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CIN No: U74999MP2018PTC045751

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Date: 28/06/2018

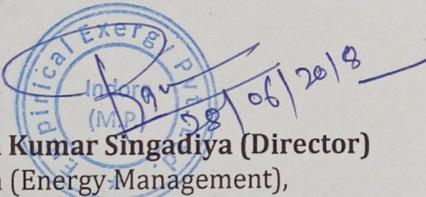
GREEN AUDIT CERTIFICATE

This is certified that the Green audit was conducted at **Mewar University, Chittorgarh (Rajasthan)** dated 18/06/2018 to 21/06/2018 (Four Days) and the audit report has been submitted by **Empirical Exergy Private Limited (EEPL), Indore**

We avail this opportunity to express our deep and sincere gratitude to the management for their wholehearted support and co-operations during the green audit.

This certificate is being issued based on the Green Audit conducted by EEPL.

For- **Empirical Exergy Private Limited**


Rajesh Kumar Singadiya (Director)

M.Tech (Energy Management),

Certified Energy Auditor [CEA-7271]

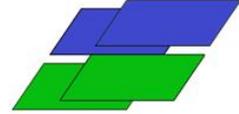
(BEE, Ministry of Power, Govt. of India)

Lead Auditor ISO50001:2011 [EnMS] from FICCI, Delhi

Certified Water Auditor (NPC, Govt of India)



**Green Audit Report
Mewar University, Gangrar Chittorgarh
(Rajasthan) Year 2017-18**



**GREEN AUDIT REPORT
CONSULTATION REPORT**



**MEWAR UNIVERSITY
Gangrar Chittorgarh (Rajasthan)**

PREPARED BY

EMPIRICAL EXERGY PRIVATE LIMITED

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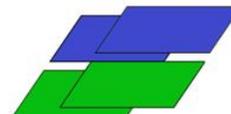
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(2017-18)



**Green Audit Report
Mewar University, Gangrar Chittorgarh
(Rajasthan) Year 2017-18**

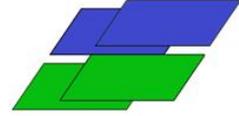


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ACKNOWLEDGEMENT

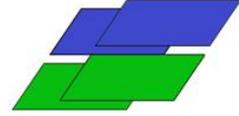
Empirical Exergy Private Limited (EEPL), Indore (M.P) takes this opportunity to appreciate & thank the management of **Mewar University Gangrar Chittorgarh** for allowing us to conduct the green audit for the university.

We are indeed touched by the helpful attitude and co-operation of all faculties and technical staff, who rendered their valuable assistance and co-operation during the study.

Rajesh Kumar Singadiya

(Director)

M.Tech (Energy Management), PhD (Research Scholar)
Accredited Energy Auditor [AEA-0284]
Certified Energy Auditor [CEA-7271]
(BEE, Ministry of Power, Govt. of India)
Empanelled Energy Auditor with MPUVN, Bhopal M.P.
Lead Auditor ISO50001:2011 [EnMS) from FICCI, Delhi
Certified Water Auditor (NPC, Govt of India)
Chartered Engineer [M-1699118], the Institution of Engineers (India)
Member of ISHRAE [58150]



Green Monitoring Committee.

**OFFICE OF THE REGISTRAR
MEWAR UNIVERSITY, GANGRAR, CHITTORGARH (RAJ.)**

Ref. No.MU/RO (Admin)/2018/308(A)

Date:- 17th March, 2018

OFFICE ORDER

**Sub:- Reconstitution of Green, Environment & Energy Auditing
Committee.**

Green Audit, Environment Audit & Energy Audit Committee is reconstituted to conduct the necessary audit in due course. An Audit Committee is constituted with the following officials:-

