Green, Environment, Water and Energy Audit Report

1. Green Audit Report RVSKVV University, Gwalior
2. COA Gwalior Green Audit Report
3. COA Indore Green Audit Report
4. COA Sehore Green Audit Report
5. COA Khandwa Green Audit Report
6. COA Mandsaur Green Audit Report

RAJMATA VIJAYARAJE SCINDIA KRISHI VISHWA VIDYALAYA, GWALIOR (M.P.)

ISO 50001:2018

Certificate of Registration

This is to Certify That
Energy Management System of

AGRICULTURE COLLEGE OF GWALIOR

AGRICULTURE COLLEGE, GWALIOR - 474005,
MADHYA PRADESH, INDIA

has been assessed and found to conform to the requirements of

ISO 50001:2018

for the following scope :

PROVIDING AGRICULTURE COURSES OF M.Sc AND Ph.D (AGRONOMY, SOIL SCIENCE, AGRICULTIRAL EXTENSION, EDUCATION, PLANT PATHOLOGY, AGRICULTURAL ECONOMICS) AND VARIOUS RELATED COURSES.

Certificate No	: **24MEQSY77**		
Initial Registration Date	: 21/08/2024	Issuance Date	: 21/08/2024
Date of Expiry	: 20/08/2027		
1st Surve. Due	: 21/07/2025	2nd Surve. Due	: 21/07/2026

MMS MANAGEMENT SERVICES PRIVATE LIMITED

DIRECTOR

EGAC Accredited
EnMS Certification
CAB # 011805

MEMBER OF MULTILATERAL RECOGNITION ARRANGEMENT IAF

Magnitude Management Services Pvt. Ltd.

Third Floor, A-60, Sector-2, Noida, Gautam Budh Nagar, U.P.-201301, India. ***e-mail:*** *info@mmscertification.com,* ***website:*** *www.mmscertification.com*

ISO 50001:2018

Certificate of Registration

This is to Certify That
Energy Management System of

COLLEGE OF AGRICULTURE INDORE

OFFICE OF THE DEAN COLLEGE OF AGRICULTURE, INDORE - 452001,
(M.P.) INDIA

has been assessed and found to conform to the requirements of

ISO 50001:2018

for the following scope :

PROVIDING AGRICULTURE COURSE OF B.Sc. AND M.Sc. (AGRONOMY, SOIL SCIENCE, AGRICULTIRAL EXTENSION , EDUCATION, PLANT PATHOLOGY, AGRICULTURE ECONOMICS) AND VARIOUS RELATED COURSES.

Certificate No	: **24MEQSK79**		
Initial Registration Date	: 21/08/2024	Issuance Date	: 21/08/2024
Date of Expiry	: 20/08/2027		
1st Surve. Due	: 21/07/2025	2nd Surve. Due	: 21/07/2026

MMS MANAGEMENT SERVICES PRIVATE LIMITED

DIRECTOR

Magnitude Management Services Pvt. Ltd.

EGAC Accredited
EnMS Certification
CAB # 011805

MEMBER OF MULTILATERAL RECOGNITION ARRANGEMENT IAF

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ISO 50001:2018

Certificate of Registration

This is to Certify That
Energy Management System of

R. A. K. COLLEGE OF AGRICULTURE

R. A. K. COLLEGE OF AGRICULTURE SEHORE – 466001,
MADHYA PRADESH, INDIA

has been assessed and found to conform to the requirements of

ISO 50001:2018

for the following scope :

PROVIDING AGRICULTURE COURSE OF B.Sc. AND M.Sc. (AGRONOMY, SOIL SCIENCE, AGRICULTIRAL EXTENSION , EDUCATION, PLANT PATHOLOGY, AGRICULTURE ECONOMICS) AND VARIOUS RELATED COURSES.

Certificate No	: **24MEQSV72**		
Initial Registration Date	: 21/08/2024	Issuance Date	: 21/08/2024
Date of Expiry	: 20/08/2027		
1st Surve. Due	: 21/07/2025	2nd Surve. Due	: 21/07/2026

MMS MANAGEMENT SERVICES PRIVATE LIMITED

DIRECTOR

EGAC Accredited
EnMS Certification
CAB # 011805

MEMBER OF MULTILATERAL RECOGNITION ARRANGEMENT IAF

Magnitude Management Services Pvt. Ltd.

Third Floor, A-60, Sector-2, Noida, Gautam Budh Nagar, U.P.-201301, India. ***e-mail:*** *info@mmscertification.com,* ***website:*** *www.mmscertification.com*

ISO 50001:2018

Certificate of Registration

This is to Certify That
Energy Management System of

B.M. COLLEGE OF AGRICULTURE

B.M. COLLEGE OF AGRICULTURE, KHANDWA - 450001,
MADHYA PRADESH, INDIA.

has been assessed and found to conform to the requirements of

ISO 50001:2018

for the following scope :

PROVIDING AGRICULTURE COURSES OF B.SC. AND M.Sc
(AGRICULTURE, PLANT PATHOLOGY)

Certificate No	: **24MEQSU69**		
Initial Registration Date	: 21/08/2024	Issuance Date	: 21/08/2024
Date of Expiry	: 20/08/2027		
1st Surve. Due	: 21/07/2025	2nd Surve. Due	: 21/07/2026

MANAGEMENT SERVICES PRIVATE LIMITED MMS

DIRECTOR

EGAC Accredited
EnMS Certification
CAB # 011805

MEMBER OF MULTILATERAL RECOGNITION ARRANGEMENT IAF

Magnitude Management Services Pvt. Ltd.

Third Floor, A-60, Sector-2, Noida, Gautam Budh Nagar, U.P.-201301, India. ***e-mail:*** *info@mmscertification.com*, ***website:*** *www.mmscertification.com*

ISO 50001:2018

Certificate of Registration

This is to Certify That
Energy Management System of

KNK COLLEGE OF HORTICULTURE

KNK COLLEGE OF HORTICULTURE, MANDSAUR (M.P.)

has been assessed and found to conform to the requirements of

ISO 50001:2018

for the following scope :

PROVIDING Horticulture COURSES OF B.Sc AND M.Sc VEGETABLE SCIENCE, FRUIT SCIENCE, FLORICULTURE AND PSMA.

Certificate No	: **24MEQSB79**		
Initial Registration Date	: 21/08/2024	Issuance Date	: 21/08/2024
Date of Expiry	: 20/08/2027		
1st Surve. Due	: 21/07/2025	2nd Surve. Due	: 21/07/2026

MMS MANAGEMENT SERVICES PRIVATE LIMITED

DIRECTOR

EGAC Accredited
EnMS Certification
CAB # 011805

MEMBER OF MULTILATERAL RECOGNITION ARRANGEMENT IAF

Magnitude Management Services Pvt. Ltd.

Third Floor, A-60, Sector-2, Noida, Gautam Budh Nagar, U.P.-201301, India. ***e-mail:*** *info@mmscertification.com*, ***website:*** *www.mmscertification.com*

GREEN MENTORS

Powered by Law of Nature
Special Consultative Status with the
Economic and Social Council of United Nations from 2021

Date : 14/09/2024

To,
Prof. Arvind Kumar Shukla
Vice Chancellor
RVSKVV, Gwalior

Sub: Accreditation of Rajmata Vijayaraje Scindia Krishi Vishwa Vidyalaya (RVSKVV), Gwalior as an Accredited Green University in Platinum Ranking

Dear Sir | Madam,

Green Mentors is pleased to inform you that, we have evaluated the Green Audit Report of University of Rajmata Vijayaraje Scindia Krishi Vishwa Vidyalaya (RVSKVV), Gwalior along with supportive documentary evidences.

We are proud to announce that, Rajmata Vijayaraje Scindia Krishi Vishwa Vidyalaya (RVSKVV), Gwalior has achieved the standards for Accredited Green University and hereby accredited as Green University in Platinum Ranking.

Regards

Virendra Rawat
Founder | Director
Green Mentors

B-802, Mondeal Heights, Near Wide Angle Cinema, S.G. Highway, Ahmedabad, India - 38 00 15.
Email: info@greenmentors.in | Website: www.greenmentors.in | Phone: +91 79 49 00 01 60

ACCREDITATION CERTIFICATE

ACCREDITED GREEN UNIVERSITY

PLATINUM

2022-2025

EARTH WATER AIR LIGHT SPACE

EDUCATION INNOVATION HYGIENE SPACE TRANSPORT

This is to certify that

RAJMATA VIJAYARAJE SCINDIA KRISHI VISHWA VIDYALAYA

Gwalior, Madhya Pradesh

has successfully achieved the Accreditation Standards designed and defined by Green Mentors for Global Readiness in Ensuring Ecological Neutrality associated with Teaching and Learning practices, and now is Accredited as a

GREEN UNIVERSITY

in Platinum Ranking.

Virendra
14-09-2024

Virendra Rawat
Director, Green Mentors

GREEN MENTORS
Powered by Law of Nature
Special Consultative Status with the
Economic and Social Council of United Nations from 2021

In Association

GREEN MENTORS inc
New York | USA

GREEN MENTORS

GM/GA/2024/061/G1

This Certificate is issued on 14th September, 2024 & Valid till the Academic Year 2025

Certificate

ENERGY AUDIT

Academic Year 2022 - 2025

This is to certify that

RAJMATA VIJAYARAJE SCINDIA KRISHI VISHWA VIDYALAYA

Gwalior, Madhya Pradesh

has achieved the energy uses standards for the learning spaces with least impact on environment during the Green University Audit - 2022-25.

This Certificate is issued on the bases of Green University Audit Report 2022-25

GREEN MENTORS
Powered by Law of Nature
Special Consultative Status with the Economic and Social Council of United Nations from 2021
www.greenmentors.in

14-09-2024
Virendra Rawat
Director, Green Mentors

GREEN MENTORS

GM/EYA/2024/061/E1

EARTH WATER AIR LIGHT SPACE

ENVIRONMENT AUDIT 2022-25

EDUCATION INNOVATION HYGIENE SPACE TRANSPORT

Certificate

This is to certify that

RAJMATA VIJAYARAJE SCINDIA KRISHI VISHWA VIDYALAYA

Gwalior, Madhya Pradesh

has achieved the global standards for environmental responsibility with academic accountability for the Universities during the Green University Audit - 2022-25

This Certificate is issued on the bases of Green University Audit Report 2022-25

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Special Consultative Status with the Economic and Social Council of United Nations from 2021

In Association

GREEN MENTORS inc
New York | USA

14-09-2024
Virendra Rawat
Director, Green Mentors

GM/EA/2024/61/E

GREEN, ENERGY & ENVIRONMENTAL AUDIT REPORTS

OF

UNIVERSITY

2022-2025

GREEN AUDIT REPORT

Academic Year 2022 - 2025

EARTH WATER AIR LIGHT SPACE

RAJMATA VIJAYARAJE SCINDIA KRISHI VISHWA VIDYALAYA

Gwalior,Madhya Pradesh

Prepared by

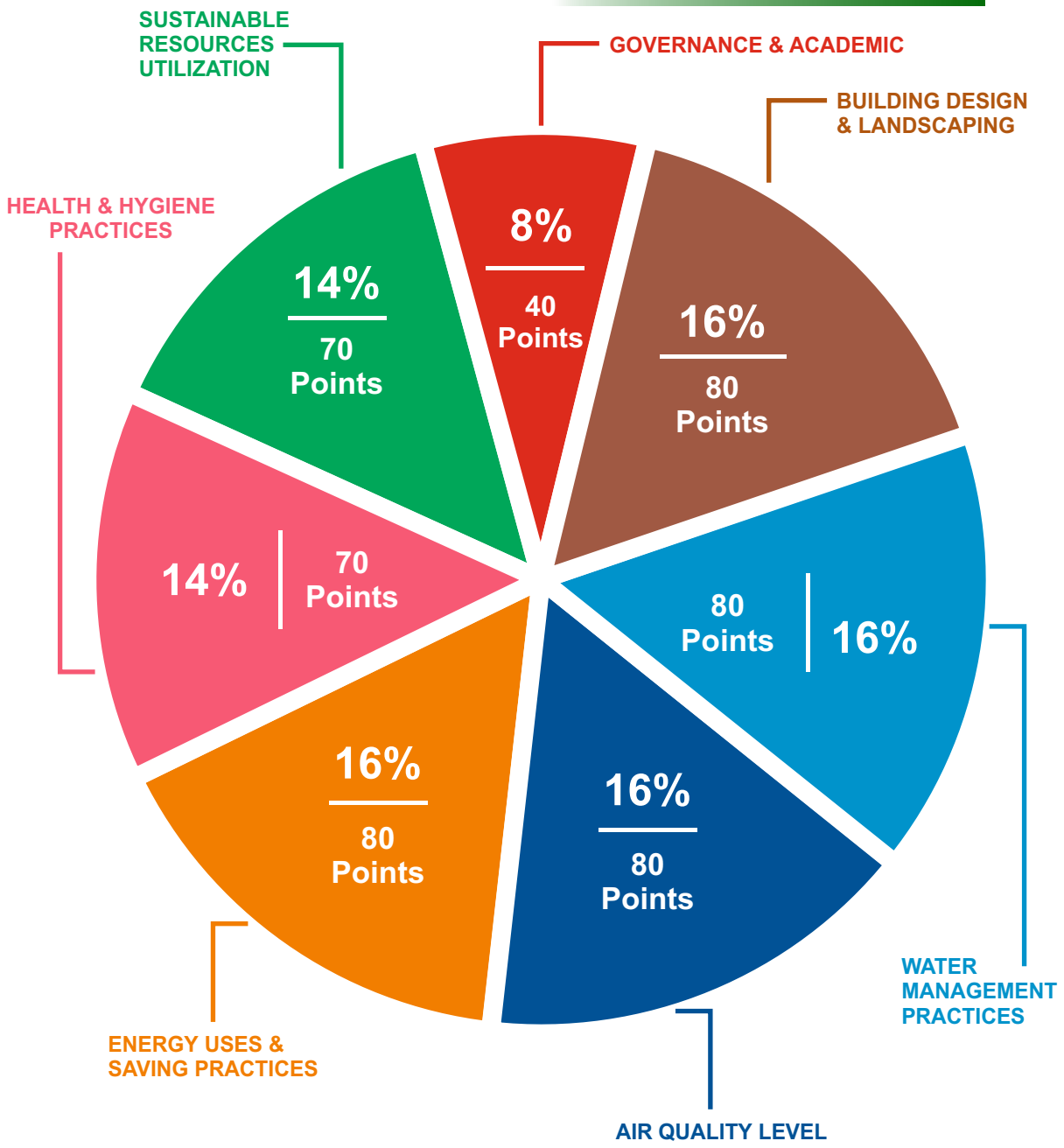
GREEN MENTORS

Powered by Law of Nature

Special Consultative Status with the
Economic and Social Council of United Nations from 2021

GLOBAL READINESS IN ENSURING ECOLOGICAL NEUTRALITY AUDIT REPORT 2022-2025

Sustainability Weightage of Assessment Areas



Certification Level

Rejection	Certification	Silver	Gold	Platinum
000-100 Points	100-200 Points	200-300 Points	300-400 Points	400-500 Points

CERTIFICATE

GREEN UNIVERSITY AUDIT REPORT
Academic Year 2022 - 2025

RAJMATA VIJAYARAJE SCINDIA KRISHI VISHWA VIDYALAYA
Gwalior,Madhya Pradesh

Brief Introduction

Rajmata Vijayaraje Scindia Krishi Vishwa Vidyalaya (RVSKVV), Gwalior, was established by the Government of Madhya Pradesh in 2008 to advance agricultural education, research, and extension in the state.

Located in Gwalior, Madhya Pradesh, RVSKVV serves a vast territorial jurisdiction spread over 26 districts, covering diverse agro-climatic zones such as Gird, Malwa Plateau, Nimar Valley, Vidhyan Plateau, Jhabua Hills, and Bundelkhand.

The university encompasses five colleges, multiple Zonal and Regional Agricultural Research Stations, Special Research Stations, Krishi Vigyan Kendras (KVKs), and numerous All India Coordinated Research Projects, making it a key player in agricultural innovation and education in the region.

RVSKVV's mission is to drive agricultural development through cutting-edge research, effective knowledge dissemination, and skill development of the farming community.

The university's academic and research activities are focused on solving region-specific agricultural challenges, improving crop productivity, and promoting sustainable farming practices across its jurisdiction.

RVSKVV, with its access to diverse soil types and agroclimatic conditions, is uniquely positioned to address Madhya Pradesh's diverse agricultural needs, making it a crucial player in the state's agricultural landscape.

Academic Programs

Sr. No	Under Graduate	Post Graduate	Research / Ph.D.
1	B.Sc. (Hons.) Agriculture	M.Sc. (Ag.) Agronomy	Ph.D. (Agronomy)
2	B.Sc. (Hons.) Agriculture	M.Sc. (Hort.) Vegetable Science	Ph.D. (Vegetable Science)
3		M.Sc. (Hort.) Fruit Science	Ph.D. (Fruit Science)
4		M.Sc. (Hort.) Plantation, Spices, Medicinal and Aromatic Plants	Agriculture
5		M.Sc. (Hort.) Floriculture and Landscape Architecture	Computer Science
6		M.Sc. (Ag.) Soil Science	Ph.D. (Agricultural Extension Education)
7		M.Sc. (Ag.) Genetics and Plant Breeding	Ph.D. (Agricultural Economics)
8		M.Sc. (Ag.) Agricultural Extension Education	Ph.D. (Plant Pathology)
9		M.Sc. (Ag.) Agricultural Economics	Ph.D. (Entomology)
10		M.Sc. (Ag.) Plant Pathology	
11		M.Sc. (Ag.) Entomology	
12		M.Sc. (Ag.) Molecular Biology and Biotechnology	
13		M.Sc. (Ag.) Environmental Science	

Green Academic Team

Sr. No.	Name	Designation
1	Dr. U.C. Singh	Professor (CAS)
2	Dr. G.P.S. Rathore	
3	Dr. H.P. Singh	
4	Dr. N.S. Bhadouria	
5	Dr. M.L. Sharma	
6	Dr. S.K. Trivedi	
7	Dr. H.S. Bhadauria	
8	Dr. I.S. Naruka	
9	Dr. N.S. Thakur	
10	Dr. P.K. Malviya	
11	Dr. S.K. Choudhary	
12	Dr. N.K. Gupta	
13	Dr. Swati Barche	
14	Dr. S.R.J.Singh	
15	Dr.R. K.jaiswal	
16	Dr. K.N. Pathak	
17	Shri B.B. Parmar	Associate Professor (CAS)
18	Dr. H.L. Khapediya	
19	Dr. O.P. Singh	
20	Dr. R.P. Patel	
21	Dr. Roopesh Chaturvedi	
22	Dr. S.S. Kushwah	
23	Dr. R.N. Kanpure	
24	Dr. S.B. Singh	
25	Dr. H.C. Bharvey	Assistant Librarian
26	Dr. Vikash Kumar	Assistant Professor

Green Academic Team

Sr. No.	Name	Designation
27	Dr. Sunil Narbaria	
28	Dr. Ankita Sahu	
29	Dr. D.K. Raidas	
30	Dr. Vandna Yadav	
31	Dr. Akhauri Nishant Bhanu	
32	Dr. B.K. Kachouli	
33	Dr. K. Alam Khan	
34	Shri B.K. Patidar	
35	Dr. Roshan Gallani	Assistant Professor
36	Dr. S.K. Dwivedi	
37	Dr. (Smt.) Joyti Kawar	
38	Dr. (Smt.) P. Sonkar	
39	Dr. Rajeev Dubey	
40	Dr. R.K. Sharma	
41	Dr. Om Singh	
42	Dr. Anuj Kumar	
43	Dr. M.K. Tripathi	
44	Dr. K.C. Meena	
45	Dr. M.K. Kureel	
46	Dr. Nitin Soni	Assistant Professor/Scientist
47	Dr. A.K. Sharma	
48	Dr. K.S. Bangar	
49	Dr. (Smt) Indu Swarup	
50	Dr. Bharat Singh	Principal Scientist (CAS)
51	Dr.D.R.Saxena	
52	Dr.S.C.Gupta	

Green Academic Team

Sr. No.	Name	Designation
53	Dr. Moly Saxena	Principal Scientist (CAS)
54	Dr.S.A.Ali	
55	Dr.R.C.Jain	
56	Dr.R.P.Singh	
57	Dr. Rupendra Khandwe	
58	Dr. D.K. Vani	
59	Dr. S.K. Badodiya	
60	Dr. R.S. Chundawat	
61	Dr. Ravi K. Pandya	
62	Dr. M.K. Tripathi	
63	Dr. M. Yashin	Principal Scientist (CAS) and I/c Dean
64	Dr. I.S. Tomar	
65	Dr. Shobhana Gupta	Senior Scientist
66	Dr. S.S. Kushwaha	Senior Scientist (CAS)
67	Dr. S.P.S. Tomar	
68	Dr. Rashmi Bajpai	
69	Dr. Arvinder Kaur	
70	Dr. M.K. Bhargav	
71	Dr. D.V. Bhagat	
72	Dr. A.K. Badaya	
73	Dr. K.S. Bhargav	
74	Dr. Manish kumar	
75	Dr. Mahendra Singh	
76	Dr. R.K. Yadav	
77	Er.S.S.Kushwah	
78	Dr. S.K. Parsai	

Green Academic Team

Sr. No.	Name	Designation
79	Shri Y.K. Jain	Senior Scientist (CAS)
80	Dr. G.S. Chundawat	Senior Scientist (CAS)
81	Dr. D.S. Sasode	Senior Scientist
82	Dr. Varsha Gupta	Scientist
83	Dr. Rajni S. Sasode	
84	Dr. Janmejay Sharma	
85	Dr. R.S. Sikarwar	
86	Dr. Nisha Singh	
87	Dr. Sushma Tiwari	
88	Dr. Shashi Yadav	
89	Dr. Akhilesh Singh	
90	Dr. Ekta Joshi	
91	Dr. Y.D. Mishra	
92	Dr. R.C. Aswani	
93	Dr. Amita Sharma	
94	Dr. J.S. Rajput	
95	Dr. Pushpendra Singh	
96	Dr. Mukesh Saxena	
97	Dr. Nisha Sapre	
98	Dr. Deeksha Tembhre	
99	Dr. R.K. Singh	
100	Dr. Jayprakesh Mehra	
101	Dr A.K.Choudhary	
102	Dr. Lekhram	
103	Dr. B.R. Baraiya	
104	Dr. A.K. Mishra	

Green Team

Sr. No.	Name	Designation
1	Smt. Monika Sharga	Assistnat Grade-II
2	Shri A.K. Potdar	
3	Smt. Meena Bhoyar	
4	Smt. Richa Singh	
5	Shri Tasleem Khan	
6	Shri V.K. Rajak	
7	Sh. Rajendra Dhamdhere	
8	Mrs. Pramila Bamniya	Assistant Grade-III
9	Sh. Rajesh Chouhan	
10	Smt. Kirti Chafekar	
11	Shri Cheten Joshi	
12	Shri Sanjay Shendre	
13	Smt. Sangeeta Lodhi	
14	Smt. Kajal Choudhary	
15	Shri K.K. Singh	
16	Shri Javed Ansari	
17	Shri Yeshdeep Shinde	
18	Sh. Mahendra Singh Kushwaha	
19	Sh. Praveen Likhar	
20	Sh. Harimohan Jatav	
21	Smt. Preeti Srivastava	
22	Smt. Rashmi Chourasiya	
23	Smt. Usha Panika	
24	Shri Bhoovam Hedau	
25	Shri Ravi Rangare	
26	Shri Manoj Awasthi	

Green Team

Sr. No.	Name	Designation
27	Shri Ayush Toria	Assistant Grade-III
28	Shri Shailendra Singh Dodiya	Asstt. Grade 3 Cum Stenotypist
29	Shri Pankaj Shrivas	
30	Sh. Harvansh Singh	
31	Sh. Sudhanshu Jain	STO
32	Shri Sanjay Dubey	AEO
33	Sh. K.L. Verma	FEO
34	Sh. S.N. Kushwaha	FEO
35	Sh. Y.K. Singh	FEO
36	Sh. D.S. Bhadauria	FEO
37	Sh. D.S. Sikarwar	FEO
38	Sh. R.K.S. Sengar	FEO
39	Shri R.C. Bhallavi	FEO
40	Shri K.C. Porwal	FEO
41	Shri Kamal Singh	FEO
42	Shri P.S. Maravi	FEO
43	Shri Laxman Malviya	FEO
44	Shri Ramu Patel	Field Attendent
45	Sh. Ramveer Kushwaha	Field Attendent
46	Smt. Laxmi	Field Attendent
47	Shri R.S. Tomar	Field Extenstion Officer
48	Ku. Deepa Malviya	Field Extenstion Officer
49	Smt. Varsha Dhurve	Horticulture Assistant
50	Sh. D. K. Patidar	Horticulture Assistant
51	Smt. Laxmi Kori	Jr. Steno
52	Smt. J. Motwani	Junior Computer

Green Team

Sr. No.	Name	Designation
53	Shri Mukesh Barman	Lab Attendant
54	Shri R.S. Khede	Lab Attendant
55	Ku. Firda Beck	Lab Attendant
56	Shri D.S. Baghel	Laboratory Attendant
57	Shri Sunil Sisodia	Laboratory Attendant
58	Smt. Sarita Mandekar	Lab Tech.
59	Shri P.N. Niranjan	Lab Tech.
60	Shri S.S. Deora	Lab Tech.
61	Shri S.K. Goyal	Lab Tech.
62	Smt. Roshan Ansari	Lab. Tech
63	Shri R.K. Bele	Lab. Tech
64	Shri Y.K. Bhuarya	Lab. Tech
65	Shri Vishwash Sitoke	Lab. Tech
66	Abhishek Singh Rathore	Stenographer
67	Dr. Smt. Usha Saxena	Sr. Tech. Officer
68	Sh. Irshad Kurreshi	Stenographer Gr-03
69	Sh. Gitesh Dongre	Stenographer Gr-03
70	Sh. Abdesh Rasouriya	Stenographer Gr-03
71	Sh. Neeraj Tyagi	Stenographer Gr-03
72	Sh. Vikash Madavi	Stenographer Gr-03
73	Ku. Reena Goyal	Stenographer Gr-03
74	Ku. Poonam Chouhan	Stenographer Grade-3
75	Smt. Neha Vaidya	Stenotypist Grade-3
76	Shri S.S. Chouhan	Technical Assistant (Lib)
77	Sh. Mahendra Joshi	Sub Engineer
78	Er. K.K. Valke	Sub Engineer

Green Team

Sr. No.	Name	Designation
79	Er.Aashish Mishra	Sub Engineer (Civil)
80	Shri Yogendra	Sweeper
81	Shri N.P. Mandvi	Machanic
82	Shri S.C. Solanki	Mechanic
83	Sh. Ramnath Rathor	Electrician
84	Shri Anil Vishwakarma	Electrician
85	Sh. S. Vasunia	Electrician
86	Shri D.C. Narnare	Carpenter
87	Sh. Vishal Kushwaha	Peon
88	Sh. R.S. Chauhan	Peon
89	Sh. Suresh Rao Pote	Peon
90	Sh. Ismile Khan	Peon
91	Sh. Mohar Singh	Peon
92	Smt. Sunita Batham	Peon
93	Smt. Gomti Bai	Peon
94	Shri Babu Khan	Peon
95	Shri Prahlad Singh	Peon
96	Shri Hariom Timrai	Peon
97	Shri Arvind Malviya	Peon
98	Shri Arun Mukati	Peon
99	Shri Kishore Kumar	Peon
100	Shri Sanjay Devle	Peon
101	Shri Dinesh Mandloi	Driver
102	Sh. Narottam Singh Gurjar	Driver cum Machenic
103	Sh. Gopal Prasad	Mali
104	Sh. Bhagwan Joshi	Mali

Number of students

Certificate	Diploma	Under Graduate	Post Graduate	Research / Ph.D.
	-	1318	664	142

GOVERNANCE & ACADEMIC

A Green University is an institution of higher education that prioritizes sustainability and environmental stewardship in its operations, curriculum, and community engagement. As such, academic practices in a Green University are centered around sustainable principles and procedures.

Sustainable Curriculum: A Green University may offer programs focusing on environmental sustainability, such as Environmental Science, Sustainable Development, Green Energy, and more.

Green Research: A Green University may prioritize research on environmental sustainability, climate change, and green technologies. Researchers at Green University may work on projects that seek to find innovative solutions to environmental challenges, such as developing renewable energy sources or reducing carbon emissions.

Sustainable Campus Operations: A Green University may prioritize sustainable campus operations by implementing sustainable practices such as energy-efficient buildings, renewable energy sources, sustainable transportation, waste reduction and recycling programs, and more.

Community Engagement: A Green University may engage with the local community to promote sustainability and environmental stewardship.

Sustainable Procurement: A Green University may prioritize purchasing products and services that are environmentally sustainable, such as environmentally-friendly cleaning products, recycled paper, and locally sourced food.

Sustainable Policies: A Green University may prioritize implementing sustainable policies that align

GOVERNANCE & ACADEMIC

1. GOVERNANCE

Green governance of the University refers to the policies, practices, and structures in place to ensure the institution operates environmentally and sustainably. Here are some key elements of green governance in universities:

Environmental Policies: A university should have a clear set of environmental guidelines that outline its commitment to sustainability and environmental stewardship.
These policies should address energy and water conservation, waste reduction and recycling, sustainable procurement, and sustainable transportation.

Sustainability Committees: A university should establish a sustainability committee or task force that is responsible for implementing and overseeing sustainability initiatives.

This committee should include representatives from various departments, faculty, and students to ensure sustainability is integrated throughout the institution.

Green Buildings: Universities should adopt green building practices to reduce the environmental impact of their facilities.

This includes designing and constructing energy-efficient buildings, using sustainable materials, and promoting healthy indoor environments.

Sustainable Transportation: Universities should promote sustainable transportation options such as biking, walking, carpooling, and public transportation.

This can be achieved through infrastructure improvements, incentives for sustainable commuting, and partnerships with local transportation providers.

Curriculum Integration: Universities should integrate sustainability into their curriculum to ensure that students are equipped with the knowledge and skills needed to address environmental challenges.

This can be achieved by offering sustainability-focused courses, interdisciplinary programs, and experiential learning opportunities.

Community Engagement: Universities should engage with their local communities to promote sustainability and environmental stewardship.

This can be achieved through partnerships with local organizations, sustainability events, and outreach programs.

Green governance of the University involves integrating sustainability into all aspects of the institution, from policies and practices to facilities and curriculum. This approach promotes environmental stewardship and sustainability and is a model for other higher education institutions.

1. GOVERNANCE

Rajmata Vijayaraje Scindia Krishi Vishwa Vidyalaya (RVSKVV), Gwalior, exemplifies a governance structure integrating sustainability into its academic and administrative framework.

The institution's Board of Management is under Vice-Chancellor Prof. (Dr.) Arvind Kumar Shukla provides strategic direction while fostering sustainable agricultural practices across its vast jurisdiction.

The involvement of diverse stakeholders, including government representatives, agricultural experts, and local farmers, ensures that decisions align with both academic excellence and environmental stewardship.

The Board's comprehensive governance model, supported by active councils for academics and research, reflects RVSKVV's commitment to sustainability and the long-term well-being of the agricultural sector and community.

About Governing Body

Rajmata Vijayaraje Scindia Krishi Vishwa Vidyalaya (RVSKVV), Gwalior's **Board of Management**, conducts its governance and administrative oversight. The Board plays a pivotal role in shaping the university' suniversity's strategic direction and ensuring effective operational management.

The Board, chaired by **Prof. (Dr.) Arvind Kumar Shukla**, the Vice Chancellor, is responsible for aligning the university's objectives with its mission to promote sustainable agriculture and environmental stewardship.

The Board of Management includes a diverse group of members, such as representatives from the **Agriculture and Finance Departments of the Government of Madhya Pradesh**, eminent researchers in agriculture, and progressive farmers. These individuals bring unique perspectives to the governance of the institution.

RVSKVV's governance structure underscores its commitment to fostering a sustainable future through agricultural education, research, and community engagement.

GOVERNANCE & ACADEMIC

2. LEADERSHIP

Sustainable university leadership incorporates sustainability into the institution's operations, policies, and culture.

Developing a Sustainability Vision: University leaders should establish a clear and compelling vision that outlines the institution's commitment to environmental, social, and economic sustainability.
The vision should be communicated to all stakeholders, including students, faculty, staff, and community members.

Establishing Sustainability Goals: University leaders should develop specific, measurable, and time-bound goals aligning with the institution's vision. These goals should be integrated into the University's strategic plan and monitored regularly to track progress.

Embeding Sustainability Into the Curriculum: University leaders should work to integrate sustainability into the curriculum across all disciplines.This can be achieved by offering sustainability-focused courses, incorporating sustainability into existing courses, and promoting interdisciplinary sustainability programs.

Promoting Sustainable Operations: University leaders should implement sustainable practices in university operations, including energy and water conservation, waste reduction and recycling, sustainable transportation, and green building practices.

Fostering a Culture of Sustainability: University leaders should promote a culture of sustainability throughout the institution by engaging stakeholders and encouraging participation in sustainability initiatives. This can be achieved through employee and student sustainability training programs, sustainability awards, and sustainability outreach programs.

Collaborating with Stakeholders: University leaders should work collaboratively with stakeholders, including students, faculty, staff, alumni, and community members, to identify sustainability priorities and develop strategies to achieve sustainability goals. Sustainable leadership in universities requires a commitment to sustainability across all institution levels. By incorporating sustainability into the institution's operations, policies, and culture, university leaders can promote a more sustainable future and inspire the next generation of sustainability leaders.

GOVERNANCE & ACADEMIC

2. LEADERSHIP

The leadership at Rajmata Vijayaraje Scindia Krishi Vishwa Vidyalaya (RVSKVV), Gwalior, is marked by visionary guidance and a steadfast commitment to advancing sustainable agricultural practices.

Under the stewardship of Vice-Chancellor Prof. (Dr.) Arvind Kumar Shukla, the university, has implemented strategic initiatives that promote research, innovation, and environmental stewardship across the agricultural landscape of Madhya Pradesh.

The leadership team's focus on fostering academic excellence while integrating sustainability into the university's research, extension, and educational activities exemplifies RVSKVV's holistic approach to addressing the challenges of modern agriculture.

Their proactive governance and collaborative efforts with stakeholders ensure that RVSKVV remains a leader in sustainable agricultural education.

The leadership at Rajmata Vijayaraje Scindia Krishi Vishwa Vidyalaya (RVSKVV), Gwalior, is structured around a dynamic and inclusive governance model guided by the **Board of Management**, which is appointed by the Hon'ble Governor of Madhya Pradesh.

Prof. (Dr.) Arvind Kumar Shukla
Vice-Chancellor

The **Vice-Chancellor**, serving as the apex authority and chair of the Board, leads the institution in alignment with the Board's directives and governmental policies.

The Board includes representatives from ICAR, governmental nominees, farmers, industrialists, and social activists, reflecting a broad spectrum of stakeholders invested in advancing agricultural education and sustainability.

2. LEADERSHIP

The **Registrar** serves as the Secretary of the Board, supporting the Vice-Chancellor in governing the university and ensuring the smooth administration of university affairs.

The leadership is further strengthened by the **Academic and Administrative Councils**, which deliberate on key academic and operational matters and present them to the Board for approval.

The university's academic leadership includes the **Dean of the Faculty of Agriculture**, who oversees undergraduate programs, and the **Director of Instructions**, who manages postgraduate and doctoral studies.

The **Directorates of Research and Extension** reflect the university'suniversity's strong emphasis on research and practical advancements, while the **Director of Farms** supervises seed production across the university'suniversity's extensive farmlands.

The Comptroller upholds fiscal responsibility, and the Madhya Pradesh Local Fund Audit conducts regular audits to ensure transparency and accountability.

Additionally, the university is committed to quality and innovation in education through the **Internal Quality Assurance Cell (IQAC)**, which oversees improvements in teaching methodologies and evaluation systems. The university also adheres to the **Right to Information Act**, reinforcing its dedication to transparency.

This robust leadership structure enables RVSKVV to remain at the forefront of sustainable agricultural education, research, and community engagement. It is a strong contender for Green University Audit and Accreditation by Green Mentors.

