Green Audit / Environmental Inspection

CIL Ref. No.:	**CIL/20242373**
Name of organization:	MEWAR UNIVERSITY
Address of premises:	NH - 48 Gangrar, Chittorgarh, Rajasthan-312901.
Name of Inspector:	Ashutosh Tiwari, Nilza Angmo
Date of Inspection:	15 March 2024 & 16 March 2024
Type of Inspection:	Green Audit

Organization Details	
Total Campus Area	1306800 sq. ft.
Total Built-up Area	803093 sq. ft.
Covered Parking	4235 sq. ft.
Total Air-Conditioned Area	32350 sq. ft.
Non-Airconditioned Area	860147.1 sq. ft.
Cross Floor Area	892497.1 sq. ft.
Forest / Planted Area	530707 sq. ft.
Age of the building	12 Years

DETAILS OF INFRASTRUCTURE

Classrooms	75
Laboratory	82
Library	03
Seminar hall and auditorium	05
Sports room	02
Gymnasium	01
Staff and student parking area	05
Canteen	01
Playground	04
Green Area / Plantation	503707 sq. ft.

LIST OF BUILDINGS

Name of Building	Number of Floors	Area (m^2)
Administrative and Academic Block	4	10,055.22
Education Block	5	1411.08
Engineering Block	3	2300.51
Mewar Hospital	4	1625.94
Bhamashah Hostel	4	1629.69
Sanga Hostel	5	1326.85
Kumbha Hostel	4	614.93
Pratap Hostel	4	543.69
Panna dhai Hostel	4	441.53
Meera Hostel	4	390.27
Guest House	4	295.78
Staff Quarter (1 BHK)	4	367.6
Staff Quarter	4	353.84
Annapurna Mess	1	708.4

DEPARTMENTS

1	Department of Commerce
2	Department of Management
3	Department of Computer Application
4	Department of Law
5	Department of Education
6	Department of Psychology
7	Department of Physical Education
8	Department of Chemical Engineering
9	Department of Civil Engineering
10	Department of Computer Science and Engineering
11	Department of Electronics and Communication Engineering
12	Department of Electrical Engineering
13	Department of Mechanical Engineering
14	Department of Mining Engineering
15	Department of Chemistry
16	Department of Life Science
17	Department of Mathematics
18	Department of Physics
19	Department of Economics
20	Department of Geography
21	Department of History
22	Department of Humanities

23	Department of Political Science
24	Department of Sociology
25	Department of Agriculture
26	Department of Paramedical
27	Department of Physiotherapy
28	Department of Pharmacy
29	Department of Astrology
30	Department of Yoga

DETAILS OF STUDENTS AND STAFF

Total Number of Students	4805
Teaching Staff	289
Technical Staff	33
Non-Technical Staff	88
Outsourced Staff	46

GREEN AUDIT PARTICIPANTS

Name	Designation
Dr. Y Sudarshan	Professor
Dr. Neelu Jain	Associate Professor
Dr. Deepak Mishra	Assistant Professor
Ms. Nirma kumari Sharma	Assistant Professor

LEGAL COMPLIANCES

Description	Registration Details
Consent to operate (CTO) from SPCB	Not available
Fire NOC	Not available
Water Boring permission	Not available
DG Set Permission	Not available

About Organization

Mewar University is a multidisciplinary, self-financed university located in the village of Chogawari in Gangrar tehsil, situated in the historical city of Chittorgarh in southern Rajasthan. Chittorgarh is renowned for its rich cultural heritage and is home to several historical monuments, including the Chittorgarh Fort, designated as a UNESCO World Heritage Site.

Established in 2009 under the aegis of the Mewar Education Society, the university has emerged as a leading institution in the region. It offers a diverse array of undergraduate, postgraduate, and doctoral (research) programs across various disciplines such as Engineering, Pharmacy, Management, Agriculture, Law, Arts, and more. Mewar University comprises 11 faculties and 30 academic departments, providing a total of 38 undergraduate programs, 53 postgraduate programs, 2 postgraduate diploma programs, and 37 doctoral programs. All programs offered by the university are approved by regulatory bodies such as AICTE, PCI, BCI, NCTE, and others.

The University is committed to providing a quality teaching and learning environment facilitated by well-equipped infrastructure and qualified, experienced faculty members, with the overarching goal of enabling students to progress from "Knowledge to Wisdom". Its primary objective is to democratize higher education by making it accessible to rural communities, women, and marginalized populations.

Spanning across 30 acres, the university boasts a sprawling, verdant campus equipped with modern amenities and state-of-the-art infrastructure. Facilities include a well-stocked library, laboratories, sports facilities, an auditorium, hostels, a gym, playgrounds, a canteen, and a guest house. Mewar University is dedicated to enhancing students' skills through a range of value-added and skill development courses. Additionally, the university actively collaborates with industries and institutions through functional memoranda of understanding (MOUs) to facilitate training, internships, and exchanges for both faculty and students.

Despite being situated in an educationally and socially disadvantaged area of Rajasthan, the university offers students a distinctive chance to engage with the region's rich cultural and historical heritage. Moreover, it provides a serene and supportive atmosphere conducive to learning and personal development. In the current academic session, over 430 international students are enrolled, with more than 70% of students coming from reserved categories and over 60% hailing from outside Rajasthan.

The university also boasts well-established museums such as the Gandhi Museum and Mewar Museum, along with a 100-bed hospital located on the campus premises, further enhancing the educational and cultural experience for its students.

Vision:

Every organization embarks as a small group of committed individuals driven by a vision. Mewar University, since its inception, has been led by a dedicated team under the visionary guidance of its Chairman, Dr. Ashok Kumar Gadiya. Situated uniquely in the rural landscape

of Chittorgarh, Rajasthan, the university has not only imparted education but also engaged in various extension activities for the benefit of its community.

The university's vision is to establish itself as a center of excellence for technical, professional, and vocational education and research, aligned with both national and international standards. This vision is pursued through the delivery of quality education that meets the evolving demands of industry and society. Additionally, the university fosters a culture of research and innovation, aimed at generating new knowledge and technologies.

GEOGRAPHICAL LOCATION WITH CAMPUS MAP IN SCALE

LAND USE DATA

Categories of Land Use	Area (m^2)
Plantation area	46795.911
Builtup area (Includes Road)	74609.781
Total area	121405.692

CLIMATIC PARAMETERS

1. **Climate:** The climate of Chittorgarh is quite dry and parched. The summer season extends from April to June and is quite hot. The average temperature in summers falls between 43.8°C to 23.8°C. The winter season lasts from October to February. Chittorgarh weather in the winters is pretty cool.The temperature averages around 28.37° C to 11.6°C. The monsoon season falls during the months of June to August. As far as climatic conditions of Chittorgarh, Rajasthan in monsoon are concerned, there is only slight rainfall that averages around 60 cm to 80 cm.