Sr. No.	Name	Designation	Committee
1	Dr. R C Tiwari	Professor / Dean Department of Agriculture	Co-Ordinator
2	Mr. Rakesh Kumar Singadiya	Director, Empirical Energy Pvt.Ltd.	External Auditor
3	Mr. K.K. Bhati	Asst. Professor, Department of Agriculture	Internal Auditor
4	Dr. Satish Kumar Ameta	Asst. Professor, Department of Life Science	Internal Auditor
5	Mr. Deepak Kumar Joshi	Asst. Professor, Department of Electrical Engineering	Internal Auditor
6	Dr. Mohammad Ashid	Asst. Professor, Department of Chemistry	Member
7	Mr. Suraj Kumhar	Asst. Professor, Department of Electrical Engineering	Member
8	Mr. Brijesh Kumar Meena	Asst. Professor, Department of Agriculture	Member
9	Mr. H. Widhani	OSD	Member
10	Mr. Kripal Singh	Non-Teaching Staff	Member
11	Mr. Rajesh Sharma	Non-Teaching Staff	Member

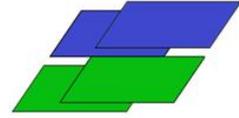
(Signature)
Registrar
Mewar University
Gangrar, (Chittorgarh)

Copy to:

1. PS to Hon'ble Chancellor (for kind information)
2. PS to Hon'ble President/Vice Chancellor(for kind information)
3. All Officers/Deans/Directors/Hod's
4. IT Section/Accounts Dept./All Staff
5. Coordinator – IQAC Cell
6. Record File



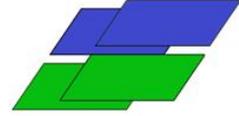
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The Audit Team

The study team constituted of the following senior technical executives from **Empirical Exergy Private Limited,**

- ✚ **Mr. Rajesh Kumar Singadiya** [Director & Accredited Energy Auditor AEA-0284]
- ✚ **Mr. Rakesh Pathak,** [Director & Electrical Expert]
- ✚ **Dr. Suresh Kumar Soni** [Certified Energy Auditor & Energy Expert]
- ✚ **Mr. Sachin Kumawat** [Sr. Project Engineer]
- ✚ **Mr. Lokesh Kumar Varma** [Project Engineer]
- ✚ **Mr. Mohit Malviya** [Fire safety Engineer]
- ✚ **Mr. Aakash Kumawat** [Site Engineer]
- ✚ **Mr. Ajay Nahra,** [Sr. Accountant & admin]



EXECUTIVE SUMMARY

Green Initiative Taken by University

+ CAMPAIGN OF PLANTATION AND GREEN CAMPUS:

University has around **1186** trees on campus. It's a good initiative taken by management for a green campus under the campaign of a plantation. **It's APPRECIABLE.**

GREENN AUDIT RECOMMENDATION: -

+ QR Code System on Tree

University can provide QR codes on the trees for its information and to exploit the rapidly growing platform for a unique purpose.

+ Eco-restoration programmes

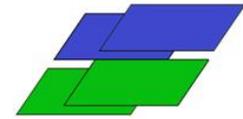
Frame a holistic campus development plan with long-term eco-restoration programmes for replacing exotic Acacia plantations with indigenous trees.

+ Vehicle pooling:

- Vehicle pooling should be promoted both among students and faculty and use of bicycles should be promoted as a policy.



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CHAPTER-1 INTRODUCTION

1.1 About University

Mewar University is an autonomous body set up by the Government of Rajasthan through Act. No. 4 of 2009 passed by the Rajasthan Legislative Assembly (Government of Rajasthan). The University is recognized by the UGC u/s 2(f) of UGC Act with powers to confer degrees u/s 22(1) of the UGC Act, 1956 vide their letter no. F.9-15/2009(CPP-I) dated 30th March 2009. This is the only private and self-financed University in Rajasthan which is also approved by the UGC u/s 12B of the UGC Act vide their letter No. F.9-15/2009 (CPP-I/PU) dated 15th October 2018. The University is also NAAC accredited.

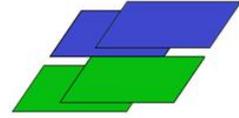
Mewar University has never affiliated with any institution, nor has the University ever set up any study centre in any part of the country other than its main campus at Gangrar in Chittorgarh (Rajasthan).