2. LEADERSHIP

The Vice-Chancellor Profile

Academic Background and Expertise
Prof. Arvind Kumar Shukla is a renowned academician and researcher with a distinguished soil science and agricultural chemistry career.

Born in Kanpur, Uttar Pradesh, in 1966, Prof. Shukla holds a B.Sc. (Ag.) & AH with honors, an M.Sc. (Ag.) in Soil Science & Agricultural Chemistry, and a Ph.D. in the same field, all from CS Azad University of Agriculture and Technology.

He has received numerous accolades for his academic excellence, including a Chancellor's Gold Medal and several prestigious awards.

Professional Experience

Prof. Shukla brings an extensive professional background to his role as Vice Chancellor, having served in key positions such as Project Coordinator at AICRP on Micronutrients, Principal Scientist at ICAR-NRRI, and Senior Scientist at ICAR-CPRI, among others.

His leadership has been instrumental in advancing agricultural research and institutional governance across multiple organizations, both at the national and international levels. Prof. Shukla has been critical in driving research and development initiatives, fostering collaboration with global institutions such as IRRI, Philippines, AIIMS, Bhopal, in linking soil and human health.

Awards and Recognition

Prof. Shukla'sShukla's contributions have earned him over 25 honors and awards, including the prestigious **Rafi Ahmed Kidwai Award (2020)** for his outstanding work in natural resource management and the **NAAS-Fellowship (2017)** for research on micronutrients. Other notable recognitions include the **International Zinc Award (2014)** from Brussels, the **International Plant Nutrition Institute Award (2016)** from the USA, and the **Chaudhary Devi Lal Outstanding AICRP Award (2016)** from ICAR.

Research and Achievements
Prof. Shukla has led 21 externally funded projects, securing over ₹37.68 crores in research grants from agencies like the World Bank, ICAR, and the International Plant Nutrition Institute. His research focuses on soil health, micronutrients, and precision agriculture.

2. LEADERSHIP

He has significantly contributed to soil health appraisal across India, creating e-atlases on micronutrient status, developing sustainable agricultural practices, and promoting biofortification and climate-resilient farming methods.

Leadership and Impact at RVSKVV

As Vice Chancellor of RVSKVV, Prof. Shukla drives the institution's strategic vision to enhance agricultural education, research, and extension services in Madhya Pradesh.

He is committed to fostering a sustainable future by promoting innovative agricultural practices, integrating technology, and encouraging collaboration with international and national institutions.

Under his leadership, RVSKVV has seen substantial growth in research, development of sustainable farming practices, and extension services that benefit farmers across the region.

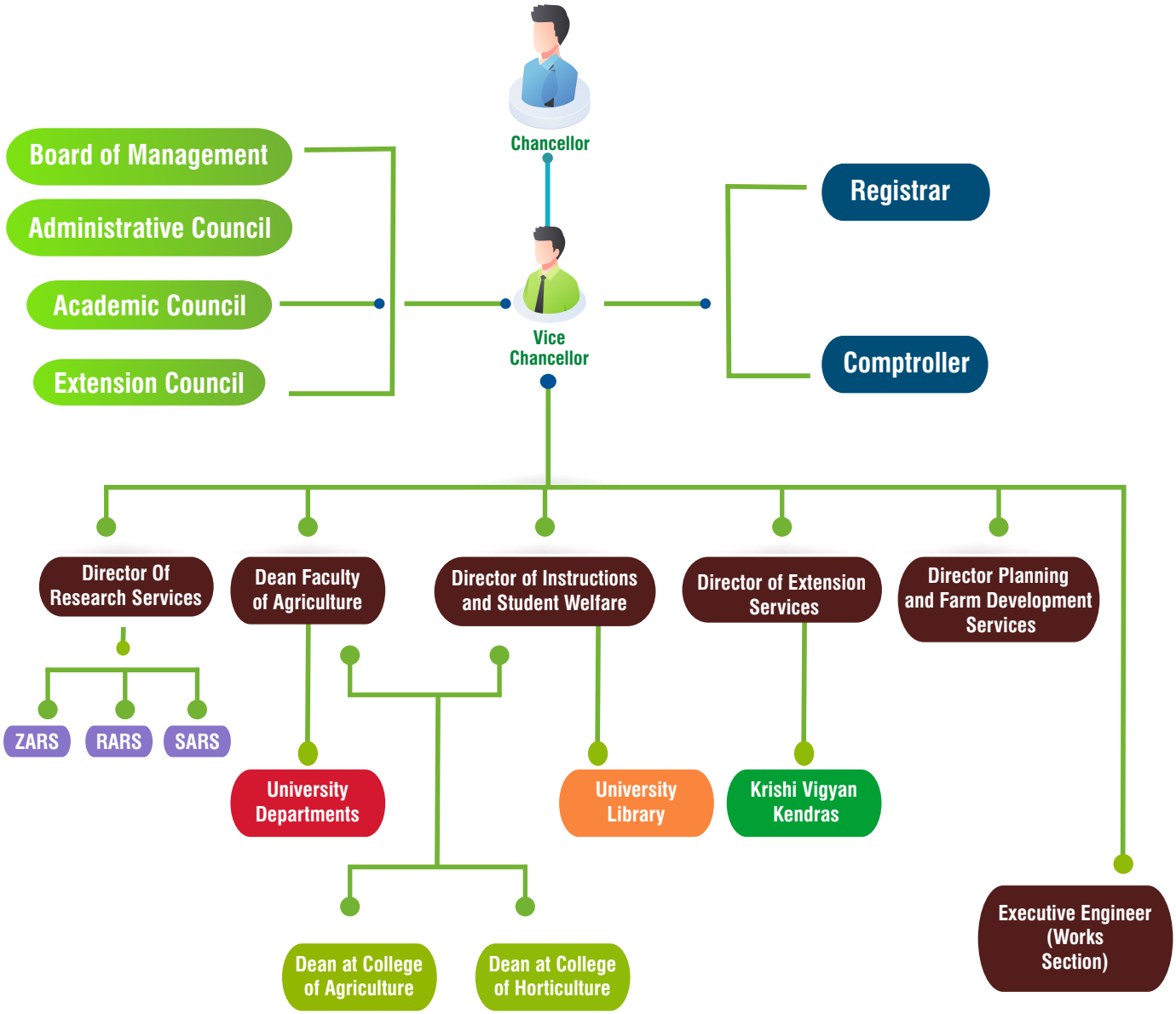
Prof. Shukla continues to contribute to shaping the future of agricultural education and research while upholding the university's mission of advancing sustainable farming practices.

His extensive experience, dedication to academic excellence, and passion for environmental sustainability make him an ideal leader for fostering RVSKVV's growth and development.

GOVERNANCE & ACADEMIC

2. LEADERSHIP

Organization Chart



GOVERNANCE & ACADEMIC

3. Sustainability Commitment

The sustainability commitment of a university refers to its dedication to integrating sustainability into all aspects of its operations, policies, and culture. A university's sustainability commitment involves a comprehensive approach to sustainability that incorporates environmental, social, and economic factors i.e.

Environmental Sustainability: A university's commitment to ecological sustainability involves reducing its environmental impact through sustainable practices in energy and water conservation, waste reduction and recycling, sustainable transportation, and green building practices.

Social Sustainability: A university's commitment to social sustainability involves promoting social justice, equity, and inclusivity within the institution and in the broader community.

This can be achieved through diversity and inclusion initiatives, community engagement programs, and the promotion of social responsibility and ethical behavior.

Economic Sustainability: A university's commitment to economic sustainability involves balancing its financial needs with its sustainability goals.
This can be achieved through responsible financial management, sustainable procurement practices, and promotion of entrepreneurship and innovation.

Curriculum and Research: A university's commitment to sustainability involves incorporating sustainability into the curriculum across all disciplines and promoting sustainability research.
This can be achieved by offering sustainability-focused courses, incorporating sustainability into existing systems, and promoting interdisciplinary sustainability programs.

Stakeholder Engagement: A university's commitment to sustainability involves engaging stakeholders, including students, faculty, staff, alumni, and community members, in sustainability initiatives.

This can be achieved through employee and student sustainability training programs, sustainability awards, and sustainability outreach programs.

Overall, a university's sustainability commitment involves a comprehensive approach that integrates environmental, social, and economic factors into all aspects of the institution's operations, policies, and culture.

By promoting sustainability within the institution and in the broader community, universities can inspire the next generation of sustainability leaders and contribute to a more sustainable future.

GOVERNANCE & ACADEMIC

3. Sustainability Commitment

Rajmata Vijayaraje Scindia Krishi Vishwa Vidyalaya (RVSKVV), Gwalior, demonstrates a deep-rooted commitment to sustainability through its mission to enhance agricultural productivity while safeguarding the environment.

RVSKVV's focus on sustainable practices is evident in its research, education, and extension activities that promote resource-efficient agricultural techniques and optimize land, water, and biological resources.

The university's efforts in water conservation, renewable energy use, and soil health management underscore its dedication to addressing the challenges of climate change and ecological balance.

By embedding sustainability into every aspect of its operations, RVSKVV is cultivating a culture of environmental responsibility that positively impacts both the agricultural sector and rural livelihoods in Madhya Pradesh.

Rajmata Vijayaraje Scindia Krishi Vishwa Vidyalaya (RVSKVV), Gwalior, is deeply committed to fostering sustainability in agriculture and allied sectors.

The university's mission is centered on enhancing productivity, optimizing profits, and ensuring the sustainability of agriculture in the state of Madhya Pradesh, with a strong focus on improving rural livelihoods.

RVSKVV serves as a center of higher education, conducting pioneering research and extension activities that promote sustainable agricultural practices while supporting local communities.

The university has made significant strides in natural resource management (NRM), particularly in semi-arid and rainfed regions. Through strategic initiatives like stabilizing gully systems, converting wastelands into productive water storage tanks, and establishing sunken ponds and percolation tanks, RVSKVV has effectively curbed soil erosion and enhanced groundwater recharge.

These efforts have led to an impressive increase in crop productivity, addressing critical challenges of water scarcity and climatic variability.

RVSKVV also promotes biodiversity, with initiatives such as conserving the endangered Kadaknath

3. Sustainability Commitment

chicken breed, which has garnered national prominence and a Geographical Indication (GI) Tag.

Through its integrated approach to research, education, and extension, RVSKVV's commitment to sustainability is evident in its efforts to transform agricultural practices and contribute to the region's long-term environmental and economic well-being.

This commitment reflects RVSKVV's dedication to creating a sustainable future for agriculture, benefiting local farmers, improving resource management, and advancing innovative solutions for climate resilience.

Message from the Vice Chancellor

At Rajmata Vijayaraje Scindia Krishi Vishwa Vidyalaya (RVSKVV), Gwalior, our commitment to sustainability is unwavering and deeply embedded in our institution's core values.

As a proud Green University, RVSKVV goes beyond academic excellence by fostering a culture of environmental stewardship and sustainable agricultural practices.

Our campus is a living example of how education and sustainability can coexist harmoniously. From innovative research in agriculture to our eco-friendly campus initiatives—such as energy-efficient buildings, sustainable water management, and biodiversity conservation—RVSKVV is dedicated to building a more sustainable future.

Our efforts in integrating sustainable practices into every facet of our operations reflect our mission to lead by example, offering solutions to critical environmental challenges while enhancing rural livelihoods.
However, the path to sustainability is a journey, and we recognize that continuous progress is vital.

We can achieve our ambitious sustainability goals through the collective effort of our students, faculty, staff, and partners. I encourage every community member to engage actively with our sustainability initiatives, as your participation is critical to shaping a greener and more resilient future.

Together, we can ensure that RVSKVV remains at the forefront of sustainable agricultural education and leads the way in promoting global ecological responsibility.

Sustainability Statement: From the Desk of the Dean, Faculty of Agriculture

At Rajmata Vijayaraje Scindia Krishi Vishwa Vidyalaya (RVSKVV), sustainability is not just an initiative—it is a guiding principle that shapes our academic, operational, and community efforts.

GOVERNANCE & ACADEMIC

3. Sustainability Commitment

Our vision for a Sustainable Green Energy University reflects our deep commitment to environmental stewardship and innovation. We are determined to be a beacon of ecological responsibility, driving transformative change in agricultural education and practice.

Our campus is thoughtfully designed with sustainability at its core, integrating energy-efficient structures, renewable materials, and green building techniques to reduce our environmental impact. These efforts ensure that our university remains a model of energy conservation and ecological balance, fostering a healthy environment for both our community and the planet.

In line with our waste management goals, RVSKVV has implemented comprehensive programs for waste reduction, recycling, and reuse. By adopting eco-friendly practices such as promoting bicycles, electric vehicles, and public transportation, we actively contribute to reducing carbon emissions and fostering a culture of sustainable transportation.

Biodiversity conservation is also central to our mission. Our initiatives to preserve native flora and fauna, restore natural habitats, and integrate biodiversity into our curriculum reflect our commitment to safeguarding ecosystems.

Additionally, we employ advanced water conservation methods, such as rainwater harvesting and efficient irrigation systems, to ensure the responsible use of water resources.

Through these initiatives, RVSKVV is building a future where sustainability is woven into every aspect of our university.

We believe fostering a culture of environmental responsibility is essential to creating a sustainable world and inspiring future generations to take meaningful action toward ecological preservation.

Dr. Mridula Billore
Dean, Faculty of Agriculture, RVSKVV, Gwalior

4. Innovative Practices

Innovation practices in universities refer to the strategies and approaches universities use to promote and support innovation and entrepreneurship. Here are some examples of innovative practices in universities:

Incubators and Accelerators: Many universities have established incubators and accelerators to provide support and resources to startups and entrepreneurs.

These programs often offer mentoring, funding, networking opportunities, and specialized equipment and facilities access.

Entrepreneurship Courses and Programs: Universities can offer classes and programs that teach students the skills and knowledge needed to launch and run a successful startup.

These programs may cover business planning, marketing, and finance topics.

Research and Development Partnerships: Universities can partner with businesses and organizations to conduct research and development, leading to new products, services, and technologies. These partnerships can benefit both the University and the partner, creating opportunities for innovation and commercialization.

Intellectual Property and Commercialization Support: Universities can provide support and resources for protecting and commercializing intellectual property. This can include patent filing assistance, licensing services, and startup incubation and acceleration.

Collaborative Innovation Spaces: Universities can establish collaborative spaces that bring together students, faculty, researchers, and industry partners to work on innovative projects.

These spaces can facilitate cross-disciplinary collaboration and knowledge sharing.

Innovation Competitions and Awards: Universities can organize innovation competitions and prizes to recognize and incentivize creative thinking and problem-solving.

These competitions encourage students to develop new solutions to real-world problems and promote a culture of innovation on campus.

University innovation practices involve creating an environment that fosters creativity, encourages risk-taking, and supports entrepreneurship. By promoting innovation on campus, universities can help drive economic growth and development while providing students with the skills and experience needed to succeed in a rapidly changing world.

4. Innovative Practices

Rajmata Vijayaraje Scindia Krishi Vishwa Vidyalaya (RVSKVV), Gwalior, has consistently demonstrated a forward-thinking approach to addressing modern agricultural challenges through innovation.

The university's commitment to research and development in water conservation, renewable energy, and sustainable farming practices highlights its role as a pioneer in agricultural innovation.

Initiatives such as implementing advanced soil and water management techniques, biofortification, and linking soil health with human health reflect RVSKVV's dedication to transforming agriculture for long-term sustainability.

These innovative efforts enhance productivity and contribute to the ecological balance and well-being of the farming communities. Through collaboration with national and international institutions, RVSKVV continues to be at the forefront of developing solutions that drive sustainable agricultural practices and environmental stewardship.

BUILDING DESIGN & LANDSCAPING

Building design and landscaping are critical components of a Green University, as they are vital in promoting sustainability and environmental stewardship. Here are some essential considerations for building design and landscaping in a Green University:

Sustainable Building Design: A Green University should prioritize sustainable building design incorporating energy-efficient systems and materials, green roofs and walls, natural lighting and ventilation, and water conservation features.

Renewable Energy Sources: A Green University should consider incorporating renewable energy sources into its buildings, such as solar panels, wind turbines, or geothermal systems.

Sustainable Landscaping: A Green University should prioritize sustainable landscaping practices that promote biodiversity, soil health, and water conservation.

Sustainable Water Management: A Green University should consider implementing sustainable water management practices, such as rainwater harvesting, grey water recycling, and low-flow fixtures. These practices can help conserve water and reduce the University's impact on the local water supply.

Green Transportation: A Green University should prioritize sustainable transportation options, such as bike paths, pedestrian walkways, and electric vehicle charging stations.

Sustainable Materials: A Green University should prioritize using sustainable materials in construction and landscaping, such as reclaimed wood, recycled materials, and sustainably sourced materials.

The University can reduce its environmental impact, promote sustainable practices, and inspire the next generation of environmentally-conscious leaders.

BUILDING DESIGN & LANDSCAPING

1. Local Building Regulations

Building laws and regulations in India vary from state to state and are subject to changes over time. These regulations are typically enforced at the local or state level, and they cover a wide range of aspects related to construction, including safety, zoning, environmental concerns, and more. For universities or educational institutions in India, here are some key considerations and regulations to keep in mind:

Local Building Codes: Universities in India must adhere to local building codes and regulations. These codes specify requirements for structural integrity, fire safety, electrical systems, plumbing, and other aspects of construction. Local municipal bodies or development authorities often enforce these codes.

Zoning Laws: Zoning regulations determine how land in a particular area can be used. Educational institutions, including universities, are allowed in specific zones. It's important for universities to ensure that their campus location complies with local zoning laws.

Environmental Regulations: Building and construction activities can have environmental impacts. Universities need to be aware of and comply with environmental regulations related to waste disposal, energy efficiency, and water conservation.

Fire Safety Regulations: Fire safety is a critical aspect of building construction. Universities must adhere to fire safety regulations, which may include the installation of fire alarms, sprinkler systems, and fire exits.

Accessibility and Disability Laws: It's important for universities to ensure that their buildings are accessible to individuals with disabilities. Compliance with accessibility standards, such as the Rights of Persons with Disabilities Act, is crucial.

Heritage and Conservation Laws: If a university is located in an area with historical or cultural significance, there are heritage conservation laws that restrict modifications to existing buildings or the construction of new structures.

Occupancy Certificates: Before a university building can be occupied, it typically needs to obtain an occupancy certificate from the local municipal authority. This certificate confirms that the building meets all necessary safety and regulatory requirements.

BUILDING DESIGN & LANDSCAPING

Local Building Regulations

Land Use Planning: Universities need to submit a master plan for their campus, outlining the land use and development plans. This plan may need approval from local planning authorities.

Local Authority Approvals: Before starting construction, universities need to obtain approvals and permits from local development authorities or municipal corporations. These approvals may involve scrutiny of building plans and compliance with local regulations.

Energy Efficiency Standards: Building regulations in India increasingly emphasize energy efficiency and sustainability. Universities need to incorporate energy-efficient features into their buildings and follow local green building standards like LEED (Leadership in Energy and Environmental Design).

To ensure compliance with local building laws and regulations, universities need to work closely with local authorities, hire qualified architects and engineers, and consult legal experts as needed.
It's also important to stay updated on any changes in building codes and regulations at the local or state level, as these can evolve over time.

BUILDING DESIGN & LANDSCAPING

1. Local Building Regulations

RVSKVV, Gwalior adheres to stringent local building regulations, ensuring its infrastructure meets legal and environmental standards. The university's commitment to compliance is evident in its campus design, which incorporates sustainable architecture and construction principles.

By aligning with the National Building Code and local authority regulations, RVSKVV, Gwalior emphasizes earthquake-resistant construction, efficient land use, and integrating green building practices.

The campus buildings are planned to focus on functionality and sustainability, incorporating advanced materials and techniques to enhance energy efficiency and environmental impact.

This commitment to local building regulations ensures safety and durability and demonstrates RVSKVV 's dedication to being a leader in sustainable campus development.

2. Top-Soil Preservation

Topsoil erosion can occur due to wind, rain, or human activities like excavation and construction. When topsoil erodes, it can cause soil degradation and reduce the soil's ability to support plant growth. Therefore, preserving topsoil helps to prevent erosion and maintain soil health.

Soil conservation is the prevention of loss of the topmost layer of the earth from erosion or the prevention of reduced fertility caused by over usage, acidification, salinization, or other chemical soil contamination.

Topsoil has the highest concentration of organic matter and nutrients. It is also the most fertile layer of soil and is crucial for plant growth. Therefore, preserving topsoil helps to conserve the soil's fertility and ensures that it can support plant growth in the future.

Topsoil acts as a sponge, absorbing water and allowing it to infiltrate the soil. This helps to reduce runoff and erosion, and it also helps to recharge groundwater supplies. In addition, preserving topsoil helps to maintain soil moisture levels and ensure that water is available for plant growth.

The topsoil layer contains diverse microorganisms, including bacteria, fungi, and other soil organisms. These microorganisms play an essential role in nutrient cycling and soil health. Preserving topsoil helps to maintain soil biodiversity, which is necessary for ecosystem health.

Preserving topsoil is an essential aspect of sustainable landscaping. It helps to reduce the need for chemical fertilizers and pesticides, which can harm the environment and human health. The University can create a more sustainable and environmentally friendly landscape by preserving topsoil.

BUILDING DESIGN & LANDSCAPING

2. Top-Soil Preservation

RVSKVV, Gwalior prioritizes topsoil preservation as part of its commitment to sustainability and environmental stewardship. The campus employs innovative landscaping techniques that minimize soil erosion and degradation, including native plant species that are well-adapted to the local climate.

By maintaining healthy topsoil, the university supports biodiversity and promotes the growth of vegetation that enhances the area's ecological balance. The institution also integrates soil preservation practices into its curriculum, providing students practical insights into sustainable land management and conservation.

These efforts highlight RVSKVV's role in promoting environmental sustainability and its dedication to protecting natural resources for future generations.

3. Eco-friendly Commuting Practices

Eco-friendly commuting practices in universities involve promoting sustainable transportation options that reduce the environmental impact of commuting to and from campus, including...

Public Transportation: University should encourage students and employees to use public transport by providing information on local transit options, offering transit subsidies, and partnering with local transit agencies to provide discounted fares.

Active Transportation: University should promote active transportation options such as walking, biking, and skateboarding by providing bike racks, shower facilities, and safe pedestrian and bike routes.

Carpooling and Vanpooling: University should encourage carpooling and vanpooling by providing carpool matching services, preferred parking for carpool vehicles, and incentives such as discounted parking fees.

Electric and Hybrid Vehicles: Universities can promote using electric and hybrid cars by providing charging stations and offering incentives such as preferred parking or discounted parking fees.

Telecommuting and Flexible Work Arrangements: Universities can offer telecommuting and flexible work arrangements to reduce the need for employees to commute to campus.

Green Transportation Events and Campaigns: Universities can organize events and campaigns to promote eco-friendly commuting options, such as bike-to-work days, car-free days, and sustainable transportation fairs.

Universities' eco-friendly commuting practices involve sustainable transportation options that reduce the environmental impact of commuting to and from campus.

By promoting sustainable transportation, universities can help reduce traffic congestion, improve air quality, and contribute to a more sustainable future.

BUILDING DESIGN & LANDSCAPING

Eco-friendly Commuting Practices

RVSKVV encourages its students & professors to adopt environment friendly transport to minimize environmental impact from automobile use. University offers residential facilities to its professors and non teaching staff that minimizes to impact on environment

	Walking	Bicycle	Motorcycle	Car	College Bus	Public Transport	Total
Students	313	180	180	-	-	313	673
Teachers	10	05	28	07	-	-	50
Non-Teaching Staff	20	10	26	14	-	-	70

BUILDING DESIGN & LANDSCAPING

4. Sustainable Parking Facility

Sustainable parking facilities in universities involve designing and operating parking structures to minimize their environmental impact and maximize their sustainability benefits. Here are some examples of sustainable parking facilities in universities:

Green Roofs and Walls: Universities can incorporate green ceilings and walls into their parking structures, which can help reduce the heat island effect, improve air quality, and provide habitat for wildlife.

Electric Vehicle Charging Stations: Universities can install electric vehicle charging stations in their parking structures to encourage the use of electric vehicles and reduce greenhouse gas emissions.
Bike storage and amenities: Universities can provide bike storage and amenities such as showers, lockers, and repair stations in their parking structures to encourage active transportation and reduce the use of cars.

Sustainable Construction Materials: Universities can use sustainable construction materials such as recycled content concrete, low VOC paints and coatings, and locally-sourced materials to reduce the environmental impact of their parking structures.

Solar Panels: Universities can install solar panels on the roofs of their parking structures to generate renewable energy and reduce their carbon footprint.

Stormwater Management: Universities can incorporate stormwater control features such as rain gardens, bioswales, and permeable paving into their parking structures to reduce stormwater runoff and improve water quality.

Sustainable parking facilities in universities involve designing and operating parking structures to minimize their environmental impact and maximize their sustainability benefits.

By incorporating sustainable features into their parking structures, universities can reduce their carbon footprint, promote active transportation, and contribute to a more sustainable future.

BUILDING DESIGN & LANDSCAPING

Parking Facility

RVSKVV is having sustainable shaded parking space that include sustainable paving materials, energy-efficient or natural lighting, renewable energy sources and improved pedestrian walkways.

Parking capacity in the campus

Buses	Cars	Motorcycles	Bicycles
20	40	120	180

BUILDING DESIGN & LANDSCAPING

5. Greenery and Biodiversity on Campus

Greenery in universities involves incorporating plants and other natural elements into the campus environment to create a more sustainable and livable space. Biodiversity in universities consists in promoting and preserving various plant and animal species within the campus environment.

Green Roofs and Walls: Universities can install green ceilings and walls on their buildings to provide insulation, reduce stormwater runoff, improve air quality, and create habitats for wildlife.

Trees and Shrubs: Universities can plant trees and shrubs throughout their campuses to provide shade, improve air quality, and reduce the heat island effect.

Rain Gardens and Bioswales: Universities can incorporate rain gardens and bioswales into their landscapes to manage stormwater runoff and improve water quality.

Urban Aagriculture: Universities can establish urban agriculture programs that provide fresh produce for campus dining services and engage students in sustainable food systems.

Native Plant Gardens: Universities can establish gardens that feature native plant species, which support local ecosystems and promote biodiversity.

Wildlife Habitat Preservation: Universities can preserve natural areas on campus that serve as habitats for local wildlife, such as wetlands, forests, and meadows...

Campus Sustainability Plans: Universities can include biodiversity initiatives in their campus sustainability plans, setting targets for biodiversity preservation and establishing monitoring programs to track progress.

Education and Awareness: Universities can educate their students, faculty, and staff about the importance of biodiversity and promote awareness of local ecosystems and wildlife.

Greenery in universities involves incorporating natural elements into the campus environment to create a more sustainable, livable, and biodiverse space. By promoting vegetation on campus, universities can contribute to a healthier and more sustainable future for their communities and the planet. In contrast, by supporting biodiversity on campus, universities can contribute to a healthier and more sustainable future for their communities and the earth.

BUILDING DESIGN & LANDSCAPING

5. Greenery and Biodiversity on Campus

RVSKVV, Gwalior boasts a lush, green campus that is a testament to its commitment to environmental sustainability and biodiversity. The university maintains extensive green spaces, including gardens, parks, and landscaped areas, contributing to a serene and healthy environment for learning and recreation.

With over 522 species of plants, the campus enhances aesthetic appeal, supports local wildlife, and promotes ecological balance.

The university's landscaping practices prioritize water conservation and the use of native plant species, reducing the need for irrigation and chemical fertilizers.

These efforts highlight RVSKVV, Gwalior's dedication to creating a sustainable and inviting campus environment that inspires both students and the community.

	Building foot print	**Sq.mt.**
1	Playground area	03 ha
2	Vegetated space	01 ha
	A. Turf area	09 ha
	B. Area with native species	05 ha
	C. Area with drought tolerant species	02 ha
	D. Other Species area	2939.67
3	Non-roof impervious area	7638.6
4	Water body	3 wells

Total Area of the University campus: **sq. mt.**

5. Greenery and Biodiversity on Campus

BUILDING DESIGN & LANDSCAPING

6. Minimise Heat Exposure to Sun: Non-Roof

Minimizing heat exposure to the Sun for non-roof areas in universities can be achieved through a variety of strategies, including:

Planting Trees and Greenery: Trees and other vegetation provide natural shade and help to cool the surrounding environment through evapotranspiration.

Installing Shade Structures: Installing shade structures, such as pergolas or shade sails, can provide a shaded area for students and staff to stay calm and protect them from the Sun's heat.

Creating Green walls and Green Roofs: Green walls provide additional insulation and reduce the heat absorbed by buildings and surrounding areas.

Using Cool Pavement: Using light-colored or reflective pavement can reduce heat absorption and reflect sunlight into the atmosphere, helping to cool the surrounding area.

Incorporating Water Features: Water features, such as fountains or misting systems, can help cool the surrounding area through evaporative cooling.

Creating Windbreaks: Installing windbreaks, such as walls or hedges, can protect from the wind and reduce wind chill, making the area feel more relaxed.

Providing Proper Ventilation: Ensuring adequate ventilation in the area can help circulate air and prevent hot air buildup.

Minimizing heat exposure to the Sun for non-roof areas in universities involves incorporating shading, Greenery, cool pavement, water features, windbreaks, and proper ventilation into the design and operation of the campus. By implementing these strategies, universities can create a comfortable and safe outdoor environment for students and staff, even on hot days, while promoting sustainability and reducing energy consumption.

BUILDING DESIGN & LANDSCAPING

6. Minimise Heat Exposure to Sun: Non-Roof

RVSKVV, Gwalior employs several strategies to minimize heat exposure to the sun on non-roof surfaces, enhancing comfort and reducing energy consumption on campus.

Using reflective materials and light-colored surfaces helps decrease heat absorption, while strategically placed vegetation provides natural shade and cooling.

Open grid pavers and permeable pavements allow natural water infiltration and reduce heat buildup, contributing to a cooler microclimate.

These measures are part of the university's broader efforts to mitigate the urban heat island effect and promote sustainable campus design, aligning with its commitment to environmental stewardship and energy efficiency.

A.	University campus area is approximately	15 Hectares
B.	No. of existing trees / saplings planted: approx.	522 Nos.
C.	Total non-roof area, area covered with trees (foliage) or open grid pavers:	03 Hectares.

BUILDING DESIGN & LANDSCAPING

7. Minimise Heat Exposure to Sun: Roof

Minimizing heat exposure to the Sun on roofs in universities can be achieved through a combination of strategies, including:

Cool Roofs: Using cool roofs, designed to reflect more sunlight and absorb less heat, can help reduce the amount of heat absorbed by the shelter and transferred into the building.

Green Roofs: Installing a green roof, which involves planting vegetation on the surface, can provide natural insulation and reduce the heat the top absorbs. This can also help to improve biodiversity on the campus.

Solar Shading Devices: Installing solar shading devices, such as awnings or screens, can help block direct sunlight and reduce the amount of heat the roof absorbs. This can also provide shaded areas for students and staff to study or relax.

Insulation: Properly insulating the roof can help to prevent heat from penetrating the building and reduce the need for air conditioning.

Ventilation: Proper ventilation of the roof space can help to circulate air and reduce the buildup of hot air. This can be achieved through the installation of vents or fans.

Maintenance: Regular roof maintenance, cleaning and repairing any damage, can help ensure the roof functions efficiently and reduces heat absorption.

By incorporating these strategies into the design and operation of university buildings, it is possible to create a more comfortable and sustainable campus environment.

This can also reduce energy costs and improve the University's overall sustainability. Additionally, providing shaded and cool areas on roofs can encourage outdoor learning and activities, positively impacting student well-being and academic performance.

BUILDING DESIGN & LANDSCAPING

7. Minimise Heat Exposure to Sun: Roof

To minimize heat exposure on roofs, RVSKVV, Gwaliori ncorporates innovative design features and materials that enhance energy efficiency and reduce cooling demands. The installation of solar panels generates clean energy and provides shade that reduces heat gain on building rooftops.

Reflective coatings and green roofs further help lower temperatures, creating a more sustainable and comfortable indoor environment. These strategies demonstrate RVSKVV's commitment to integrating green building practices into its infrastructure, setting a benchmark for sustainable campus design and operation.

Total Roof Area	11175 Sq.mtr
Total Roof Area Covered wuth Tiles / paint/ vegetation	11150 Sq. mtr

purpose to protect the roof fr

BUILDING DESIGN & LANDSCAPING

8. Universal Design

Universal design is an approach to design that aims to create products, buildings, and environments accessible and usable by everyone, regardless of their age, abilities, or disabilities. For example, in the context of a university, universal design should be applied to create an inclusive learning environment that benefits all students, including those with disabilities.

Universal design can be incorporated into the design and operation of a university through...

Building Design: Buildings should be designed to be accessible and usable by people with disabilities. This includes ramps, wide doorways, elevators, and accessible restrooms.

Classroom Design: Classrooms should be accessible and usable by students with disabilities. This includes features such as adjustable desks, chairs, and lighting and ensuring classroom materials are available in accessible formats.

Information Technology: Information technology should be designed to be accessible to all users. This includes closed captioning on videos, text-to-speech options, and compatibility with assistive technology devices.

Pedagogy: Teaching methods should be designed to be inclusive of all students. This includes using various teaching methods, such as visual, auditory, and kinesthetic, and providing clear instructions and expectations.

Campus Amenities: Campus amenities, such as dining facilities and recreational areas, should be designed to be accessible and usable by people with disabilities.

By incorporating universal design principles into the design and operation of a university, it is possible to create an inclusive learning environment that benefits all students. This can help to improve the academic experience and outcomes for students with disabilities, as well as promote a more diverse and inclusive campus community.

BUILDING DESIGN & LANDSCAPING

8. Universal Design

RVSKVV, Gwalior is dedicated to creating an inclusive and accessible environment by applying Universal Design principles across its campus. The university ensures its facilities are accessible to all individuals, including those with disabilities, by incorporating ramps, elevators, and tactile signage.

This commitment to accessibility extends to digital platforms, where the university strives to provide everyone equal access to information and resources.

By prioritizing Universal Design, RVSKVV, Gwalior enhances the experience of its diverse community and reinforces its dedication to inclusivity and equality in education.

WATER MANAGEMENT PRACTICES

Water management is a critical component of sustainability in a Green University. Some essential water management practices that a Green University should consider implementing:

Rainwater Harvesting: A Green University should have rainwater harvesting systems, such as rain barrels or cisterns, to collect rainwater from rooftops and other surfaces.

Greywater Recycling: A Green University should consider recycling greywater, wastewater from sinks, showers, and washing machines, for landscape irrigation.

Low-Flow Fixtures: A Green University should install low-flow fixtures, such as toilets, showerheads, and faucets, to reduce water consumption.

Drought-Tolerant Landscaping: A Green University should prioritize drought-tolerant landscaping, such as native plants, that require less water than traditional turf grass.

Water Audits: A Green University should conduct water audits to identify high-water use areas and implement measures to reduce water consumption.

Leak Detection and Repair: A Green University should regularly check for leaks in plumbing fixtures, irrigation systems, and other water systems.

Educational Programs: A Green University should also provide educational programs on water conservation for students, faculty, and staff. These programs can increase awareness of water conservation issues and promote sustainable water use behaviors.

Water management practices in a Green University should prioritize water conservation, reuse, and efficiency. By implementing these practices, the University can reduce its water consumption, conserve water resources, and promote sustainable water use.

WATER MANAGEMENT PRACTICES

1. Rainwater Harvesting: Roof & Non-Roof

Rainwater harvesting is collecting, storing, and using rainwater for various purposes. It is an effective and sustainable method of conserving water, especially in regions where water is scarce or where water supply is unreliable.

Rainwater harvesting can be done through the roof and non-roof methods, both of which can be implemented in a university setting. Roof-based rainwater harvesting involves collecting rainwater that falls on rooftops and storing it for later use. This method is typically used in buildings with large roof areas and is relatively easy to implement.

The rainwater collected from the roofs can be used for a variety of purposes, including irrigation, flushing toilets, and washing clothes.

Non-roof rainwater harvesting, on the other hand, involves collecting rainwater from other surfaces such as pavements, lawns, and gardens. This method is typically used in open spaces such as parks, playgrounds, and other public areas.

Non-roof rainwater harvesting can be done using trenches, swales, and other surface-level structures that capture and store rainwater.