2. **Rainfall**: Chittorgarh district is located in the southeast part of Rajasthan, spanning approximately 7.50 lakh hectares. Agro-ecologically, the district falls within Zone-IVA, which comprises the sub-humid southern plain and the Aravali hill zone. The district receives an average annual rainfall of 852 mm.

3. **Temperature:** The summer season in Chittorgarh spans from April to June and is characterized by hot temperatures. On average, temperatures during this period range from 43.8°C to 23.8°C. In contrast, the winter season lasts from October to February, featuring cooler temperatures. During winters, the temperature typically ranges from around 28.37°C to 11.6°C in Chittorgarh.

BIO-DIVERSITY

Physical Count of Flora in Campus

S. No.	Particulars	Units
1	Trees	618
2	Plants	382
3	Gardens	406

List of Tree/Shrubs/Herbs species found in the campus

S. No.	Botanical Name	Common Name	Units
Trees			
1.	Adansonia digitata	Kalpvriksha / Gorakh Imli	2
2.	Annona squamosa	Sitafal or Custard Apple	12
3.	Aegle marmelos	Bel	7
4.	Albezia lebbeck	Siris	6
5.	Alstonia scholaris	Saptparni/Scholar tree	20
6.	Artocarpus heterophyllus	Jackfruit	5
7.	Azadirachta indica	Neem	110
8.	Bauhinia purpurea	Kachnar	80
9.	Butea monosperma	Palaas	5
10.	Callistemon viminalis	Bootle Brush	13
11.	Cassia fistula	Amaltash	10
12.	Cassia siamea	Kasod	50
13.	Casuarina equisetifolia	Junglisaru	3
14.	Ceiba pentandra	Kapok Tree	7
15.	Cordia myxa	Assyrian Plum	7
16.	Cordia sebestena	Geiger Tree	6
17.	Dalbergia sissoo	Shisham	3

18.	Delonix regia	Gulmohar	6
19.	Emblica officinalis	Amla	15
20.	Ficus benjamina	Benjamina	30
21.	Ficus infectoria	Paakar	5
22.	Ficus religiosa	Peepal	5
23.	Grevillea robusta	Silver Oak	2
24.	Guazuma ulmifolia	Bhadraksha	5
25.	Juniperus chinensis	Common Juniper	6
26.	Kigelia Pinnata	Balam khira	4
27.	Mailkara hexandra	Khirni	7
28.	Mangifera indica	Mango	10
29.	Manilkara zapota	Chikoo	2
30.	Mimusops elengi	Maulsari/Spanish Cherry	15
31.	Moringa oleifera	Drum Stick	3
32.	Morus alba	Mulberry	5
33.	Neolamarckia Kadamba	Kadamba	5
34.	Nyctanthes arbor-tristis	Harsringar	5
35.	Peltophrum pterocarpum	Copper Pod	3
36.	Pithecellobium dulce	Jungle Jalebi	3
37.	Phoenix roebelenii	Pygmy Date Palm	2
38.	Phoenix sylvestris	Jangli Khajur	2
39.	Plumeria alba	White Champa	10
40.	Plumeria pudica	Nag Champa or Gilded Spoon	4
41.	Plumeria rubra	Pagoda Tree	2
42.	Polyalthia longifolia	Ashapala	45
43.	Pongamia pinnata	Karanja	3
44.	Porsopis cineraria	Khejri	1
45.	Prunus persica	Peach	3
46.	Psidium gujava	Guava	10
47.	Roystonea rigia	Royal Palms	10
48.	Saraca asoca	Sita Asoka	2
49.	Simarouba glauca	Paradise Tree	1
50.	Spathodea campanulate	African Tulip Tree	2
51.	Syzygium cumini	Jamun	10
52.	Terminalia arjuna	Arjun	10
53.	Terminalia bellirica	Behada	2
54.	Terminalia catappa	Jangli badam	4
55.	Thuja occisentalis	White Cedar	8
56.	Ziziphus mauritiana	Ber	5

Shrubs			
1.	Cycas revoluta	Cycas or sago palm	5

2.	Calotropis gigantea	Safed aakda	3
3.	Dodonaea viscosa	Hop Bush	15
4.	Duranta erecta	Golden Durant	38
5.	Hibiscus rosa-sinensis	China Rose	50
6.	Lawsonia inermis	Mehndi	60
7.	Livistona chinensis	Carnauba palm	10
8.	Melaleuca bracteata	Golden bottle brush	2
9.	Murraya paniculata	Madhukaamini	70
10.	Nerium oleander	Kaner	50
11.	Plumbago auriculata	Nila Chitrak	10
12.	Rauvolfia serpentina	Sarpaganda	2
13.	Rosa indica	Rose	50
14.	Senna occidentalis	Septicweed (senna)	5
15.	Tinospora cordifolia	Giloey	2
16.	Withania somnifera	Ashwagandha	10

Grasses/Herbs			
1	Apluda mutica	Grass	-
2	Argemone mexicana	Satyanashi	5
3	Aristida adscensionis	Grass	-
4	Aloe barbadensis	Gwarpatha (Aloevera)	25
5	Andrographis paniculata	Kalmegh	2
6	Asparagus racemosus	Satavar	10
7	Barleria prionitis	Vajradanti	12
8	Calotropis gigantea	Safed aakda	5
9	Catharanthus roseus	Sadabahar	60
10	Centella asiatica	Brahmi / Mandukaparni	10
11	Chamaecostus cuspidatus	Insulin plant	5
12	Cissus quadrangularis	Hathjod	10
13	Commiphora wightii	Guggal	5
14	Crinum asiaticum	Sudarshan	12
15	Cymbopogon citratus	Lemon grass	15
16	Datura metel	Kala Dhatura	3
17	Datura stramonium	Dhatura	10
18	Ferula assa-foetida	Hing	1
19	Ficus benghalensis	Banyan (National tree of India)	3
20	Gymnema sylvestre	Gudmar	3
21	Ipomoea cairica	Railway creepers	2
22	Jasminum sambac	Champa Bela or Arabian jasmine	10
23	Justicia adhatoda	Adusa	10
24	Kalanchoe pinnata	Patharchatta	15

25	Mentha arvensis	Pudina (Wild mint)	10
26	Mentha piperita	Peppermint (hybrid species of mint)	10
27	Mimosa pudica	Chuiimuii (touch-me-not)	20
28	Murraya koenigii	Curry plant (meetha neem)	50
29	Musa paradisiaca	Banana	5
30	Ocimum kilimandscharicum	Camphor Basil (kapoor Tulsi)	2
31	Ocimum sanctum	Tulsi	40
32	Origanum majorana	Marua	7
33	Passiflora vitifolia	Rakhi bel	2
34	Pelargonium graveolens	Geranium	2
35	Polianthes tuberosa	Rajnigandha	10
36	Thespesia populnea	Paras peepal	2
37	Trachyspermum ammi	Ajwain	4
38	Turnera ulmifolia	Sage Rose	4

