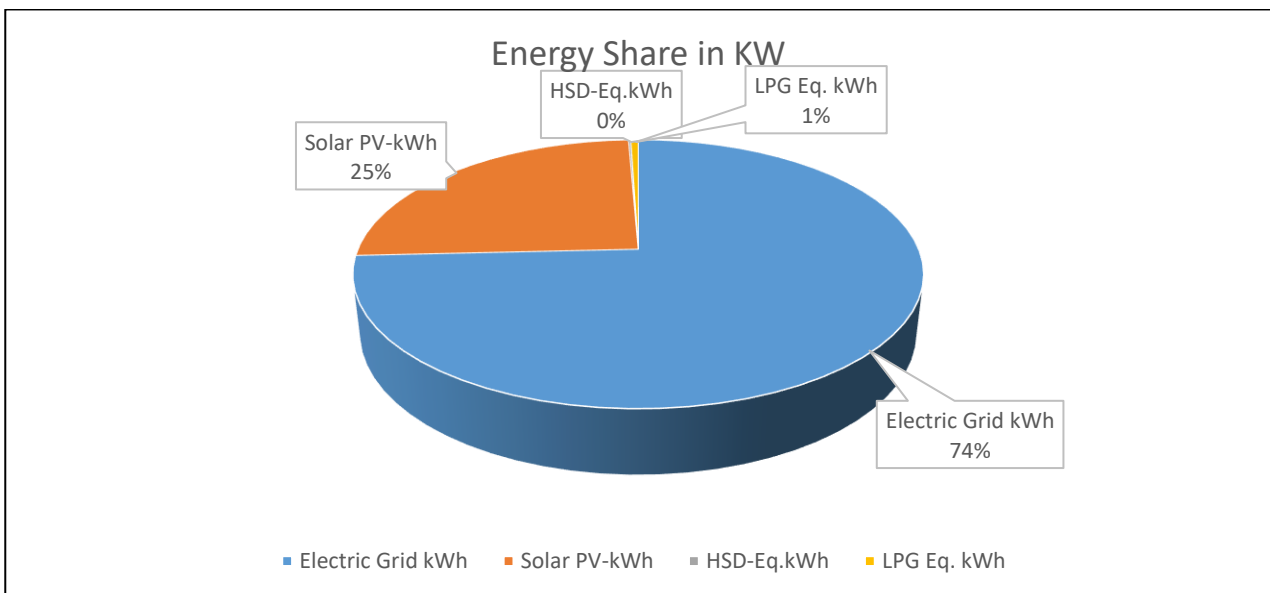
### 5. Are your computers and other equipment put in power-saving mode?

Yes approximately 5-6 hours

### 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	611500.00	74.24%
Solar PV-kWh	206762.00	25.10%
HSD-Eq. kWh	1250.76	0.15%
LPG Eq. kWh	4188.00	0.51%
<b>Total -kWh</b>	<b>823700.76</b>	<b>100%</b>



# WATER AND WASTEWATER MANAGEMENT

## 1. List uses of water in your institute

Basic use of water in campus:

**Drinking** – 129.00 KL/month

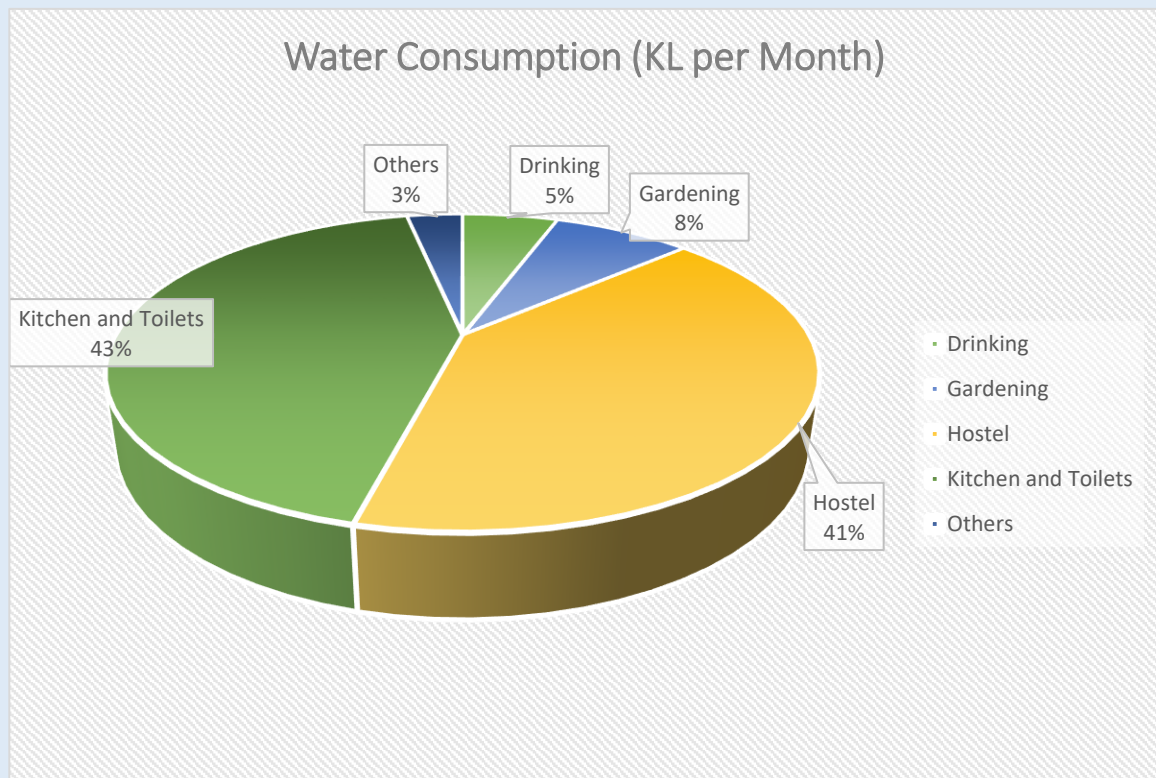
**Gardening** – 186.24 Kl/month

**Kitchen and Toilets** – 1019.19 KL/month

**Others** – 75.33 KL/month

**Hostel** – 963.90 KL/Month

**Total = 2373.66 KL/Month**



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

College stores water in overhead and underground tanks. Storage capacity along with quantity is mentioned below.

Type of Storage Tank	Capacity of Tank (Liters)	Count of Tanks	Total Capacity (Liters)
Overhead Tank	500	75	37500
Overhead Tank	1000	19	19000
Overhead Tank	2000	3	6000



Overhead Tank	3000	1	3000
UNDERGROUND TANK (Fire-Tank)	5000	3	15000
UNDERGROUND TANK	34000	3	102000
UNDER GROUND HEAD TANK	10000	1	10000

**TOTAL STORAGE CAPACITY 1,92,500**

#### **Saving Techniques**

- *MH ensures regular water tank maintenance and checks water quality standards on campus.*
- *The water tanks and water coolers are checked every three months, and RO systems are regularly changed.*
- *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 - The primary source of water is the Delhi Jal Board (MCD) and borewells.*

*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:**

- *The college ensures that the faucets in the washrooms and water filtration units are checked regularly and do not have any leakages.*
- *The college has initiated the installation of auto-push taps to reduce water wastage.*
- *The college-planted adusa, scientifically known as Justicia adhatoda, is a versatile and medicinal plant often used in traditional remedies. Also, the college planted Sisymbrium, Chamrod, and Vajradanti, which require less water.*
- *The RO reject water is used in the toilets.*
- *The college has initiated growing plants native to the semi-arid regions, requiring less water to survive.*
- *These initiatives have significantly reduced water usage on campus while promoting sustainable water management practices.*

*These initiatives have significantly reduced water usage on campus while promoting sustainable water management practices.*



### 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)*

*The college has several environmental Policies*

*Environment Policy*

*Plastic Free Campus*

*Energy usage Policy*

*Name of the Environment Department: Department of Environmental Studies*

*Name of Environmental Committee: Vatavaran*

*Name of Garden Committee: Vatika*

## 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.*
- Use of Single Use plastic in the college campus is discouraged. Miranda House has signed an MoU with Bisleri Bottles for Change, whereby all the single use plastic (plastic bottles and chips wrapper, etc.) is collected and sent for recycling, especially during major events (Tempest – Annual Fest and conferences).*
- 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, NSS and UBA 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.**

*The institution is a Swachhta action plan institute. MH has received Certification for recognition as a Social Entrepreneurship, Swachata and Rural Engagement Cell (SES REC) Institution.*

*It follows the 5 parameters of Swachhta*

- (i) Energy Management*
- (ii) Water management*
- (iii) Sanitation and Cleanliness*
- (iv) Greenery Management*
- (v) Waste management.*