In a university setting, both roof-based and non-roof rainwater harvesting methods can be implemented to conserve water and reduce the demand for municipal water supply.

This can be done by installing rainwater collection systems on rooftops and in open spaces such as lawns, gardens, and parks. The collected rainwater can be used for irrigation, landscaping, and other non-potable uses.

Additionally, universities can also implement rainwater harvesting systems for potable water use. This can be done by treating the collected rainwater to make it safe for drinking and cooking. This approach requires a more sophisticated and expensive system than non-potable uses, but it can be a viable option in areas with limited water supply.

Rainwater harvesting is a sustainable and effective way to conserve water and reduce the demand for municipal water supply. In a university setting, implementing rainwater harvesting systems can reduce water usage and promote sustainable practices among students, staff, and faculty.

WATER MANAGEMENT PRACTICES

Rainwater Harvesting: Roof & Non-Roof

RVSKVV, Gwalior has implemented an effective rainwater harvesting system that captures runoff from roof and non-roof areas. This system contributes significantly to groundwater recharge and reduces reliance on external water sources.

The university's infrastructure is designed to maximize rainwater collection, utilizing advanced techniques to ensure efficient water capture and storage.

This sustainable practice conserves water and mitigates the risk of flooding during heavy rains by directing excess water to designated recharge pits.

By adopting such measures, RVSKVV, Gwalior exemplifies its commitment to responsible water management and ecological sustainability.

Average Normal Rainfall ®					
Location	Year	Peak Rainy Month	Total Rainfall (mm)	Number of rainy days	Normal rainfall/day (mm)
Gwalior	2022	August	799.60	45	17.77
Gwalior	2021	August	765.20	49	15.62
Gwalior	2020	August	637.60	46	13.86
Gwalior	2019	August	990.9	48	20.64
Gwalior	2018	August	774.8	36	21.52
17.88 Average normal rainfall/ day (mm)					
0.018 Average normal rainfall/ day (m)					

Note: If the number of rainy days in respective months is not available, a maximum of 15 rainy days can be considered to arrive at normal rainfall

Please submit the details of percentage of runoff volumes harvested from roof & non-roof areas and, rainwater harvesting capacity with photographs

Rainwater Harvesting Capacity	117.75 KL	Runoff volumes harvested from Rroof & Non-roof areas	19.98 KL & 248.21KL

WATER MANAGEMENT PRACTICES

Rainwater Harvesting: Roof & Non-Roof

Runoff coefficients for Typical Surface Types

Sr. No	Surface Type	Runoff coefficient
1	Cemented / Tiled Roof	0.85 to 0.095
2	Roof Garden (<100 mm thickness)	0.60 to 0.80
3	Roof Garden (100 – 200 mm thickness)	0.50 to 0.70
4	Roof Garden (201 – 500 mm thickness)	0.30 to 0.50
5	Turf, Flat (0 – 1% slope)	0.05 to 0.20
6	Turf, Average (1 - 3% slope)	0.15 to 0.35
7	Turf, Hilly (3 - 10% slope)	0.30 to 0.50
8	Vegetation, Flat (0 - 1% slope)	0.05 to 0.20
9	Vegetation, Average (1 - 3% slope)	0.10 to 0.30
10	Vegetation, Hilly (1 - 3% slope)	0.30 to 0.50
11	Concrete Pavement	0.70 to 0.95
12	Gravel Pavement	0.20 to 0.70
13	Open-grid Concrete Pavement	0.15 - 0.35
14	Open-grid Grass Pavement	0.15 - 0.35
15	Water Body	1.0
16	Playground	
	1. Grass/ natural soil	0.10 - 0.35
	2. Artificial turf	0.20 - 0.40
	3. Asphalt/ Concrete	0.70 - 0.95
	4. Gravel	0.20 - 0.50

WATER MANAGEMENT PRACTICES

Rainwater Harvesting: Roof & Non-Roof

Rain Water Harvesting Calculation

Sr.No	SURFACE TYPE	Run-off coefficient (c)	Area (m2) (a)	Impervious area (m2) I = (c × a)
1	Tiled Roof	0.85 to 0.95	11,175	10,057.5
2	Playground	0.10 to 0.95	13,706	6,853
3	Turf, Flat (0-1% slope)	0.05 to 0.20	50,000	5,000
4	Vegetation, average (1-3% slope)	0.10 to 0.30	90,000	4,500
5	Open Grid Pavement	0.15 - 0.35	5,000	1,000
6	Water Body	1.0	10,000	10,00037,410.5
Total impervious area in sq.m. (Σ I)				37,410.5
Average normal rainfall in m (R)				17.88
Total roof and non-roof run-off volume in cu.m (Σ I × R)				6,68,899.74
Storage capacity of pond/ tank etc. in cu.				7,25,369
Harvesting capacity of recharge pits in cu.m (3 no's)				29.44
Percentage (%) of run-off volume harvested				30.85%

The runoff coefficient for a roof garden with a soil thickness of less than 100 mm typically ranges from **0.60 to 0.80**. Due to the minimal soil depth, these roof gardens have limited water retention capacity, leading to higher runoff. The exact coefficient can vary depending on the type of vegetation, soil composition, and drainage design. In such cases, the ability to absorb and retain water is significantly reduced, resulting in more surface runoff.

WATER MANAGEMENT PRACTICES

2. Water Efficient Plumbing Fixtures

Water-efficient plumbing fixtures are designed to conserve water while providing the same functionality as traditional fixtures. In addition, these fixtures use less water than conventional fixtures, which can help reduce water consumption and lower water bills. For example, the university can use the following to achieve water-efficient plumbing fixtures.

Low-flow Toilets: Low-flush toilets work with a minimal amount of water. The exact amount of water varies between less than a liter - 8 liters per flush. In addition, these toilets can operate by gravity or vacuum. This can save significant water, as conventional toilets use up to 15 liters per flush.

Water-Saving Showerheads: Water-saving showerheads can reduce water consumption by up to 50% compared to traditional showerheads while still providing a satisfying shower experience. These fixtures typically have a flow rate of 6 liters per minute or less.

Faucet Aerators: Faucet aerators mix air with water to reduce water use while still maintaining water pressure. These can be installed on any faucet, saving up to 50% of water usage.

High-Efficiency Washing Machines: High-efficiency washing machines use less water than traditional washing machines and are designed to be more efficient in water use. They can save up to 40% of water usage compared to traditional washing machines.

Dual-Flush Toilets: Dual-flush toilets have two flush options: solid waste and liquid waste. This reduces water usage for liquid waste, saving significant water consumption.

By using water-efficient plumbing fixtures, universities can reduce water usage and promote sustainable practices among students, staff, and faculty. Ensuring these fixtures are installed correctly and properly maintained is essential to ensure maximum efficiency and water conservation.

WATER MANAGEMENT PRACTICES

Water Efficient Plumbing Fixtures

RVSKVV, Gwalior have initiated responsible uses of fresh water practices in academic and hostel areas to reduce the consumption of potable water in drinking Water Points, face washing points, urinals, toilets to reduce water flow rate in the daily use.

Most of plumbing fixtures are low flow without hammering the performance. Plumbing fixtures have achieved water efficiency standards for Green University, and are working properly with no leaks or drips.

Baseline Flow Rates for Plumbing Fixtures

Fixture Type	Maximum Flow Rate	Duration	Daily uses per person / day
Water Closets	6 Liter/Flush	5 Min	60
Urinals	3 Liter/Flush	5 Flush	270
Health Faucet	3.8 Liter/Min.	5 Min	270
Faucet/ Taps	2.2GPM/60PSI	5 Min	300
Kitchen Taps	8 Liter/Min.	5 Min	40
Showerhead	4. 3 Liter/Min.	6 Min	50

WATER MANAGEMENT PRACTICES

Water Efficient Plumbing Fixtures

Fixture Type	Duration	Daily uses per person / day	Number of students & teachers (n)	Baseline		Proposed	
				Flow rate /capacity (fb)	Total water use (litres) Tb=(n x fb)	Flow rate /capacity (fb)	Total water use (litres) Tb=(n x fb)
Water Closets	1. Flush (Full Flush)	1 for Male	1000 Approx.	6000 liters/day	6000 liters/day	4500 liters/day	4500 liters/day
		1 for female	1000 Approx.	6000 liters/day	6000 liters/day	2250 liters/day	2250 liters/day
	1. Flush (Half Flush)	2 for female	1000 Approx.	3000 liters/day	3000 liters/day	1500 liters/day	1500 liters/day
Urinals	1 Flush	2 for male	1000 Approx.	1000 Approx.	6000 liters/day	6000 liters/day	2250 liters/day
Health Faucet	0.25	1	1000 Approx.	1125 liters/day	1125 liters/day	625 liters/day	625 liters/day

WATER MANAGEMENT PRACTICES

Water Efficient Plumbing Fixtures

Water use reduction calculation over 1000 stuents and teachers

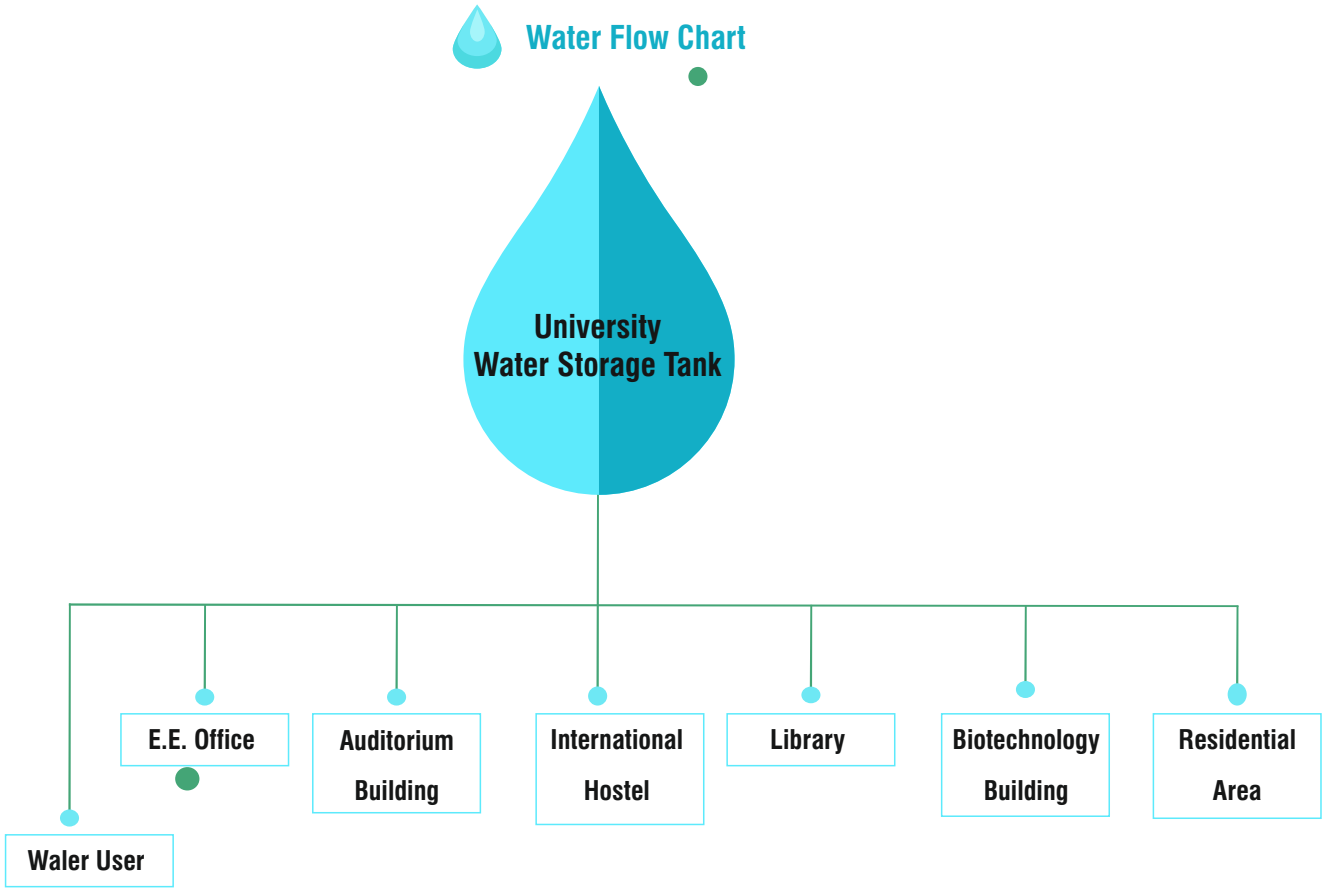
Fixture Type	Duration	Daily uses per person / day	Number of students & teachers (n)	Baseline		Proposed	
				Flow rate /capacity (fb)	Total water use (litres) **Tb=(nxfb)**	Flow rate / capacity (fb)	Total water use (litres) **Tb=(nxfb)**
Water Closets	1. Flush (Half Flush)	1. for male	472	6 Liter/Flush	2832	4 Liter/Flush	1888
		1. for female	228	6 Liter/Flush	1368	4 Liter/Flush	912
	1. Flush (Half Flush)	2. for female	472	3 Liter/Flush	1416	2 Liter/Flush	944
			228	3 Liter/Flush	684	2 Liter/Flush	456
Urinals	Flush 2. for male		472	1.5 Liter/Flush	708	1 Liter/Flush	472
Health Faucet	0.25	1	228	1.5 Liter/Flush	342	1 Liter/Flush	228

Fixture Type	Duration	Daily uses per person / day	Number of students & teachers (n)	Baseline		Proposed	
				Flow rate /capacity (fb)	Total water use (litres) **Tb=(nxfb)**	Flow rate / capacity (fb)	Total water use (litres) **Tb=(nxfb)**
Faucet / Taps	0.25	4	702	6 Liter/Flush	4212	4 Liter/Flush	2808
Total water use (litres/day)				6 Liter/Flush	4212	4 Liter/Flush	2808
Number of working days 25							
Total Annual water use in litres (Total water use x Number of working days)				4212*25*12	12,63,600	2808*25*12	8,42,400
Percentage reduction of water usage from the baseline				**10.67%**			

WATER MANAGEMENT PRACTICES

Water Efficient Plumbing Fixtures

Water Flow Chart



WATER MANAGEMENT PRACTICES

3. Sustainable Turf Design

Sustainable turf design is an approach to landscaping and management that focuses on reducing the environmental impact of turf areas while maintaining their functionality and aesthetics. University can use the following principles of sustainable turf design:

Reduce the Size of Turf Areas: One of the most effective ways to reduce the environmental impact of turf areas is to reduce their size. This can be achieved by converting some areas to natural landscapes, such as meadows or native plant gardens.

Choose Drought-Tolerant Grass Varieties: Drought-tolerant grass varieties require less water and maintenance than traditional grass varieties. This can significantly reduce water usage and maintenance costs.

Use Organic Fertilizers and Pest Control Methods: Organic fertilizers and pest control methods are less environmentally harmful than traditional chemical methods. They can also promote soil health and reduce water pollution.

Use Recycled Water for Irrigation: Recycled water, such as greywater or rainwater, can be used for irrigation instead of potable water. This can save significant amounts of water and reduce the demand for municipal water supply.

Implement low-Impact Maintenance Practices: Low-impact maintenance practices, such as using manual tools instead of electric ones,

Consider Alternative Turf Surfaces: Alternative turf surfaces, such as synthetic turf or gravel, can be used in high-traffic areas where natural grass may not be feasible. In addition, these surfaces require less water and maintenance than natural grass.

By implementing sustainable turf design practices, universities can reduce environmental impact while maintaining functional and aesthetically pleasing outdoor spaces.

When designing and maintaining turf areas, it is essential to consider the local climate, soil conditions, and water availability.

WATER MANAGEMENT PRACTICES

Turf Design

Turf is a major component of whole landscape in RVSKVV, Gwalior, which meets functional and aesthetic expectations for teaching learning community, while at the same time minimizing the impact of natural resources and the greater environment.

Turf area of RVSKVV, Gwalior is having many drought tolerant species in its total vegetated area that minimizes water consumption.

Type of Vegetation	On Ground (sq.m.)
Turf	1000
Native species	10000
Drought tolerant	6500
species Other plant	10000
species Total	27500

Total landscaped area (sq.m) : 27500

Total Turf area (sq.m) : 1000

Percentage(%) of vegetated area with turf : 3.64

WATER MANAGEMENT PRACTICES

4. Water Efficient Landscaping

Water-efficient landscaping, also known as xeriscaping or drought-tolerant landscaping, is an approach to landscaping that focuses on reducing water consumption while still maintaining functional and aesthetically pleasing outdoor spaces. University can use these critical principles of water-efficient landscaping:

Choose Drought-Tolerant Plants: Drought-tolerant plants require less water than traditional plants and can still provide a lush and attractive landscape. Native plants are often a good choice as they are well-adapted to the local climate.

Group Plants by Water Needs: Grouping plants with similar water needs together can help reduce water usage by avoiding overwatering or underwatering. This can also help ensure that water is used efficiently.

Use Efficient Irrigation Systems: Drip irrigation systems and smart controllers can help reduce water usage by delivering water directly to the plants and adjusting water output based on weather conditions.

Mulch Around Plants: Mulch helps retain moisture in the soil, reducing the need for watering. It also suppresses weeds, which can compete with plants for water.

Use Permeable Surfaces: Permeable surfaces, such as gravel or permeable pavers, allow rainwater to soak into the soil instead of running off, reducing the need for irrigation.

Consider Hardscaping: Hardscaping, such as patios or walkways, can reduce the amount of lawn or plant beds, reducing water usage and maintenance needs.

By implementing water-efficient landscaping practices, universities can reduce water usage, save money on water bills and maintenance costs, and promote sustainable practices among students, staff, and faculty. Therefore, choosing the right plants and irrigation systems based on local climate and soil conditions is essential, and adequately maintaining the landscape ensures maximum efficiency and water conservation.

WATER MANAGEMENT PRACTICES

Water Efficient Landscaping

RVSKVV, Gwalior has embraced water-efficient landscaping practices to enhance the sustainability of its campus. By incorporating native and drought-tolerant plants, the university reduces the need for irrigation and minimizes water usage.

The landscape design also includes mulching and strategic plant placement to optimize water retention and prevent soil erosion. These practices conserve water and create a vibrant, sustainable campus that supports biodiversity and ecological balance.

Type of Vegetation	On Ground (sq.m.)
Turf	1000
Native species	10000
Drought tolerant	6500
species Other plant	10000
species Total	27500

Total landscaped area (sq.m) :	27500
Total area with native/ drought tolerant species (sq.m) :	9500
Percentage(%) of vegetated area with native and drought tolerant species :	47.36

WATER MANAGEMENT PRACTICES

5. Water Efficient Irrigation System

Water-efficient irrigation systems are designed to deliver the right amount of water to plants while minimizing water waste. Therefore, the university can apply a few fundamental principles of water-efficient irrigation systems:

Choose The Right System: There are several types of irrigation systems, including drip irrigation, sprinklers, and soaker hoses. Choosing the right system depends on plant type, soil type, and local climate.

Use an Intelligent Controller: A smart controller can adjust the amount and frequency of water delivery based on weather conditions and plant needs. This can help reduce water waste and improve plant health.

Use Water-Saving Nozzles and Heads: Water-saving nozzles and heads can reduce water usage by up to 30% compared to traditional ones. These are available for both drip and sprinkler systems.

Check for leaks and Maintenance Issues: Regular maintenance can help ensure that the system is working efficiently and that there are no leaks or other issues that can waste water.

Use Rainwater Harvesting: Harvesting rainwater can provide a free source of water for irrigation, reducing the demand for potable water.

Install a Soil Moisture Sensor: Soil moisture sensors can help ensure that plants are receiving the right amount of water by measuring the moisture content of the soil. This can prevent overwatering or underwatering.

By implementing water-efficient irrigation systems, universities can reduce water usage and save money on water bills. Therefore, choosing the right design and components based on local climate and plant needs is essential, and adequately maintaining the system ensures maximum efficiency and water conservation.

WATER MANAGEMENT PRACTICES

5. Water Efficient Irrigation System

The university utilizes state-of-the-art irrigation systems to maximize water efficiency across its landscaped areas. These systems, including drip and sprinkler irrigation, deliver water directly to plant roots, reducing evaporation and wastage.

By employing advanced irrigation technologies, RVSKVV, Gwalior ensures water use is optimized for conservation and effectiveness. This commitment to efficient water management highlights the university's proactive approach to environmental stewardship.

Water Efficient Drip Irrigation System

Sprinkler system for lawn watering

WATER MANAGEMENT PRACTICES

6. Waste Water Treatment

Wastewater treatment is treating and cleaning sewage and other wastewater before it is released into the environment. Here are some fundamental principles of wastewater treatment for Universities:

Primary Treatment: Primary treatment involves the removal of large particles and solids from wastewater through physical processes such as screening and settling.

Secondary Treatment: Secondary treatment involves using biological processes to remove organic matter and nutrients from wastewater. This is typically done through activated sludge or other natural treatment systems.

Tertiary Treatment: Tertiary treatment involves the removal of remaining contaminants from the wastewater using processes such as filtration, disinfection, or chemical treatment. This is often necessary to meet regulatory standards for wastewater discharge.

Reuse of Treated Water: Treated wastewater can be reused for irrigation, flushing toilets, or other non-potable uses, reducing the demand for potable water and conserving resources.

Energy Recovery: Energy recovery systems, such as biogas capture or heat recovery, can be used to generate energy from the treatment process, reducing energy costs and promoting sustainability.

Proper Disposal of Residual Sludge: The residual sludge from the treatment process must be appropriately disposed of to prevent contamination of the environment. This may involve further treatment or disposal at a certified facility.

By implementing wastewater treatment systems in universities, the amount of wastewater pollution can be reduced, and the water quality in the surrounding environment can be improved. It is essential to choose suitable treatment systems based on the size of the university and local regulations and to properly maintain and monitor the systems to ensure maximum efficiency and compliance with regulatory standards.

WATER MANAGEMENT PRACTICES

6. Waste Water Treatment

RVSKVV, Gwalior has implemented a comprehensive wastewater treatment program to ensure water is reused and recycled efficiently on campus.

The treatment facilities are equipped to process wastewater to high-quality standards, making it suitable for non-potable irrigation and landscaping.

The university reduces its environmental impact by treating wastewater and contributing to water conservation efforts. This initiative reflects RVSKVV 's commitment to sustainable resource management and ecological responsibility.

Sewage treatment plant of capacity : 2 x 250 KL/Day
Effluent treatment plant (ETP) of capacity : 5 CUM/DAY
ETP is based on MBBR Technology Moving Bed Bio form Reactor Technology.

WATER MANAGEMENT PRACTICES

7. Use of Treated Waste Water

Using treated wastewater in universities can provide several benefits, including reducing demand for potable water, conserving resources, and promoting sustainability. Here are some key ways that treated wastewater can be used in universities:

Irrigation: Treated wastewater can be used for irrigation of landscaping and agriculture, reducing the demand for potable water and conserving resources.

Toilet Flushing: Treated wastewater can be used for toilet flushing, reducing the demand for potable water and conserving resources.

Cooling Systems: Treated wastewater can be used in cooling systems, reducing the demand for potable water and conserving resources.

Fire Protection: Treated wastewater can be used for fire protection systems, reducing the demand for potable water and conserving resources.

Industrial Uses: Treated wastewater can be used for industrial processes that do not require potable water, reducing the demand for potable water and conserving resources.

It is essential to ensure that treated wastewater is safe for its intended use and that all regulatory standards are met. This requires proper treatment and monitoring of the wastewater treatment system.

Treated wastewater must also be clearly labeled and separated from potable water to avoid accidental consumption. Finally, communicating and educating the university community about the benefits and safe use of treated wastewater can promote acceptance and support for these sustainable practices.

WATER MANAGEMENT PRACTICES

Use of Treated Waste Water

RVSKVV, Gwalior has initiated gray water treatment to be used for flushing toilets and irrigation of vegetated areas that reduces dependence on fresh water.

Total volume of waste water generated (litres/day)	250 KL/DAY
Capacity of sewage treatment plant (litres)	12,50,000
Efficiency of STP	80 - 90
Total Volume of waste water treated & available for reuse	50 MLD
(litres/day) Number of working days	Every day
Total volume of treated waste water available annually (litres)	91,250,000

Application	Volume of Water Required Annually (Litres)	Volume of Treated Waste Water Reused (litres)
Flushing	2,73, 750	1,40,875
Landscaping	1,35,770	45,256
Total	4,09,520	1,86,131

Total
Total volume of water required annually (for landscaping & flushing) : 4,09,520 Liters
Total volume of treated waste water used annually : 1,86,131 Liters
Percentage of treated waste water used anually : 45.45 Liters

WATER MANAGEMENT PRACTICES

8. Water Use Monitoring

Water use monitoring in universities is critical to help identify water usage patterns and areas where water conservation measures can be implemented. Here are some essential steps for implementing water use monitoring in universities:

Identify the Scope of the Monitoring: Determine which buildings, areas, and water fixtures will be included in the monitoring program. This will depend on the size of the university and the availability of resources for monitoring.

Install Water Meters: Install water meters on all significant water lines and fixtures to measure water usage over time. This can help identify patterns and areas where water conservation measures can be implemented.

Collect and Analyze Data: Collect and analyze water usage data to identify areas of high water usage and potential areas for water conservation measures. This can also help track progress over time and identify trends.

Set Targets and Goals: Set targets and goals for water conservation based on the data collected. These can include reducing overall water usage or reducing water usage in specific areas or buildings.

Implement Water Conservation Measures: Implement water conservation measures based on the data and targets set. These can include repairing leaks, installing water-efficient fixtures, and promoting water-saving behaviors.

Communicate with the University Community: Communicate the goals and progress of the water use monitoring program to the university community. This can promote support and participation in water conservation efforts.

By implementing a water use monitoring program in universities, water usage patterns can be identified, and water conservation measures can be implemented to reduce overall water usage and promote sustainability. Therefore, it is essential to regularly monitor and analyze the data and communicate the progress and goals to the university community to maintain support and participation.

WATER MANAGEMENT PRACTICES

8. Water Use Monitoring

RVSKVV, Gwalior employs a robust water use monitoring system to track and optimize water consumption across its campus. This system provides real-time data on water usage, enabling the university to identify areas for improvement and implement water-saving measures.

By continuously monitoring water use, RVSKVV, Gwalior ensures that its conservation efforts are practical and that resources are managed responsibly. This dedication to monitoring and management underscores the university's commitment to sustainability and efficient resource utilization.

Cumulative Score	61/80

AIR QUALITY LEVEL

Achieving good air quality is an essential aspect of sustainability in a Green University. Following critical practices that can help achieve good air quality:

Energy-efficient HVAC Systems: A Green University should prioritize energy-efficient heating, ventilation, and air conditioning (HVAC) systems that minimize the energy needed to heat or cool the building while maintaining good indoor air quality.

Use of Non-Toxic Cleaning Products: A Green University should prioritize using non-toxic cleaning products to reduce the amount of harmful chemicals released into the air.

Proper Waste Management: A Green University should prioritize appropriate waste management practices, including recycling and composting, to reduce the amount of waste sent to landfills. Landfills are a significant source of air pollution and can contribute to poor air quality.

Green Transportation: A Green University should promote sustainable transportation options, such as biking, walking, or taking public transportation, to reduce the number of vehicles on campus.

Proper Ventilation: A Green University should prioritize adequate ventilation to ensure good indoor air quality. This can include using natural ventilation, such as opening windows, or mechanical ventilation systems that bring in fresh air.

Building Materials: A Green University should prioritize using low-emission building materials, such as low-VOC paint, to reduce the amount of harmful chemicals released into the air.

AIR QUALITY LEVEL

1. Tobacco Smoke Control

Tobacco smoke control is an important issue for universities, as exposure to secondhand smoke can have negative health effects on students, faculty, and staff. Here are some key principles for implementing tobacco smoke control measures in universities:

Establish Smoke-Free Policies: Establishing smoke-free policies for all campus buildings, facilities, and grounds is an important step in reducing exposure to secondhand smoke. These policies should be communicated clearly to students, faculty, and staff.

Provide Smoking Cessation Resources: Providing resources and support for smoking cessation, such as counseling and nicotine replacement therapy, can help smokers quit and reduce secondhand smoke exposure for others.

Create Designated Smoking Areas: If smoking is allowed on campus, create designated smoking areas in non-residential areas away from building entrances and common areas. These areas should be well-ventilated and have appropriate ashtrays for cigarette butts.

Enforce Policies: Enforce smoke-free policies through signage, education, and disciplinary actions if necessary. This will help promote compliance and reduce exposure to secondhand smoke.

Monitor Air Quality: Monitor air quality in buildings and other areas where smoking is allowed to ensure that levels of secondhand smoke are not harmful to non-smokers.

Promote Awareness and Education: Promote awareness and education about the risks of smoking and exposure to secondhand smoke through public health campaigns, educational programs, and community outreach.

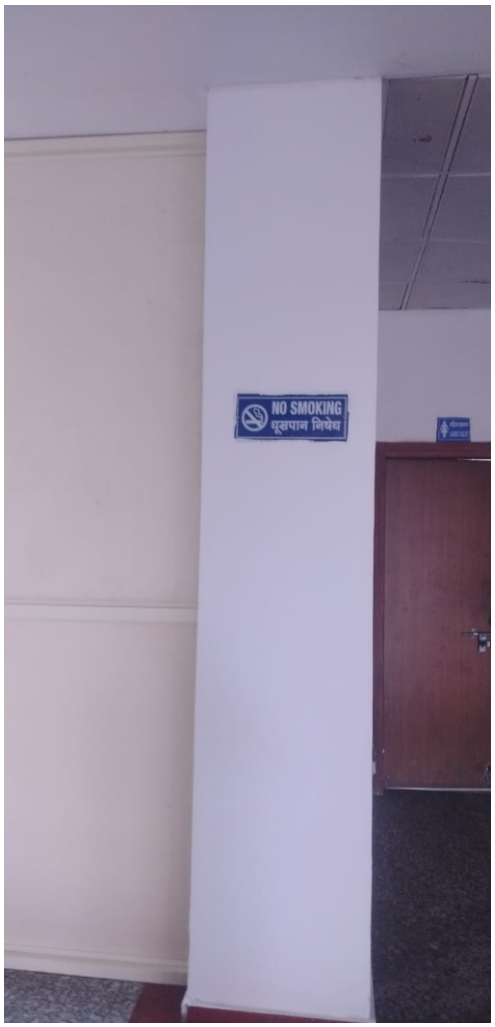
By implementing tobacco smoke control measures in universities, the health and well-being of students, faculty, and staff can be promoted. It is important to establish clear policies, provide support for smoking cessation, and enforce policies to promote compliance and reduce exposure to secondhand smoke.

AIR QUALITY LEVEL

1. Tobacco Smoke Control

RVSKVV, Gwalior implements stringent tobacco smoke control measures to ensure a healthier campus environment. The university enforces a strict no-smoking policy, supported by clear signage in strategic locations, including entrances and common areas .

This policy is complemented by educational campaigns that highlight the health risks associated with smoking and the importance of maintaining a smoke-free environment. By promoting awareness and adherence to smoke-free regulations, RVSKVV, Gwalior fosters a campus culture that prioritizes health and well-being, aligning with its commitment to creating a sustainable and safe learning environment.



AIR QUALITY LEVEL

2. Day Lighting

Daylighting and the daylight factor are closely related concepts essential for sustainable building design in universities.

Daylighting is using natural light to illuminate interior spaces in buildings, reducing the need for artificial lighting and promoting energy efficiency. It involves strategically placing windows, skylights, and other openings to maximize the natural light entering a space while minimizing glare and overheating.

The daylight factor is a quantitative measure of the amount of natural light that reaches the interior of a building. It is calculated as the ratio of the amount of light that enters a space through windows and skylights to the amount of light that would enter the room if the entire window or skylight was open to the sky.

The daylight factor is expressed as a percentage and is typically measured at a height of 0.75 meters above the floor. In universities, daylighting and the daylight factor are essential considerations for promoting energy efficiency, improving productivity and comfort, and reducing environmental impact.

The following principles can help Universities can achieve daylighting and daylight factor.

Design Buildings for Daylighting: Incorporate daylighting into the design of new buildings and renovations by placing windows and skylights strategically to allow for maximum natural light.

Use Daylighting Controls: Use automated shading and dimming systems to regulate the amount of natural light in a space and reduce the need for artificial lighting.
Optimize window and skylight placement: Optimize the placement of windows and skylights to maximize natural light while minimizing glare and direct sunlight.

Use Shading Devices: Use shading devices, such as blinds and shades, to control the amount of natural light in a space and reduce glare and overheating.

Monitor and Adjust: Monitor the daylight factor regularly and adjust shading devices to maintain a comfortable and productive learning and working environment.

By implementing daylighting and the daylight factor in universities, natural light can be maximized, reducing the need for artificial lighting and promoting energy efficiency. Additionally, natural light has improved productivity and comfort for students and faculty, promoting a positive learning and working environment. Therefore, it is essential to design buildings for daylighting, use daylighting controls and shading devices, optimize window and skylight placement, and monitor and adjust as necessary to promote sustainable and comfortable learning and working environments.

AIR QUALITY LEVEL

2. Day Lighting

RVSKVV, Gwalior emphasizes using natural daylight to enhance indoor environmental quality and reduce energy consumption. The university buildings' architectural design incorporates large windows and strategically placed skylights, allowing ample daylight to illuminate interior spaces.

This minimizes the need for artificial lighting and creates a more inviting and comfortable atmosphere for students and staff. By leveraging daylight, the university enhances productivity and well-being while supporting its sustainability goals through reduced energy usage.

Illumination level Chart

Space	Carpet area in m^2 (a)	Illumination level prescribed lux	Achieved / Not achieved
Classroom	82.40 m2	300	Achieved
Lab	306.18 m2	500	Achieved
Library	800.00 m2	500	Achieved
Indore Games	764.40 m2	600	Achieved

No.	Visual task	Prescribed Daylight Factor
1.	Classroom desk top, chalkboards	2.5
2.	Laboratory/ Workshops/ Drawing	3.2
3.	Library reading tables	2.9
4.	Staff room, office area	2.6

Location	Minimum Airflow
Kitchen / Mess	2.0
Toilets	0.50
Laboratories	4.0

AIR QUALITY LEVEL

3. Fresh Air Ventilation

Fresh air ventilation is an essential component of sustainable building design in universities. It involves the controlled introduction of fresh air into a building to maintain indoor air quality, reduce the risk of indoor pollutants, and promote occupant health and well-being.

In universities, fresh air ventilation can be achieved through a variety of strategies, including natural ventilation, mechanical ventilation, or a combination of both. Here are some key principles for implementing fresh air ventilation in universities:

Determine Ventilation Requirements: Determine the ventilation requirements for each space based on the number of occupants and the type of activities that occur in the space.

Use Natural Ventilation Where Possible: Where possible use natural ventilation strategies, such as operable windows, to introduce fresh air into a space and reduce the need for mechanical ventilation.

Use Mechanical Ventilation When Needed: In spaces where natural ventilation is not feasible, use mechanical ventilation systems, such as air handling units, to introduce fresh air into a space.

Use Energy Recovery Systems: Use energy recovery systems, such as heat recovery ventilation (HRV) or energy recovery ventilation (ERV), to reduce the energy required for ventilation while still maintaining indoor air quality.

Monitor and Adjust: Monitor ventilation systems regularly to ensure that they are functioning properly and adjust them as necessary to maintain indoor air quality and occupant comfort.

By implementing fresh air ventilation in universities, indoor air quality can be maintained, reducing the risk of indoor pollutants and promoting occupant health and well-being. Additionally, by using natural ventilation strategies and energy recovery systems, energy can be saved, and sustainability can be promoted. It is important to determine ventilation requirements, use natural ventilation where possible, use mechanical ventilation when needed, uses energy recovery systems, and monitor and adjust ventilation systems as necessary to promote a sustainable and comfortable learning and working environment.

AIR QUALITY LEVEL

3. Fresh Air Ventilation

RVSKVV, Gwalior prioritizes fresh air ventilation to maintain high indoor air quality. The university employs advanced HVAC systems that ensure continuous air circulation, delivering fresh air to all areas and expelling indoor pollutants.

Additionally, the buildings are designed with operable windows that allow for natural ventilation, providing occupants with access to fresh air and enhancing overall comfort.
These measures contribute to a healthier indoor environment, supporting the university's commitment to sustainability and well-being.