Images of Green Cover of the University Campus

List of birds and animals

S. No.	Zoological Name	Common Name
1.	Canis lupus familiaris	Dog
2.	Felis catus	Cat
3.	Equus ferus caballus	Horse
4.	Chiroptera	Bat
5.	Capra aegagrus hircus	Goat
6.	Rattus rattus	Rat
7.	Bubalus bubalis	Buffalo
8.	Gallus gallus domesticus	Hen
9.	Simiiformes (infraorder)	Monkey
10.	Boselaphus tragocamelus	Nilgai
11.	Pavo cristatus	Peacock
12.	Sus scrofa domesticus	Pig
13.	Oryctolagus cuniculus	Rabbit
14.	Ovis aries	Sheep
15.	Equus africanus asinus	Ass
16.	Lumbricus	Earthworm
17.	Columba livia	Pigeon
18.	Corvus splendens	Crow
19.	Passer domesticus	House Sparrow
20.	Psittaciformes	Parrot
21.	Bos taurus	Cow
22.	Formicidae	Ant
23.	Pycnonotidae	Bulbul
24.	Acridotheres tristis	Myna
25.	Eudynamis scolopaccus	Koel

List of Butterflies found in and around the campus

S. No.	Zoological Name	Common Name
1.	Rhopalocera	Butterfly
2.	Musca domestica	House fly
3.	Culicidae	Mosquito
4.	Araneae	Spider
5.	Caelifera	Grasshopper
6.	Apis	Honey Bee
7.	Blattodea	Cockroach

List of Reptiles found in and around the campus

S. No.	Zoological Name	Common Name
1.	Hemidactylus flaviviridis	House wall Lizard
2.	Python molurus	Indian Python
3.	Naja naja	Indian cobra
4.	Eryx johnii	Indian Sand Boa
5.	Uromastyx	Indian spiny-tailed lizard

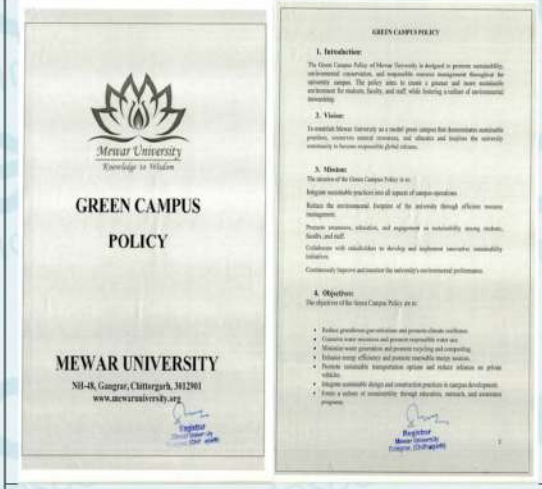
LEGEAL REQUIREMENTS

Description	Registration Details
Consent to operate (CTO) from SPCB	Not available
Fire NOC	Not available
Water Boring permission	Not available
DG Set Permission	Not available

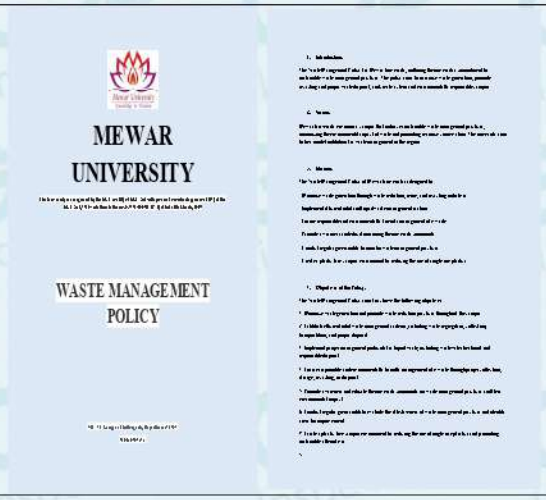
GENERAL

General Requirements: Environmental Policies / Environmental Objectives, etc	
Is there an environmental policy? Is it publicly communicated?	The Institute has an environmental policy in place, which is publicly communicated to ensure transparency and accountability. Reference doc/pic no:- A1
Is there a defined waste management policy in the organization?	The organization has implemented a defined waste management policy to effectively handle waste materials and promote environmental sustainability. Reference doc/pic no:- A2
Are there any quantifiable environmental objectives decided by the organization?	During audit no written evidence of quantifiable environmental objectives decided by the organization was found, however The organization has established environmental objectives outlined in its Green Policy, aiming to promote sustainability and reduce environmental impact. These objectives are regularly discussed and monitored to ensure progress towards environmental goals. Reference doc/pic no:- A3

Is the organization aware of all environmental Laws pertaining to different aspects of the organization's activities ? Mention laws & compliance status.	No record found at the time of audit.
Does the organization have any Recognition/certification for the environment friendliness? Provide details.	No record found at the time of audit.
Has the organization established any committee to decide, implement & monitor environmental initiatives?	Organization has established waste management committee headed by Dr Hariom Sharma, Associate professor Pharmacy. Also Clause 7 of the Institution's Green Campus Policy suggests the establishment of a committee tasked with overseeing the implementation of the Green Campus Policy. Reference doc/pic no:- A4
Has the institution ever received any notice/warning from the pollution control board or any other concerned environmental authorities? If yes, then what corrective & preventive measures have been taken?	No record found at the time of audit.
Related Images/documents	



A1. Environmental Policy



A2. Waste management Policy

	 
A3. Quantifiable Environmental objective	A4. Adherence committee constitution

Identified Nonconformities:
1. The organization does not have environmental laws pertaining to different aspects of the organization's activities has been found. 2. The organization has not established quantifiable environmental objectives. 3. During the audit, no written evidence was found indicating that the institute has never received any notice or warning from the Pollution Control Board or any other concerned environmental authorities 4. The organization does not have environmentally friendly certificate.

POLLUTION

Air Pollution Management (objective, practices / methods to minimize air pollution)	
Identify the major sources of air pollution within the organization & the actions taken to either eliminate or minimize the pollution.	During the audit, the major sources of air pollution within the organization were identified as air conditioning units, DG sets, and vehicles. To minimize pollution, the institute is conducting plantation drives. Reference doc/pic no:-B1
HVAC maintenance and calibration records, testing and balancing reports. When was the duct system tested for leakage last?	At the time of the audit, no records were found.
DG set stack emission test as per CPCB norms.	At the time of the audit, no records were found.
Related documents / images:	

GREEN CAMPUS POLICY

1. Introduction:

The Green Campus Policy of Mewar University is designed to promote sustainability, environmental conservation, and responsible resource management throughout the university campus. The policy aims to create a greener and more sustainable environment for students, faculty, and staff, while fostering a culture of environmental stewardship.

2. Vision:

To establish Mewar University as a model green campus that demonstrates sustainable practices, conserves natural resources, and educates and inspires the university community to become responsible global citizens.

3. Mission:

The mission of the Green Campus Policy is to:

Integrate sustainable practices into all aspects of campus operations.

Reduce the environmental footprint of the university through efficient resource management.