Mewar University is promoted by the Mewar Education Society (MES). It is controlled by a Board of Management, constituted by the MES, which is headed by Chairperson Shri Ashok Kumar Gadara, a great visionary, educationist, and nationalist, who translated his ideas and dreams of promoting higher education into reality by setting up institutes of learning in various subjects. In no time, he has carved out a niche for himself as an educationist, who believes in the inculcation of values through education in the young generation.

The group, under the able leadership of Dr. Ashok Kumar Gadiya and the active support and association of renowned academicians, experienced professionals, and technocrats, has established a chain of Institutes of higher education and learning:



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VISION:-

To develop a center of excellence for technical, professional and vocational education and research at par with national and international standards.

MISSION:-

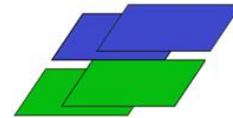
To develop the framework for effectively conducting various educational and research programmes of the highest standards to produce confident, self-reliant, and responsible youth for society and outstanding professionals for government, industry, and business. The mission is to "**Reach the unreached**"

Objective:-

- ❖ Provide easy access to high-quality education in Management, Engineering, as well as other academic & professional fields to its students, irrespective of their caste, creed, age, gender, region, or country, at an affordable cost.
- ❖ To offer a conducive environment for pursuing research and vocational studies with a market-driven orientation.
- ❖ To expose students to new ideas, fresh vision, and pragmatic ambition, and enhance their competency in the ever-changing business environment.
- ❖ To provide a flexible choice-based credit system of education and dual-degree programmes while flexible adopting modes of delivery to suit students' requirements of learning.
- ❖ To prepare and assist students in improving their future prospects through career counselling and placement support, on-the-job training, industrial visits, presentations, and group discussions.
- ❖ To Promote and practice a convenient distance education concept in India and abroad.
- ❖ To spread job-oriented Skill Development education in rural and tribal areas



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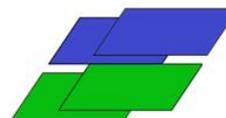
1.2 About Campus: -

Table 1.1 Details are the total build-up area given in the table:-

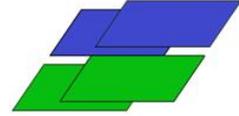
TOTAL GROUND COVERED. =20856.78 SQ.MT									
TOTAL OVERALL BUILT-UP ALL FLOORS AREA:- 76024.72 SQ.MT									
S.NO	BLOCK	FAR AREA				BUILT AREA			
		GROUND FLOOR AREA IN SQ.MT	FIRST FLOOR AREA IN SQ.MT	SECOND FLOOR AREA IN SQ.MT	THIRD FLOOR AREA IN SQ.MT	GROUND FLOOR AREA IN SQ.MT	FIRST FLOOR SQ.MT	SECOND FLOOR AREA IN SQ.MT	THIRD FLOOR AREA IN SQ.MT
1	ADMINISTRATIVE AND ACADEMIC BLOCK.	8890.84	8519.33	8675.24	8675.24	8966.05	9050.97	9206.74	9206.74
2	EDUCATION BLOCK	1062.08	1170.08	1062.08	1062.1	1193.08	1253.27	1126.29	1126.29
3	ENGINEERINGBLOCK	1979.9	11979.9	1979.9	0	2126.84	2093.74	2093.74	0
4	MEWAR HOSPITAL	1337.03	1337.03	0	0	1590.91	1590.91	0	0
5	BHAMASHAH HOSTEL	1382.11	1382.11	1382.11	1382.1	1601.64	1572.82	1572.82	1572.82
6	SANGA HOSTEL	1189.78	1189.78	1189.78	1189.8	1359.6	1341.62	1341.62	1341.62
7	KUMBHA HOSTEL	602.71	602.71	620.65	620.65	709.19	697.35	697.35	697.35
8	PRATAP HOSTEL	640.52	640.52	665.78	665.78	749.38	739.64	739.64	739.64