Space	Carpet area in m^2 (a)	Openable area in m^2 (b)	Prescribed percentage or openable area	Percentage or openable area (b/a) x 100	Achieved / Not achieved
Classroom	82.40 m2	8.64 m2	0.10	10.48	Achieved
Lab	306.18 m2	30.24 m2	0.09	09.88	Achieved
Library	800.00 m2	85.05 m2	0.10	10.63	Achieved
Indore Games	764.40 m2	68.58 m2	0.09	8.97	Achieved

AIR QUALITY LEVEL

4. Area of Class Room

The area of a classroom in a university can vary depending on the number of students and the type of activities that will take place in the space. However, there are some general guidelines and standards that can be used to determine the appropriate size for a classroom.

The Compendium of Architectural Norms and Guidelines for Educational Institutions of CPWD India has established standards for classroom sizes based on the number of students and the type of activities that will take place in the space.

The classroom area should also be designed to provide sufficient space for the various activities that will take place in the space, such as lectures, discussions, and group work. The classroom layout should allow for clear sightlines to the instructor and the board or screen and should provide sufficient space for seating, circulation, and storage.

Additionally, the classroom should be designed with acoustics in mind to ensure that sound is properly distributed and that there is minimal noise disturbance from external sources. Lighting should also be considered to provide adequate illumination for the various activities that will take place in the space.

In summary, the appropriate area for a classroom in a university will depend on various factors, such as the number of students and the type of activities that will take place in the space. However, established standards and guidelines can be used to ensure that the classroom provides sufficient space, clear sightlines, and proper acoustics and lighting for a comfortable and productive learning environment.

AIR QUALITY LEVEL

4. Area of Class Room

The classrooms at RVSKVV, Gwalior are designed with careful consideration of space and layout to optimize student learning and comfort. Each classroom provides sufficient space per student, adhering to educational standards and guidelines that enhance learning experiences .

The spacious design facilitates effective interaction and collaboration among students and faculty, promoting an engaging and productive educational environment.
RVSKVV, Gwaliorreinforces its dedication to delivering quality education in a supportive setting by ensuring ample classroom space.

No.	Category	No. of students per classroom	Minimum gross area of class rooms (inm2)/student
1.	Diploma	NIL	NIL
2.	Under Graduate	90	0.91 m2
3.	Post Graduate	12	06.87 m2

AIR QUALITY LEVEL

5. Anthropometric Dimensions in spaces

Anthropometric dimensions refer to the measurements of the human body and are an important consideration in the design of built-up spaces in universities. Designing spaces with appropriate anthropometric dimensions ensures that the spaces are comfortable and accessible for the occupants and can help to promote a healthy and productive learning environment.

Here are some common anthropometric dimensions to consider when designing built-up spaces in universities:

Seating Height: The height of chairs or benches should be appropriate for the intended occupants to ensure that they can comfortably sit and work for extended periods. The recommended seating height is between 16 and 20 inches for most adults.

Desk or Table Height: The height of desks or tables should be appropriate for the intended occupants to ensure that they can comfortably work and maintain good posture. The recommended desk or table height is between 28 and 30 inches for most adults.

Door Width: Doorways should be wide enough to accommodate the passage of people and equipment, including those with mobility aids. The recommended door width is at least 32 inches.

Aisle Width: Aisles and passageways should be wide enough to allow for the safe and efficient movement of people and equipment. The recommended aisle width is at least 36 inches.

Corridor Width: Corridors should be wide enough to allow for the safe and efficient movement of people and equipment, as well as to provide a sense of openness and accessibility. The recommended corridor width is at least 6 feet.

Ceiling Height: The height of ceilings can have a significant impact on the perceived spaciousness and comfort of a space. The recommended ceiling height for most built-up spaces in universities is between 9 and 10 feet.

By designing built-up spaces in universities with appropriate anthropometric dimensions, a comfortable and accessible environment can be created for the occupants. This can help to promote a healthy and productive learning environment and contribute to the overall well-being of the university community.

By designing restrooms in universities with appropriate anthropometric dimensions associated with toilet seat height, Toilet stall depth,

Grab bar height, Sink height, and Mirror height must be maintained to make toilets comfortable and accessible. This can help to promote hygiene, privacy, and overall well-being of the university community.

AIR QUALITY LEVEL

5. Anthropometric Dimensions in spaces

RVSKVV, Gwalior applies anthropometric principles in designing its learning spaces to ensure comfort and accessibility for all users. The university considers human body measurements in furniture design, fixture placement, and spatial layout, creating an ergonomic environment that enhances user experience.

This approach is reflected in adjustable desks and chairs, accessible restrooms, and thoughtfully designed common areas.

RVSKVV, Gwaliorprioritizes anthropometric dimensions and demonstrates its commitment to inclusivity and user-centered design .

Anthropometric dimensions for classroom furniture

Anthropometric dimension	H (Standing height of a Student, in m)		
	Diploma	Under Graduate	Post Graduate
Position with Furniture	-	45	45

Toilet Fixtures for students

Anthropometric dimension	H (Standing height of a Student, in m)		
	Diploma	Under Graduate	Post Graduate
Squatting position	–	–	–
Wash basin	02	02	02

Sill height, Parapet wall & Riser of stairs

Architectural Element	Height (H), in m		
Parapet Wall	–	0.90	0.90
Sill height	–	0.80	0.80
Riser of the stairs	–	0.15	0.15

AIR QUALITY LEVEL

6. Toxin-free Environment

Creating a toxin-free environment in a university is an important aspect of promoting the health and well-being of students, faculty, and staff. Here are some strategies that can be implemented to create a toxin-free environment in a university:

Use of Non-Toxic Cleaning Products: Traditional cleaning products can contain toxic chemicals that can be harmful to the health of occupants. Consider using non-toxic cleaning products that are safe for both humans and the environment.

Avoidance of Chemical Pesticides: Chemical pesticides can have negative effects on both human health and the environment. Consider implementing integrated pest management strategies that use non-toxic methods of pest control, such as trapping or exclusion.

Proper Ventilation: Proper ventilation can help to reduce the concentration of indoor air pollutants, such as volatile organic compounds (VOCs) and carbon monoxide. Ensure that HVAC systems are properly maintained and that air filters are regularly changed.

Use of Non-Toxic Building Materials: Building materials, such as flooring, paint, and insulation, can contain toxic chemicals that can off-gas into the indoor environment. Consider using non-toxic building materials that are free from harmful chemicals.

Indoor Plant Installation: Indoor plants can help to purify the air by absorbing pollutants and producing oxygen. Consider installing indoor plants in common areas, such as classrooms and offices.

Proper Waste Management: Proper waste management can help to reduce the amount of toxins that are released into the environment. Consider implementing recycling and composting programs to divert waste from landfills.

By implementing these strategies, a university can create a toxin-free environment that promotes the health and well-being of occupants.

AIR QUALITY LEVEL

6. Toxin-free Environment

RVSKVV, Gwalior is committed to maintaining a toxin-free environment by using low-emission materials and products. The university selects paints, coatings, and building materials that meet low-VOC standards, minimizing the presence of harmful chemicals indoors.

This commitment extends to cleaning products and maintenance practices, ensuring that the campus remains a safe and healthy place for students and staff.

By fostering a toxin-free environment, RVSKVV, Gwaliorsupports the well-being of its community and aligns with global sustainability standards.

AIR QUALITY LEVEL

7. Dust-free Environment

Creating a dust-free environment in a university is important for promoting the health and well-being of students, faculty, and staff. Dust can contain a variety of allergens and pollutants that can cause respiratory problems and exacerbate existing health conditions. Here are some strategies that can be implemented to create a dust-free environment in a university:

Regular Cleaning: Regular cleaning is essential for maintaining a dust-free environment. Ensure that floors, walls, and surfaces are cleaned regularly to prevent the accumulation of dust.

Use of HEPA Filters: High-efficiency particulate air (HEPA) filters can help to remove dust particles from the air. Consider using HEPA filters in HVAC systems and portable air purifiers.

Proper Ventilation: Proper ventilation can help to reduce the concentration of dust particles in the air. Ensure that HVAC systems are properly maintained and that air filters are regularly changed.

Reduction of Clutter: Clutter can trap dust particles and make cleaning more difficult. Encourage occupants to keep their spaces tidy and free from clutter.

Use of Doormats: Doormats can help to reduce the amount of dust that is tracked into buildings. Consider using doormats at building entrances to help prevent dust from entering the building.

Use of Natural Cleaning Products: Traditional cleaning products can contain chemicals that can contribute to the accumulation of dust. Consider using natural cleaning products that are free from harmful chemicals.

By implementing these strategies, a university can create a dust-free environment that promotes the health and well-being of occupants.

AIR QUALITY LEVEL

7. Dust-free Environment

RVSKVV, Gwalior implements rigorous cleaning protocols to maintain a dust-free environment in all indoor spaces. The university employs modern cleaning equipment and practices that reduce dust accumulation, ensuring a clean and healthy atmosphere.

Additionally, using whiteboards and markers instead of traditional chalkboards minimizes airborne dust particles, contributing to improved air quality.

These efforts highlight Darshan University's dedication to creating a comfortable and health-conscious learning environment.

AIR QUALITY LEVEL

8. Exhaust Systems

Exhaust systems in a university are an important component of building ventilation systems. Exhaust systems are responsible for removing stale air and pollutants from indoor spaces and replacing them with fresh outdoor air. Here are some types of exhaust systems commonly found in universities:

Bathroom Exhaust Fans: Bathroom exhaust fans are typically installed in restrooms to remove excess moisture and odors. They help to prevent the growth of mold and mildew and improve indoor air quality.

Kitchen Exhaust Systems: Kitchen exhaust systems are designed to remove cooking fumes, smoke, and odors from commercial kitchens. They typically consist of hoods, ducts, and fans and are important for maintaining good indoor air quality and preventing fire hazards.

Laboratory Exhaust Systems: Laboratory exhaust systems are designed to remove hazardous fumes and pollutants from laboratory spaces. They are typically equipped with high-efficiency filters and fans to ensure that hazardous substances are safely removed from the building.

General Exhaust Systems: General exhaust systems are used to remove stale air and pollutants from common areas, such as hallways and lobbies. They help to maintain good indoor air quality and prevent the buildup of pollutants.

Parking Garage Exhaust Systems: Parking garage exhaust systems are designed to remove vehicle exhaust fumes and pollutants from enclosed parking garages. They typically consist of fans and ducts and are important for maintaining good indoor air quality and preventing the buildup of pollutants.

By ensuring that exhaust systems are properly installed and maintained, a university can ensure good indoor air quality and promote the health and well-being of occupants.

AIR QUALITY LEVEL

8. Exhaust Systems

RVSKVV, Gwalior has installed efficient exhaust systems in key areas such as kitchens, laboratories, and restrooms to enhance indoor air quality and safety. These systems effectively remove moisture, odors, and airborne contaminants, maintaining a fresh and healthy indoor environment.

The strategic placement of exhaust systems across the campus reflects the university's commitment to ensuring optimal ventilation and air quality for its community.

RVSKVV, Gwaliorprioritizes effective exhaust solutions and supports its students' and staff's well-being and comfort.

ENERGY USES & SAVING PRACTICES

Energy sourcing and saving practices are critical components of sustainability in a Green University. Some essential techniques that can help achieve these goals:

Renewable Energy: A Green University should prioritize the use of renewable energy sources, such as solar, wind, or geothermal power, to reduce reliance on fossil fuels and reduce greenhouse gas emissions.

Energy-efficient Lighting: A Green University should use energy-efficient lighting systems, such as LED lights, to reduce energy consumption.

Energy-efficient Appliances: A Green University should use energy-efficient appliances, such as refrigerators and washing machines, to reduce energy consumption.

Energy Audits: A Green University should conduct regular energy audits to identify areas of high energy use and implement measures to reduce energy consumption.

Behavioral Changes: A Green University should encourage sustainable energy practices among its students, faculty, and staff. This can include promoting energy-saving behaviors, such as turning off lights and electronics when not in use and providing education on the importance of energy conservation.

Green University Accreditation: A Green University should consider obtaining green University Accreditation from Green Mentors to demonstrate its commitment to sustainability and energy efficiency.

ENERGY USES & SAVING PRACTICES

1. Ozone Depleting Substances

Ozone-depleting substances (ODS) are chemicals that can cause damage to the earth's ozone layer, which protects us from harmful ultraviolet radiation. These substances are commonly used in refrigeration, air conditioning, fire suppression systems, and other applications. Here are some ways in which a university can reduce its use of ODS:

Retrofitting Equipment: Old equipment that uses ODS can be retrofitted with alternative refrigerants that are more environmentally friendly. This can help to reduce the amount of ODS that is released into the atmosphere.

Purchasing Equipment with Alternative Refrigerants: When purchasing new equipment, choose models that use alternative refrigerants that are less harmful to the environment. This can help to reduce the university's overall use of ODS.

Proper Disposal of ODS: ODS should be properly disposed of to prevent them from entering the atmosphere. Work with qualified technicians to ensure that ODS are properly recovered and disposed of in accordance with local regulations.

ODS Awareness and Training: Educate staff, students, and faculty about the dangers of ODS and the importance of reducing their use. Training programs can help to raise awareness and promote responsible behavior.

Use of Alternatives: Consider using alternative products and technologies that do not contain ODS.

For example, fire suppression systems can be replaced with alternatives that use inert gases or water mist.

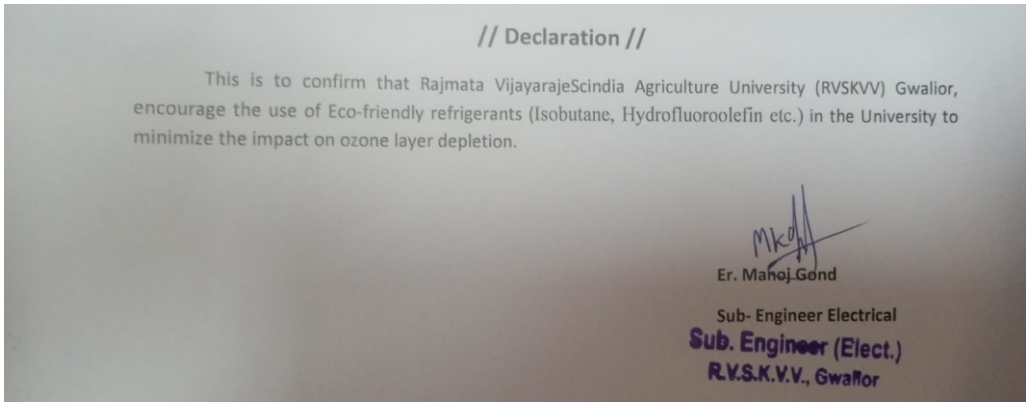
By taking these steps, a university can reduce its use of ODS and help to protect the earth's ozone layer. This can have a positive impact on the environment and the health of future generations.

ENERGY USES & SAVING PRACTICES

1. Ozone Depleting Substances

Only environment friendly refrigerants such as Isobutane, Hydrofluoroolefin etc. & halons are used in the university. In which there are minimum chances of damage to the ozone layer.

Refrigerants and Fire Suppression System is installed in various buildings in the University in prescribed capacity.



// Declaration //

This is to confirm that Rajmata VijayarajeScindia Agriculture University (RVSKVV) Gwalior, encourage the use of Eco-friendly refrigerants (Isobutane, Hydrofluoroolefin etc.) in the University to minimize the impact on ozone layer depletion.

Er. Manoj Gond

Sub- Engineer Electrical

Sub. Engineer (Elect.)
R.V.S.K.V.V., Gwalior

ENERGY USES & SAVING PRACTICES

2. Energy Efficient Lighting Fixtures

Energy-efficient lighting fixtures are an important part of any university's efforts to reduce energy consumption and lower operating costs. Here are some examples of energy-efficient lighting fixtures that can be used in universities:

LED Lighting: LED lights are highly energy-efficient and can last up to 25 times longer than traditional incandescent bulbs. LED lighting can be used in various applications, including classrooms, offices, and outdoor spaces.

CFL Lighting: Compact fluorescent lights (CFLs) are another energy-efficient lighting option. They use up to 75% less energy than incandescent bulbs and can last up to 10 times longer.

Occupancy Sensors: Occupancy sensors can be used to automatically turn off lights in unoccupied areas, such as classrooms or offices. This can help to reduce energy waste and lower operating costs.

Daylight Harvesting Systems: Daylight harvesting systems use sensors to automatically adjust the amount of artificial light based on the available natural light. This can help to reduce energy consumption and improve the quality of light in indoor spaces.

Task Lighting: Task lighting is designed to provide lighting for specific tasks, such as reading or computer work. By using task lighting instead of overhead lighting, energy consumption can be reduced while maintaining adequate lighting levels.

By implementing energy-efficient lighting fixtures, a university can reduce its energy consumption and operating costs while also improving the quality of light in indoor spaces. Additionally, energy-efficient lighting fixtures can contribute to a more sustainable and environmentally friendly campus.

University has installed LED Lighting & Fixtures instead of old Lightning that reduces the environmental impacts associated with energy use.

University decided to replace all the old structured 36 W fluorescent-based lighting modules by 18 W LED T/L, 2×2 LED panels and required efficient lighting where needed.

ENERGY USES & SAVING PRACTICES

2. Energy Efficient Lighting Fixtures

RVSKVV, Gwalior has implemented a comprehensive strategy to enhance energy efficiency through advanced lighting solutions. By replacing conventional lighting with energy-efficient LED fixtures across the campus, the university has significantly reduced its energy consumption.

LED lighting offers superior illumination quality and durability, ensuring a safe and well-lit environment for students, faculty, and staff. This transition to LED technology lowers operational costs and demonstrates Darshan University's commitment to reducing its carbon footprint and promoting sustainable practices.

Through these efforts, the university exemplifies leadership in energy conservation, setting a benchmark for other educational institutions striving for environmental sustainability.

ENERGY USES & SAVING PRACTICES

2. Energy Efficient Lighting Fixtures

BASECASE SCENARIO - Lighting Fixtures Number of working days (n)						
Location	Carpet area (sq.m)	Number of fixtures (f)	Luminare capacity (kW)	Operating hours (hr)	Energy consumption by lighting fixtures in a day (kW x hr x f)	Total energy consumption by lighting fixtures in entire year (W x Hr x f x n)
Classrooms	82.4	12x36	0.432	04	1.728	34.5
Labs	918.52	90x36	3.24	08	25.92	518.4
Total	1000.94	102	3.672	12	27.648	552.9

PROPOSED SCENARIO - Lighting Fixtures Number of working days (n)						
Location	Carpet area (sq.m)	Number of fixtures (f)	Luminare capacity (kW)	Operating hours (hr)	Energy consumption by lighting fixtures in a day (kW x hr x f)	Total energy consumption by lighting fixtures in entire year (W x Hr x f x n)
Classrooms	41.2	16x36w	0.216	04	0.864	17.628
Labs	459.27	45x36w	1.620	08	12.96	259.20
Total	500.47	51	1.836	12	13.824	276.48

ENERGY USES & SAVING PRACTICES

3. Energy Efficient Fans

Energy-efficient fans and air-conditioners are important in universities as they can help reduce energy consumption and lower operating costs. Here are some examples of energy-efficient fans and air-conditioners that can be used in universities:

High-Efficiency Ceiling Fans: Ceiling fans can be a cost-effective way to cool indoor spaces. High-efficiency ceiling fans can be up to 20% more efficient than standard ceiling fans, helping to reduce energy consumption and lower operating costs.

Variable Speed Air Handlers: Variable-speed air handlers can be used with central air-conditioning systems to help reduce energy consumption. These systems can adjust the speed of the fan based on the cooling needs of the indoor space, helping to save energy and reduce operating costs.

Energy-Efficient Window Air-Conditioners: Window air-conditioners can be an energy-efficient option for cooling small spaces, such as individual offices or dorm rooms. Look for models with the BEE STAR rating 1 to 5, the ascending order of energy efficiency, which indicates that they meet the energy efficiency level.

Split-System Air-Conditioners: Split-system air-conditioners are designed to cool individual rooms or spaces. They are more energy-efficient than traditional central air-conditioning systems, as they only cool the spaces that need them.

Heat Pumps: Heat pumps can be used for both heating and cooling indoor spaces. They are more energy-efficient than traditional heating and cooling systems, as they transfer heat rather than create it. Heat pumps are particularly effective in moderate climates.

By implementing energy-efficient fans and air-conditioners, a university can reduce its energy consumption and operating costs while maintaining a comfortable indoor environment for students, staff, and faculty. Additionally, energy-efficient fans and air-conditioners can contribute to a more sustainable and environmentally friendly campus.

ENERGY USES & SAVING PRACTICES

3. Energy Efficient Fans

In pursuit of sustainability, RVSKVV, Gwalior has installed energy-efficient fans throughout its campus. These fans are designed to operate with minimal energy usage while providing optimal airflow and comfort in various settings, including classrooms, offices, and common areas.

By choosing energy-efficient options, the university reduces its electricity consumption and reinforces its commitment to environmental responsibility. This initiative is part of a broader effort to integrate sustainable technologies into campus infrastructure, promoting a culture of energy conservation among students and staff.

RVSKVV, Gwalior's dedication to using energy-efficient fans highlights its focus on reducing greenhouse gas emissions and supporting sustainable development.

ENERGY USES & SAVING PRACTICES

4. Energy Efficiency in Appliances & Equipment

Energy efficiency in appliances and equipment is important in universities as it can help reduce energy consumption and lower operating costs. Here are some examples of energy-efficient appliances and equipment that can be used in universities:

Energy-Efficient Computers and Monitors: Energy-efficient computers and monitors can help reduce energy consumption in computer labs and offices. Look for models that have earned the BEE STAR label, which indicates that they meet energy efficiency guidelines set by the Bureau of Energy Efficiency.

Energy-Efficient Refrigerators and Freezers: Energy-efficient refrigerators and freezers can help reduce energy consumption in university dining halls, cafeterias, and research labs. Look for models that have earned the ENERGY STAR label, which indicates that they meet energy efficiency guidelines set by the Bureau of Energy Efficiency.

Energy-Efficient HVAC Systems: Energy-efficient heating, ventilation, and air conditioning (HVAC) systems can help reduce energy consumption in university buildings. Look for systems that have earned the ENERGY STAR label, which indicates that they meet energy efficiency guidelines set by the Bureau of Energy Efficiency.

Energy-Efficient Lighting Controls: Lighting controls, such as occupancy sensors and daylight harvesting systems, can help reduce energy consumption in university buildings by automatically adjusting lighting based on occupancy and available natural light.

Energy-Efficient Water Heaters: Energy-efficient water heaters can help reduce energy consumption in university dormitories and athletic facilities. Look for models that have earned the ENERGY STAR label, which indicates that they meet energy efficiency guidelines set by the Bureau of Energy Efficiency.

By implementing energy-efficient appliances and equipment, a university can reduce its energy consumption and operating costs while maintaining the necessary functionality of its facilities. Additionally, energy-efficient appliances and equipment can contribute to a more sustainable and environmentally friendly campus

ENERGY USES & SAVING PRACTICES

4. Energy Efficiency in Appliances & Equipment

RVSKVV, Gwalior prioritizes using energy-efficient appliances and equipment as part of its commitment to sustainability. The university has invested in modern appliances with high energy ratings, such as refrigerators, ovens, and washing machines, to minimize energy consumption and reduce operational costs.

By adopting best practices and innovative technologies, RVSKVV, Gwalior enhances its energy efficiency, contributing to a reduction in its overall carbon footprint. This approach benefits the environment and serves as a model for other institutions seeking to optimize resource utilization and promote sustainable practices.

ENERGY USES & SAVING PRACTICES

5. Energy Sub-Metering

Energy sub-metering is the practice of installing meters to measure energy consumption in specific areas or systems within a building, such as lighting, HVAC, and plug loads. In a university setting, energy sub-metering can be used to identify areas of high energy consumption and implement energy-saving measures to reduce energy consumption and costs. Here are some benefits of energy sub-metering in universities:

Identify Areas of High Energy Consumption: Energy sub-metering can help identify areas of high energy consumption within a university. By identifying these areas, universities can target energy-saving measures to reduce energy consumption and costs.

Allocate Energy Costs: Energy sub-metering can help allocate energy costs to specific departments or buildings within a university. This can provide an incentive for departments to reduce energy consumption and costs.

Monitor Energy Performance: Energy sub-metering can help monitor energy performance over time. By monitoring energy performance, universities can track energy consumption and identify trends or anomalies.

Improve Sustainability: Energy sub-metering can help universities achieve their sustainability goals by reducing energy consumption and carbon emissions.

When implementing energy sub-metering in a university, it is important to ensure that the meters are accurate, reliable, and installed correctly. Additionally, data from the meters should be collected and analyzed to identify opportunities for energy savings.

ENERGY USES & SAVING PRACTICES

5. Energy Sub-Metering

RVSKVV, Gwalior employs a sophisticated energy submetering system to monitor and manage energy consumption effectively across its campus. By installing submeters at various points, the university gains real-time insights into energy usage patterns, enabling informed decision-making and efficient resource management.

This approach allows for identifying high-energy consumption areas and implementing targeted measures to enhance energy efficiency. RVSKVV, Gwalior's focus on data-driven energy management reflects its commitment to sustainability and continuous improvement in reducing its environmental impact.

ENERGY USES & SAVING PRACTICES

6. On-Site Renewable Energy

On-site renewable energy in universities refers to the installation of renewable energy systems on university campuses to generate electricity or heat. On-site renewable energy can help universities reduce their reliance on fossil fuels and reduce their carbon emissions. Following options of on-site renewable energy systems that can be installed in universities:

Solar Photovoltaic (PV) Systems: Solar PV systems can be installed on university buildings or in open areas on campus to generate electricity. Solar PV systems are relatively low-maintenance and have a long life span, making them a good investment for universities.

Wind Turbines: Small-scale wind turbines can be installed on university campuses to generate electricity. Wind turbines require more maintenance than solar PV systems and are less reliable, but they can be a good option in areas with high wind speeds.

Geothermal Heating and Cooling Systems: Geothermal heating and cooling systems can be installed in university buildings to provide heating and cooling using energy from the ground. Geothermal systems are highly efficient and can reduce heating and cooling costs for universities.

Biomass Heating Systems: Biomass heating systems can be installed in university buildings to provide heat using renewable biomass fuels, such as wood chips or pellets. Biomass heating systems require regular maintenance and can be more expensive to install than other renewable energy systems, but they can provide a reliable source of heat for universities.

By installing on-site renewable energy systems, universities can reduce their energy consumption and carbon emissions while demonstrating their commitment to sustainability. Additionally, on-site renewable energy systems can provide educational opportunities for students and faculty, as well as research opportunities for university researchers.

ENERGY USES & SAVING PRACTICES

6. On-Site Renewable Energy

RVSKVV, Gwalior leads in renewable energy adoption by harnessing on-site renewable energy sources to meet its electricity needs. The university has installed a solar power plant on its premises, generating clean energy and significantly reducing reliance on non-renewable sources.

This initiative decreases the university's carbon footprint and demonstrates its dedication to sustainable development and environmental stewardship.

By investing in renewable energy infrastructure, RVSKVV, Gwaliorsets a positive example for other educational institutions embracing green technologies and promoting ecological balance.

ENERGY USES & SAVING PRACTICES

7. Solar Water Heating Systems

Solar water heating systems are a type of renewable energy system that can be installed in universities to heat water using energy from the sun. Solar water heating systems can be installed on university buildings, such as dormitories, gymnasiums, or cafeterias, to provide hot water for showers, sinks, and other uses.

Here are some benefits of installing solar water heating systems in universities:

Energy Cost Savings: Solar water heating systems can help universities save money on energy costs by reducing the need for electricity or natural gas to heat water.

Reduced Carbon Emissions: Solar water heating systems can help universities reduce their carbon emissions by using renewable energy to heat water.

Educational Opportunities: Solar water heating systems can provide educational opportunities for students and faculty to learn about renewable energy technologies and their applications.

Increased Resilience: Solar water heating systems can provide increased resilience to universities by providing hot water even during power outages or other disruptions to the electrical grid.

When installing solar water heating systems in universities, it is important to ensure that the systems are designed and installed correctly to maximize their efficiency and lifespan. Additionally, regular maintenance and monitoring should be performed to ensure that the systems are operating effectively and efficiently.

ENERGY USES & SAVING PRACTICES

7. Solar Water Heating Systems

RVSKVV, Gwalior has implemented solar water heating systems in its hostel facilitiesin its quest for sustainability. These systems utilize solar energy to provide hot water, reducing the environmental impact of traditional water heating methods.

The adoption of solar water heating technology reflects the university's commitment to integrating renewable energy solutions into its operations, supporting its goal of achieving carbon neutrality. This initiative contributes to energy conservation and enhances the university's reputation as a forward-thinking institution dedicated to environmental sustainability.

ENERGY USES & SAVING PRACTICES

8. Distributed Power Generation

Distributed power generation is a type of energy system that involves generating electricity from small-scale power sources located close to the point of use instead of from a centralized power plant. Universities can benefit from distributed power generation by installing renewable energy systems such as solar panels or wind turbines on their campuses.

Here are some benefits of distributed power generation in universities:

Reduced Energy Costs: Distributed power generation can help universities save money on energy costs by generating electricity on-site and reducing their reliance on grid-supplied electricity.

Reduced Carbon Emissions: Distributed power generation can help universities reduce their carbon emissions by using renewable energy sources to generate electricity.

Increased Resilience: Distributed power generation can provide increased resilience to universities by providing a local source of electricity in case of power outages or other disruptions to the electrical grid.

Educational Opportunities: Distributed power generation can provide educational opportunities for students and faculty to learn about renewable energy technologies and their applications.

Examples of distributed power generation systems that can be installed in universities include:

Solar Photovoltaic (PV) Systems: Solar PV systems can be installed on university buildings or in open areas on campus to generate electricity.

Wind Turbines: Small-scale wind turbines can be installed on university campuses to generate electricity.

Micro-Hydro Systems: Micro-hydro systems can be installed on university campuses to generate electricity using the energy from flowing water.

Combined Heat and Power (CHP) Systems: CHP systems can be installed in university buildings to generate both electricity and heat from a single system.

By installing distributed power generation systems, universities can reduce their energy costs, carbon emissions, and reliance on grid-supplied electricity while demonstrating their commitment to sustainability.

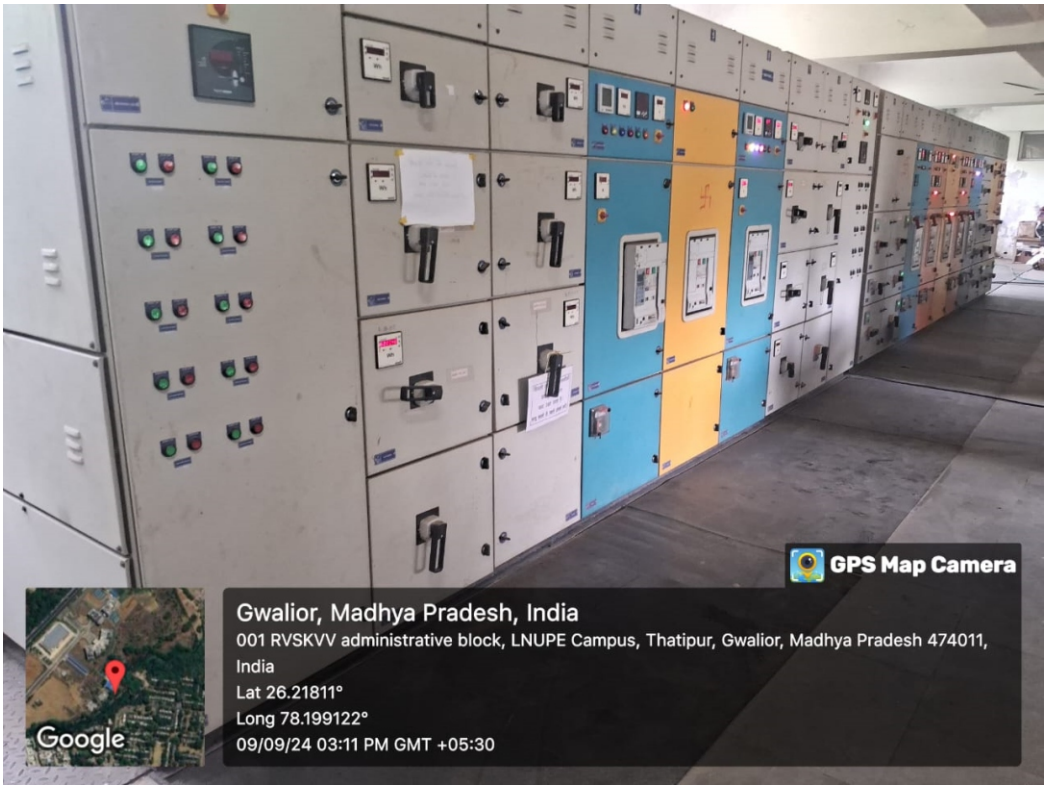
ENERGY USES & SAVING PRACTICES

8. Distributed Power Generation

RVSKVV, Gwalior supports distributed power generation to enhance energy security and promote using renewable energy sources. By integrating decentralized energy systems such as solar panels, the university ensures a reliable power supply while reducing its environmental impact.

Distributed power generation enables RVSKVV, Gwalior to operate more sustainably, reducing reliance on centralized energy systems and minimizing transmission losses.

This approach highlights the university's commitment to pioneering sustainable energy solutions and reducing its carbon footprint.



HEALTH & HYGIENE PRACTICES

Health and hygiene practices are essential considerations in a Green University, as they can help ensure the well-being of students, faculty, and staff while also promoting sustainability. Following critical practices that can help achieve these goals:

Clean Drinking Water: A Green University should prioritize clean drinking water by regularly testing and treating the water supply to ensure it meets quality standards.

Sustainable Food Options: A Green University should prioritize sustainable food options, such as locally sourced and organic foods, to promote healthy eating and reduce the environmental impact of food production.

Handwashing and Sanitizing Stations: A Green University should provide ample handwashing and sanitizing stations throughout its buildings to promote good hygiene and prevent the spread of illness.

Safe and Sustainable Cleaning Products: A Green University should prioritize using safe and sustainable cleaning products to reduce the amount of harmful chemicals released into the environment.

Waste Management: A Green University should prioritize proper waste management practices, including recycling and composting, to reduce the amount of waste sent to landfills.

Sustainable Transportation: A Green University should promote sustainable transportation options, such as biking, walking, or taking public transportation, to reduce the number of vehicles on campus. This can help reduce air pollution and promote good health.

Mental Health Support: A Green University should prioritize mental health support services for its students, faculty, and staff to promote overall well-being.

HEALTH & HYGIENE PRACTICES

1. Toilet Facilities

Restrooms and toilets are important facilities in universities that need to be designed to meet the needs of the students, faculty, and staff. Proper design and maintenance of these facilities can help promote hygiene, reduce water usage, and ensure accessibility for all. Some factors to be considered when designing restrooms and toilets in universities:

Accessibility: Restrooms and toilets should be designed to be accessible for people with disabilities, including wheelchair users. This includes providing adequate space, grab bars, and accessible fixtures.

Gender Inclusivity: Restrooms and toilets should be designed to be inclusive of all gender identities, with options for single-user restrooms and multi-user restrooms with privacy features.

Hygiene: Restrooms and toilets should be designed to promote good hygiene, with features such as touchless fixtures, automatic flush systems, and hand sanitizing stations.

Water Efficiency: Restrooms and toilets should be designed with water-efficient fixtures, such as low-flow toilets and faucets, to reduce water usage and promote sustainability.

Maintenance: Restrooms and toilets should be designed with ease of maintenance in mind, with durable and easy-to-clean materials and regular cleaning schedules.

When designing restrooms and toilets in universities, it is important to consider the specific needs and requirements of the campus community, as well as applicable laws and regulations related to accessibility and hygiene. Regular maintenance and monitoring should also be performed to ensure that the facilities are operating effectively and efficiently.

HEALTH & HYGIENE PRACTICES

1. Toilet Facilities

RVSKVV, Gwalior strongly emphasizes maintaining high standards of hygiene and cleanliness in all its toilet facilities, which a professional cleaning agency regularly maintains.

The university has outsourced hygiene and cleanliness services to ensure that all toilet facilities are well-maintained, providing students, staff, and visitors with a safe and hygienic environment.