Promote awareness, education, and engagement on sustainability among students, faculty, and staff.

Collaborate with stakeholders to develop and implement innovative sustainability initiatives.

Continuously improve and monitor the university's environmental performance.

4. Objectives:

The objectives of the Green Campus Policy are to:

- Reduce greenhouse gas emissions and promote climate resilience.
- Conserve water resources and promote responsible water use.
- Minimize waste generation and promote recycling and composting.
- Enhance energy efficiency and promote renewable energy sources.
- Promote sustainable transportation options and reduce reliance on private vehicles.
- Integrate sustainable design and construction practices in campus development.
- Foster a culture of sustainability through education, outreach, and awareness programs.

Registrar
Mewar University
Gangrar, Chittorgarh

B1. Policy on Air pollution reduction & Plantation to mitigate it.

Identified Nonconformities:

1. During the audit, no written evidence of HVAC maintenance and calibration records or testing and balancing reports was found.
2. During the audit, no stack emission test results for the DG set, as per CPCB norms, were found.

In-Door Air Quality (Checks, methods, tests & practices to ensure indoor air quality)	
Does the organization test indoor air quality? Details of last indoor air quality test done.	The organization regularly conducts green audits and tests indoor air quality. The latest indoor air quality test conducted by CDG Inspection Ltd. revealed the following results: Air Pollution Level: 24.75 µg/m³ Formaldehyde (HCHO): 0 mg/m³ Total Volatile Organic Compounds (TVOC): 0 mg/m³ PM2.5: 62.5 µg/m³ PM1.0: 47 µg/m³ PM10: 72 µg/m³ Reference doc/pic no:- C1 & C2
Is there a proper system of exhaust of indoor air?	There is a provision for windows and doors that facilitate the proper exhaust of indoor air, ensuring effective ventilation within the premises. Reference doc/pic no:- C3
Supplies: Are 'Material Safety Data Sheets (MSDS)' available for different types	During the audit, no written evidence of Material Safety Data Sheets (MSDS) for different types of

of supplies (Ex: solvent, wax, adhesives, paints, flammables etc.)?	supplies (e.g., solvents, wax, adhesives, paints, flammables, etc.) was found.
Are storage areas separate & ventilated properly?	Yes storage areas are separate & ventilated properly.
Are less or nonhazardous materials used when possible?	No record found at the time of audit.
Does the organization have a defined system to evaluate & find out safer alternatives?	No record found at the time of audit.
Is there a defined procedure available for disposal of used substances?	No record found at the time of audit.
General Cleanliness:	
Are rooms dusted and vacuumed thoroughly and regularly? What are related checks & controls?	The cleaning staff regularly and thoroughly dusts and vacuums the rooms to maintain cleanliness and hygiene standards. Additionally, a committee comprising faculty members has been established to oversee and ensure adherence to cleanliness and maintenance standards within the premises. Reference doc/pic no:- C5
Does the organization ensure to use of environment-friendly, non-scented cleaning products?	No evidence was found at the time of the audit.
Pest control methods & products used (check & control).	No record found at the time of audit.
Does the organization ensure use of low emitting paints, coatings, furniture etc.? What are related checks & controls?	No record found at the time of audit.

Is there any sign of mold infestation?	During the audit, no evidence of mold infestation was found.
Does the organization eliminate any bird or animal nests or droppings near outdoor air intakes?	The organization does not eliminate any bird or animal nests or droppings near outdoor air intakes.
What are the methods adopted by the organization to control/prevent dust within the buildings?	The organization controls and prevents dust accumulation within the building through regular cleaning by the cleaning staff.

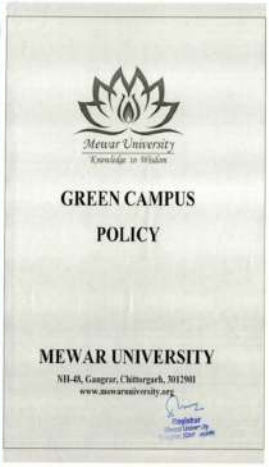
Related records / images:

C1. Test on Indoor air quality

C2. Test on Indoor air quality

C3. Exhaust of Indoor air

C4. Policy on Disposal of used substance

 	
C5. Cleanliness of room	C6. Policy on use of Less or Nonhazardous material
 	
C7. Green Campus Policy & Ban on use of Plastic	. Policy on use of Environment friendly product.

Identified Nonconformities:

- The organization does not use environment-friendly, non-scented cleaning products.
- The organization does not use low-emitting paints, coatings, etc.
- The organization should have a defined system to evaluate and identify safer alternatives and use less or non-hazardous materials whenever possible.
- The organization does not have any MSDS reports.
- There is no pest control method in place, and no information is available regarding the pest control chemicals used.

WATER POLLUTION

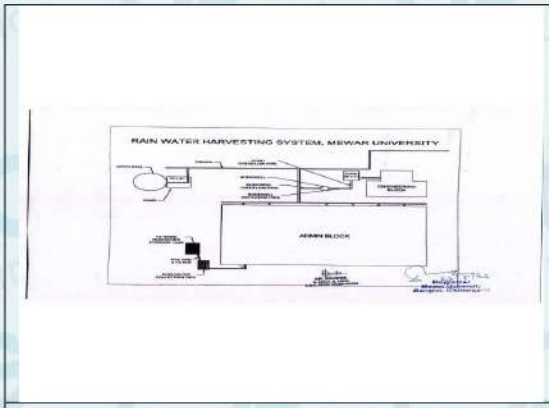
Water Pollution Management (objective, practices / methods to minimize water pollution)	
Source of water pollution within the premises.	No source of water pollution within the premises.
Measures taken to prevent / stop water wastage.	At various locations, signboards have been installed to prevent or discourage water wastage. Additionally, Clause 4 of the Green Policy addresses the prevention of water wastage. Reference doc/pic no:- D2
Does the institute harvest rainwater? Give details.	The Institute implements rainwater harvesting practices. The university has calculated its rainwater harvesting potential to be 1400 m^3/year using the rainwater harvesting potential formula. Reference doc/pic no:- D3
Is there any water recycling system? Give details.	The college has implemented a water recycling system where water from both the sewage treatment plant and the rainwater harvesting unit is utilized for gardening purposes.
Is there any effluent treatment plant in premises? No. of outlets for discharge of effluent?	There is a sewage treatment plant on the premises, and one outlet is designated for the discharge of effluent. The discharged effluent is stored in a well and subsequently utilized for gardening purposes. Reference doc/pic no:- D4
What is the quality of effluent in KLD?	The Sewage Treatment Plant (STP) discharges 300 kiloliters per day (KLD) of effluent. Reference doc/pic no:- D5
Whether operating STP/ETP satisfactorily?	During the audit, it was found that the Sewage Treatment Plant (STP) was operating satisfactorily, although there is still room for improvement.
Whether provided flow meters on outlet & inlet of ETP/STP?	Yes, flow meters are installed at both the outlet and inlet of the Sewage Treatment Plant (STP). Reference doc/pic no:- D6