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S.NO	BLOCK	FAR AREA				BUILT AREA			
		GROUND FLOOR AREA IN SQ.MT	FIRST FLOOR AREA IN SQ.MT	SECOND FLOOR AREA IN SQ.MT	THIRD FLOOR AREA IN SQ.MT	GROUND FLOOR AREA IN SQ.MT	FIRST FLOOR SQ.MT	SECOND FLOOR AREA IN SQ.MT	THIRD FLOOR AREA IN SQ.MT
9	PANNA DHAI HOSTEL	376.53	376.53	382.3	382.3	447.6	435.97	435.97	435.97
10	MEERA HOSTEL	323.13	323.13	323.13	323.13	386.87	381.68	381.68	381.68
11	GUEST HOUSE	229.94	223.58	223.58	223.58	295.78	258.82	258.82	258.82
12	STAFF QUARTERS(1 BHK)	285.11	285.11	285.11	285.11	367.6	362.67	362.67	362.67
13	STAFF QUARTER	276.99	276.99	276.99	276.99	353.84	349.18	349.18	349.18
14	ANNAPURNA MESS	613.7	0	0	0	708.4	0	0	0
	TOTAL	19190.37	28306.8	17066.65	15086.78	20856.78	20128.64	18566.52	16472.78



Satellite Image of Mewar university from Google map

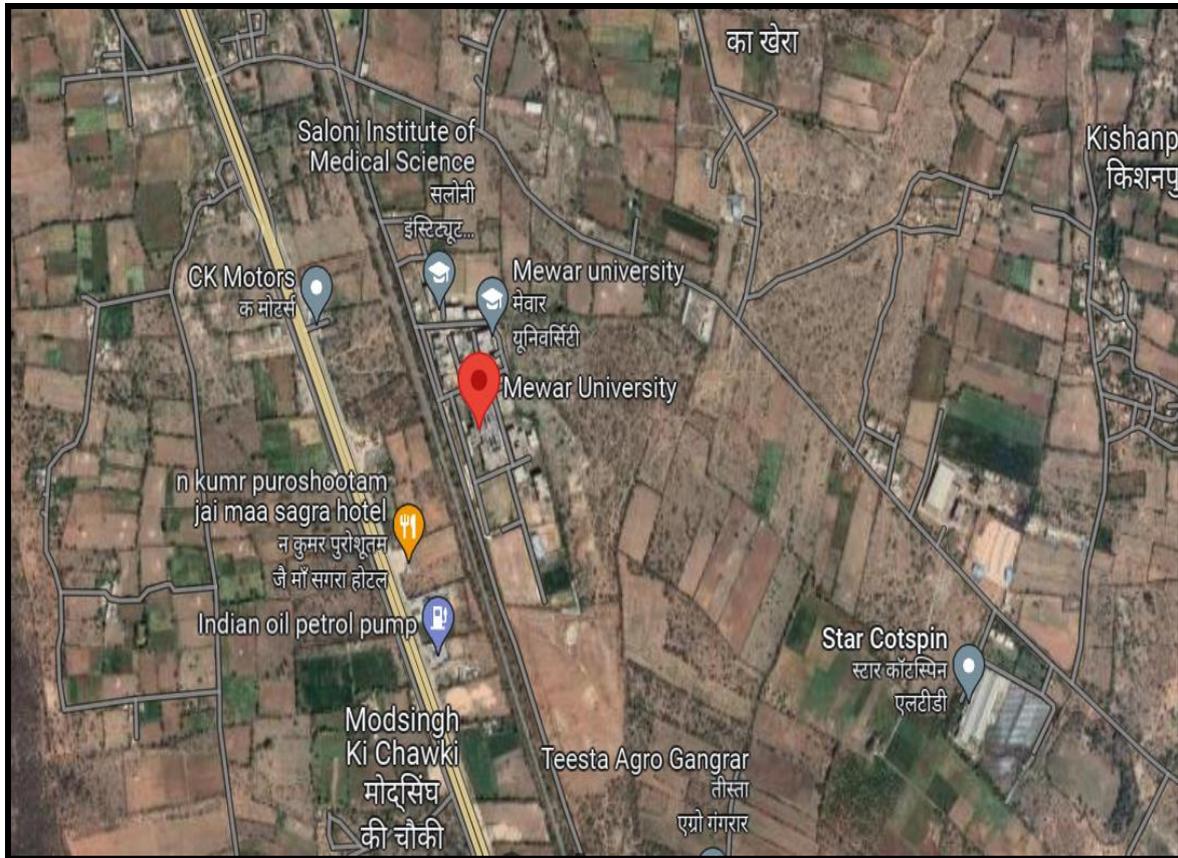
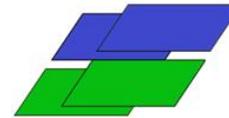
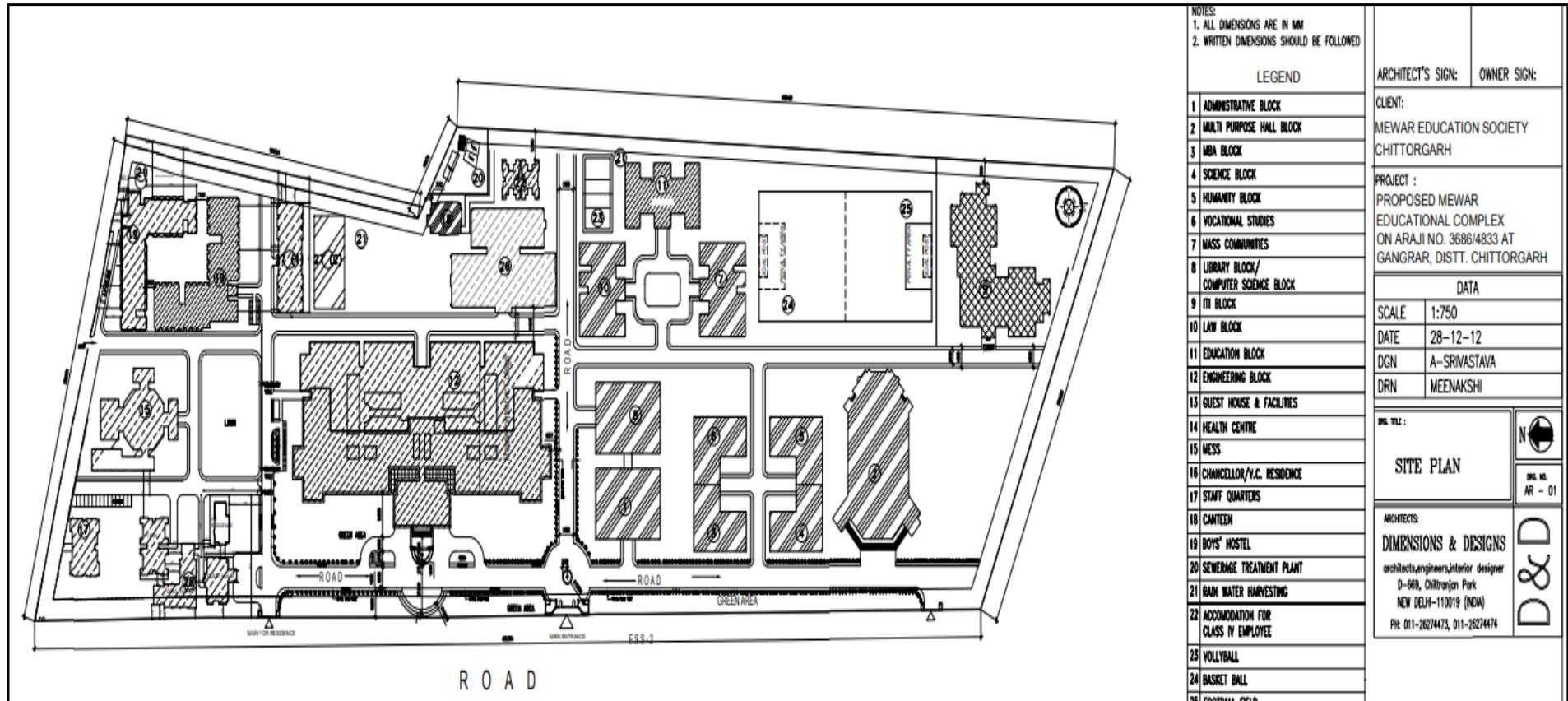