This proactive approach reduces the risk of infections and contributes to the overall well-being of the university community. The facilities are equipped with modern amenities and regularly inspected to ensure health and safety standards compliance.

HEALTH & HYGIENE PRACTICES

2. Drinking Water Facility

Drinking water is a basic necessity, and providing access to clean and safe drinking water is an important aspect of ensuring the health and well-being of students, faculty, and staff in universities. A few suggested criteria associated with drinking water facilities in universities:

Accessibility: Drinking water facilities should be easily accessible to all members of the campus community, including people with disabilities. This may involve providing wheelchair-accessible fountains or bottle filling stations.

Water Quality: The quality of the drinking water provided in universities should meet or exceed applicable standards and regulations for drinking water. Regular testing and monitoring should be performed to ensure that the water is safe to drink.

Water Conservation: Drinking water facilities should be designed to promote water conservation, with features such as low-flow fountains and automatic shut-off valves.

Maintenance: Regular maintenance and cleaning of drinking water facilities are important to ensure their continued functionality and hygiene.

Education: Providing information to students, faculty, and staff about the importance of staying hydrated and the availability of drinking water facilities can help promote healthy habits and reduce waste from single-use water bottles.

When designing and maintaining drinking water facilities in universities, it is important to consider the needs and preferences of the campus community, as well as applicable laws and regulations related to water quality and accessibility. Providing access to clean and safe drinking water is an important step in promoting the health and well-being of the campus community.

HEALTH & HYGIENE PRACTICES

2. Drinking Water Facility

RVSKVV, Gwalior is committed to providing clean, safe drinking water. The university has installed water purification systems at all drinking water stations, ensuring water quality meets stringent safety standards.

Government-authorized laboratories conduct regular testing and monitoring to verify water quality and safety, ensuring that students, staff, and visitors can access potable water at all times . This commitment to safe drinking water underscores the university's dedication to the health and well-being of its community.

HEALTH & HYGIENE PRACTICES

3. Access to Healthy Food

Access to healthy foodfood is an important aspect of promoting the health and well-being of students, faculty, and staff in universities. The following can be considered while planning to provide access to healthy foodfood in universities:

Availability: Healthy food options should be readily available on campus, including in dining halls, cafes, vending machines, and other food service areas.

Variety: Offering a wide variety of healthy food options can help ensure that the needs and preferences of all members of the campus community are met.

Nutrition: Healthy food options should be nutritious, with an emphasis on fresh fruits and vegetables, whole grains, lean protein, and healthy fats.

Affordability: The cost of healthy food options should be comparable to other food options on campus to ensure that they are accessible to all members of the campus community.

Sustainability: The food options provided on campus should be sourced in a sustainable and socially responsible manner, with a focus on reducing waste and supporting local and organic food systems.

Education: Providing education and information about healthy eating habits can help promote healthy lifestyles and encourage members of the campus community to make informed food choices.

When designing and maintaining food service areas in universities, it is important to consider the needs and preferences of the campus community, as well as applicable laws and regulations related to food safety and accessibility. Providing access to healthy and nutritious foodfood is an important step in promoting the health and well-being of the campus community.

HEALTH & HYGIENE PRACTICES

3. Access to Healthy Food

RVSKVV, Gwalior offers its students and staff a wide range of healthy and nutritious food options, promoting a balanced diet and overall well-being.

The university's canteen facilities provide access to wholesome meals that cater to various dietary needs. There is a strict policy against junk food . The catering services are outsourced to ensure high food quality and hygiene standards.

By prioritizing healthy food options, RVSKVV, Gwalior supports its community's physical and mental health, fostering a conducive environment for learning and development .

HEALTH & HYGIENE PRACTICES

4. Sports Amenities

Sports amenities in universities are essential for promoting physical activity, encouraging healthy lifestyles, and providing opportunities for socialization and community building. Here are some standard sports amenities found in universities:

Athletic Fields: Universities often have athletic fields for sports such as soccer, football, lacrosse, and baseball.

Indoor Gymnasiums: Indoor gymnasiums may include basketball courts, volleyball courts, badminton courts, and other facilities for indoor sports.

Fitness Centers: Fitness centers typically include exercise equipment such as treadmills, ellipticals, weights, and resistance machines.

Swimming Pools: Swimming pools provide opportunities for aquatic sports and fitness activities.

Tennis and squash courts: Tennis and squash courts provide opportunities for racquet sports.

Climbing Walls: Climbing walls are becoming increasingly popular in universities, providing opportunities for rock climbing and other vertical activities.

Outdoor Recreational Areas: Universities may also have outdoor recreational areas for hiking, camping, and picnicking.

When designing and maintaining sports amenities in universities, it is essential to consider the needs and preferences of the campus community, as well as applicable laws and regulations related to safety and accessibility. In addition, providing a variety of sports amenities can help ensure that all campus community members have opportunities to engage in physical activity and promote healthy lifestyles.

HEALTH & HYGIENE PRACTICES

4. Sports Amenities

The university is equipped with a variety of sports amenities that cater to its students' diverse interests. RVSKVV, Gwalior offers indoor and outdoor sports facilities, including a dedicated playground, to encourage physical activity and enhance student fitness.

These amenities are designed to promote a healthy lifestyle and provide students with recreation and skill development opportunities. The university's commitment to sports and physical education is evident in its well-maintained sports infrastructure and support for various athletic programs.

HEALTH & HYGIENE PRACTICES

5. Dedicated Playground

A dedicated playground for sports in a university can provide students, faculty, and staff with space for organized and informal sports activities. Points to be considered when designing a playground for sports in a university:

Space: The playground size will depend on the number and types of sports that will be played. Consider the size of the field or court needed for each sport, as well as any additional space for spectator seating, restrooms, and storage.

Surface: The type of surface used on the playground can affect the safety and performance of the athletes. Options include natural grass, synthetic turf, concrete, and asphalt.

Lighting: Adequate lighting is essential for evening and nighttime use of the playground. Consider the placement and brightness of the lights and any energy efficiency measures that can be implemented.

Equipment: Depending on the sports played, the playground may require equipment such as basketball hoops, soccer goals, volleyball nets, and tennis nets. It is important to ensure that the equipment is safe, durable, and properly maintained.

Accessibility: The playground should be accessible to all members of the campus community, including those with disabilities. This may involve the installation of ramps, accessible seating, and other features to ensure that the playground is compliant with relevant accessibility guidelines and regulations.

When designing a playground for sports in a university, it is important to involve stakeholders from across the campus community to ensure that the design meets the needs and preferences of all users. This may include student organizations, athletic departments, facilities management, and disability services offices.

HEALTH & HYGIENE PRACTICES

5. Dedicated Playground

RVSKVV, Gwalior boasts a dedicated playground as a central hub for sports and recreational activities. The playground accommodates various sports, including tennis, basketball, and swimming, and provides students ample space for physical exercise and team sports. This facility underscores the university's commitment to promoting physical health and well-being, offering students a space to unwind, socialize, and engage in healthy activities. The playground is integral to the campus, enhancing the university's vibrant community life.

HEALTH & HYGIENE PRACTICES

6. Organic Fertilizers and Pesticides

Using organic fertilizers and pesticides in a university can benefit the environment and the health of students, faculty, and staff. Here are some considerations when implementing organic fertilizers and pesticides in a university:

Soil Health: Organic fertilizers are made from natural materials and help to improve soil health by increasing microbial activity and promoting the growth of beneficial microorganisms. This can result in healthier plants and a more sustainable campus environment.

Reduced Chemical Exposure: Organic pesticides are made from natural ingredients and are less toxic than chemical pesticides, which can harm human health and the environment. Using organic pesticides can reduce the risk of exposure to these chemicals.

Environmental Benefits: Organic fertilizers and pesticides are generally considered more environmentally friendly than their chemical counterparts, as they do not contribute to water and air pollution or harm wildlife.

Cost: Organic fertilizers and pesticides can be more expensive than chemical products, but the long-term benefits to soil health and environmental sustainability may outweigh the upfront costs.

Education: Implementing organic fertilizers and pesticides in a university can also provide opportunities for education and outreach about sustainable practices and environmental stewardship. This can raise awareness among students, faculty, and staff about the importance of sustainable agriculture and pest management.

When implementing organic fertilizers and pesticides in a university, consulting with experts in sustainable agriculture and pest management is essential to ensure that the products used are effective and safe for the campus environment. Additionally, it may be necessary to invest in training for facilities management staff and groundskeepers to ensure they can implement these practices properly.

HEALTH & HYGIENE PRACTICES

6. Organic Fertilizers and Pesticides

In its commitment to sustainability and environmental health, RVSKVV, Gwalior uses organic fertilizers and pesticides across its campus grounds.

The university employs composting techniques to produce organic fertilizers, reducing reliance on chemical fertilizers and minimizing environmental impact.

This approach supports healthy plant growth and promotes a safe environment for students, staff, and local wildlife. By adopting organic practices, RVSKVV, Gwalior demonstrates its dedication to ecological sustainability and the well-being of its campus community.

HEALTH & HYGIENE PRACTICES

7. Green Housekeeping

Green housekeeping in a university involves implementing sustainable cleaning practices to reduce the negative environmental impact of cleaning products and processes. Some criteria associated with green housekeeping in a university:

Environmentally Friendly Cleaning Products: Using environmentally friendly cleaning products can reduce the amount of harmful chemicals that are released into the environment. Look for cleaning products certified by organizations such as Green Seal or EcoLogo, and avoid products that contain volatile organic compounds (VOCs) or other harmful chemicals.

Water Conservation: Implementing water conservation measures during cleaning can reduce water use, such as using low-flow cleaning equipment and mops and minimizing water use for rinsing. Additionally, using microfiber cleaning cloths can help reduce water usage and the amount of cleaning product needed.

Waste Reduction: Implementing waste reduction measures such as using reusable cleaning cloths and mops, and reducing the use of disposable cleaning products, can help to reduce the amount of waste generated by the cleaning process.

Energy Conservation: Utilizing energy-efficient equipment such as vacuums and floor polishers can help reduce energy consumption during cleaning.

Education: Providing education and training for cleaning staff on sustainable cleaning practices and the proper use of cleaning products can help to ensure that these practices are implemented effectively.

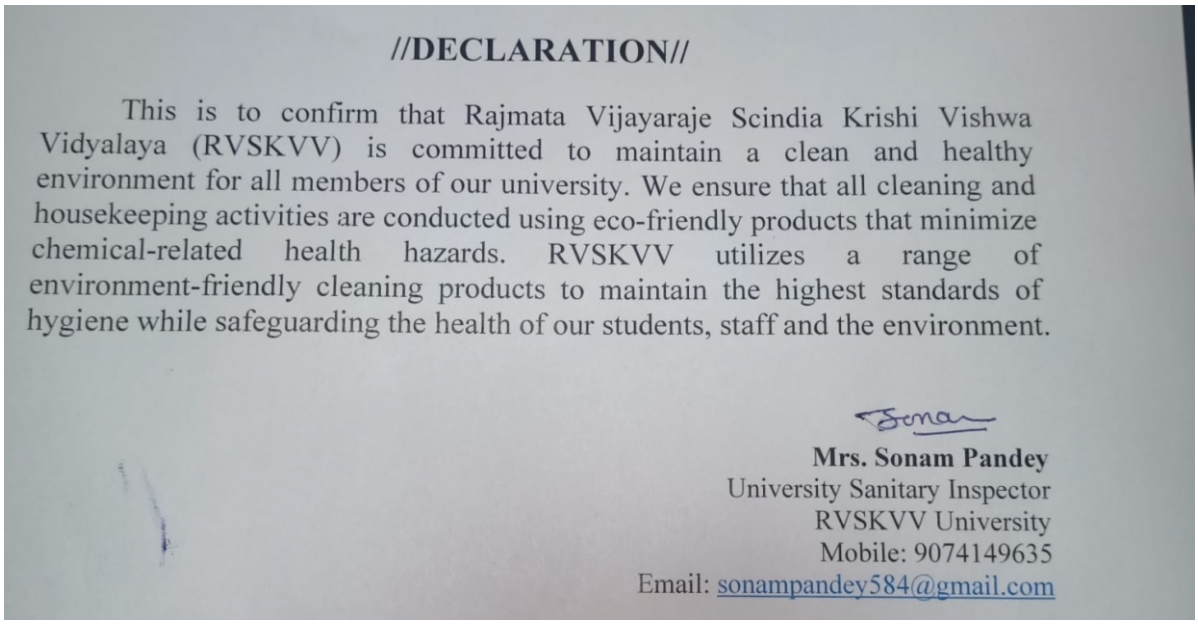
By implementing green housekeeping practices in a university, the campus can reduce its environmental impact, improve indoor air quality, and promote sustainability. These practices can also improve the health and well-being of students, faculty, and staff by reducing their exposure to harmful chemicals and allergens.

HEALTH & HYGIENE PRACTICES

7. Green Housekeeping

RVSKVV, Gwalior has implemented green housekeeping practices to minimize the environmental impact of its cleaning operations. The university uses eco-friendly cleaning products free from harmful chemicals, ensuring a safe and healthy environment for its students and staff.

These practices extend to all campus facilities, including classrooms, restrooms, and common areas. By prioritizing green housekeeping, RVSKVV, Gwalior reduces its ecological footprint and sets a positive example for sustainable practices within educational institutions.



//DECLARATION//

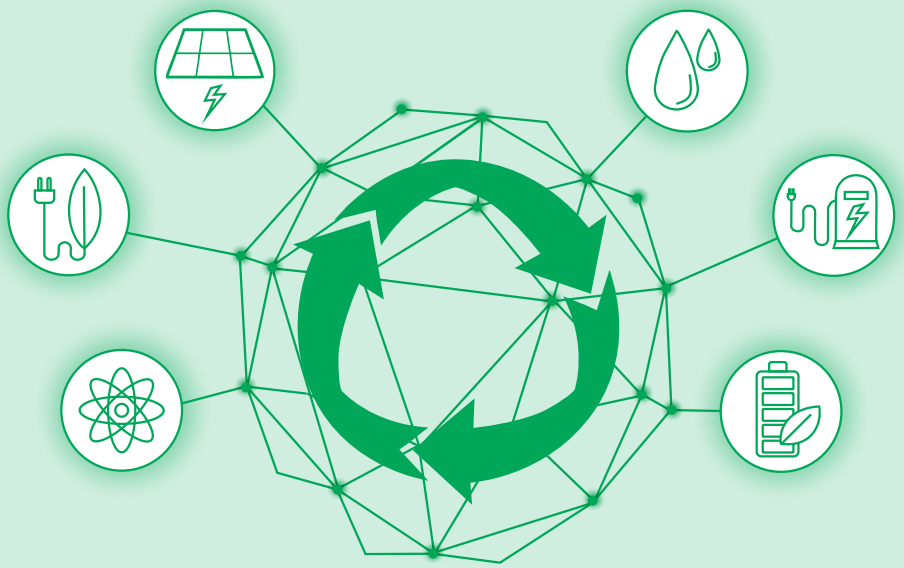
This is to confirm that Rajmata Vijayaraje Scindia Krishi Vishwa Vidyalaya (RVSKVV) is committed to maintain a clean and healthy environment for all members of our university. We ensure that all cleaning and housekeeping activities are conducted using eco-friendly products that minimize chemical-related health hazards. RVSKVV utilizes a range of environment-friendly cleaning products to maintain the highest standards of hygiene while safeguarding the health of our students, staff and the environment.

Sonam

Mrs. Sonam Pandey
University Sanitary Inspector
RVSKVV University
Mobile: 9074149635
Email: sonampandey584@gmail.com

Cumulative Score	56/70

SUSTAINABLE RESOURCES UTILIZATION



A Green University should prioritize water conservation practices, such as low-flow faucets and toilets, to reduce water consumption on campus. The University can also implement rainwater harvesting systems to collect and reuse rainwater for non-potable uses like landscaping or toilet flushing.

Materials Management: A Green University should prioritize materials management practices, such as recycling and composting, to reduce the amount of waste sent to landfills.

Energy Conservation: A Green University should prioritize energy conservation practices, such as energy-efficient lighting and appliances, to reduce energy consumption on campus.

Transportation: A Green University should prioritize sustainable transportation practices, such as biking, walking, and public transit, to reduce the carbon footprint of transport on campus.

Land Use: A Green University should prioritize sustainable land use practices, such as preserving green space and wildlife habitat, to promote biodiversity and ecosystem health.

Procurement: A Green University should prioritize sustainable procurement practices, such as purchasing products from sustainable materials and minimizing packaging waste.

Education and Outreach: A Green University should prioritize education and outreach efforts to promote sustainable resource utilization among its students, faculty, and staff.

Sustainable resource utilization in a Green University should prioritize water conservation, materials management, energy conservation, sustainable transportation, land use, procurement, and education and outreach. A Green University can promote a more sustainable future by implementing these practices.

SUSTAINABLE RESOURCES UTILIZATION

1. Waste Segregation

Waste segregation in a university separates different types of waste materials for proper disposal or recycling. Proper waste segregation is crucial for managing waste effectively and reducing waste in landfills.

Waste segregation guidelines for a university:

Education and Training: Proper education and training on waste segregation should be provided to all members of the university community, including students, faculty, and staff. This includes information on what types of waste can be segregated, how to segregate waste properly, and the importance of waste segregation for sustainability.

Bin Placement: Adequate waste bins should be placed throughout the university, with clear signage indicating which types of waste should be placed in each bin. Color coding can also be used to help with waste segregation. For example, blue bins can be used for paper and cardboard, green bins for organic waste, and yellow bins for plastic and metal.

Collection and Transport: Proper collection and transport of segregated waste materials is important to ensure they are properly disposed of or recycled. Separate collection vehicles can be used for each type of waste material to ensure that they are not mixed together during transport.

Recycling Infrastructure: The university should have adequate recycling infrastructure to recycle segregated waste materials properly. This includes recycling facilities for paper, plastic, metal, and other recyclable materials.

By implementing waste segregation in a university, the campus can significantly reduce the amount of waste in landfills, promote sustainability, and save resources by recycling materials that would otherwise be discarded.

SUSTAINABLE RESOURCES UTILIZATION

1. Waste Segregation

RVSKVV, Gwalior has established a comprehensive waste segregation system to manage and reduce waste on campus effectively. The university employs color-coded bins strategically across the campus to ensure proper waste sorting into organic, recyclable, and non-recyclable categories.

This proactive approach minimizes waste sent to landfills and maximizes recycling efforts, aligning with the university's sustainability goals. Regular training and awareness programs are conducted to educate students and staff about the importance of waste segregation, fostering a culture of environmental responsibility and stewardship.

SUSTAINABLE RESOURCES UTILIZATION

2. Organic Waste Management

Organic waste management in a university involves properly handling, treating, and disposing of food waste and other organic materials generated on campus. Organic waste management tips for the university:

Source Separation: One of the critical components of organic waste management is source separation. This involves separating food waste and other organic materials from waste streams such as paper, plastics, and metals. The university should provide separate bins for organic waste in high-traffic areas such as dining halls and kitchens.

Composting: Composting is a natural process where microorganisms break down organic materials to create nutrient-rich soil. Composting can be a cost-effective and sustainable way to manage organic waste on campus. The university can establish on-site composting facilities or work with local composting facilities to process organic waste.

Anaerobic Digestion: Anaerobic digestion is another method for managing organic waste that involves using microorganisms without oxygen to break down organic material. This process can produce biogas, which can be used to generate energy.

Education and Outreach: Proper education and outreach are crucial to the success of organic waste management programs in universities. The university should provide information on the importance of organic waste management, how to correctly separate organic waste, and how to participate in composting programs.

By implementing organic waste management in a university, the campus can significantly reduce the amount of organic waste in landfills, promote sustainability, and create valuable resources such as compost and biogas.

SUSTAINABLE RESOURCES UTILIZATION

2. Organic Waste Management

RVSKVV, Gwalior is committed to sustainable waste management practices and strongly focuses on organic waste management. The university utilizes on-site composting facilities to process organic waste generated on campus, transforming it into nutrient-rich compost for use in campus gardens and landscaping.

This approach reduces the volume of waste sent to landfills, supports sustainable agriculture, and reduces the need for chemical fertilizers. RVSKVV, Gwalior exemplifies its dedication to environmental sustainability and circular economy principles through initiatives like vermicomposting and organic waste recycling.

SUSTAINABLE RESOURCES UTILIZATION

3. Greening Education Policy

A greening education policy can provide a roadmap for universities to reduce their environmental impact and promote sustainability on campus while also creating a culture of environmental stewardship among students, faculty, staff, and other stakeholders. A "Greening Education" policy for a university may include the following elements:

Curriculum Integration: The policy should promote the integration of sustainability principles and practices into all aspects of the university's academic programs, including general education requirements, majors, and graduate programs.

Professional Development: The policy should provide opportunities for faculty and staff to learn about sustainability principles and practices and how to integrate them into their teaching, research, and operations.

Campus Operations: The policy should encourage the university to adopt sustainable practices, such as green building design and construction, energy and water conservation, waste reduction and recycling, sustainable transportation, and the use of renewable energy sources.

Research and Scholarship: The policy should encourage and support research and scholarship that advances sustainability science and addresses pressing environmental, social, and economic challenges.

Community Engagement: The policy should encourage the university to engage with its local and global communities to promote sustainability, such as through outreach and education programs, community gardens, and sustainability-focused events and initiatives.

Partnerships and Collaboration: The policy should encourage partnerships and collaboration with other universities, government agencies, and private sector organizations to advance sustainability efforts and share best practices.

Monitoring and Reporting: The policy should establish a system for monitoring and reporting on the university's progress in achieving its sustainability goals and regularly reporting on its performance to stakeholders.

A greening education policy can provide a framework for universities to integrate sustainability principles and practices into all aspects of their operations, research, and education, promoting environmental stewardship, social responsibility, and economic viability for future generations.

SUSTAINABLE RESOURCES UTILIZATION

3. Greening Education Policy

RVSKVV, Gwalior has implemented a comprehensive green policy that guides its sustainability efforts across all aspects of campus life. The policy emphasizes reducing environmental impact, promoting energy efficiency, conserving natural resources, and fostering a culture of sustainability among students, staff, and faculty.

This green policy is a framework for the university's sustainability initiatives, encouraging responsible behavior and decision-making that prioritizes ecological well-being.

By integrating sustainability into its core values and operations, RVSKVV, Gwalior demonstrates its commitment to creating a sustainable and environmentally conscious campus community.

SUSTAINABLE RESOURCES UTILIZATION

4. Salvaged Materials

The use of salvaged materials in universities can contribute to sustainable and environmentally responsible construction practices. Salvaged materials are typically reclaimed or reused from existing structures or buildings rather than being newly produced and can include items such as reclaimed wood, repurposed metal, or refurbished fixtures.

Incorporating salvaged materials into university construction projects can offer several benefits, including reducing the demand for new materials and the associated energy and resources required for their production. It can also reduce the amount of waste sent to landfills and provide unique and characterful design elements that contribute to a sense of history and place.

However, when incorporating salvaged materials into university projects, it is important to ensure that they are of high quality and suitable for their intended use. It is also important to work with experienced professionals who are knowledgeable about salvaged materials and their appropriate applications.
Additionally, proper documentation and tracking of salvaged materials can help ensure that they are sourced ethically and that their environmental benefits are accurately accounted for. Overall, the use of salvaged materials in universities can help to promote sustainable and environmentally responsible construction practices.

SUSTAINABLE RESOURCES UTILIZATION

4. Salvaged Materials

RVSKVV, Gwalior prioritizes using salvaged materials in its construction and renovation projects, significantly reducing the demand for new materials and minimizing waste. The university encourages the reuse of materials from deconstructed buildings and other sources, integrating them into new structures whenever possible.

This practice conserves natural resources and supports the university's sustainability goals by reducing the environmental impact of construction activities.

RVSKVV, Gwalior's commitment to using salvaged materials exemplifies its innovative sustainable construction and resource conservation approach.

SUSTAINABLE RESOURCES UTILIZATION

5. Eco-friendly Wood Based Materials

The use of eco-friendly wood-based materials in university construction can contribute to sustainable and environmentally responsible building practices.

Eco-friendly wood-based materials are typically made from sustainably sourced or recycled wood and often have a reduced environmental impact compared to traditional wood-based materials.

Examples of eco-friendly wood-based materials include bamboo, which is a rapidly renewable resource that can be used for flooring, furniture, and other applications.

Another example is reclaimed wood, which is salvaged from old buildings or structures and repurposed for use in new construction projects. Additionally, there are composite wood materials made from recycled wood fibers and plastics, which can be used for decking, cladding, and other applications.

Using eco-friendly wood-based materials in university construction can offer several benefits, including reducing the demand for new wood and the associated energy and resources required for their production. It can also reduce the amount of waste sent to landfills and promote sustainable forestry practices that protect the environment.

However, it is important to ensure that eco-friendly wood-based materials are of high quality and suitable for their intended use. It is also important to work with experienced professionals who are knowledgeable about eco-friendly materials and their appropriate applications.

Overall, the use of eco-friendly wood-based materials in universities can help to promote sustainable and environmentally responsible building practices while also creating a healthy and inspiring learning environment for students and staff.

SUSTAINABLE RESOURCES UTILIZATION

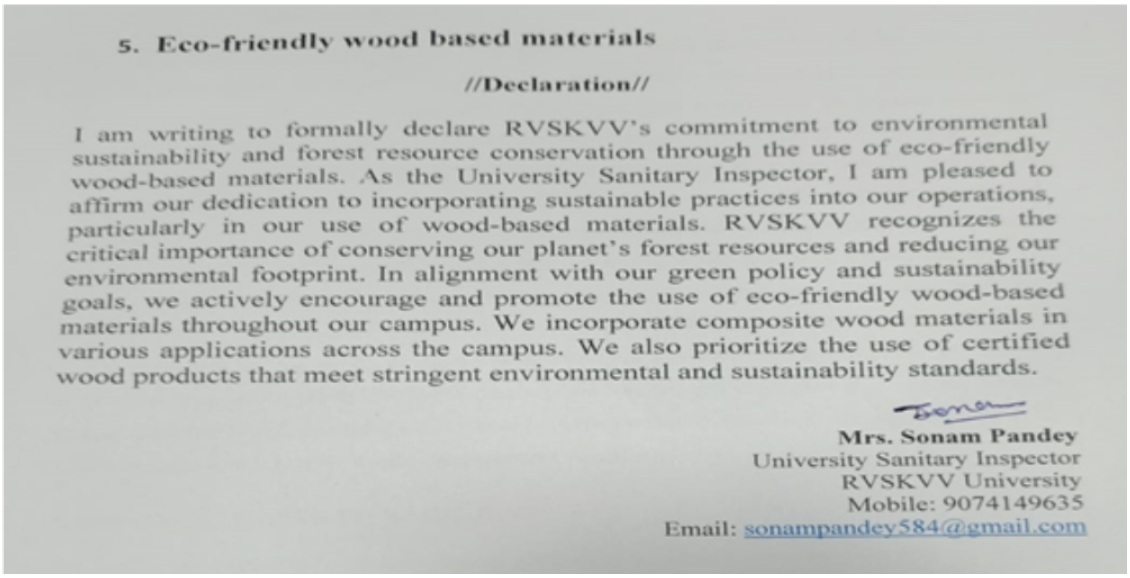
5. Eco-friendly Wood Based Materials

RVSKVV's is committed to sustainable resource use and prioritizes eco-friendly wood-based materials in its construction and furnishing projects.

The university selects certified composite wood and other sustainable materials that have minimal impact on forests and biodiversity.

By choosing eco-friendly wood options, RVSKVV, Gwaliorsupports responsible forestry practices and reduces its ecological footprint.

This approach aligns with the university's broader sustainability objectives, highlighting its dedication to environmental stewardship and resource conservation.



5. Eco-friendly wood based materials

//Declaration//

I am writing to formally declare RVSKVV's commitment to environmental sustainability and forest resource conservation through the use of eco-friendly wood-based materials. As the University Sanitary Inspector, I am pleased to affirm our dedication to incorporating sustainable practices into our operations, particularly in our use of wood-based materials. RVSKVV recognizes the critical importance of conserving our planet's forest resources and reducing our environmental footprint. In alignment with our green policy and sustainability goals, we actively encourage and promote the use of eco-friendly wood-based materials throughout our campus. We incorporate composite wood materials in various applications across the campus. We also prioritize the use of certified wood products that meet stringent environmental and sustainability standards.

Mrs. Sonam Pandey
University Sanitary Inspector
RVSKVV University
Mobile: 9074149635
Email: sonampandey584@gmail.com

SUSTAINABLE RESOURCES UTILIZATION

6. Materials with Recycled Content

The use of materials with recycled content is an important aspect of sustainability in university buildings. This includes materials such as recycled steel, glass, plastic, and concrete.

By using these materials, the demand for virgin materials is reduced, which helps to conserve natural resources and energy. In addition, using recycled materials can help to reduce the amount of waste that ends up in landfills.

There are several ways that universities can incorporate materials with recycled content into their buildings. One way is to specify these materials in construction contracts and to work with contractors and suppliers to ensure that they are used. Another way is to require that a certain percentage of materials used in construction and renovation projects are made from recycled content.

It's also important to note that not all materials with recycled content are created equal. The quality and environmental benefits of recycled materials can vary depending on factors such as the manufacturing process, the source of the recycled content, and the end-of-life disposal options for the material.

Therefore, it's important to carefully evaluate the environmental impact of different materials before selecting them for use in university buildings.

SUSTAINABLE RESOURCES UTILIZATION

6. Materials with Recycled Content

RVSKVV's actively incorporates materials with recycled content into its infrastructure projects, reducing the environmental impact of its construction activities.

By using products like recycled concrete, fly ash bricks, and aluminum, the university minimizes the consumption of virgin materials and supports the recycling industry.

This practice conserves natural resources and demonstrates RVSKVV's commitment to sustainable construction and innovative resource management. The university's use of recycled materials underscores its dedication to reducing waste and promoting environmental sustainability.

SUSTAINABLE RESOURCES UTILIZATION

7. Local Materials

RVSKVV, Gwalior emphasizes using locally sourced materials in its construction and renovation projects, minimizing the carbon footprint associated with transportation and supporting local economies.

The university reduces transportation emissions and fosters regional economic growthby sourcing materials from local suppliers. This approach aligns with RVSKVV 's sustainability goals, demonstrating its commitment to environmentally responsible practices and community engagement.

Using local materials further highlights the university's dedication to reducing its environmental impact and promoting sustainable development.

GREEN MENTORS

Powered by Law of Nature

Special Consultative Status with the
Economic and Social Council of United Nations from 2021

B, 802, Mondeal Heights, Near Wide Angle Cinema, S. G. Highway, Ahmedabad - 3800 015

+91-96242 70773 I +91-79-49000160 info@greenmentors.in www.greenmentors.in

#401, 67 W Street, Brooklyn, New York -11222

+ 17186733942 info@greenmentors.world www.greenmentors.world

aashe member | eauc The Alliance for Sustainability Leadership in Education Educational Member | GREEN UNIVERSITY | naaee North American Association for Environmental Education | ASU Prep Digital Arizona State University | WORLD ECONOMIC FORUM | CLIMATE NEUTRAL NOW

GREEN, ENERGY & ENVIRONMENTAL AUDIT REPORTS

OF

CoA, Gwalior

2022-2025

Rajmata Vijayaraje Scindia Krishi Vishwavidyalaya

Raja Pancham Singh Marg, Near Akashwani, Gwalior, (M.P.)

Green Audit Report

2023-24

Green Audit Report Structure

INTRODUCTION

OVERVIEW OF COLLEGE

VISION AND MISSION

AUDIT PARTICIPANTS

EXECUTIVE SUMMARY

GREEN AUDIT ANALYSIS

- 1.1 GENERAL INFORMATION OF COLLEGE
- 1.2 WASTE MINIMIZATION AND RECYCLING
- 1.3 GREENING THE CAMPUS
- 1.4 WATER & WASTE WATER MANAGEMENT
- 1.5 ANIMAL WELFARE
- 1.6 CARBON FOOTPRINTS

INITIATIVES TAKEN BY COLLEGE

RECOMMENDATION

CONCLUSION

Acknowledgement

We would like to thank the management of COA for assigning this important work of Green Audit. We appreciate the co-operation to the teams for completion of assessment.

We are thankful to Team IQAC for continuous support and guidance and inputs from time to time, 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 would like to thank Management and ***(Principal),*** **COA** for giving us an opportunity to evaluate the environmental performance of the campus.

Disclaimer

Audit Team has prepared this report for **COA** 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 there port.

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

Management and its staff and other related stakeholder shall keep confidential all information relating to your organization 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.

COA Staff, Stakeholders and accreditation bodies have signed individual confidentiality undertakings and will only receive confidential information on a 'need to know' basis.

Concept & Context

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. Green Audit is assigned to the Criteria 7 of NAAC, National Assessment and Accreditation Council which is a self-governing organization of India that declares the institutions as Grade A, Grade B or Grade C according to the scores assigned at the time of accreditation. Moreover, it is part of Corporate Social Responsibility of the Higher Educational Institutions to ensure that they contribute towards the reduction of global warming through Carbon Foot print reduction measures.

In view of the NAAC circular regarding Green auditing, the College management decided to conduct an external environment assessment study by a competent external professional auditor. The green audit aims to examine environmental practices within and outside the College campus, which impact directly or indirectly on the atmosphere. Green audit can be defined as systematic identification, quantification, recording, reporting and analysis of components of College/college environment. It was initiated with the intention of reviewing the efforts within the institutions whose exercises can cause risk to the health of inhabitants and the environment.

Through the green audit, a direction as how to improve the structure of environment and inclusion of several factors that can protect the environment can be commenced. This audit focuses on the Green Campus, Waste Management, Water Management, Air Pollution, Energy Management & Carbon Footprint etc. being implemented by the institution. The concepts, structure, objectives, methodology, tools of analysis, objectives of the audit are discussed below.

Introduction

Nowadays, the educational institutions are becoming more thoughtful towards the environmental aspects and as a result new and innovative concepts are being introduced to make them sustainable and eco-friendly. To preserve the environment within the institution, a number of viewpoints are applied by the several educational institutes to solve their environmental problems such as promotion of the saving the energy, waste recycle, water consumption reduction, water harvesting and many more...

Green auditing and the application of mitigation measures is a win-win situation for all the institutions, the learners and the mother earth. It can also result in health awareness and can promote the environmental awareness, values and beliefs. It provides a better understanding to staff and students about the Green impact on institution. Green auditing also upholds financialsavingsthroughreductionofresourceusage.Itgives anopportunitytothestudentsandteachersfor the development of ownership of the personal and social responsibility. The audit process involves primary data collection, site walk through with the team of College/college including the assessment of policies, activities, documents and records.