Whether provided separate electricity meter on ETP/STP?	Yes, a separate electricity meter is installed specifically for the Sewage Treatment Plant (STP). Reference doc/pic no:- D7
Whether maintained Logbook for consumption of Electricity/ Chemicals/Quantity of effluent?	Yes, a logbook for the consumption of electricity, chemicals, and quantity of effluent is maintained Reference doc/pic no:- D6& D7
Detail of land in case effluent is discharged for percolation/ irrigation purpose with justification for its 100% utilization.	5,03,707 sq.ft. of land is used for percolation or irrigation purposes from effluent from STP(Sewage Treatment Plant).
Status of ZLD (Zero Liquid Discharge) as per CPCB	The institute discharges all its wastewater to the sewage treatment plant, and the effluent from the STP is stored in a well for further use in gardening or irrigation. However, this cannot be considered a Zero Liquid Discharge (ZLD) system. Reference doc/pic no:-D4
Locate the point of entry of water and point of exit of waste water in the organisation.	The point of entry of water into the organization's premises is through a borewell located within the campus. The point of exit for wastewater within the organization is the Sewage Treatment Plant (STP), and the effluent from the STP is directed to a well for further management. Reference doc/pic no:- D8

Related records / image:

D1. Water save signage

D2. Measure taken to stop water wastage



D3. Layout of Rainwater harvesting in Campus

D4. Sewage treatment plant & storage of discharged effluent from STP


FEASIBILITY REPORT ON
SEWAGE TREATMENT PLANT
BASED ON SOIL BIO
TECHNOLOGY AS GEO GREEN
BIO FILTERS(A NOVEL GREEN
TECHNOLOGY)
300kld
For
MEWAR UNIVERSITY
AT GANGRAR
Green Tech Engineers
(Old name Teesta SAI Infrastructure Pvt. Ltd)
1148, RANI SATI NAGAR (SOUTH)
KING'S ROAD, JAIPUR-302019

D5. Effluent discharged from STP

D6. Flow meter at outlet and Inlet of STP

D7. Separate electricity meter at STP

D8. Point of entry of water and exit of waste water

Observation

1. The organization does not have a Zero Liquid Discharge (ZLD).

Water Consumption & Water Efficiency Use of water (indoor and outdoor water) & practices related to efficient /reduced use of water.)	
Sources of water supply	The borewell serves as the primary source of water supply for the organization.
Number of water storage tanks and their storage capacity. Total water storage capacity.	There are a total of 15 water storage tanks distributed across various facilities such as the administrative building, academic building, hostels, and workshop. These tanks collectively have a total storage capacity of 1,070,000 liters. Reference doc/pic no:- E1 & E2
Water used in irrigation?	The organization utilizes 1.5 lakh liters of water for irrigation purposes.
Water used in cleaning?	The organization consumes 20,000 liters of water for cleaning purposes.

E1. Water storage tank & total capacity

E2. Water storage tank & total capacity

Details	No. of persons	Domestic (liter/ day)	Flushing (liter / day)	Total (liter / day)
Students	4805	1,35,000	1,71,225	3,06,225
Teaching Staff	289	20,520	6,165	26,685
Technical Staff	33	2,835	540	3,375
Non-technical Staff	88	5,805	2,025	7,830
Outsourced Staff	46	3,510	900	4,410
Total	5261	1,67,670	1,80,855	3,48,525

Description	Requirement*	Actual consumption

Water consumption per head /day	Without boarding facility: 45 liter per head / day With boarding facility: 135 liter per head / day	66.246 liter/head/day
*As per Central Ground Water Authority Guidelines water requirements (Ref. NBC 2016, BIS) of an educational institute for drinking and domestic use.		

SANITARY CONVENIENCE TO BE PROVIDED

Fitments	Educational Institutes (non-Residential)				Educational Institutes (Residential)			
	Boys		Girls		Boys		Girls	
	Req.*	Actual	Req. *	Actual	Req. *	Actual	Req.	Actual
Water closets	1 per 40 pupils or part thereof	208	1 per 25 pupils or part thereof	208	1 for every 8 pupils or part thereof	304	1 for every 6 pupils or part thereof	56
Ablution taps	1 in each water closet	208	1 in each water closet	208	1 in each water closet	304	1 in each water closet	56
Urinals	1 per 20 pupils	248	-	-	1 for every 25 pupils or part thereof	56	-	-
Wash basins	1 per 60 pupils, Min 2	156	1 per 40 pupils, Min 2	156	1 for every 8 pupils or part thereof	310	1 for every 6 pupils or part thereof	24
Bath	-	-	-	-	1 for every 8 pupils or part thereof	304	1 for every 6 pupils or part thereof	56
Drinking water fountains or taps	1 for every 50 pupils or part thereof	182	1 for every 50 pupils or part thereof	60	1 for every 50 pupils or part thereof	48	1 for every 50 pupils or part thereof	16

Cleaner's sinks	1 per floor, minimum

*As per IS 1172:1993

NOISE POLLUTION

Noise Pollution Management (objective, practices / methods to minimize noise pollution)

During the CDG Inspection, noise level tests were conducted at various locations within the Institute during the daytime. The measured noise level was found to be 74.975 dB(A) Leq.

Noise level in dB(A) Leq	Standard Level*	Actual Level
Day Time	50	74.975 dB(A) Leq
Nighttime	40	---------

*As per The Noise Pollution (Regulation and Control) Rules, 2000; rule 3(1) and 4(1)
Day time from 6:00am to 10:00pm
Nighttime from 10:00pm to 6:00am

Related records / images:

F. Noise meter

Building Sustainability	
Ensure that walls, floors, roofs, and windows are as energy efficient as possible.	During the audit, it was observed that the walls, floors, roofs, and windows of the buildings are designed to maximize energy efficiency. Additionally, the institute has invested in renewable energy by installing a 480 KWp solar photovoltaic rooftop grid-connected system on most of its buildings. The solar unit generates 632,850 units, which accounts for more than 50% of the total energy consumption of the university campus. Reference doc/pic no:- G1
Design for good indoor air quality	The institute building is designed to ensure good indoor air quality, with adequate ventilation systems and windows to facilitate proper airflow. Reference doc/pic no:-G2
Use of natural daylight in building interiors as a source of ambient light.	Natural daylight is effectively utilized within the interior of the Institute building as a source of ambient light. Reference doc/pic no:- G3
Use of low emitting materials for building modifications, maintenance, and cleaning.	The Institute ensures the use of low-emitting materials for building modification, maintenance, and cleaning purposes. Reference doc/pic no:- G4
Related Images:	
	
G1. Energy efficient Building	G2. Good Indoor air quality

	
G3. Natural daylight is used in Building Interior	G4. Use of low emitting material for maintenance and cleaning