*The college won the award due to the efforts made by the students, faculty members, and staff to promote and implement Swachhta on the campus. In addition, MH Vatavaran organise various events to impart knowledge on cleanliness.*

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

*Yes. Miranda House creates awareness through Environment committee activities, Webinars, plantation drives, and cleanliness drives in the campus and 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, MH actively participates in Clean India 2.0 and Mission Life activities in various villages, including Burari CT (North Delhi), Majra Badarpur Burari (North Delhi), Jagatpur (North Delhi), Dhirpur (North Delhi), Anantpura (Alwar, Rajasthan).

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

- Miranda House 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.
- MH Vatavaran was acknowledged for its participation in Global Roti Day organized under the Poshan Abhiyan Scheme, Govt. of India.
- Miranda House Staff and Non-Teaching Flats have been awarded "Zero Waste Society" by the Municipal Corporation of Delhi, Civil Lines District.

**Miranda House has received various awards for its green practices:**

- Certification for being a "Sustainable Campus" - from the Ministry of Education, Govt. of India.
- Certification for recognition as a Social Entrepreneurship, Swachata and Rural Engagement Cell (SES REC) Institution.

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

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

## INITIATIVES CARRIED OUT BY COLLEGE

### ➤ Solid Waste Management

- Solid Waste Management system that starts with waste segregation at source.
- Anti-litter drives are regularly conducted.
- The composting unit converts biodegradable waste into compost. It processes biodegradable waste and a proportionate amount of horticulture waste every day.
- Reduce the use of paper by supporting the digitization of attendance and internal assessment records.



- Reduce the 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. College canteen displays amount of food wasted each day – for general awareness.
  - The habit of reusing and recycling non-biodegradable products is encouraged and inculcated within the student community.
  - Organizes workshops for students on solid waste management.
  - There is a ban on single-use plastic and plastic crockery in the campus. All steel cutlery is used in the college canteen.
  - Systematically engages with the 3Rs of environment friendliness (Reduce, Reuse and Recycle).
- **Liquid Waste Management**
- Maintains leakproof water fixtures.
  - Minimizes 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 any water leakage through taps, pipes, tanks, toilet flush etc.
  - Reuse of wastewater generated by the Reverse Osmosis (RO) system in washrooms.
- **E-waste Management**
- The 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.
- **Rainwater harvesting**
- College has 3 rainwater harvesting pits for better groundwater recharge. The stored water in this tank can be used for gardening purposes.
  - Grey-water from hostel kitchen is recycled using Hydroponics technique
- **Renewable Energy**
- The college uses solar energy through Solar Photovoltaic (SPV) Street Lights, Solar Water Heaters and a Grid Interactive Rooftop SPV plant.
  - The college has installed solar PV (157 KW) on the rooftop of building.
  - The surplus energy generated by the 7kWp renewable SPV that is fed into the grid leads to deduction in equivalent electricity units.
  - 40 standalone SPV lights and 7 Solar water heaters contribute towards electricity saving
  - The College is using solar lights for street lights.
  - College has signed an agreement with third party solar power provider for 1 MW.
- **Air Pollution Reduction**
- Personal Vehicles (Students) are not allowed in the campus
- **Environment Committee – MH *Vatavaran* Initiatives**





Throughout the academic year 2023-24, MH *Vatavaran*, the Environmental Society of Miranda House, embarked on a remarkable journey of raising environmental awareness and instilling a sense of responsibility among students. The society conducted numerous events, competitions, workshops, and campaigns to promote environmental awareness and climate action, leaving an indelible mark on the campus. MH *Vatavaran* successfully participated in various Swachh Bharat activities throughout the year, such as Swachhta hi Seva, Swachhta Pakhwada, and Swachhta Shramdaan. Under the leadership of the Principal, Prof. Bijayalaxmi Nanda, students, and faculty participated in the “Ek Tareek Ek Ghanta” Swachhta hi Seva campaign on 1st October 2023. MH *Vatavaran* also organized several cleanliness drives within the campus and adopted villages of the college, including the Clean Your Campus Drive, in North Campus, University of Delhi. Volunteers participated in the drive and removed all paper waste used during student election campaigning, which was then recycled at the Paper Recycling Plant of Miranda House. Plantation drives were regularly organized in collaboration with various organizations to create a bigger and more meaningful impact. These drives included partnerships with the Garden Committee of Miranda House, the Department of Chemistry, and the Mission for Life Campaign (Govt. of India), as well as a part of the World Environment Day celebrations.