Mandate & Mission

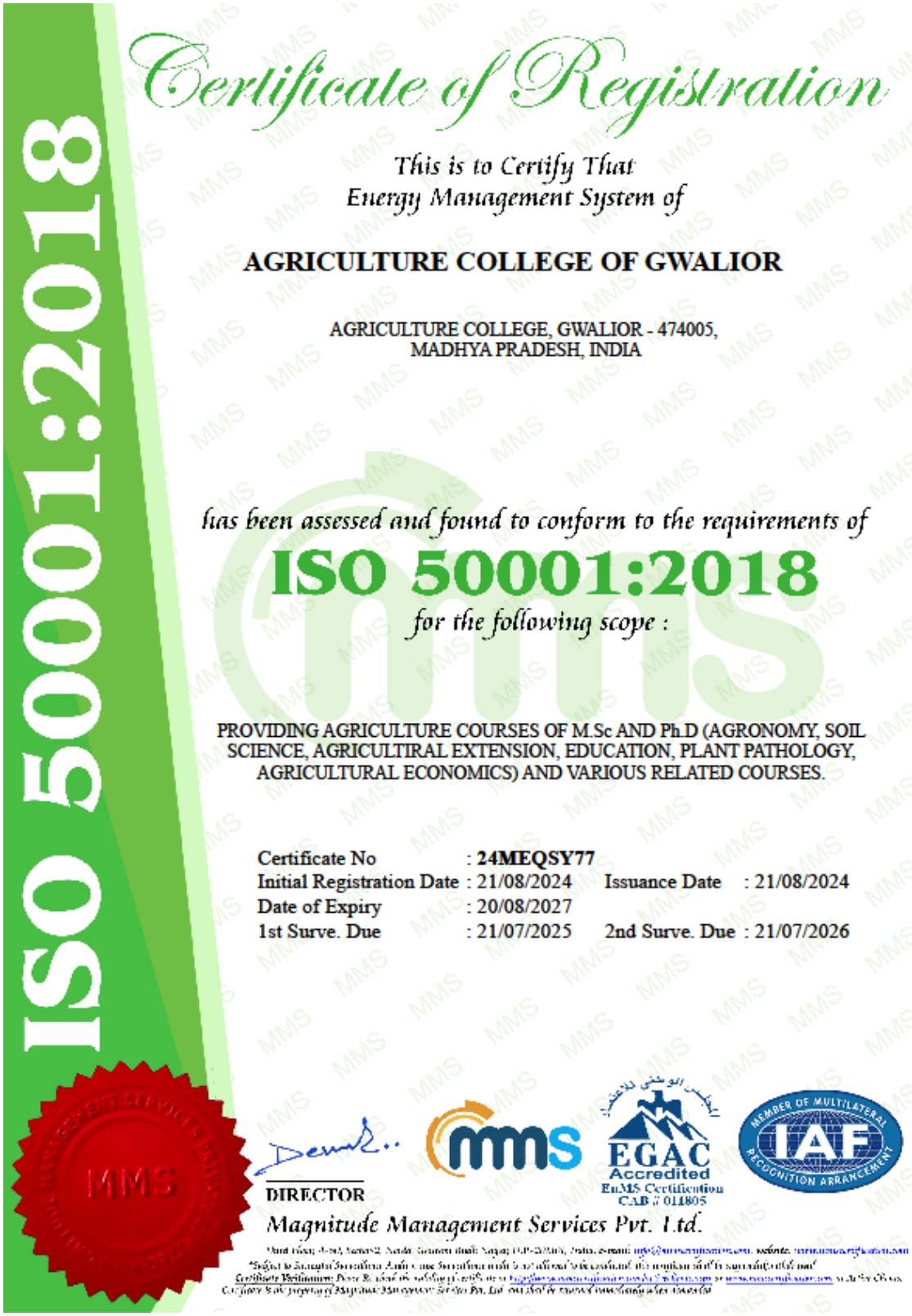
Our Mandate:

To serve as a center of higher education and research in the field of agriculture and allied sciences. To disseminate technology to farmers, extension personnel and organizations engaged in agricultural development through various extension programmes.

Our Mission:

To conduct education research and extension activities for enhancing productivity optimization of profit and sustainability of agricultural production system and improving rural livelihood in Madhya Pradesh.

ISO CERTIFICATE-



ISO 50001:2018

Certificate of Registration

This is to Certify That
Energy Management System of

AGRICULTURE COLLEGE OF GWALIOR

AGRICULTURE COLLEGE, GWALIOR - 474005,
MADHYA PRADESH, INDIA

has been assessed and found to conform to the requirements of

ISO 50001:2018

for the following scope :

PROVIDING AGRICULTURE COURSES OF M.Sc AND Ph.D (AGRONOMY, SOIL SCIENCE, AGRICULTIRAL EXTENSION, EDUCATION, PLANT PATHOLOGY, AGRICULTURAL ECONOMICS) AND VARIOUS RELATED COURSES.

Certificate No	: **24MEQSY77**		
Initial Registration Date	: 21/08/2024	Issuance Date	: 21/08/2024
Date of Expiry	: 20/08/2027		
1st Surve. Due	: 21/07/2025	2nd Surve. Due	: 21/07/2026

MMS

DIRECTOR

Magnitude Management Services Pvt. Ltd.

EGAC Accredited
EnMS Certification
CAB # 011805

MEMBER OF MULTILATERAL RECOGNITION ARRANGEMENT
IAF

IQCS Certification

CERTIFICATE of SUCCESSFUL COMPLETION

IRCA CERTIFIED TRAINING COURSE

LMS CERTIFICATION

This is to certify that

MR. RAJIV KUMAR DALELA

Attended and passed the Quality Management Systems (QMS) Auditor/Lead Auditor (ISO 9001:2015) Training Course No.: A18126 certified by IRCA

This course is certified by the International Register of Certificated Auditors and satisfies part of the formal training requirements for individuals seeking certification under the IRCA QMS 2015 Auditor Certification Scheme

Held in

INDIA

on

15th – 19th July 2016

Course Leader/Examiner:

In scientia veritas, In artes bonor

IQCS CERTIFICATION

Certificate Number:

A18126/418/2016

Note: This Certificate is valid for three years for the purposes of IRCA Auditor Certification.

CERTIFICATE

ICL
Integral Certification (P) Ltd.

This is to Certified That

Mr. Rajiv Kumar Dalela

Has Successfully Completed

Has passed the ongoing assessment and written examination required for successful completion of an ICL Certified

ISO 14001:2015 (Environmental Management System)
Transition Auditor Training Course

Integral Certification (P) Ltd.

Location of course: Lucknow

Date of Course: 14/12/2015

Certificate No: ICL/EMS/15/0021 *Course No: ICL/TR-E-15/15*

Training Head

ICL TRAINING

Integral Certification (P) Ltd.
(Formerly Indraprastha Certification (P) Ltd.)
U-60 (3rd Floor), Shakar Pur,Laxmi Nagar, Delhi-110092
email: info@iclcert.com
Website : www.iclcert.com
Contact No. : +91-11-33257055

For Precise and Updated information concerning this certificate visit at www.iclcert.com

GREENAUDIT-ANALYSIS

1.1 GENERALINFORMATION

1. **DoesanyGreenAuditconductedearlier?**

   yes

2. **Whatisthetotalstrength(peoplecount)oftheInstitute?(Pl. Fill the fields)**

	2023-24	2022-23	2021-22	2020-21	2019-20
Numberof students	673	633	678	657	631
Teachers	34	44	37	40	55
Non- Teaching Staff	36	39	37	41	45
Total	743	716	752	738	731
Number of Working days	241	243	242	246	240

3. **Whatisthetotalnumber ofworkingdaysofyourcampusinayear?**

   ??

4. **Whereisthecampuslocated?**

   Raja Pancham Singh Marg, Near Akashwani, Gwalior

5. **Whichofthefollowingareavailable inyourinstitute??**

   Gardenarea:Play ground :Kitchen: Toilets: GarbageOrWasteStoreYardLaboratoryCanteenHostelFacilityGuest House

6. **Whichofthefollowingarefoundnearyourinstitute??**

Municipaldumpyard
Garbageheap
Publicconvenience
Sewer
lineStagnant
waterOpen
drainage
Industry–
(Mentionthetype)Bus /
RailwaystationMarket/Shop

1.2 WASTEMINIMIZATIONANDRECYCLING

1. Doesyourinstitutegenerateanywaste?Ifso,whatarethey?

Yes-

2. Whatistheapproximateamountofwastegeneratedperday?(inKGapprox.)

Biodegradable waste –
Non-biodegradablewaste-

HazardousWaste<ifO
thers-

3. How isthewastemanagedintheinstitute?ByComposting,Recycling,Reusing,Others(specify)

??

4. Doyouuserecycledpaperininstitute?

??

5. Howwouldyouspreadthemessageofrecyclingtoothersinthecommunity?

??

6. Canyouachievezerogarbageinyourinstitute?Ifyes,how?

??

1.3 GREENINGTHECAMPUS

1. Isthereagardeninyourinstitute?

YES

2. Dostudentsspendtimeinthegarden?

YES

3. TotalnumberofPlantsinCampus?

Planttypewithapprox.count
*FullgrownTreesyes*1262
*SmallTrees:*1100
*HedgePlants:*1210
Grass Cover SQM

4. IstheCollegecampushavinganyHorticultureDepartment?(Ifyes,givedetails)

YES

5. How manyTreePlantationDrivesorganizedbycampusperannum?

??

6. IsthereanyPlantDistributionProgramforStudentsandCommunity?

??

8.IsthereanyPlantOwnershipProgram?

YES BY STUDENTS

1.4 WATERANDWASTEWATERMANAGEMENT

1. Listusesofwaterinyourinstitute

Basicuseofwaterin campus: ??

Drinking *–*

Gardening–

KitchenandToilets–

Others–

Hostel–

Total=KL/Month

2. Howdoesyour institutestorewater?Arethereanywatersavingtechniquesfollowedinyourinstitute??

Therearetotal_ _____literswaterstorageofwaterandboostingwithinthe College

Sl. No	*StorageType*	*Capacity*	*Quantity*	*Total(inLitres)*
1	*OVERHEADTANK*			
2	*OVERHEADTANK*			
3	*OVERHEADTANK*			
4	*OVERHEADTANK*			
5	*UNDERGROUNDTANK(Fire tank)*			
6	*UNDERGROUNDTANK*			
7	*UNDERGROUNDHEADTANK*			
	TOTALSTORAGECAPACITY			

SavingTechniques

- *Avoidoverflowofwatercontrolledvalvesareprovidedinwatersupplysystem.*
- *Closesupervisionforwatersupplysystem.*
- *WaterConservationawarenessfornewstudents*
- *Sprinklersusageforgardeningandgrasscover*

3. Locatethepointofentryofwaterandpointofexitofwastewaterinyourinstitute.??

Entry–

Exit-

4. Writedownwaysthatcouldreducetheamountofwaterusedinyourinstitute

Basicways: ??

- *Closethetapsafterusage:*
- *WaterConservationawarenessfornewstudents:*
- *Maintenanceandmonitoringofvalvesinsupplysystemtoavoidoverflow,leakageand spillage:*
- *Innewblock,pushtapareinstalledtosavewater:*

1.5 ANIMALWELFARE ??

1. Listtheanimals(wildanddomestic)foundonthecampus(dogs,cats,squirrels,birds,insects,etc.)

Dogs –
Cats _
Birds–

2. DoesyourinstitutehaveaBiodiversityProgramoraKARUNACLUB??

1.6 CARBONFOOTPRINT-EMISSION&ABSORPTION

1. Electricityusedperyear-CO2emissionfromElectricity

(electricityusedperyearinkWh/1000)x0.84
= /1000x0.84=
=ton

2. LPG/PNGusedperyear-CO2emissionfromLPG/PNG

(LPG/PNGusedperyearinKG)x2.99 =
x2.99=
=x2.99
=ton

3. DieselusedperyearCO2emissionfromHDS(Diesel)

(Dieselusedperyearinlitres)x2.68x2.
68
=x2.68=
=ton

4. Transportationperyear(car)CO2emissionfromtransportation(BusandCar)

_____*2.68=_____

TotalCO2emissionper yearcumulativebyelectricity usage+busandcartransportation(____Tons)

CARBONABSORPTIONBYFLORAINTHEINSTITUTION

Thereare 1262fullgrowntreesand1100s emigrowntrees Quartor grown trees1210-ofdifferentspecies,onthecampus spread overacres.
Carbonabsorptioncapacityofonefullgrowntree22kgCO2ThereforeCarbonabsorptioncapacity of _full-growntrees1262*6.8kg CO2=_11,301.6 kgs- tonsofCO2.

Thecarbonabsorptioncapacityof onesemi-growntreesis50%of thatof full-growntrees.Hencethecarbonabsorption 1100x3.4kg of CO2=3740 kgs_ tonsofCO2

Thecarbonabsorptioncapacityof onequartor-growntreesis50%of thatof semi-growntrees.Hencethecarbonabsorption 1210x1.7kg of CO2=2057 kgs_ tonsofCO2

TherareapproximatelyHedgePlantsofvariousspeciesbeingraisedinthegardensandgrown in the areas where no buildings are built Carbon absorption of bush plants varies widelywiththeirspecies.CertainbushesabsorbveryhighlevelofCO2whereassomeothersabsorbveryl ow level of CO2. In the absence of a detailed scientific study, 200g of CO, absorption is taken perbush(inconsultationwithEnvironmentalSciencespecialists).Basedonthis,totalcarbonabsorption ofbushesisx200g=tonsof CO2

Thelawnsonthecampushavegrassandcoveratotalareaof_ _____sq.ft.Carbonabsorptionc apacityofa10sq.ft.areaoflawnis1gperdayTherefore,carbonabsorptionbylawnarea _____x365x0.1gCO2=_____tonsCO2peryear.

Grandtotalof carbonabsorptioncapacityofthecampus is = = **tons.**

Green Initiatives by Campus

- **Solid Waste Management**

  - Waste management is done by composting.
  - Recycling of used paper is carried out in paper recycling plant.
  - There is ban on single use plastic and plastic crockery in the campus.

- **Tree Plantation Drives**
  - Five plantation drives were carried-out in the current year in the Campus.
  - Plants survival rate is around 85%

- **Air Pollution Reduction**
  - Personal Vehicles(Students)are not allowed in the campus
  - College is in process to pursue air quality monitoring by NABL approved lab.
  -

Environment Committee Initiatives – COA has an environment committee.

RECOMMENDATIONS

- Environmental parameters should be included in purchase policy to achieve a cradle to grave approach for sustainability.
- College should go for water balancing / audit for monitoring the use and wastage of water.
- Water meter should be installed at every building of institute for monitoring of water consumption per capita.
- College should start drip irrigation to save water in campus
- College should increase the use of Sprinklers for gardening purpose
- Flow rate of taps should be checked, it should not be more than2.5 litres/minute.
- Increase plantation drives in nearby local bodies, NGO and Municipal Corporation.
- Arrangetrainingprogrammesonenvironmentalmanagementsystemandnature conservation for schools and local people.
- Establish an E-waste collection center in campus.

Green building guidelines for future expansion projects of the campus.

AUDIT CERTIFICATE

PRESENTED TO

COLLEGE Of AGRICULTURE

GWALIOR, MADHYA PRADESH.

Has been assess by Vision Care Certification for the comprehensive study of environmental impacts on institutional working framework to fulfil the requirements of

GREEN AUDIT

The green initiatives carried out by the institution have been verified on the report submitted and was found to be satisfactory.

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

Auditor Signature **Date of Audit:**

A-Total average power consumption per year- 188,743.2*12=2,264919.2
B-Emission Factor 0.85
A*B= 2,264919.2*0.85= 1925181.3 Kg's of Co2 librated /year

Kg's of Co2 Absorbed by Trees= 17098 Kg's ?year

Electricity : Input value (in KWh/Yr) X 0.85 (Emission Factor) = Output value in (Kg of CO_2)

GREEN, ENERGY & ENVIRONMENTAL AUDIT REPORTS

OF

CoA, Indore

2022-2025

RAJMATA VIJAYARAJE SCINDIA KRISHI
VISHWAVIDYALAYA, GWALIOR

COLLEGE OF AGRICULTURE,
OLD SEHORE ROAD, INDORE (M.P.) 452001

1. INDEX

2. ACKNOWLEDGEMENTS

We Express Our Sincere Thanks to Dr. K.N. Pathak, Dean, College of Agriculture, Indore for his kind support and Giving us the assignment to contribute in their effort towards Green initiatives & efficient energy managementin thecollege.

We are highly indebted to IQAC Coordinator and IQAC Members for their guidance, intellectual advice and his kind support in completing the project.

Our boundless gratitude to other teaching and non-teaching staff associated with thisEnergy Audit, Environment Audit & Green Audit study of College of Agriculture, Indore (M.P.) for extending cooperation during collection of data and field study work.

We trust that the findings of this study will help the college in improving theirGreeninitiativetowards creating awarenessfor healthy andsustainable environment.

3. DISCLAIMER

WarrantiesandLiability

While every effort is made to ensure that the content of this report is accurate, the details provided “as is” makes no representations or warranties in relation to the accuracy or completeness of the information found on it. While the content of this report is provided in good faith, we do warrant that the information will be kept up to date, be true and not misleading, or that this report will always (or ever) be available for use.

While implementing the recommendations site inspection should be doneto constitute professional approach and adequacy of the site to be established withoutambiguityandweexcludeallrepresentationsandwarrantiesrelatingto the content and use of this report.

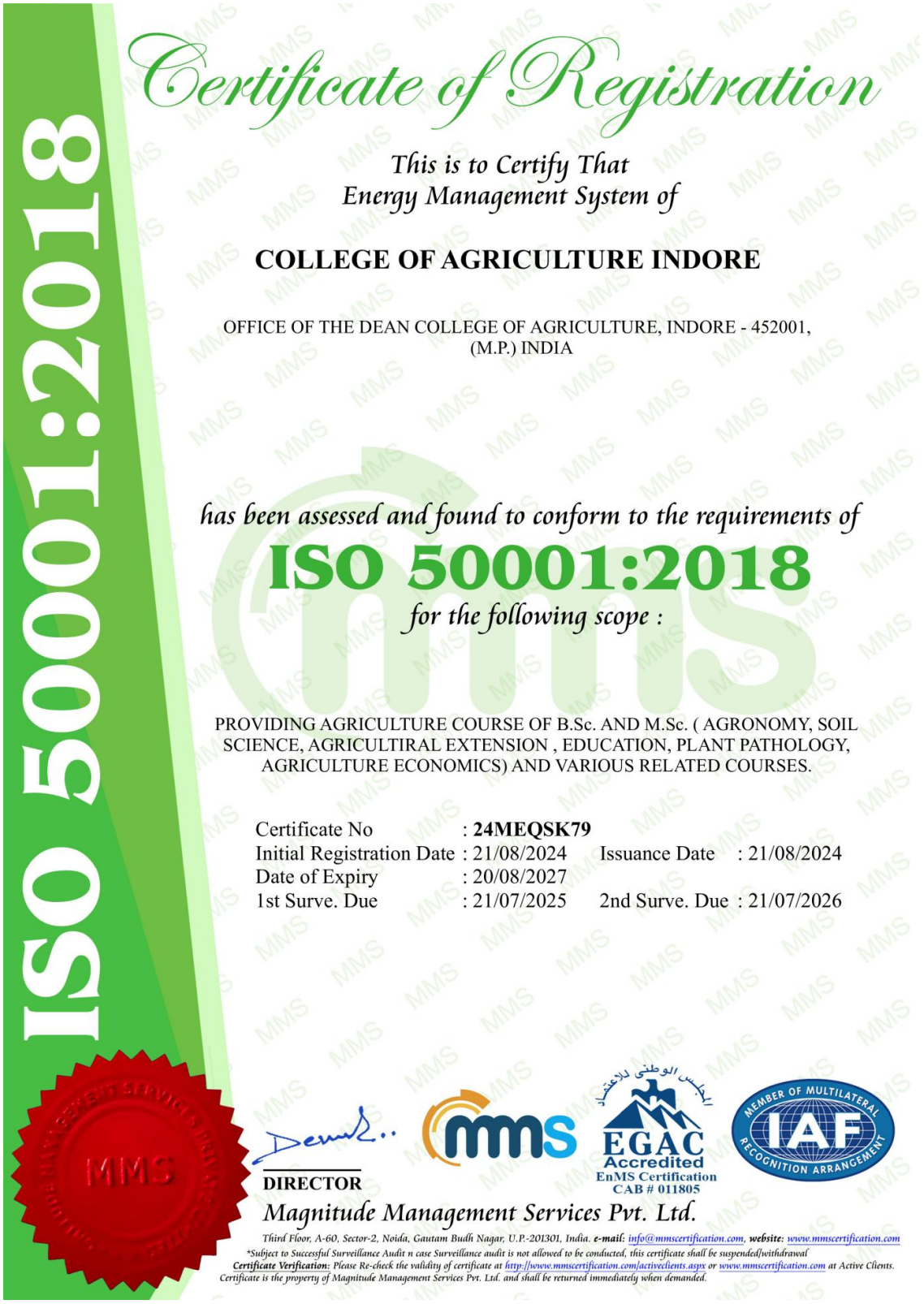
In no event We will be liable for any incidental, indirect, consequential or special damages of any kind, or any damages whatsoever,including, without limitation, those resulting from loss of profit, loss of contracts, goodwill, data, information, income, anticipated savings or business relationships, whether or not advised of the possibility of such damage, arising out of or in connection with the use of this report.

Exceptions

Nothinginthisdisclaimernoticeexcludesorlimitsanywarrantyimpliedby lawfordeath,fraud,personalinjurythroughnegligence,oranythingelse which it would not be lawful for to exclude.

We trust the data provided by the College of Agriculture, Indore (M.P.) personnelis true to their best of knowledge.

4. CERTIFICATE



5. AUDITOR'SCERTIFICATE

IQCS Certification

CERTIFICATE of SUCCESSFUL COMPLETION

IRCA CERTIFIED TRAINING COURSE

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Training Head

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(Formerly Indraprastha Certification (P) Ltd.)
U-60 (3rd Floor), Shakar Pur,Laxmi Nagar, Delhi-110092
email: info@iclcert.com
Website : www.iclcert.com
Contact No. : +91-11-33257055

For Precise and Updated information concerning this certificate visit at www.iclcert.com

ST

ICL TRAINING

6. INTRODUCTION

1. INTRODUCTION

About College of Agriculture, Indore:

Indore being an educational and a commercial hub enjoys the enviable status in Madhya Pradesh, the heart of the country. Its history depicts a rich and prosperous agricultural production. The year 1924 will always be known as a land mark for, the Institute of Plant Industry came into existence, to enhance the agriculture production and research opportunities. Scientists like Dr. Howard of international repute rendered their services in the institute. The hard work and dedication of the scientists of the institute impressed many eminent people including the father of the nation Mahatma Gandhi, who visited the institute to see the Indore Method of Composting already acknowledged by the world all over.

With the passage of time, in the year 1959 a major change took over, the establishment of the Government College of Agriculture with the merger of Institute of Plant Industry which has contributed significantly in the field of teaching, research and extension. With the establishment of Jawaharlal Nehru Krishi Vishwa Vidyalaya in the year 1964 at Jabalpur the College of Agriculture, Indore became its offshoot. Since then it has earned a place of distinction, thanks, to the numerous innovative research activities and teaching learning processes. In the year 2008 with the existence of Rajmata Vijayaraje Scindia Krishi Vishwa Vidyalaya, Gwalior the College of Agriculture, Indore became an integral part of this new university.

1.	NameofInstitution	College of Agriculture, Indore (M.P.) 452001
2.	AddressoftheInstitution	**Old Sehore Road, Indore (M.P.) 452001**
3.	UniversityAffiliatedto	Rajmata Vijayaraje Scindia Krishi Vishwa Vidyalaya, Gwalior (M.P.)
6.	NameofthePrincipal	Dr.K.N. Pathak
7.	Contact Number	0731 - 2492607 91+ 94251 45736
8.	EMail ID	Dean.indore@rvskvv.net

About College

Organizational setup -

The College was established with the establishment of Jawaharlal Nehru Krishi Vishwa Vidyalaya in the year 1964 at Jabalpur, the College of Agriculture, Indore became its offshoot. In the year 2008 with the existence of Rajmata Vijayaraje Scindia Krishi Vishwa Vidyalaya, Gwalior the College of Agriculture, Indore became an integral part of this new university. Dean is the Chief Executive of the College. He is supported by head of the Sections of eleven departments. Since its establishment the college has created a base for scientific research and education in a wide spectrum of areas. The College is functioning for Teaching, Research and Extension in Agriculture covering Malwa Plateau and Jhabua Hills Agro Climatic Zones. The College is offering education in Agriculture leading to B.Sc. (Ag) and M.Sc. (Ag) degree. **Rural Entrepreneurship Awareness Development Yojana** is also introduced as an innovative programme in B.Sc (Ag) curriculum. The UG and PG teaching is imparted through electronic media (PowerPoint presentation). For Bachelor degree programmes the admission is made through Pre Agriculture Test for Faculty of Agriculture organized by MP Board of Professional Examination, Bhopal. Admission in Post-Graduate studies is given on merit basis. Ten percent extra seats are created over and above the prescribed intake capacity for Indians living abroad and foreign nationals besides payment seats. The College has well equipped laboratories, library, instructional farm, ARIS cell linked with global information system, class-room facilities and qualified faculty. The students live in pleasant and intellectually stimulating environment with well-furnished hostels for boys and girls. Well-equipped Gymnasium, NCC, NSS, educational tours and agro-industrial information enable students to develop their personality, whereas placement cell guides them to choose the profession. Rural Agricultural Work Experience is imparted to the students to understand the real village farming situation.

DEPARTMENTS:

Department of Agricultural Economics
Department of Soil Science
Department of Agril. Extension Education
Department of Horticulture
Department of Agronomy
Department of Genetics and Plant Breeding
Department of Plant Pathology
Department of Entomology
Department of Crop Physiology
Department of Agriculture engineering
Department of Mathematics and Agricultural Statistics
Department of Livestock Production and Management

RESEARCH STATIONS & KRISHI VIGYAN KENDRA

Research stations:

Malwa plateau zone

Zonal Agricultural Research station -Indore
Zonal Agricultural Research station - Ujjain

Jhabua hills Zone

Zonal Agricultural Research Station - Jhabua

(B) Krishi Vigyan Kendras: Jhabua, Ujjain, Dhar, Manawar (Dhar-2), Shajapur, Dewas, Alirajpur & Agar-Malwa

Presently the college is one of the prime College in Madhya Pradesh, a Lead College Indore that provides research, teaching and extension services. The collegehasstudentstrengthofMoreThan593inthecurrentsession2023-24. Itholds the unique opportunity of being a mixed bowl of urban and rural students with gender equality. The college, sinceitscommencement,isserving societyand nation in asignificant way by providingvarious research activities through AICRP projects including varieties in soybean, Jowar, Safflower, Chick-pea etc. and deeply involved in of higher education to learners, making this a distinctive feature of thisinstitution.

The institution always cherished its location advantage for being situated close to Bus Stand.

	2023-24	2022-23	2021-22	2020-21	2019-20
Numberof students	**599**	**562**	**527**	**552**	**532**
Teachers	**20**	**20**	**20**	**26**	**30**
Non- Teaching Staff	38	36	33	45	45
Total	**657**	**618**	**580**	**623**	**607**
Number of Working days	240	235	242	176	232

Library

The college library is fully automated with CERA, KOHA library software, online database facility and well equipped withbooks,journals, periodicals and reading rooms. Book bank facility for SC and ST students.

CareerCounsellingandPlacementCell

Career Counselling and Placement Cell monitors activities related to job notificationsandopportunities,Interviewpreparation,development of entrepreneurial skills, organizing of campus Interviews besidesensuring maximum participation in campus recruitment and interviews. The cell worksin coordination with all Head of departments to cater to diverse need of students.It is activelyengaged in organizingInspirational lectures by experts.

It aims at guiding students towards cracking Civil Service exams, State Agriculture Department examination like RAEO, RHEO, ADA, ADH, Banking sector AOs. All India level examination like JRF, SRF, NET, ARS etc.The Cell alsoattemptsat encouraging students by providing them opportunities to interact with young officers, Researchers, newly appointed Asstt. Directorsin agriculture/ Horticulture, Agriculture Officer in Banks etc. who have already crackedtheexams.

Thecollegeismovingforwardwitha multi-prongedstrategy towardsexcellencewithaviewtocomeoutasaninstitutionofthe future that prepares the students equipped with knowledge, skill, aptitude and social commitment.

Generalissues:

➢ **AwarenessofEnvironmental policy**	Yes
➢ **Environmentalprotection rules**	• Banonsingleuseplastic • Properdisposalofdiscardedand unsafe materials of laboratories • Periodicuseofbicycles • Controlleduseofwater
➢ **Housekeepingschedule**	• Regulardustingandmoppinginclass rooms, veranda and laboratory areas
➢ **Activities done for environmentalcleanliness**	• Plantation • Awarenesscampaigns
➢ **CelebrationofImportantdays**	• WorldEnvironmentDay,EarthDay, Ozone Day, National Pollution preventionDay,VishwaShaochalya Diwas etc.
➢ **ParticipationinLocaland National Environmental protection movements**	• ParticipationinSwachhBharat Movement • ActivitiesthroughNSS,YRC

VISION

The vision is transformation to make self-sufficient, self-reliant nation with livelihood security of population, preparedness to futuristic challenges posed by climate change, to ensure socio-economic growth of farmers, to impart globally competitive education and technological disbursal.

"Social Transformation through Education."

Our objective is to evolve through collective leadership into a centre of academic excellence which, while retaining its regional roots, is able to surmount and objectify global concerns and their wide social perspective we tend to achieve a balance between academic practices, social empathy, cultural inclination and co-curricular activities so that we should gain our best inshaping young minds.

MISSION

"To impart education conduct research and extension activities for enhancing productivity, optimisation of profit and sustainability of agriculture and allied sector and improving rural livelihood in the state of Madhya Pradesh"

GOAL

To ensure good governance, flawless administration and sound human resource management to harness the full potential of the staff and student so as to transform a process driven institution into a result oriented organisation.

The Covid 19 brought in new challenges into the entire education system due to the sudden lockdown. Exams of the undergraduate classes and the teaching of thesemester classes were conducted online mode.

- The professors took the initiative of immediately opening the online teaching classes for the students. Video lectures, reading materials in the form of pdfs, audio lectures were uploaded to the college website for the benefit of the students.
- The students were also supported with their assignments and courses through Calls, Whatsapp groups, and U-tube lectures.
- The students of NSS, and NCC have supported the community during the lockdown by making and distributing masks, distributing sanitizers, explaining Social distancing in the markets and other public places

- ✓ **Auditing forEnergyManagementoftheCollegeofAgriculture for Environmental Consciousness and Sustainability.**

- ✓ **Alternate Energy initiatives such as: Percentage of annual power requirement of the Institution met by the renewable energy sources.**

- ✓ **Percentage of annual lighting power requirements met through LED bulbs (Current year data)**

7. ENERGYMANAGEMENT

Energy Management is the strategy of adjusting and optimizing energy, using systems and procedures so as to reduce energy requirements per unit of output while holding constant or reducing total costs of producing the output from these systems"

PrincipleofEnergyManagement

- ✓ Procureenergyatlowestpossibleprice
- ✓ Manageenergyuseathighestenergyefficiency
- ✓ Reusingandrecyclingenergy
- ✓ Selectlowinvestmenttechnologytomeetpresentrequireme ntand environment condition
- ✓ Makeuseofwastesgeneratedwithintheplantassourcesofenergyand reducing the component of purchased fuels and bills

7.1 EnergyScenario

Electrical energy is supplied by Madhya Pradesh State Power Distribution Company Limited. There are total six energy meter catering the electrical demand of College of Agriculture, Indore (M.P.) One of the LT connectionmeter is only for hostel and other five LT connections are catering the electrical demandof college premises.

Sl. No.	NameofConnections	IVRS Number	Service Number	Contract Demand in Watt	Tariff Category
1	New boys Hostel	N3373012797	3373012979	18000	LV2 [LV 2.1]
2	New Girls Hostel	N 3542034437	3542034437	0.0 KW	LV2 (LV 2.2)
3	Old Girls Hostel	N3542039996	3542039996	15000	LV2 (LV 2.2)
4	Gym building sport complex	N3373008015	3373008015	0.0 KW	LV2 (LV 2.2)
	Total			**33000**	

Table 1 :Analysis ofbillings of meters of College premise for the year 2024- 25

7.2 ElectricityBillAnalysis

We have analyzedtheelectricity bills ofall the connectionsof college premisesand hostel.

Analysis ofbillings of meters ofCollegepremises

2024-25	S.C.No.	ContractDemand in KW	Maximum Demand in KW	AverageUnit PerMonth
	BP No. 3373012797	18 KW	8.235	2998
	BP No. 3542034437	0.0 KW	0	82
	BP No. 3542039996	15 KW	10.726	3344
	BP No. 3373008015	0.0 KW	1	413
	Total			**6837**
	TotalAverageAnnualUnitConsumption 12* 6837=			
	KWh/year*.085= Kg.of C02/per year generated			

Table 2 :Analysis ofbillings of meters of College premise for the year 2024- 25

7.3 ConnectedLoadofCollegepremises

Segment	ElectricalEquipment	Wattage	Quantity	Totalloadin Watt
Lighting	LEDTL	20	320	6400
	FTLTL	40	65	2600
	LED Bulb	20	30	600
	LEDPanelLight	72	20	1440
	LED street light	70	25	1750
	TotalLightingLoad			**12950**
HVAC	CeilingFan	80	220	17600
	Wall Fan	70	50	3500
	Cooler18"	300	50	15000
	ExhaustFan12"	150	08	1200
	ExhaustFan14"	200	4	1000
	ExhaustFan18"	250	6	1500
	AirConditioner1.5T	1500	18	10000
	AirConditioner2T	2000	5	10000
	TotalHVACLoad			**59800**
Office Equipment	Computer	100	65	6500
	Printer	55	20	1100
	PhotoCopyMachine	600	10	6000
	U.P.S.	220	20	4400
	TotalOfficeEquipmentLoad			**18000**
Water Supply	Submersiblepump	750	2	1500
	TotalWaterSupplyLoad			**1500**
Others	WaterCoolerSmall	300	2	600
	WaterCoolerBig	600	2	400
	SmartBoard	150	3	450
	Inverter	350	2	700
	Generator	2000	1	2000
	TotalOtherConnectedLoad			**4150**
TotalConnectedLoadinWatt				**96400 KW**
TotalConnectedLoadin Kilo Watt (Say)				**96.4 (KW)**

Table3 :Connectedloadofcollege

7.4 Segmentwiseconnectedloadandtheirpercentages

Segment	TotalloadinKiloWatt	LoadinPercentage
Lighting	12950	13.43
HVAC	59800	62.03
WaterSupply	1500	1.5
OfficeEquipments	18000	18.60
Others	4150	4.3

Table4:Segmentwiseconnectedloadandtheirpercentages

7.5 ConnectedLoadofHostel

Segment	ElectricalEquipment	Wattage	Quantity	Total
Lighting	FTL40watt	40	35	1400
	LEDTL20Watt	20	65	1300
	LEDBulb	20	10	200
	LEDBulb			
	LEDStreetLight	70	12	840
	LEDStreetLight			
	TotalLightingLoad			**3740**
HVAC	Ceilingfan	60	70	4200
	WaterCooler	600	1	600
	TotalHVACLoad			**4800**
Others	Others			
TotalConnectedLoadinWatt				**8540**
TotalConnectedLoadinKiloWatt				**8.5 KW**

Table5:Connectedloadofhostel

TotalConnectedLoadinCollege

ConnectedLoadofCollege of Agriculture	96400
ConnectedLoadofHostel	8540
TotalConnectedLoadofCollegeincluding Hostel	**104.94 KW**

Table6:Totalconnectedloadincollege

Water Management

- **Auditing for Water Management of the instituteforEnvironmentalConsciousnessand Sustainability**

- **Rain water harvesting structures and utilization in thecampus**

8. WATERMANAGEMENT

This indicator addresses water consumption, water sources, irrigation, storm water, appliancesandfixtures.Aquiferdepletionandwatercontaminationare taking place at unprecedented rates. It is therefore essential that any environmentally responsible institution should examine its water use practices.

College of Agriculture, Indore (M.P.) gets water from municipal Corporation, Indore and oneground water bore well sources.

Two submersible pumps having rating of 7.5 HP are operated to lift water from Bore well and one submersible pump of 1 HP capacity is dedicatedly operated forgardening. College has presently 5 nos. Overhead water storage tanks each having capacity of average 3000 litre. Thus college have total14000 litre of water storage capacity.

College

Sl.No.	WaterTankCapacity	Numbers	TotalCapacity
1	5000	01	5000
2	2000	02	4000
3	1000	01	1000
4	4000	01	4000
TotalConsumptionofwaterinLitre			**14000 L**

Table7:Overheadwaterstoragetankcapacityincollege

Boys Hostel

Sl.No.	WaterTankCapacity	Numbers	TotalCapacity
1	1000	8	8000
2	500	2	1000
TotalCapacityinLitre			**9000 L**

Table 8 : Overhead waterstoragetankcapacityinhostel

Girls Hostel

Sl.No.	WaterTankCapacity	Numbers	TotalCapacity
1	1000	6	6000
2	50	16	8000
3	1000	02	2000
TotalCapacityinLitres			**16000 L**

Quantities of water taps and water coolers

Description	College	Hostel
Water Taps	40	80
WaterCoolers	04	04

- **AuditingforWasteManagementoftheinstitutefor Environmental Consciousness and Sustainability.**
- **WasteManagementstepsincluding:**
- **Solid wastemanagement**
- **Liquid waste management**
- **E-waste management**

9. WASTEMANAGEMENT

This indicator addresses waste production and disposal, plastic waste, paper waste, food waste, and recycling. Municipal solid waste has a number of adverseenvironmentalimpacts,mostofwhicharewellknownandnotinneed ofelaboration.Toreducewasteatinstitute,studentsandstaffareeducatedon properwastemanagementpracticesthroughlectures,advertisementonnotice boards, displaying slogan boards in the campus.