Lighting	
Use of energy efficient lighting system (bulb & other products)	The college has installed an LED lights on its campus. Clause 10 of the Institute's Green Campus Policy specifically addresses the use of energy-efficient lighting systems. Reference doc/pic no:- H1
Use of natural day light	Natural daylight is utilized within the Institute to reduce the reliance on artificial lighting during daylight hours. Reference doc/pic no:- H2
Related Images:	
	
H1. Eneregy management policy	H2.Natural daylight is used in college

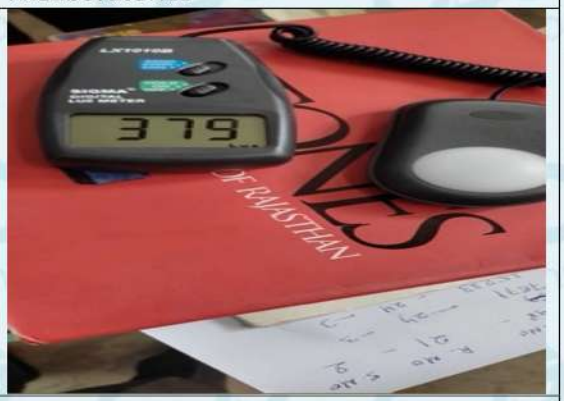
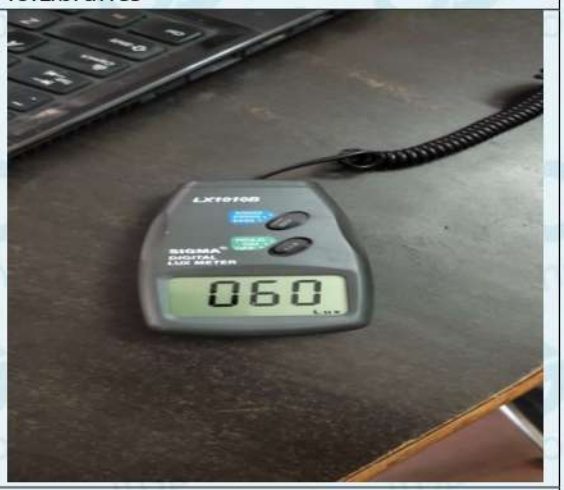
ILLUMINATION LEVELS AND GLARE INDEX

Sr. No.	Area	Standard Illumination (Lux)*	Standard Glare Index*	Actual Illumination (Lux)	Actual Glare Index
a)	Classrooms	300	16	614	
b)	Lecture rooms (including demonstration areas)	300	16	202	
c)	Reading rooms	150 to 300	19	201	
d)	Laboratories	300	16	245	
e)	Corridors	70	-	113	
f)	Libraries	300	16	379	
g)	Auditorium I. Hall II. Foyer III. Stage area	 70 70 300	 - - 16	 111 062	
h)	Gymnasiums	150	-	60	
j)	Cafeterias	100	-	099	
K)	Staff rooms	150	-	122	

* Recommended illumination Levels and Glare index as per National Lighting Code 2010 [ETD 24: Illumination Engineering and Luminaries] Part 5 Section 3

I1.Classrooms

I2.Lecture rooms

	
I3.Reading rooms	I4.Laboratories
	
I5.Corridor	I6.Libraries
	
I7.Auditorium	I8.Gymnasium

	
I9.Cafeterias	I10.Staff room

Electrical Equipment's	
Details of electrical equipment, its energy efficiency & practices	During audit Electrical equipments found are: Tubelight, Ceiling Fan, LED Tubelight, CFL, AC, PC, Printer, Exhaust, Round light & High Mast with a Toal power of 373.850 KW

Equipments	Quanity(Nos)	Total Power(Watt)
Tubelight(28W)	1134	31752
Tubelight(36W)	98	3528
Ceiling Fan(60W)	2702	162120
CFL(18W)	506	9108
AC	49	73500
PC	414	35190
Printer	54	13500
Round light	44	792
High Mast	4	6000
Exhaust	68	12240

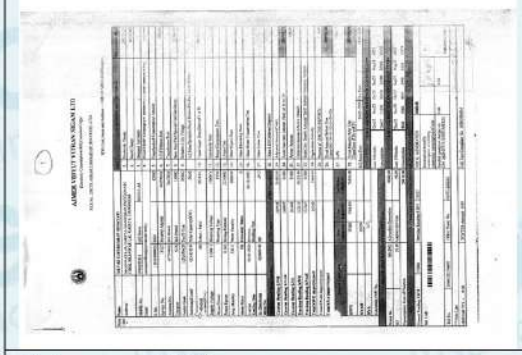
All electrical equipment is used as per requirement, and high mast lights are used during night time.

ELECTRICITY CONSUMPTION

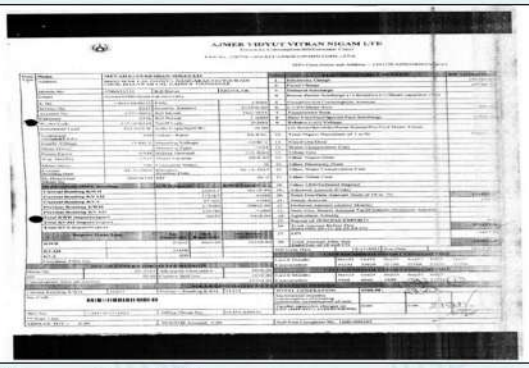
Month	Electricity Consumption (Last 6 months)
January 2024	29380 KWH
December 2023	26652 KWH
November 2023	31232 KWH
October 2023	35620 KWH

September 2023	32180 KWH
August 2023	32988 KWH

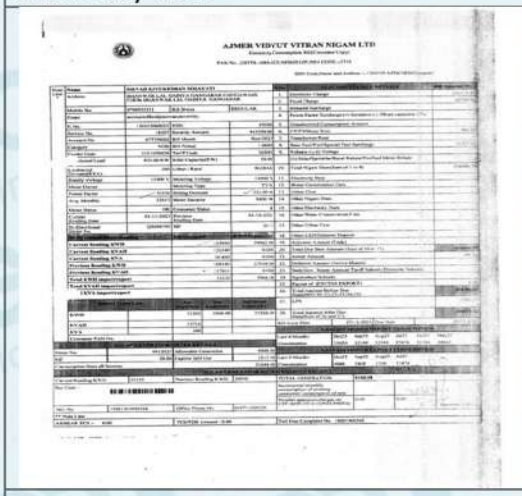
Related Images:



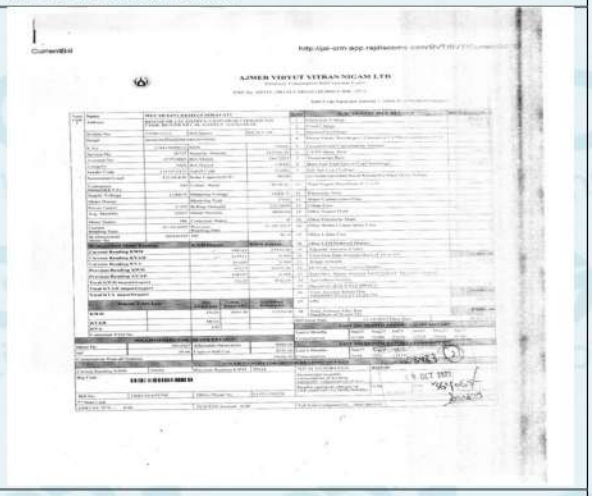
J1.January 2024



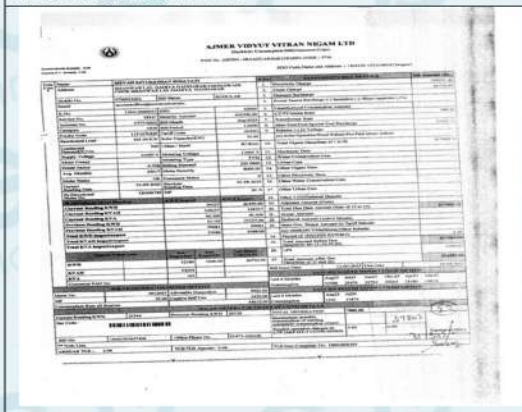
J2.December 2023



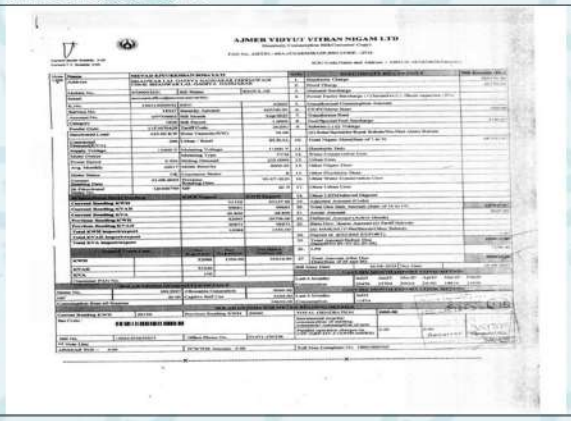
J3.November 2023



J4.October 2023



J5.September 2023



J6.August 2023

Energy Efficiency
(consumption, objective, practices / methods to achieve energy efficiency objectives)

Current energy uses.	<table><tr><th>Energy Sources</th><th>Consumption (Unit)</th></tr><tr><td>Electricity</td><td>31342 KWH</td></tr><tr><td>Fuel oil</td><td>17,750 Liter per year</td></tr><tr><td></td><td></td></tr></table>
Short-term energy efficiency goals & roadmap to achieve those goals.	No record found at the time of audit.
Long-term energy efficiency goals & roadmap to achieve those goals.	No record found at the time of audit.

Observation

- The organization does not have short term and long-term energy efficiency goals & roadmap to achieve those goals.

On-Site Energy Generation
(Details of renewable energy generation projects on organization's property for organization's use)

The University has installed a 480 KWp solar photovoltaic rooftop grid-connected system on most of its buildings. The solar unit generated for the year 2021-22 is 6,32,850 units, which accounts for more than 50% of the total unit consumption of the university campus.
Reference doc/pic no:- L1.

Related records / images:

L1. Solar panel

DRINKING WATER

Drinking Water Quality (As per IS 10500: 2012)
During the CDG Inspection, pH tests were conducted at various borewell locations within the Institute. It was found that the pH of the borewell water is 7.283. These pH values fall within the permissible limits as defined by IS 10500:2012 and confirmed that the water is safe for drinking.
Identified Nonconformities: • The organization does not conduct drinking water quality test as per IS 10500:2012.
Related records / images:    M2. Ph Test

WASTE MANAGEMENT

Type of waste - Plastic waste

Approximate annual quantity- 1 Ton

Source of waste – Broken old Furniture, Dustbins, Garden pipes, water cans etc.

Handling methods: Items are sold for recycling through authorized scrap dealers, ensuring responsible disposal and environmental sustainability.

Measures to reduce the waste quantity- The Institute has implemented a ban on single-

use plastic and is replacing it with steel furniture, promoting environmental conservation and sustainable practices.

Type of waste – Paper waste

Approximate annual quantity- 10 Ton

Source of waste – Old answer script (Weeded off), waste paper, charts etc.

Handling methods- Items are sold for recycling through authorized scrap dealers, ensuring responsible disposal and environmental sustainability.

Measures to reduce the waste quantity-
Online examinations are conducted, and an Enterprise Resource Planning (ERP) system is implemented for all purposes.

Type of waste – Electronic waste

Approximate annual quantity- 120 Kg

Source of waste – Old computer, IT waste, Old batteries.

Handling methods- The Institute has established a contract with an authorized e-waste recycler for responsible disposal of electronic waste.

Measures to reduce the waste quantity- Repairing of IT equipment and annual maintenance contract for maintenance.

Type of waste – Hazardous waste

Approximate annual quantity- 210 Kg

Source of waste – Mewar university Hospital, Pharmacy and Chemistry Labs.

Handling methods- The Institute has established contracts with authorized recyclers for responsible disposal and recycling of materials.

Measures to reduce the waste quantity- No record found at the time of audit.

Type of waste – Garden waste

Approximate annual quantity- 10 Ton

Source of waste – Garden Leaves

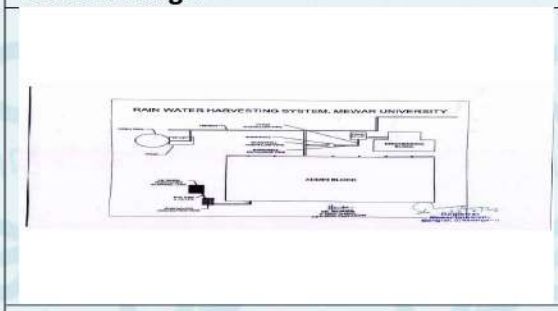
Handling methods- Vermin Compost plant
Measures to reduce the waste quantity- Proper Gardening, sprinkler facility etc.

Type of waste – Food waste **Approximate annual quantity-** 10 Ton **Source of waste –** Hostel Mess and cafeteria **Handling methods-** Biogas plant and Vermin compost plant **Measures to reduce the waste quantity-** Minimizing food waste and creating awareness through banners and other means are important initiatives undertaken by the Institute.
Identified Nonconformities: • The organization should follow a proper waste management handling process as well as strive to reduce the quantity of waste.