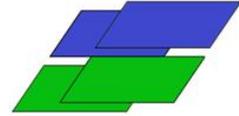
Figure 1.1: - Satellite Image of Mewar university from Google map



1.3 MEWAR UNIVERSITY LAYOUTS OF VARIOUS BUILDINGS

Layout map of Mewar University





1.4 About Green Auditing

Eco campus is a concept implemented in many educational institutions, all over the world to make them sustainable because of their mass resource utilization and waste discharge into the environment.

Green audit means to identify opportunities for sustainable development practices, enhance environmental quality, improve health, hygiene, and safety, reduce liabilities achieve values of virtue. A green audit also provides a basis for calculating the economic benefits of resource conservation projects by establishing the current rates of resource use and their associated costs.

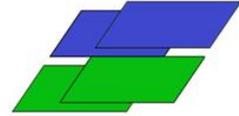
Green auditing of “**Mewar University**” enables assessment of the lifestyle, action, and its impact on the environment. This green audit was mainly focused on greening indicators like utilization of green energy (solar energy) and optimum use of secondary energy sources (petrol and diesel) in the University campus, vegetation, carbon footprint of the campus, etc. Green auditing aims to help the institution to apply sustainable development practices and to set examples before the community and young learners.

1.5 Objectives of Green Auditing

The general objective of a green audit is to prepare a baseline report on “Green campus” and alternative energy sources (solar energy), measures to mitigate resource wastage, and improve sustainable practices.

The specific objectives are:

-  To inculcate values of sustainable development practices through a green audit mechanism.
-  Providing a database for corrective actions and plans.
-  To identify the gap areas and suggest recommendations to improve the green campus status of the University.



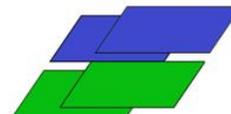
**CHAPTER- 2
GREEN CAMPUS**

2.1 Green Audit

In the survey, the focus has been given to the assessment of the present status of plants and trees on the university campus and efforts made by the university authorities for nature conservation. The campus is in the vicinity of approximately more than 1685 trees/medicinal herbs/ornamental plants. The detail is given below:



Figure .2.1 Green Campus



2.1 List of plants on the university campus.

Sr. No	Common name	Botanical Name	Quantity
1	Neem	Azadirachta indica	45
2	Kadamba	Neolamarckia kadamba	4
3	Drum Stick	Moringa oleifera	12
4	Peepal	Ficus religiosa	2
5	Desi Babul	Acacia nilotica	23
6	Siris	Albezia lebbeck	25
7	Shisham	Dalbergia sissoo	14
8	Arjun	Terminalia arjuna	12
9	Ashapala	Polyalthia longifolia	34
10	Rudrax	Elaeocarpus ganitrus	2
11	Royal Palms	Roystonea rigia	6
12	Vilayati Babul	Prosopis juliflora	28
13	Monkey Puzzled Tree	Araucaria heterophylla	10
14	Indian Laburnum	Cassia fistula	14
15	Bel	Aegle marmelos	12
16	Geiger Tree	Cordia sebestena	13
17	Siamea Tree	Cassia siamea	28
18	Pagoda Tree	Plumeria rubra	30
19	Kachnar	Bauhinia variegata	56
20	Devil Tree	Alstonia scholaris	45
21	Gulmohar	Delonix regia	35
22	Silver Oak	Grevillea robusta	4
23	Ashapala	Polyalthia longifolia	35
24	Ashoka	Saraca asoca	10
25	Benjamina	Ficus benjamina	28
26	Date Palms	Phoenix dactylifera	11
27	Amla	Emblica officinalis	27
28	Mango	Mangifera indica	10
29	Guava	Psidium gujava	13
30	Mulberry	Morus alba	5
31	Jamun	Syzygium cumini	7
32	Jackfruit	Artocarpus heterophyllus	10
33	Ber	Ziziphus mauritiana	8
34	Pears	Pyrus spp.	7
35	Lemon	Citrus lemon	16
36	White Champa	Plumeria alba	56
37	Rose	Rosa indica	65