Waste is collected on a daily basis from various sources and is separated as **dry and wet waste**. Colour coded dustbins are used for different types of wastes. Green for wetand blue for solid waste.

Daily garbage is collected by housekeeping personnel and handed over to authorized personnel of District Municipal Corporation, Indore for further processing.

9.1 SolidWastemanagement

Solid waste can be divided into two categories: general waste and hazardous waste. General waste includes what is usually thrown away in homes and Collegesuchaspaper,plasticstinsandglassbottles.Hazardouswasteiswaste that is likely to be a threat to one's health or the environment like cleaning chemicals and petrol. Small bucket and big buckets are used for solid waste.

SmallPlasticbucket = 40 Nos.
Big Plastic Bucket =20 Nos.

Total Production of Solid Waste (Bio degradable) : 20-25 Kg

TotalProductionofSolidWaste(NonBiodegradable):3-5 Kg/ day

College also have two numbers of Napkins/Wending/Burning Machine

9.1.1 Non Bio Degradable Waste – Plastic Bottles / Waste Paper etc.

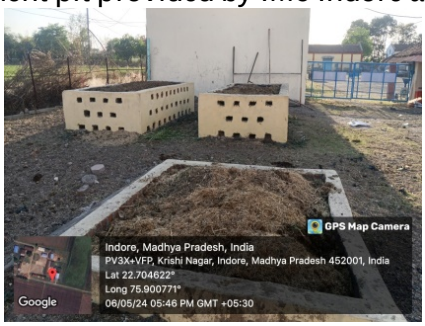
- Non-biodegradable are those waste, which cannot be decomposed by biological processes. These are of two types - Recyclable: waste having economicvaluesbutdestined fordisposal canberecoveredandreused along with their energy value. e.g. Plastic, paper, old cloth etc. Non-recyclable: waste which do not have economic value of recovery. e.g. Carbon paper, thermocol,tetra packs etc. Disposal of non-biodegradable waste is a major concern, not just plastic, a variety of waste being accumulated. There are a few ways to help non-biodegradable waste management. The impact of non-biodegradable waste on the environment and also focus on its safe disposal for sustainable environment.

- Waste material like plastic, papers etc. are collected and sold out to scrap vendor from time to time.

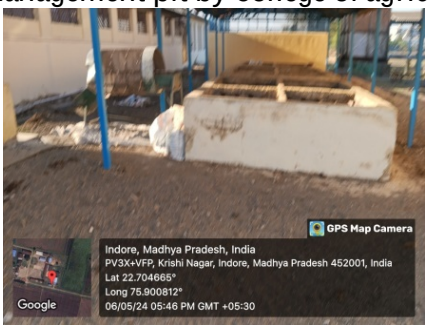
- Collegehasalsoplannedforcompostpittoproducecompostmanurefromthe research areas, dairy unit, hostels, residential areas, canteen solid waste and waste from other sources. Manure will be used for the purposeof research area, garden and forplantedtree.

Solid waste management

Solid waste management pit provided by IMC Indore at girls hostel building



Solid waste management pit by College of agriculture Indore



Solid waste management pit by College of agriculture Indore

Solid waste management vermin pit at farm area

Solid waste management pit at college campus by IMC Indore at college campus

कार्यालय नगर पालिक निगम, इंदौर
झोन क्र. 11

क्रमांक 129 - "प्रमाण पत्र" - दिनांक 20/05/2024

प्रमाणित किया जाता है,कि कृषि महाविद्यालय ,इन्दौर ओल्ड सिहोर रोड के सोस अपशिष्ट,तरल,ई वेस्ट प्रबंधन के अन्तर्गत महाविद्यालय मे उत्पन्न होने वाले सोस अपशिष्ट का निदान डिस्पोज का कार्य नगर निगम इन्दौर द्वारा किया है ,उक्त प्रमाण पत्र कृषि महाविद्यालय ,इन्दौर ओल्ड सिहोर रोड इन्दौर की मांग अनुसार प्रदान किया जाता है।

20/5/2024

Supporting documents for solid waste management

a. Re-useofwaterfromsurroundingarea

A temporary pond has been constructed beside the farm and research area to collect the water and treat as water harvesting unit. The pond serves as a recharge point source for underground water as well as while some of it is used for research purpose and irrigation of plants during off season.

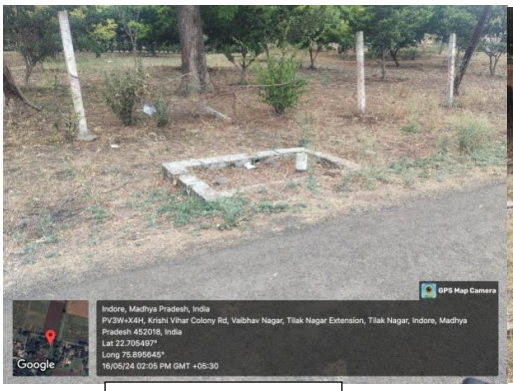
b. **Re-useofimpurewaterfromwaterpurifiers**

Impure drinking water is one of the main sources of infection, even mild poisoning, in many cases. Hence, it is important to use water purifiers in college campus. About 10 water purifiers are installed at various sites throughout thecollege campus.

Liquid waste management

Waste water deposition Tank at krishi Nagar Farm COA Indore

1. Rain water harvesting



Harvesting unit at girl hostel

Harvesting pit at college campus

Log 22.7000585 lat 75.90585 date 06.05.2024 5.30 GMT
lat

Rain water percolation & Harvesting tank at (dryland percolation tank)

Rain water percolation & Harvesting tank at (dryland percolation tank)

Rain water harvesting pit

9.2 E-WasteManagement

WasteElectricalandElectronicEquipment(WEEE)orE-wasteisoneofthefastest growing waste streamsin the world.Indeveloped countries,it equals1%oftotal solidwaste on an average.

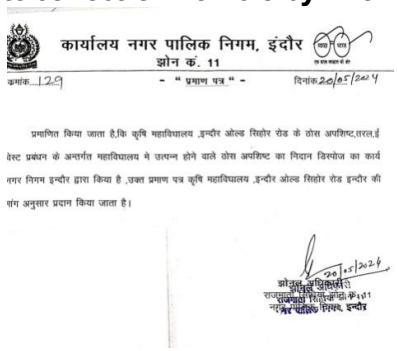
In developing countries, it ranges from 0.01% to 1% of the total municipal solid waste generation. In countries like China and India, though annual generation per capitaislessthan1kg,itisgrowingatanexponentialpace.Presently,averysmall amount of E-waste fromoffices andglass waste fromlabs is generated inCollege.

TheE-wastecollectedisstoredinstoreroomanddisposedeveryyearbygivingitto vendors.

E -Waste Management: -

E Waste collection pit at college level

E waste collection vehicle by IMC Indore



कार्यालय नगर पालिक निगम, इंदौर
झोन कं. 11

कमांक...129 - " प्रमाण पत्र " - दिनांक 20/05/2024

प्रमाणित किया जाता है,कि कृषि महाविद्यालय ,इन्दौर ओल्ड सिहोर रोड के ठोस अपशिष्ट,तरल,ई वेस्ट प्रबंधन के अन्तर्गत महाविद्यालय मे उत्पन्न होने वाले ठोस अपशिष्ट का निदान डिस्पोज का कार्य नगर निगम इन्दौर द्वारा किया है ,उक्त प्रमाण पत्र कृषि महाविद्यालय ,इन्दौर ओल्ड सिहोर रोड इन्दौर की मांग अनुसार प्रदान किया जाता है।

20/05/2024
झोनल अधिकारी
राजमाता सिंधिया वार्ड नं.11
नगर पालिक निगम, इन्दौर

E waste collection vehicle Run by IMC Indore

9.3 EnvironmentManagementPolicy:Leadingthewaytoacleaner andhealthier Environment

- Reducingdegradableandnon-degradablewastein thecampus
- Reducingpollution throughgases,heat,odor,chemicalsandhazardous microorganisms
- Reducingwaterconsumptionandwastage
- Appropriate training to staff and students for environmental awareness throughacademicprogrammesandcampusawarenessinitiatives
- Facilitationofresearchinsustainability

9.5.CorrectiveMeasureAdoptedbycollege

Measuresadopted	Impression
Use of energy conservation devises, Promotionofpaperlesswork,Reductionin e-waste	Safety duringexperimentation, powersaving,reduction insolidwaste
Timely disposal of spent materials, periodiccleaninganddisinfectionof tools, equipment and microscope,	Limited accumulation of waste, limited risk of health hazards
Useoflabcoatsduringexperiments, land fillingof animal waste and neutralization of strong chemicals beforereleaseintheenvironmentdisposal afteruse	Restricted accumulation of waste, limited risk of health hazards
CompulsionofLabcoats and hand gloves during experiments, use of biosafety cabinets during microbial transfer, Separate storage compartments for bacteria and fungi, Separateareafordecontaminationand washing, periodic cleaning and disinfectionofworkingarea,microscopes, deep refrigerators and incubators	Safetyandprotectionduringexperimentation, Reduction of generation of microbial aerosol,lesschancesofcross contaminationduring experiments, limited risk of health hazards
Compulsionof Lab coatsandhandglovesduringexperiments.	Safetyduringexperimentation
Segregationofpaperanddisposable plasticwasteinseparatebinsanddaily	Reductionintheaccumulatedwaste

MeasuresAdopted	Impression
a)Organizationofawarenesscampaigns andpromotionofgreenattitudethrough physical displays, awareness lectures	a)Acquiringtheknowledgeandimportance of environment, ensuingenvironmental protection rules, development of necessary environmentalandhealthrelatedskills,and values, understanding the concept of grey waterand continuous education to focus Reduce,Reuse&Recycle
b) Regular plantation, maintenance of plantshavingairpurificationpropertiesare preferred near conference room and laboratories.	b) Sustenance of Green environment inthe campus
C) Introduction of uniform solid waste managementsystemthroughsegregation bins and landfills.	c) Reduction in the amount of solid waste generatedandenvironmentalwasteburden in the campus
d)Provision ofsanitary napkindispensers ingirl'scommonroomandefficient disposal ofwaste throughincinerators	d)Noaccumulationofwaste
e)Regularmonitoringofoverheadwater storage PVC tanks for leakage, accumulationofwaternearbyandproper closure of lid	e) Effective and efficient use of effluxwater for gardening, washing and mopping. No entry and accumulation forlitter and overflowedwaternearoverheadwatertanks and rarer possibilityof mosquito breeding around the area
f) Rain water harvesting for judicious utilization of natural water resource throughchannelizationofrooftoprain waterforgroundwaterrecharge.	f) 'Catch the rain where it falls' Supportinggroundwaterrechargein support of water recycling

Green Audit

- ✓ **Green Campus Management and Carbon Footprint of theinstitute for Environmental Consciousness and Sustainability.**
- ✓ **GreenPractices**
- ✓ **Students,staffusing**
  a) **Bicycles**
  b) **PublicTransport**
  c) **Pedestrianfriendlyroads**
- ✓ **Plastic-freecampus**
- ✓ **Paperlessoffice**
- ✓ **Greenlandscapingwithtreesandplants**

10. GREENCAMPUSMANAGEMENT

Outcomes – Planting the trees helps to maintain clean, eco-friendly environment reduce pollution & improves the green ambience. As we know that trees are the foremost source for producing oxygen in the environment, they help to reduce the level of CO_2. As the whole world is facing the problem of global warming & another environmental related issue so as to recover from such a problem planting the trees is become in a one of the most vital aspects today.

Objective of Green Graduation: -

1.Create awareness about importance of environment, benefits of trees in premises and surrounding.

2.This is a student – centric programme having academic support, opportunity of research, commercial use and preservative of rare species.

3. To promote healthier, Kinder, smarter more effective more resilient, more beautiful more vital populace.

Concept: -

The Green Graduation Programme is a "One student- one tree" concept and is a part of the sustainable development goal by World Health Organization. As per this programme, students have to plant a sapling and are nurture it all through four years degree. At the end of their graduation, they will be awarded with a Green Graduation Certificate along with photo of plant nurtured by them. The seniors have the option of passing on the plant to their Junior too.

Our University has also initiated a unique and novel initiative known as Green Graduation Programme so as to provide every individual student a regular and diverse advantages of green wealth.

College of Agriculture Indore intends to implement it in its true spirit by assigning a student who gets enrolled to plant a sapling so as to develop environmental consciousness and love of nature among them thereby leaving an everlasting impression.

This college also followed our universities instruction hence many plants are planted by our students. The programme was undertaken by our college since 2019. Through the programme get obstructed due to Pandemic during 2021 and 2022. But after the recovery plantation was started. So far 3500 plant has been planted in our campus under Green Graduation Programme. Perhaps for the first time in the District our college will boast of having certified 'Green Graduates.' At least 85 students from our college of Agriculture Indore will be certified as 'Green Graduates.' by the end of this academic year. These students are part of the 'Green Graduates.' Programme launched by the University. Each one of them is maintaining one plant at Indore campus.

COLLEGE OF AGRICULTURE, INDORE (M.P.)

YEAR :.....2020-24.....

S.N.	NAME OF STUDENT	ROLL NO.	NAME OF PLANT	BOTANICAL NAME	FAMILY	VENUE	
1	Tarun Modi	20120173	Indian cherry	Cordia dichotoma	Boraginaceae	College campus	
2	Salvi Pandey	20130149	Rosebay	Nerium oleander	Apocynaceae	girls hostel	
3	Deepika Verma	20120117	weeping fig	ficus benjamina	Moraceae	College campus	
4	Ajay Patel	20120104	Royal Palm	roystonea regia	Arecaceae	college campus	

5	Jayesh Pathak	20130121	Nag Champa	Plumeria pudica	Apocynaceae	College campus	
6	Savinay mohabe	20120165	Rose	Rosa rubiginosa	Rosaceae	college campus	
7	vanshika sugandhi	20120177	Nag champa	plumeria pudica	apocynaceae	college campus	
8	vijay mishra	20120178	Karanj	Millettia pinnata	fabeace	college campus	
9	sapna dawar	20120163	Mango	Mangifera indica	anarcadiaceae	college campus	
10	Deepesh verma	200901016	Nag champa	Plumeria pudica	Apocynaceae	college campus	
11	Nisha raghuwanshi	20120145	karanj	Millettia pinnata	fabaceae	college campus	
12	Vidhi bundela	20110180	Ashok	Saraca asoca	fabaceae	college campus	
13	Ashutosh Patel	20120112	Ashok	*Saraca indica*	Fabaceae	College entrance	
14	Makhan kokanda	20120133	Neem	Azadirachta indica	Meliaceae	College campus	
15	Nikita Solanki	20120144	Madhu kamini	Murraya Paniculata	Rutaceae	Girls Hostel	
16	gopalkrishan leva	20120121	Mango	mengifera indica	anarcadiaceae	College campus	
17	ashish Vitthal	20120111	Nag champa	*Plumeria pudica*	apocynaceae	college campus	
18	Raj joshi	20150136	Nag champa	*Plumeria pudica*	apocynaceae	college campus	
19	Gaurav Yadav	20130118	Nag champa	*Plumeria pudica*	apocynaceae	college campus	
20	Preetam patidar	20120148	weeping fig	ficus benjamina	Moracea	college campus	
21	Shivendra baghel	20120187	Nag champa	*Plumeria pudica*	apocynaceae	college campus	
22	Arun Thakur	20120181	weeping fig	Ficus benjamina	Moracea	college campus	
23	Aanchal Mangulle	20120101	karanj	Millettia pinnata	Fabaceae	college campus	
24	Sukirti Bhargav	20120170	karanj	Millettia pinnata	fabaceae	college campus	
25	Chetna Patidar	20120114	Ashok	Saraca indica	fabaceae	college campus	
26	Bablu Dangi	20150105	Guava	Psidium guajava	Myrtaceae	boys hostel	
27	santra more	20120162	madhukamini	murraya paniculata	Rutaceae	girls hostel	
28	Tara yadav	20120172	Nag champa	Plumeria pudica	Apocvanceae	College campus	
29	Narendra Yadav	20120142	Nag chmpa	Plumeria pudica	Apocvanceae	College campus	
30	Tanushka Thakur	20120171	Madhukamini	Murraya paniculata	Rutaceae	Girls hostel	
30	Sapna Nagar	20120164	Madhu kamini	Murraya Paniculata	Rutaceae	Girls hostel	
31	Meenaxi Patidar	20120137	Madhukamini	Murraya paniculata	Rutacae	Girls hostel	
32	Manju jamle	20120135	Madhukamini	Murraya	Rutacae	Girls	

				paniculata		hostel	
33	Priyansh rawat	20120149	jamun	syzygium cumini	myrtaceae	boys hostel	
34	Kamesh Bankariya	20120127	Ashoka	Saraca indica	fabaceae	college campus	
35	vanshika Yadav 201046067 kaner Cascabela thevetia Apocynaceae girls hostel	201046067	White champa	Plumeria alba	Apocynaceae	Krishi nagar	
36	Sonu Akle	20120169	Ficus	Ficus bhenjamina	Moraceae	College campus	
37	Ranjana Vasunya	20120158	Ficus	Ficus bhenjamina	Moraceae	College campus	
38	Krishna Mujalde	20120131	Ficus	Ficus bhenjamina	Moraceae	College Campus	
39	mareena vl	20120146	rugmini	ixora coccinea	rubaceae	nursery	
40	pragya dhakad	20120147	madhu kamini	murraya paniculata	rutaceae	girls hostel	
41	Sumit Singh Parihar	20110177	Ashok	Saraca indica	fabaceae	college campus	
42	Dheeraj patel	20110123	Ashok	Saraca indica	fabaceae	college campus	
43	Priyanshi Choubey	20120150	royal palm	roystonea regia	Arecacea	college campus	
44	ADESH KANEL	20120103	Ashoka	***Saraca indica***	fabaceae	college campus	
45	Khushi Thakur	20120130	Madhukamini	Murraya paniculata	rutaceae	Girls Hostel	
46	Jitendra	20120124	vidhya	Platycladus orientalis	cypress	COA, indore	
47	jitendra patel	20120125	mango	mangifera indica	anarcadiaceae	coa indore	
48	Rajkumar Verma	20120157	Gulmohar	Delonix regia	Fabaceae	college campus	
49	Sukhlal Bhabar	20120168	Ashok	Sarraca Indiaca	Fabaceae	Boys Hostal	
50	Vishal marar	20120179	Mango	Mangifera indica	Anacardiaceae	Boys hostal	
51	Rahul Dangi	20120153	mango	Mangifera indica	anarcadiaceae	boys hostel	
52	Bhuri Dangi	20120182	rugmini	ixora coccinea	rubaceae	nursery	
53	Raj kushwah	20120154	Ashok	Saraca indica	fabaceae		
54	Shivani Hammad	20120166	Mango	Mangifera indica	Anacardiaceae	college campus	
55	Annapurna Tripathi	2120109	Madhukamini	Murraya paniculata	rutaceae	college campus	
56	Ankit Yadav	20120108	Peepal	ficus religiosa	moraceae	college campus	
57	Raveena Parmar	20120186	Nag champa	Plumeria pudica	apocynaceae	college campus	
58	Shubham	20120167	karanj	Millettia	Fabaceae	college	

	baghel			pinnata		campus	
59	Muneera Kausar Ansari	20120150	pink kaner	Nerium Oleander	Apocynaceae	krishi nagar	
60	janvi solanki	20120183	Mango	Mangifera Indica	Anacardiace	college campus	
61	Naman sharma	20120141	weeping fig	Ficus benjamina	moraceae	college campus	
62	Muskan rawat	20120185	mango	mangifera Indica	anacardiace	college campus	
63	Lalit kumar	20120132	mango	mangifera indica	anacardiace	boys hostel	
64	Rajendra Rajput	20120155	Ashok	Saraca indica	fabaceae	boys hostel	
65	Rahind Singh Yadav	200901047	Plumeria	Plumeria pudica	Apocynaceae	College campus	
66	Deepak meena	20120116	nagchampa	Plumeria pudica	apocynaceaecollege campus	College campus	
67	Anshika baghel	20120110	Madhukamini	Murraya paniculata	Fabaceae	Girls hostel	
68	Darshan yadav	20120115	Mango	Mangifera indica	Anarcardiaceae	Boys hostel	
69	Rohit Kumar barde	20120160	Mango	Mangifera indica	Anarcardiaceae	Boy Hostel	
70	Gokul dhanora	20120120	khirni	Manilkara hexandra	sapotaceae	boys hostel	
71	Sonu Ahirwar	19120169	chinaberry plant	Melia azedarach	Meliaceae	CoA, Indore	
72	Kuldeep singh goud	200201053	Karanj	pongamia pinnata	Fabaceae	college campus	
73	Tisha Gondey	20120175	Ashok	Saraca asoca	fabaceae	college campus	
74	Udit Tiwari	20120176	Ashok	Saraca asoca	fabaceae	college campus	
75	Keshav jat	20120128	mango	mangifera indica	anacardiaceace	boys hostel	
76	Vishal Umath	20120178	mango	mangifera indica	anacardiaceace	boys hostel	

GREEN GRADUATION PROGRAMME
COLLEGE OF AGRICULTURE, INDORE
B.Sc. (Ag.);Batch:- 2020-2024

B.Sc. (Ag.);Batch:- 2019-2023

10.1 GreenAudit

Green Audit defined as documented, verification process of specified environmental activities, events, conditions, management system. Green Audit can create awareness in college staff as well as students which are our responsibility too, to save our environment and also can find the ways to improveenvironmentalissueswhichareincreasingdaybyday.Environmental problems such as recycling of waste, water conservation and recycling, pollution control, plantation, biodiversity conservation etc. can solve through Green Auditing. Good growth come from good education as well as good mentalandphysicalhealthifweprotectourenvironment,wecanalsoprotect our health.

Green Audit means of assessing environmental performance. It is a systematic documentedperiodic,andobjectivereviewbyregulatedentitiesoffacility operationsand practices related to meeting environmental requirement. It is otherwise thesystematic examination of the interactions between any operation and its surroundings. This includes all emissions to air, land and water, legal constraints, the effects on the neighboring community,landscape andecology, the public's perception of the operating company in the local area. Green audit does not stop all compliance with legislation. Nor is it a 'green washing'publicrelationsexercise.Ratheritisa total strategic approach to theorganization's activities.

College Green Committee

The college Green committee was established in the college with a proactive attitude towards conservation of the environment and objective ofgenerating awareness and promoting environmental care at both individual and community level. The committee aims to create a permeating atmosphere facilitating conversation, action and feedbackon environmental issues engaging faculty, students and the general public. The institution looks at the macro-environmental perspective in the college andthe society and envisions nurturing the environmentwith a greener future.

10.2 GreenCampusPolicyofCollege

College of Agriculture, Indore is committed to develop its campuses as places where education is combined with environmental friendly practices to promoteSustainable Development by restricted entry of automobiles, promoting the use of Bicycles and provision of Pedestrian Friendly pathways, ban on use of disposable Plastics in line with the State Government Guidelines. creating awarenesswith stakeholders on the needfor maintaining greenery in the campus for sustainable ambience.

Encouraging all stakeholders to support and participate in ensuring green cover in the campus. Preserving age old trees and protect them to have prolonged life,enhancement ofgreen coverby landscapingwith trees and plants, conduct of green audit at regular intervals and implement the suggestionstowardscreatinggreencampus. Thefaculty,staffandstudents are encouraged to contribute collectively to develop an eco-friendly sustainable campus and disseminate the concept of eco-friendly cultureto the nearby community and wherever possible.

College of Agriculture, Indore envisions a clean and green university campus where ecological friendly practices and education combine to encourage sustainable and eco-friendly systemsin thecampusand beyond the campus. The green campus offers the organization a prospect to take the lead in redefining its green culture through promoting environmental ethics among students and staff The Institute also promotes clean and green campus through adopting, practicing and promotingenvironmentally friendly practices among students and staff to generate Eco consciousness among them and in the world aroundthem.

Objectives of the policy : To compose students by understanding the importanceof environmentanditsproblemareasImportantfunctionof the policy .

- Totrainstudentstocreateresponsivenessamongstpublic.
- Toencouragestudentstokeepenvironmentsafeandclean.
- To encourage students to adopt environment friendly practices which include paper bags, save .
- Tohelpthestudentstominimizetheuseofpollutingproduct.

WhyGreenAudit

The excessive environmental degradation is creating the "Environmental poverty". Thus, academic leaders should initiate the knowledgeand benefits ofresourcessothattheirinstitutionsrespondtoenvironmentalissuesand challenges.Webelievethatthereisanurgentneedtoaddressthese problems and reverse the trends of environment degradation.

OBJECTIVES-

- ✓ Toassessenvironmental performance
- ✓ Topromoteenvironmentalawareness
- ✓ Toimprovehealth

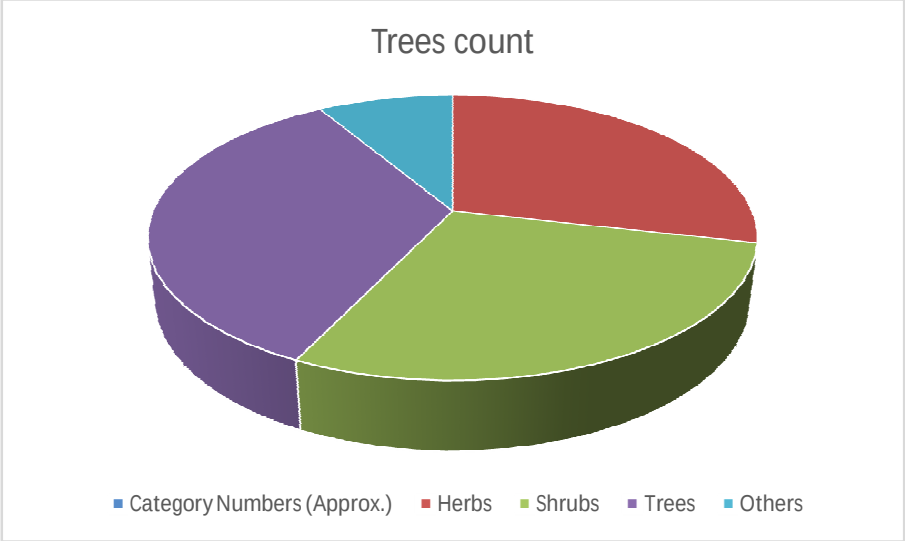
- ✓ Toconserveresources
- ✓ Toreducewaste
- ✓ Toimproveenvironmentalstandards
- ✓ Tosustainableuseofnaturalresources
- ✓ Todevelopresponsibilityaboutenvironment
- ✓ Toenhancecollegeprofile

PLANTATION-

To create Environmental awareness at the college campus we organize plantation program with all the staffs and students of our college. We try to plant more trees. To keep the greeneries in the campus we maintain the garden by paid staff under the guidance of garden committee members.

To create- green cover, eco-friendly atmosphere, pure oxygen at the collegecampus,plantationprogramisorganizedeveryyearwithinvolving all students, principal, and all departments faculty members. In this session van mahotsavprogramwasorganizedandabout150 ornamentals,avenue, medicinalplantwithrareandexoticbeautifultreeswasplantedincampus. Moreover, every year we try to plant new trees. Therearesomanyplantsarepresentinourcollege campus categorized below-

Category	Numbers(Approx.)
Herbs	1000
Shrubs	1000
Trees	1200
Others	300



IDENTIFICATIONOFPLANTSPECIES:

Thereareso manyplant speciesare present atcollege campus.

10.3 Carbon Footprint

A carbon footprint is the amount of greenhouse gases—primarily carbon dioxide—releasedintotheatmospherebyanindividual,event,organization, service,orproduct,expressedascarbondioxideequivalent.Inadditiontothe water,waste,energyandbiodiversityauditswecanalsodeterminewhatour carbon footprint is, based on the amount of carbon emissions created. The release of carbon dioxide gas into the Earth's atmosphere through human activities is commonly known as carbon emissions.

Animportantaspectofdoinganauditistobeabletomeasureourimpactso that we can determine better ways to manage the impact. In addition to the water,waste,energyandbiodiversityauditswecanalsodeterminewhatour carbon footprint is, based on the amount of carbon emissions created.

A) Thefollowingactivity/utilityisresponsibleforcarbonemission:-

- ✓ Transportation
- ✓ ElectricitypurchasedfromDistributioncompanies.

10.4.1 CarbonEmissionbyTransportation

Principal, Administrator,teaching & non-teaching staff andstudents comesto collegeeither by two wheelers& four wheelers.The two majorfuelsusedby thetransportsectorare petrol anddiesel.These fuelsare carbon intensive as theycontain 80-85%ofcarbon byweight.

Sl. No.	Fuel Used	Types of Transport	Persons	Numbers of Persons	A	B	C	D=C/B	E	F=ExD	G	H=G xFxA
					Nos.of Vehicle Used	mileage	Av. distance inKM	Fuel Consumed per Dayper Vehicle inltr	Total working days	Petrol Consumption PerVehiclein ayear	Emission factor	Total emissio n
1	**No Fuel**	**Bicycle**	Students	10	10							
			NonTeaching Staff	-	-							
2	Petrol	Two Wheeler	Students	50	50	40	20	0.6	176	88	2.67	140976
			NonTeaching Staff	35	35	40	12	0.75	176	132	2.67	26433
			TeachingStaff	20	20	40	15	0.85	176	88	2.67	9398
3	Petrol	Four Wheeler	TeachingStaff	8	8	15	12	1.50	176	234.1	2.67	40628
TotalCo2emissionin Kg Co2eqperYear												**3444184**

Thus, totalemissionbythetransportis **3444184** KGCO_2eq. Peryear

10.4.2 CarbonEmission byElectricity

Electricityistakenbygridwhichusescoalforgeneratingelectricityor DG set which uses diesel for electricity generation.

Parameter	EmissionFactor(A)	Unitin KWH (B)	Total emission (C=AxB)
Grid Electricity	0.85	82,044	69,737.4
TotalKgCO_2Eq.Emissionby Electricity (KWh/year*.085= Kg.of C02/per year generated)			69,737.4 kg/year

Table9:CarbonEmissionbyElectricity
Table 2 :Analysis ofbillings of meters of College premise for the year 2024- 25

(Thus,totalemissionbypurchasedelectricityis1,30,590Kg CO_2 Eq.)

Total Carbon dioxide emission atCollege of Agriculture, Indore

Area	CO2eq.emissioninKG
Electricity	69,737.4 Kg/year
Transport	**3444184 Kg/year**
Total	**3513921.4 kg/year**

Table 10 : Total Carbon dioxide emission at College of Agriculture, Indore

10.5 ReductionofCarbonEmission

B) Thefollowinginstallation/activityisresponsibleforreductionincarbon emission:-

- ✓ Composting
- ✓ Tree plantation

10.5.1 Reduction of Carbon Emission due to absorption of CO_2 by Tree Plantation

Planting is a great way to help sequester carbon emissions. Through photosynthesis***treesabsorbcarbondioxidetoproduceoxygen,foodand wood***.

ParticularsofFlora	Numbers	Carbonabsorption by one tree Per year	TotalCarbon Di Oxide in Kg
Full grown Tree	1200	6.8	8160
Semi grown Tree	1000	3.4	3400
Quarter grown plants	1000	1.7	1700
Total Carbon dioxide absorption by trees	**3200**		**13260**

Table 11:Carbon absorptionby tree plantation.

10.5.2 TotalReductioninCarbondioxideemissionatCollege of Agriculture, Indore

Area	Reduction in CO_2 eq.emissioninKG
Trees	**13260.0**

Table 12:TotalReductioninCarbondioxideemission

11. RECOMMENDATIONS

College has to have policy for plantation of trees in or outside of campus to reduce carbon footprints, as the ratio : Co2 generation and reduction is quit high. CarbonEmissionbyTransportation his higher then power consummation. College has already adopted plantationprogrameveryyear, Solid waste management, rain water harvesting, E-waste management etc in place.

GREEN, ENERGY & ENVIRONMENTAL AUDIT REPORTS

OF

CoA, Sehore

2022-2025

Rajmata Vijayaraje Scindia Krishi Vishwavidyalaya

Raja Pancham Singh Marg, Near Akashwani, Gwalior, (M.P.)

RAK College of Agriculture, Sehore (M.P.)

Energy, Environment and Green Audit Report

2023-24

Green Audit Report Structure

2. Acknowledgements

We would like to extend our sincere thanks to the management, R.A.K. College of Agriculture, Sehore for assigning this important work of Green Audit. We appreciate the co-operation of the teams for successful completion of assessment.

We are highly indebted to Dr. M. Yasin, Dean, R.A.K. College of Agriculture, Sehore (M.P.) for his intellectual advice and kind support in completing the project.

We are thankful to the Head of the Departments for continuous guidance and timely inputs, 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 believe that this study paves a way towards creating awareness for healthy and sustainable environment and will help the college in improving their Green initiative.

3. Disclaimer

Audit Team has prepared this report for College of Agriculture, Sehore, 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 isaccepted by Audit Team in this report or for any direct or consequential loss arising from any useoftheinformation, statementsorforecasts inthereport.

If you wish to distribute copies of this report external to your organization, then all pages must be included. Its staff and other related stakeholder shallkeepconfidentialallinformationrelatingtoyourorganization 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. CoA Staff, Stakeholders andaccreditationbodieshavesignedindividualconfidentialityundertakings and will only receive confidential information on a 'need to know' basis.

4. Concept & Context

As the effects of climate change become increasingly evident, it is imperative that all sectors of society, including higher educational institutions, take proactive steps to mitigate their impact on the environment. Global warming, driven by the accumulation of greenhouse gases in the atmosphere, poses a significant threat to the planet. Higher educational institutions, with their large campuses, extensive energy use, and influential role in shaping future leaders, have a unique responsibility to lead in reducing their carbon footprints.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. Green Audit is assigned to the Criteria 7 of NAAC, National Assessment and Accreditation Council, which is a self-governing organization of India that declares the institutions as Grade A, Grade B, or Grade C according to the scores assigned at the time of accreditation. Moreover, it is part of Corporate Social Responsibility of the Higher Educational Institutions to ensure that they contribute towards the reduction of global warming through Carbon Foot print reduction measures.

Colleges and universities are not only centers of learning and innovation but are also sizable communities that consume resources and produce carbon emissions. By implementing carbon footprint reduction measures, these institutions can significantly contribute to the fight against climate change while also educating and inspiring students to adopt sustainable practices.Nowadays, the educational institutions are becoming more thoughtful towards the environmental aspects and as result new and innovative concepts are being introduced to make them sustainable and eco-friendly. To preserve the environment within the institution, a number of viewpoints are applied by the several educational institutes to solve their environmental problems such as promotion of the saving the energy, waste recycle, water consumption reduction, water harvesting etc. Green auditing and the application of mitigation measures is a win-win situation for all the institutions, the learners and the mother earth. It can also result in health awareness and can promote the environmental awareness, values and beliefs. It provides a better understanding to staff and students about the Green impact on institution. Green auditing also upholds financial savings through reduction of resource usage. It gives an opportunity to the students and teachers for the development of ownership of the personal and social responsibility. The audit process involves primary data collection, site walk through with the team of College, including the assessment of policies, activities, documents and records.

In view of the NAAC circular regarding Green auditing, the College management decided to conduct an external environment assessment study by a competent external professional auditor. The green audit aims to examine environmental practices within and outside the College campus, which impact directly or indirectly on the atmosphere. Green audit can be defined as systematic identification, quantification, recording, reporting and analysis of components of College/College environment. It was initiated with the intention of reviewing the efforts within the institution whose exercises can cause risk to the health of inhabitants and the environment. Through the green audit, a direction to improve the structure of environment and inclusion of several factors that can protect the environment can be commenced. This audit focuses on the Green Campus, Waste Management, Water Management, Air Pollution, Energy Management, Animal welfare & Carbon Footprint etc. being implemented by the institution.This document explores the various strategieseducational institutions can adopt to reduce their carbon footprints. It will highlight practical measures, and the broader impact of such efforts on both the institution and society at large. With this context in mind, let us now delve into the specific steps that can be taken by higher educational institutions to align their operations with the global goal of reducing carbon emissions and combating climate change.