COMPOSTING PLANT

How much organic waste is generated in a day? What type of organic waste is generated?	The Institute generates 50 kg of organic waste per day, consisting of food waste, plant waste, and garden waste.
Details & capacity of compost plan installed in the organisation.	No record found at the time of audit.
Details of composting method used	The vermicomposting method is used for composting organic waste in a pit.
Compost facility maintenance & inspection plan	No record found at the time of audit.
Identified Nonconformities: • It is recommended to adopt a proper composting method for complete decomposition and can consider installing a composting machine on campus for safe and sustainable composting.	
Related Image:	
	
N1. Vermicomposting is used for Organic waste	

RAINWATER HARVESTING

Provide details of the rainwater harvesting facility.	The university has a total built-up area of approximately 1,500 m^2. With an average annual rainfall of 1.064 meters and a runoff coefficient of 0.88 for a commercial building, the estimated rainwater harvesting potential for the college is about 1,404.48 m^3 per year. This estimation is calculated using the following mathematical equation: Rainwater Harvesting Potential = Rainfall (m) x Area of catchment (m^2) x Runoff coefficient. In this case: RWH Potential = 1.064 m x 1500 m^2 x 0.88 = 1404.48 m^3/year. Reference doc/pic no:- O1
Rainwater harvesting system maintenance plan	No record found at the time of audit.
Identified Nonconformities: The organisation does not maintain any record regarding rainwater harvesting maintenance & inspection.	
Related Image:	
	
O1. Layout of rain water harvesting unit	O2. Adherence committee constitution to oversee the maintenance plan

Training	
Has the organization provided waste management/handling training to concerned employees. Give details.	No record found at the time of audit.

Has the organization provided training for energy saving?	No record found at the time of audit.
Has the organization conducted training for solid waste management?	No record found at the time of audit.
Has the organization conducted awareness training for water saving?	Yes, the organization provided training for water by saving awareness poster. Reference doc/pic no.: - P1
Related Image:	
	
P1. Water saving awareness poster	
Observation: • The organisation does not maintain any record regarding waste management and solid waste management training program.	

Environmental Practices	
Waste recycling	Institute implements waste recycling practices. Organic waste undergoes vermicomposting to produce manure, which is then utilized in the biogas plant for power generation. Additionally, wastewater recycled from the Sewage Treatment Plant (STP) is used for gardening purposes. During the audit, a Green Audit certificate provided by Empirical Exergy Private Limited was found for the academic year 2021-22. Also university is allotted the membership for disposal of E-waste as per HW (MH &TM) rules 2008 in accordance with Rajasthan State pollution control board. Also Mewar university Hospital have obtained membership of Biomedical waste management.

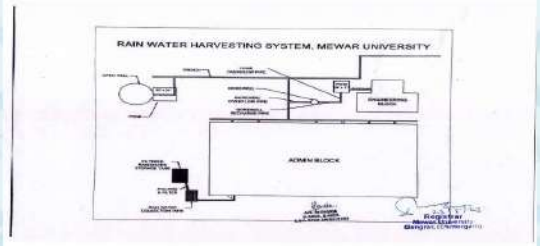
	Reference doc/pic no:- Q1 & Q2
Waste Decomposition	All organic waste undergoes decomposition through vermicomposting. Reference doc/pic no:- Q1
Rainwater harvesting	The estimated rainwater harvesting potential for the college is approximately 1404.48 m3/year, calculated using the following equation: RWH Potential = Rainfall (m) x Area of catchment (m2) x Runoff coefficient Given: Rainfall = 1.064 m (average annual rainfall) Area of catchment = 1500 m2 (total built-up area) Runoff coefficient = 0.88 Substituting the values: RWH Potential = 1.064 m x 1500 m2 x 0.88 RWH Potential = 1404.48 m3/year Reference doc/pic no:- Q3
Environmentally Preferable Purchasing (EPP) or Green Purchasing	The Institute demonstrates its commitment to environmentally preferable purchasing, also known as green purchasing, through initiatives outlined in its Green Campus Policy like use low emitting pants, LED lights with star rating, AC etc. Reference doc/pic no:-Q4
Distinct receptacles for trash and recycling	Inside the Institute, there are designated receptacles for trash and recycling, facilitating proper waste segregation. Blue dustbins are allocated for plastic waste, green dustbins for vegetable and fruit waste, and yellow dustbins for paper and glass waste, ensuring effective recycling and waste management practices. Reference doc/pic no:- Q5
Low-emission transportation	No record found at the time of audit.
maximum use of clean energy	The Institute's Green Campus Policy and Waste Management Policy prioritize the maximum utilization of clean energy sources.

Preference to electronics over the paper	The institute doing more activity in online mode like taking assignment, examination rather using papers.
Campus garden	The institute has a green campus area of 5,03,707 sq.ft., which includes 618 trees, 382 plants, and 406 gardens.

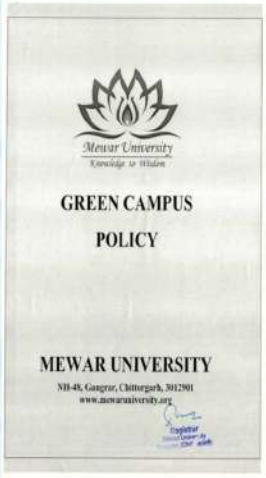
Related Image:

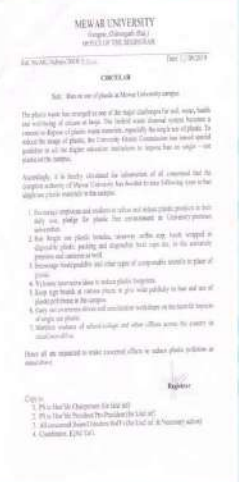
Q1. Vermicomposting & Biogas plant

Q2. STP(Sewage Treatment Plant)



Q3. Layout of Rainwater harvesting unit





Q4. Green campus Policy & Ban on use of Plastic

Q5. Distinct receptacle for trash

Environmental Initiatives / Green Initiatives

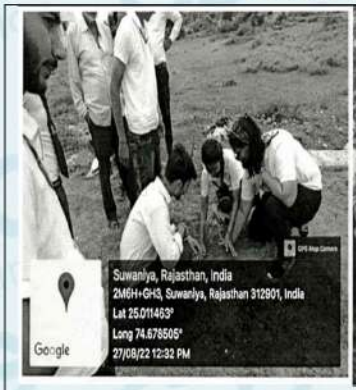
Mewar University has organized several environmental initiatives or green initiatives, including:

1. Conducting cleanliness drives in nearby neighborhoods such as parks, streets, and community areas to promote cleanliness and raise awareness among students and the public.
2. Celebrating Earth Day annually to promote environmental awareness and encourage sustainable practices.
3. Organizing tree plantation drives by students and faculty staff in nearby villages and towns to promote environmental conservation.

4.Initiating the "Nadan Parinde" initiative, aimed at providing water for birds during hot summer months both inside and outside the campus. This initiative addresses water scarcity for birds in the surrounding areas, contributing to biodiversity conservation beyond campus boundaries. Additionally, awareness campaigns are conducted in the local community to educate people about the importance of providing water to birds during summer.

5.Participating in World Environment Day celebrations outside the campus to demonstrate the university's commitment to environmental conservation. Activities include raising public awareness in nearby communities, tree plantation, cleanup campaigns, awareness rallies, and interactive sessions on environmental topics.

Related records / images:



Green Belt/ Landscaping

Biodiversity

Signature

eSign Signed by: ASHUTOSH TIWARI
Reason: Certified Copy
Location: Gurgaon, India
Date: 13-Sep-2024 (12:03 PM)

Inspection Engineer