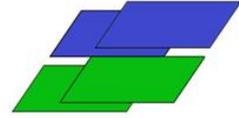
Sr. No	Common name	Botanical Name	Quantity
38	Duranta	Golden duranta	23
39	Mehndi	Lawsonia inermis	12
40	Kaner	Nerium oleander	18
41	White Cedar	Thuja occisentalis	10
42	China Rose	Hibiscus rosa-sinensis	32
43	Golden Durant	Duranta erecta	22
44	Harsringar	Nyctanthes arbor-tristis	16
45	Patharchatta	Bryophyllum pinnatum	14
46	Tulsi	Ocimum tenuiflorum	54
47	Sarpaganda	Rauvolfia serpentina	56
48	Lemon	Citrus limon (L.)	30
49	Ashwaganda	Withania somnifera	19
50	Beach Launaea	Launaea sarmentosa	10
51	Aloe Vera	Aloe barbadensis Mill.	23
52	Lemon Grass	Cymbopogon citratus	31
53	Chaff-Flower	Achyranthes aspera	5
54	Ajwain	Trachyspermum ammi	10
55	Kalmegh	Andrographis paniculata	16
56	Satawar	Asparagus racemosus	10
57	Giloey	Tinospora cordifolia	5
58	Harad	Terminalia chebula	4
		Total	1182

Observation :-

University has **1182 trees** on the campus. This is a good initiative taken by management for a green campus under the campaign of the plantation. **It's APPRECIABLE.**



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Mewar University, Gangrar Chittorgarh
(Rajasthan) Year 2017-18**



2.2 Green Campus Photographs -

Pending From University Side

CHAPTER- 3 RECOMMENDATIONS AND SUGGESTIONS

3.1 QR Code System on Trees

University can provide QR codes on trees for its information and to exploit the rapidly growing platform for a unique purpose.

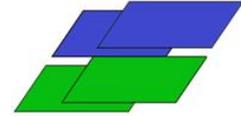


Fig: 3.1 QR code system for plants

These codes can give students all the information they need to know about the tree — from its scientific name to its medicinal value. They only need to put their smartphones to use. QR codes to them, making it easier for everybody to learn about a plant or a tree at the tip of their fingers.” Any app generating a QR code, which is available for free on the online stores can be used to avail the information of the trees.

Eco-restoration programmes

- Frame long-term eco-restoration programmes for replacing exotic Acacia plantations with indigenous trees. Need of the hour is to frame a holistic campus development plan.
- Vehicle pooling and use of bicycles can be promoted both among students and faculty as a policy.



3.2 Other Suggestions

Some of the very important suggestions are:-

- ✚ Work towards creating and implementing a strategy to reduce the environmental impact of purchasing decisions.
- ✚ Increase Awareness of Environmentally Sustainable Development in university campus.
- ✚ Practice Institutional Ecology- Set an example of environmental responsibility by establishing institutional ecology policies and practices of resource conservation, recycling, waste reduction, and environmentally sound operations.
- ✚ Involve All Stakeholders- Encourage involvement of government, foundations, and industry in supporting interdisciplinary research, education, policy formation, and information exchange in environmentally sustainable development.
- ✚ Collaborate for Interdisciplinary Approaches- To develop interdisciplinary approaches to curricula, research initiatives, operations, and outreach activities that support an environmentally sustainable future.
- ✚ Develop a butterfly garden that arouses appreciation towards flora and fauna diversity.
- ✚ Name all the trees and plants (Plant DNA barcodes) with its common name and scientific name.
- ✚ Arrange training programmes on environmental management system and nature conservation.