➤ **Accolades & Awards**

- MH Society successfully participated and completed the Apex District ECO-SDG Championship 2023 and received an outstanding performance grade of “S” for North Campus in October 2023.
- MH *Vatavaran* was acknowledged for its participation in Global Roti Day organized under the Poshan Abhiyan Scheme, Govt. of India.
- Team Miranda House received many cups in the 66th Annual Flower Show.

➤ **Activities Carried out (June 2023 – June 2024)**

- On June 5, volunteers from MH *Vatavaran* engaged in collaborative events with WWF, India and IIT, Delhi to commemorate World Environment Day
- On July 4, a Plantation Drive was conducted which aimed at enhancing campus greenery and highlighting the importance of afforestation
- On July 11, the Polythene Bag Biography Challenge provided members with a creative platform to explore and address the environmental impacts of polythene bags.
- Later in the month, on July 28, MH *Vatavaran* conducted a Cleanliness Drive, reinforcing the commitment to maintaining a pristine environment. This event was complemented by a Quiz on World Nature Conservation Day
- College’s active representation at the G20 @ India: Making India Count event on July 30 demonstrated the dedication to global sustainability discussions.
- The EcoProduct Sales Drive, which took place on August 16
- MH *Vatavaran* highlighted World Bamboo Day on the 18th with a blog that underscored the role of bamboo in sustainable development.
- Cleanliness Drive was conducted on September 15, further reinforcing the commitment to environmental cleanliness.



- On November 3rd, MH engaged the community with a Nukkad Natak, a series of street performances designed to address and raise awareness about environmental issues.
- On November 7th, the Bottles for Change Event was held, focusing on the recycling of plastic bottles and promoting the principles of a circular economy.
- On January 30th, MH organized a Poster Making Competition
- World Wildlife Day was celebrated on March 18th, which focused on biodiversity and wildlife protection
- MH *Vatavaran* in collaboration with Bisleri's Bottles for Change CSR Initiative, worked towards creating a Zero Waste event. All types of used plastic waste – from plastic bottles and chips packets, were discarded in designated trash bins, collected and subsequently sent to Bisleri's recycling partners with the aim to ensure the proper recycling of these materials generated during the two-day event.
- On April 25th, we held a Vertical Gardening Workshop in collaboration with Bisleri and MH Vatika. The month also included a Photography Contest, an Online Quiz, and a Paper Presentation Competition, all designed to engage the community and raise awareness on various environmental issues
- World Environment Day was celebrated on 5 June, 2024. The day was marked with the launch of MH *Vatavaran's* Annual Magazine – 'Madhuban'. In addition, a plantation drive and oath taking ceremony was conducted.

## 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 schedule for routine maintenance on AC and DG to attain maximum efficiency.
- Environmental Monitoring i.e. (Stack Monitoring of DG sets, Water monitoring need to be conducted periodically (as per SPCB).
- Reduce carbon emissions by reducing LPG.
- 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**

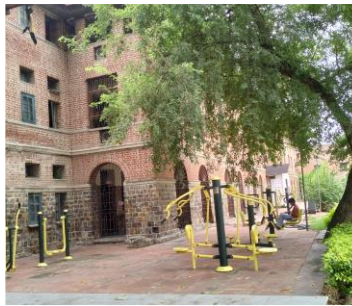
# ANNEXURE I – ENVIRONMENTAL RECOGNITION AND COMPLIANCE



# ANNEXURE II – PHOTOGRAPHS OF ENVIRONMENTAL INITIATIVES



Well maintained campus



Well ventilated building



Lush green campus



Paved Pathways



Color coded dustbins



Nursery



Ornamental plants in campus



Indoor plants in campus



Plantation drive



Solar Lights



Solar Streets Light



Energy Conservation Messages



Cleanliness drive



Nukkad natak environment justice



Environment Day Celebration



Swachhta drive



Vertical garden using waste plastic bottles



Labelled Boxes for single use plastic collection



Eco Products Sale



Best out of Waste Initiative



Products made from Recycled paper



MoU with Bisleri – Bottles for Change CSR Initiative



Colour Coded Bins



Rainwater storage tank



Paper recycling plant



composting pit



Hydroponics system for grey water recycling

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