Auditors Certificate

IQCS Certification

CERTIFICATE *of* SUCCESSFUL COMPLETION

IRCA CERTIFIED TRAINING COURSE

LMS CERTIFICATION

This is to certify that

MR. RAJIV KUMAR DALELA

Attended and passed the Quality Management Systems (QMS) Auditor/Lead Auditor (ISO 9001:2015) Training Course No.: A18126 certified by IRCA

This course is certified by the International Register of Certificated Auditors and satisfies part of the formal training requirements for individuals seeking certification under the IRCA QMS 2015 Auditor Certification Scheme

Held in

INDIA

on

15th – 19th July 2016

Course Leader/Examiner:

IQCS CERTIFICATION

Certificate Number:

A18126/418/2016

Note: This Certificate is valid for three years for the purposes of IRCA Auditor Certification.

CERTIFICATE

ICL
Integral Certification (P) Ltd.

This is to Certified That

Mr. Rajiv Kumar Dalela

Has Successfully Completed

Has passed the ongoing assessment and written examination required for successful completion of an ICL Certified

ISO 14001:2015 (Environmental Management System)
Transition Auditor Training Course

Integral Certification (P) Ltd.

Location of course: Lucknow

Date of Course: 14/12/2015

Certificate No: ICL/EMS/15/0021 *Course No: ICL/TR-E-15/15*

Training Head

ICL TRAINING

Integral Certification (P) Ltd.
(Formerly Indraprastha Certification (P) Ltd.)
U-60 (3rd Floor), Shakar Pur,Laxmi Nagar, Delhi-110092
email: info@iclcert.com
Website : www.iclcert.com
Contact No. : +91-11-33257055

For Precise and Updated information concerning this certificate visit at www.iclcert.com

5.ENERGY CERTIFICATE

ISO 50001:2018

Certificate of Registration

This is to Certify That
Energy Management System of

R. A. K. COLLEGE OF AGRICULTURE

R. A. K. COLLEGE OF AGRICULTURE SEHORE – 466001,
MADHYA PRADESH, INDIA

has been assessed and found to conform to the requirements of

ISO 50001:2018

for the following scope :

PROVIDING AGRICULTURE COURSE OF B.Sc. AND M.Sc. (AGRONOMY, SOIL SCIENCE, AGRICULTIRAL EXTENSION , EDUCATION, PLANT PATHOLOGY, AGRICULTURE ECONOMICS) AND VARIOUS RELATED COURSES.

Certificate No	: **24MEQSV72**		
Initial Registration Date	: 21/08/2024	Issuance Date	: 21/08/2024
Date of Expiry	: 20/08/2027		
1st Surve. Due	: 21/07/2025	2nd Surve. Due	: 21/07/2026

DIRECTOR
Magnitude Management Services Pvt. Ltd.

EGAC Accredited
EnMS Certification
CAB # 011805

6. Introduction

The foundation of College of Agriculture, Sehore was laid down by the first Food and Agriculture Minister of India, Late Shri Rafi Ahmad Kidwai on August 01, 1952. At that time, this college was up to intermediate level. On July 17, 1955, Union Minister for Food and Agriculture, Shri Ajit Prasad Jain laid foundation of Rafi Amhad Kidwai Undergraduate College and Agricultural Research Institute. Initially, the college was affiliated to Vikaram University, Ujjain. In the year 1964, after establishment of Jawaharlal Nehru Krishi Vishwa Vidyalaya, Jabalpur, this college was one of the constituent colleges of JNKVV, Jabalpur. On 19th August, 2008 a new agricultural university- Rajamata Vijayaraje Scindia Krishi Vishwa Vidyalaya was established by the bifurcation of JNKVV with head quarter at Sehore and this college is under administrative control of RVSKVV,Sehore.

1	Name of Institution	R.A.K. College of Agriculture, Sehore (M.P.)
2	Address of Institution	Ichhawar Road, Sehore (M.P.)
3	University Affiliated	Rajmata Vijayaraje Scindia Krishi Vishwa Vidyalaya, Sehore (M.P.)
4	Name of Dean	Dr. M. Yasin
5	Contact No.	9406517978
6	Email Id	dean.sehore@rvskvv.net

Location

This college is situated in semi urban area of Sehore town, 40 Km away from the state capital Bhopal and 150 Km away from Indore. Sehore is situated at a latitude of 23.06° N, the longitude of 77.05° E and at an altitude of 498.77 m above mean sea level. The college caters the needs of the Vindhyan Plateau Agro Climatic Zone of Madhya Pradesh.

Courses

Since its establishment the college has created a base for scientific research and education in a wide spectrum of areas, like Teaching, Research and Extension. It is offering education in Agriculture leading to B.Sc. Hons. (Ag) and M.Sc. (Ag./Horti.). Rural Agricultural Work Experience and Experiential learning have been introduced as an innovative programme in B.Sc. (Ag) curriculum. The UG and PG teaching is imparted through electronic media (PowerPoint presentation).

In Bachelor degree programme the admission is made through Pre-Agriculture Test for Faculty of Agriculture conducted by MP Board of Professional Examination, Bhopal. Admission in post-graduate studies is given based on merit. Ten per cent extra seats are created over and above the prescribed intake capacity for Indians, NRIS (living abroad and foreign nationals) besides payment seats. The College is well equipped laboratories, library, instructional farm, ARIS cell linked with global information system and class-rooms with highly qualified faculty. The students live in pleasant and intellectually stimulating environments with well-furnished hostels for boys and girls. Well-equipped Gymnasium, NCC, NSS, educational tours and agro-industrial information enable students to develop their personality, whereas placement cell guides them to choose the profession. Rural Agricultural Work Experience is imparted to the students to understand the real situation and experiential learning programme for entrepreneurship development.

The college offers undergraduate teaching programme for four years, post- graduate programme for two years in eleven departments viz; Department of Agricultural Economics and Farm Management, Soil Science and Agricultural Chemistry, Agricultural Extension & Communication, Horticulture (Veg), Agronomy, Plant Breeding and Genetics, Plant Pathology, Entomology and the three other departments viz. Department of Agriculture engineering, Department of Mathematics and Agricultural Statistics, Department of plant physiology, are also functioning in this college. Rural Agricultural Work Experience with Agro Industrial Attachment and Experiential Learning has been introduced as innovative program in UG Curriculum.

Our Mandate

- To serve as a Centre of higher education, research, and extension in the field of agriculture

and allied sciences.

- To disseminate technologies to farmers, extension personnel's and organizations engaged in agricultural development through various need-based extension programs.

Our Mission

- To impart education, conduct research and extension activities for enhancing productivity, optimization of profit and sustainability of agriculture and allied sector and improving rural livelihood in the state of Madhya Pradesh.

Particulars	2023-24	2022-23	2021-22	2020-21	2019-20
No. of Students	412	439	447	496	451
Teachers	31	31	29	39	37
Non-Teaching staff	32	37	35	40	42
Total	475	507	511	575	530
No. of Working days	237	240	262	270	270

LIBRARY AND DOCUMENTATION SERVICES:

Library Collection: -The existing book collection has been strengthened by adding new books and others reading materials edition in all agriculture and allied disciplines. This will help students, teachers/scientists and extension personnel to keep updated.

Printed Books:

Details	Total Books
Total Book Bank	42967
Book Bank	533
SC & ST Book Bank	3472
Total No. of Thesis	1095
Back Volume Journals	3060
E- Books	28
Total	51155

- Competitive exam:- The library have various books related to competitive examination like Civil services, ICAR-JRF, NET, PSC,ARS,SRF, Pre PG & Ph.D Entrance, Bank's,Private & Co-operatives services exam, interviews of all services etc. the books

on personality development are also available in the library.

- Library Circulation:- Through Aris lab the students uses KOHA Software for the circulation of library materials.
- E- Resources:-Through aris cell electronic information like India Agristat, CeRA,krishikosh are also available for students for improvement of academic and research programmes. E-books and E journal's are also available for library users some Indian and foreign journals are available for the teacher's/ Scientist/researcher's and extension personnel including UG & PG students.
- E-Thesis Program:- E-Thesis submitted by students of college under master program (M.Sc Ag./Horti) is managed through digital repository like krishikosh.
- Total Thesis:- library have total 1095 Students Thesis.
- CeRA Facility:- Through Aris Cell J- Gate online database (journal's, thesis, book series, conference, proceeding and A/V Materials) is also provided to the user this has made the reference services very fast and has saved a lot of time of the scientist and the students.
- Total journal's:- 3060
- E-Books :- Agriculture and allied discipline e-books are available for the student and university staff.
- Total E-Books:- 28
- Computer's :- Facility are being available in this library on all working day.
- Security:- College have CCTV cameras for both students and library security purpose and also we have fire extinguisher.
- Photocopy:- library have a separate photocopy machine for the students.
- Newspapers:- library Subscribes both English and Hindi newspaper for students and college staff.

Career Counselling and Placement Cell

Career Counselling and Placement Cell monitors activities related to job notifications and opportunities, Interview preparation, development of entrepreneurial skills, organizing of campus Interviews besides ensuring maximum participation in campus recruitment and interviews. The cell works in coordination with all Head of departments to cater to diverse need of students. It is actively engaged in organizing Inspirational lectures by experts. It aims at guiding students towards cracking

Civil Service exams, PCS, ICAR, and other examinations. The Cell also attempts at encouraging students by providing them opportunities to interact with young probation officers, senior civil servants, Defense Officers etc. who have already cracked the exams. The college is moving forward with a multi-pronged strategy towards excellence with a view to come out as an institution of the future that prepares the students equipped with knowledge, skill, aptitude, and social commitment.

General issues:

Awareness of Environmental policy	Yes
Environmental protection rules	• Ban on single use plastic • Proper disposal of discarded and unsafe materials of laboratories • Periodic use of bicycles • Controlled use of water
Housekeeping schedule	Regular dusting and mopping in class rooms, veranda, and laboratory areas
Activities done for environmental cleanliness	Plantation Awareness campaigns
Celebration of Important days	World Environment Day, Earth Day, Ozone Day, National Pollution prevention Day, Vishwa Diwas, World Soil Day etc.
Participation in Local and National Environmental protection movements	Participation in Swachh Bharat Movement Activities through NSS, NCC etc

7. Energy Management

Energy Management is the strategy of adjusting and optimizing energy, using systems and procedures so as to reduce energy requirements per unit of output while holding constant or reducing total costs of producing the output from these systems"

Principle of Energy Management

- Procure energy at lowest possible price
- Manage energy use at highest energy efficiency

Electricity energy management plays a crucial role in reducing carbon footprints, making it a key mission in the fight against climate change. Here's how this mission can be structured:

1. Optimizing Energy Efficiency:

- **Energy-Efficient Appliances:** Using LED lightings and Energy Efficient (five star) other offices appliances.
- **Building Management Systems:** Integrating traditional building management systems that automatically adjust lighting, heating, and cooling based on occupancy and need, reducing unnecessary energy consumption.

2. Integrating Renewable Energy Sources:

- **Solar and Wind Power:** Investing in and transitioning to renewable energy sources like solar to reduce reliance on fossil fuels.

3. Demand Response Programs:

- **Dynamic Pricing:** Implementing dynamic pricing models that encourage consumers to use electricity during off-peak hours, thus reducing the need for peak power generation, which often relies on less efficient and more polluting sources.
- **Consumer Engagement:** Educating and incentivizing consumers to participate in demand response programs, where they adjust their usage based on grid needs, reducing overall demand and carbon emissions.

4. Reducing Transmission and Distribution Losses:

- **Upgrading Infrastructure:** Modernizing transmission and distribution via armored cables networks to reduce energy losses during electricity delivery.

5. Energy Monitoring and Analytics:

- **Smart Meters:** Deploying smart meters that provide real-time data on electricity consumption, allowing both providers and consumers to make informed decisions to reduce waste.

6. Policy and Regulation:

- **Government Policies:** Advocating for policies that mandate higher energy efficiency standards, promote renewable energy adoption, and incentivize carbon reduction efforts.
- **Corporate Responsibility:** Encouraging companies to adopt energy management strategies as part of their corporate social responsibility (CSR) initiatives, aiming to reduce their carbon footprint.

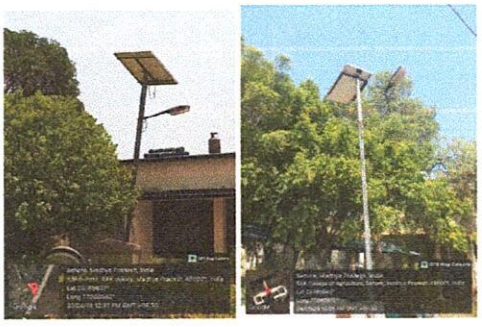
7. Public Awareness and Education:

- **Consumer Education:** Educating the public on the impact of their energy consumption and ways to reduce their carbon footprint.
- **Behavioral Change:** Promoting behavior changes, such as reducing unnecessary energy usage, turning off lights, and unplugging devices when not in use.

The mission of electricity energy management to reduce carbon footprints is essential for a sustainable future. By optimizing energy use, integrating renewables, and promoting efficiency, we can significantly reduce greenhouse gas emissions and mitigate climate change impacts.

Electrical Energy Scenario at CoA, Sehore

1. Madhya Pradesh State Power Distribution Company Limited supplies electrical energy. There are total 27 energy meters catering the electrical demand of CoA, Sehore.
2. **Solar energy:** Solar light is a clean environment energy source which now a days focus for installation in public places for generation of power for utilization for the mankind. The college has also initiated efforts for trapping this light energy in its campus, hostels and staff colony premises for lightning purpose in night by installing 11 solar plate equipped lamp posts.



3. **Use of LED bulbs / power efficient equipment :** The entire campus premises inside and outside have LED bulbs/ LED tube light for conserving electric energy. The hostel premises also have LED bulbs/ LED tube lights for inside and outside lightning for saving of the energy. Prior to 2019-20 there were ordinary electric bulbs were functioning in the college premises. Keeping in

view the saving of the electric energy these bulbs are replaced by LED lamps on all the lightning points. Near about 350 LED bulbs are in place for lightning in college and hostel premises.

Sr. No	Name of connection	IVRS No.	Service no	Contract Demand (Watt)	Terriff Category
1.	College Building Ist	N21540113023	SHR27-12 21540113023	26KW	LV2 (LV 2.2)
2.	College Building IInd	N2154004028	SHR27-12 2154004028	21KW	LV2 (LV 2.2)
3.	Work Shop Tube well	N2154032050	SHR12-3 2154032050	4 KW	LV2 (LV 2.2)
4.	Sugarcane open well	N2154013091	SHR12-16 2154013091	4 KW	LV2 (LV 2.2)
5.	Old Hostel pump	N2154002815	SHR27-12 2154002815	11.19 KW	LV2 (LV 2.2)
6	ATC Training Center	N2154026320	SHR12-17 2154026320	9 KW	LV2 (LV 2.2)
7	Pulse Project pump	N2154023099	SHR12-17 2154023099	7.46 KW	LV2 (LV 2.2)
8	Old Hostel	N2154033541	SHR27-12 2154033541	14 KW	LV2 (LV 2.2)
9	Girls Hostel Ist	N2154021198	SHR14-02 2154021198	7.98 KW	LV2 (LV 2.2)
10	Girls Hostel IInd	N2154033539	SHR14-02 2154033539	4 KW	LV2 (LV 2.2)
11	Seed take pulse sceme	N2154023692	SHR12-17 2154023692	25 KW	LV2 (LV 2.2)

8. Water Management

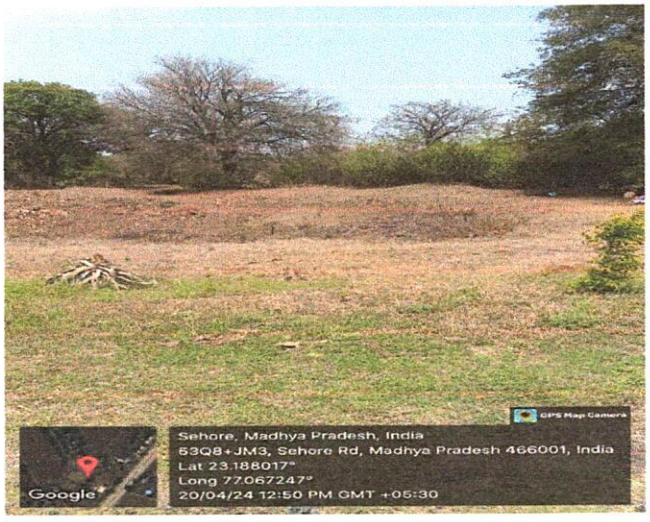
Water management is another critical aspect of reducing carbon footprints, as water and energy are deeply interconnected. Efficient water management can significantly lower the energy required for water treatment, distribution, and heating, thereby reducing greenhouse gas emissions.

Water management is about water consumption, water sources, irrigation, storm water, appliances, and fixtures. Aquifer depletion and water contamination are taking place at unprecedented rates. It is therefore essential that any environmentally responsible institution should examine its water use practices. R.A.K. College of agriculture, Sehore gets water from own tube wells. Five submersible pumps having rating of 7.5 HP are operated to lift water from Bore well and this submersible pump of capacity is dedicatedly operated for gardening.

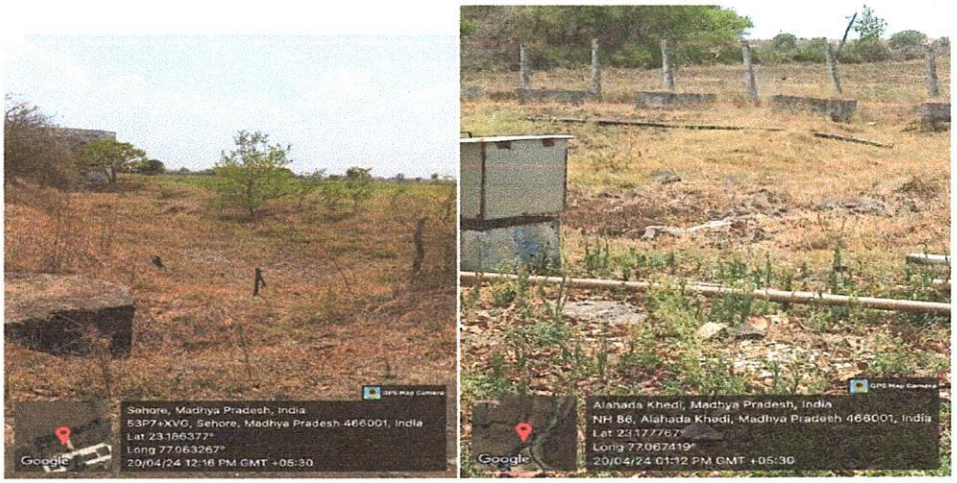
College has presently 31 nos. Overhead water storage tanks with a total of 64500 litre of water storage capacity.

Sl. No.	Water Tank Capacity (lts)	Numbers	Total Capacity
1.	1000	20	20000
2.	2000	08	16000
3.	5000	02	10000
7.	Total Capacity in Litre	30	46000

1. **Rain water harvesting :** Water is precious natural resource on the earth which is the base of survival for the all type of life existing on the earth. Keeping in view the importance of this natural resource. This college has established two open ponds.



2. **Open field recharge :** Water is essential for survival of life. For drinking and irrigation purpose, there are 12 borewells and 2 open wells in College campus and staff colony premises. Open wells are being used for ground water recharge.

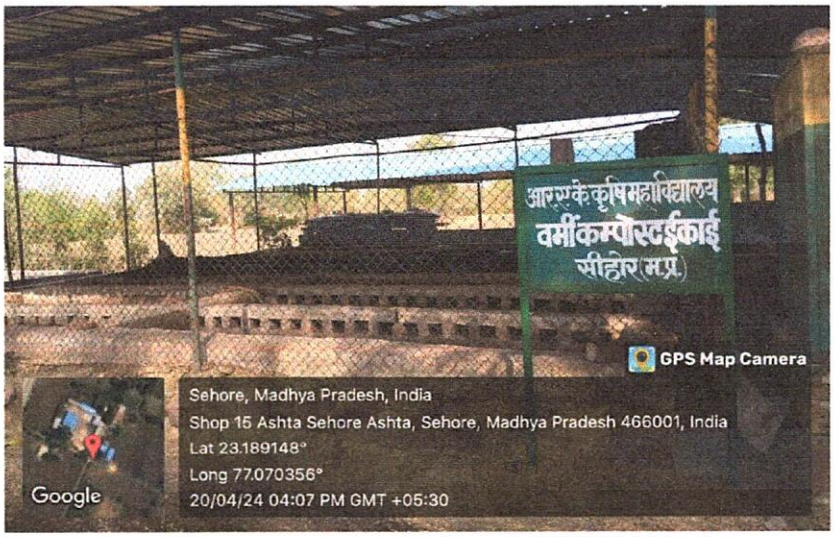


3. **Maintenance of water bodies and distribution system in the campus :** The College and hostels premises are equipped with piped water supply system in the building utilities with tap on every outlet to promote efficient use of precious water. The equipped system is connected with the 05 tube wells at different locations run as per schedule by the attendant daily. The water is stored on the overhead placed plastic water tank in the buildings of college and hostels for round the block water availability and whereas utility point.

9. Waste Management

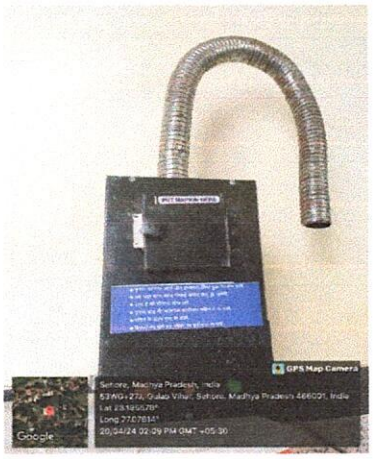
Implementing effective waste management practices is a vital mission for reducing carbon footprints and to create a more sustainable campus environment. Such practices not only minimize the environmental impact but also serve as an educational tool for students and staff. Waste management addresses waste production and disposal, plastic waste, paper waste, food waste, and recycling. Proper waste management is important for the health and well-being of the population, the environment, and the economy Municipal solid waste has a number of adverse environmental impacts, most of which are well known and not in need of elaboration. To reduce waste at institute, students and staff are educated on proper waste management practices through lectures, advertisement on notice boards, displaying slogan boards in the campus. Waste is collected on a daily basis from various sources and is separated as **dry and wet waste**. Colour coded dustbins are used for different types of wastes. Green for wet and blue for solid waste. Daily garbage is collected by housekeeping personnel and handed over to authorized personnel of District Municipal Corporation, Sehore for further processing.

1. **Solid & liquid waste management :** On the college farm premises 20 vermi composting pits are functional in dairy unit for production valuable vermi-compost form available crop residues and trees traces matter with the help of cow dung and vermin worms. FYM is also being prepared in the dairy unit from available cow dung and crop residue by using pit and heap method About 20 tones of vermi composed is being produced annually in the dairy unit of the college.



2. **Biological waste management:** No harmful chemicals, biological, radioactive material etc. are generated by the college. However, college has formulated a committee for safe disposal of biological wastes. All operations regarding waste disposal by the college have been adopted as per government guidelines.

3. **Biomedical waste management** : sanitary pad vending & burning machines installed at Girls Hostels, College of Agriculture, Sehore



Sanitary Pad Vending & Burning machines

4. **E-Waste Management-** Very limited E waste related to computers and related items waste is produced in college which is being precious material safely disposed through right off committee as and when needed in the institute through official process of waste purchase by related vendors..
5. **Waste recycling system:** Nil

Environment Management Policy: Leading the way to a cleaner and healthier Environment

–

- Reducing degradable and non-degradable waste in the campus.
- Reducing water consumption and wastage.
- Appropriate training to staff and students for environmental awareness through academic programmes and campusawareness initiatives

Sr. No	**Measures Adopted**	**Impression**
1.	Organization of awareness campaigns and promotion of green attitude through physical displays, awareness lectures	Acquiring the knowledge and importance of environment, ensuing environmental protection rules, development of necessary environmental and health related skills, and values, understanding the concept of grey water and continuous education to focus Reduce, Reuse & Recycle
2.	Regular plantation, maintenance of plants having air purification properties are preferred near conference room and laboratories.	Sustenance of Green environment in the campus
3.	Introduction of uniform solid waste management system through segregation bins and landfills.	Reduction in the amount of solid waste generated and environmental waste burden in the campus
4.	Collection of e-waste from departments and selling in the scrap market through proper channel. Periodic collection of valued answer books, student's practical files, homeassignments and test papers and other paper waste from departments, written off books from library and selling in scrap market	Selling paper waste and e-waste generate revenue for institution
5.	Regular monitoring of overhead water storage PVC tanks for leakage, accumulation of water nearby and proper closure of lid	Effective and efficient use of efflux water for gardening, washing and mopping. No entry and accumulation for litter and overflowed water near overhead water tanks and rarer possibility of mosquito breeding around the area
6.	Safe and systematic management of laboratory waste through neutralization of strong acids and alkali before draining, cooking out infectious prop gules before disposing	Maintaining ecosystem balance

10. Green Campus Management

GREEN CAMPUS MANAGEMENT

All plant and animal species - including humans - are linked together in a complex web of life; we depend upon biodiversity for our survival. Biodiversity is the key to healthy ecosystems and ultimately a healthy planet. It keeps the air and water clean, regulates our climate and provides us food, shelter, clothing, medicine, and other useful products. Each part within this complex web diminishes a little when one part weakens or disappears.

Area under green cover (in sq ft or in acre)	14,06,690 sq.m
Availability of Nursery on Campus (Yes / No)	Yes
Plant Protection Management	Yes
Number of plantations done in the year 2023-24	1800
Extent of area (% of area) under tree/medicinal/horticultural and crop plants cover	55

Green campus initiative includes

1. Restricted entry of automobiles
2. Use of Bicycles / Battery powered vehicles
3. Pedestrian Friendly pathways
4. Ban on use of plastic
5. Landscaping with trees and plants:

The college premise having good landscaping with trees and plants providing a green and clean environment in the college premises. Two big gardens having size of 13000 and 18000 ft2 are landscaped beautifully with annual and perennial plant species which includes bottle palms, ashok pendula, madhukamini, gandhraj, golden durenta, thuja's species, eclipha tricolor etc. The college has also adopted green graduation schemes as per 5th dean's recommendation from 2019-20 and is continuously running in the college with the fresh intrends taking admission in the under-graduation course.

The trees work hard to keep the air we breathe clean and healthy. They are like sponges. Their leaves take in much of the poisonous unwanted carbon dioxide in the air, and replace it with the oxygen we need for healthy living.This system of absorbing gases on which all plants rely for their food is calledphotosynthesis. In this process, the plants with the help of sunlight, water, minerals, and the green material called Chlorophyll within the leaves changethe carbon-dioxide into food for themselves. When doing this they release oxygen into the air which is vital for all life on

earth. At night when there is nosunlight the plant no longer makes food, so it does not release the same amount of oxygen.

Quality audits on environment and energy are regularly undertaken by the Institution and any awards received for such green campus initiatives:

1. Green audit
2. Energy audit
3. Environment audit
4. Clean and green campus environmental promotion activities

Gajar Ghas Unmoolan abhiyan 2023-24

Swachhata Abhiyan Program 2023-24

Plantation by College and NSS Students 2023-24

Plantation by NSS Students 2021-22

Power consumption details- Average power consumption/ year

SNo.	Area of consumption	Total kWh/ Year	Power Factor	Co2 generated/ Y
1	RAK College-Bhallavi ji	197448.0	0.85	167830Kg's of Co2
2	Sehore ATC Building	180.0	0.85	250 Kg's of Co2
3	Sehore College building II	9503.0	0.85	8077.5Kg's of Co2
4	Sehore Girls Hostel	6698.0	0.85	5693.3 Kg's of Co2
5	Sehore old Hostel	13351.0	0.85	11,348 Kg's of Co2
6	Sehore Pulse Project	7311.0	0.85	6214.3 Kg;s of Co2

Total Co2 generation/ year = 199,4123.0

- **Recommendation:** RAK College of Agriculture, Sehore has policy for Plantation by College and NSS Students in or outside of campus to reduce carbon footprints, as the ratio : Co2 generation and reduction is quit low. College has adopted good housekeeping and maintenance practices to reduce Co2, generation load like - Swachhata Abhiyan Program, Use of Bicycles, Public Transport, Plastic-free campus; use of solar energy; Paperless office,Green landscaping with trees and plants, Rain water collection and harvesting;solid waste management; green campus management, decomposition of solid organic waste and production of vermi compost; E-waste Management.Reducing degradable and non-degradable waste in the campus.Reducing water consumption and wastage, cerebration of-world Environment Day, Earth Day, Ozone Day, National Pollution prevention Day, Vishwa Diwas, World Soil Day for awareness purpose. Management should continue GHP and GMP's practices by involving staff and students to keep sustainable environment .

GREEN, ENERGY & ENVIRONMENTAL AUDIT REPORTS

OF

CoA, Khandwa

2022-2025

Rajmata Vijayaraje Scindia Krishi Vishwavidyalaya
Raja Pancham Singh Marg, Near Akashwani, Gwalior, (M.P.)

B.M.College of Agriculture, Khandwa

Energy, Environment and Green Audit Report

2023-24

Green Audit Report Structure

Acknowledgements

We would like to extend our sincere thanks to the management, College of Agriculture for assigning this important work of Green Audit. We appreciate the co-operation of the teams for successful completion of assessment.

We are highly indebted to Dr.D.H. Ranade, Dean CoA Khandwa, for his intellectual advice and kind support in completing the project. We are thankful to the Head of the Departments for continuous guidance and timely inputs, 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 believe that this study paves a way towards creating awareness for healthy and sustainable environment and will help the college in improving their Green initiative.

Disclaimer

Audit Team has prepared this report for B.M. College of Agriculture, Khandwa, 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 organization, then all pages must be included. Its staff and other related stakeholder shall keep confidential all information relating to your organization 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. CoA Staff, Stakeholders and accreditation bodies have signed individual confidentiality undertakings and will only receive confidential information on a 'need to know' basis.

Concept & Context

As the effects of climate change become increasingly evident, it is imperative that all sectors of society, including higher educational institutions, take proactive steps to mitigate their impact on the environment. Global warming, driven by the accumulation of greenhouse gases in the atmosphere, poses a significant threat to the planet. Higher educational institutions, with their large campuses, extensive energy use, and influential role in shaping future leaders, have a unique responsibility to lead in reducing their carbon footprints. 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. Green Audit is assigned to the Criteria 7 of NAAC, National Assessment and Accreditation Council, which is a self-governing organization of India that declares the institutions as Grade A, Grade B, or Grade C according to the scores assigned at the time of accreditation. Moreover, it is part of Corporate Social Responsibility of the Higher Educational Institutions to ensure that they contribute towards the reduction of global warming through Carbon Foot print reduction measures.

Colleges and universities are not only centers of learning and innovation but are also sizable communities that consume resources and produce carbon emissions. By implementing carbon footprint reduction measures, these institutions can significantly contribute to the fight against climate change while also educating and inspiring students to adopt sustainable practices. Nowadays, the educational institutions are becoming more thoughtful towards the environmental aspects and as result new and innovative concepts are being introduced to make them sustainable and eco-friendly. To preserve the environment within the institution, a number of viewpoints are applied by the several educational institutes to solve their environmental problems such as promotion of the saving the energy, waste recycle, water consumption reduction, water harvesting etc. Green auditing and the application of mitigation measures is a win-win situation for all the institutions, the learners and the mother earth. It can also result in health awareness and can promote the environmental awareness, values and beliefs. Green auditing also upholds financial savings through reduction of resource usage. It gives an opportunity to the students and teachers for the development of ownership of the personal and social responsibility. The audit process involves primary data collection, site walk through with the team of College, including the assessment of policies, activities, documents and records.

In view of the NAAC circular regarding Green auditing, the College management decided to conduct an external environment assessment study by a competent external professional auditor. The green audit aims to examine environmental practices within and outside the College campus, which impact directly or indirectly on the atmosphere. Green audit can be defined as systematic identification, quantification, recording, reporting and analysis of components of College/College environment. It was initiated with the intention of reviewing the efforts within the institution whose exercises can cause risk to the health of inhabitants and the environment. This audit focuses on the Green Campus, Waste Management, Water Management, Air Pollution, Energy Management, Animal welfare & Carbon Footprint etc. being implemented by the institution. This document explores the various strategies educational institutions can adopt to reduce their carbon footprints. It will highlight practical measures, and the broader impact of such efforts on both the institution and society at large. With this context in mind, let us now delve into the specific steps that can be taken by higher educational institutions to align their operations with the global goal of reducing carbon emissions and combating climate change.

Introduction

The College of Agriculture Khandwa was established in 1986 in the name of Shri Bhagavant Rao Mandloi, the former Chief Minister of Madhya Pradesh. The Hon'ble Chief Minister of Madhya Pradesh Shri Motilal Vora laid down the foundation stone of the B.M. College of Agriculture, Khandwa under the jurisdiction of the J.N.K.V.V. Jabalpur. The college came under jurisdiction of R.V.S.K.V.V. Gwalior on 19th August, 2008.

1	Name of Institution	B.M.College of Agriculture, Khandwa (M.P.)
2	Address of Institution	Jaswadi Road, Khandwa (M.P.)
3	University Affiliated	Rajmata Vijayaraje Scindia Krishi Vishwa Vidyalaya, Gwalior (M.P.)
4	Name of Principal	Dr. D.H.Ranade
5	Contact No.	9826605965
6	Email Id	dean.khandwa@rvskvv.net

About college

The College of Agriculture Khandwa was established in 1986 in the name of Shri Bhagavant Rao Mandloi, the former Chief Minister of Madhya Pradesh. The college is located in the Nimar Valley of Madhya Pradesh. The climate of this region is hot and dry with an average annual rainfall of about 800 mm which is unevenly distributed. The Hon'ble Chief Minister of Madhya Pradesh Shri Motilal Vora laid down the foundation stone of the B.M. College of Agriculture, Khandwa under the jurisdiction of the J.N.K.V.V. Jabalpur. The college came under jurisdiction of R.V.S.K.V.V. Gwalior on 19th August, 2008.

The College offers a four-year Under Graduate degree program in Agriculture. There are 12 departments working in this college viz., Agronomy, Plant Physiology, Agricultural statistics & Computer science, Agricultural economics & Farm management, Extension Education & Rural sociology, Entomology, Food science & Technology, Plant breeding & Genetics, Plant Pathology, Soil Science & Agricultural Chemistry, Horticulture and Agricultural Engineering. The total intake capacity of this college is 56 including payments, ICAR and NRI seats under different categories. At present, the college has total strength of 199 students, including 76 girl students. Till date, a total of 876 students have passed out from this college.

For UG, the college has four classrooms under the name of "Raman", "Bhabha", "Jagdishchandra" and "Sarabhai" for I, II, III and IV year classes, respectively. Each classroom is equipped with modern teaching aids like interactive boards and overhead projectors. Dr. Kurien Hall, a large examination hall with a capacity of 250 students is equipped with the facilities of CCTV surveillance. Modern teaching aids like interactive boards, computers, LCD projectors and internet facilities are available for staff and students. An independent ARIS Cell functions in college for computer teaching and information technology related to Agriculture Science. Wi-Fi based connectivity is available for the staff and the students in the administration section, some class-rooms and in the library. More Wi-Fi access points are being planned. Login IDs have been issued to all the students and faculty members. The college has excellent laboratories in Plant Pathology and Biotechnology with a vast collection of rare specimens and slides and a well maintained lab in Agricultural Engineering with working demo models and prototypes and a well managed process and value addition unit under the name "Cotyledon". "Umbrella" a room for mushroom is also meant for hands on training for mushroom production. Bud 'N' Blossom a horticultural nursery and "Profuse" a demarcated Hitech Horti-Arena are also being maintained based on "learning by doing" approach

Location

The college is located in the Nimar Valley of Madhya Pradesh. The climate of this region is hot and dry with an average annual rainfall of about 800 mm which is unevenly distributed.

Our Mandate

- To serve as a Centre of higher education, research, and extension in the field of agriculture and allied sciences.
- To disseminate technologies to farmers, extension personnel's and organizations engaged in agricultural development through various need-based extension programs.

Our Mission

To conduct education research and extension activities for enhancing productivity optimization of profit and sustainability of agricultural production system and improving rural livelihood in Madhya Pradesh.

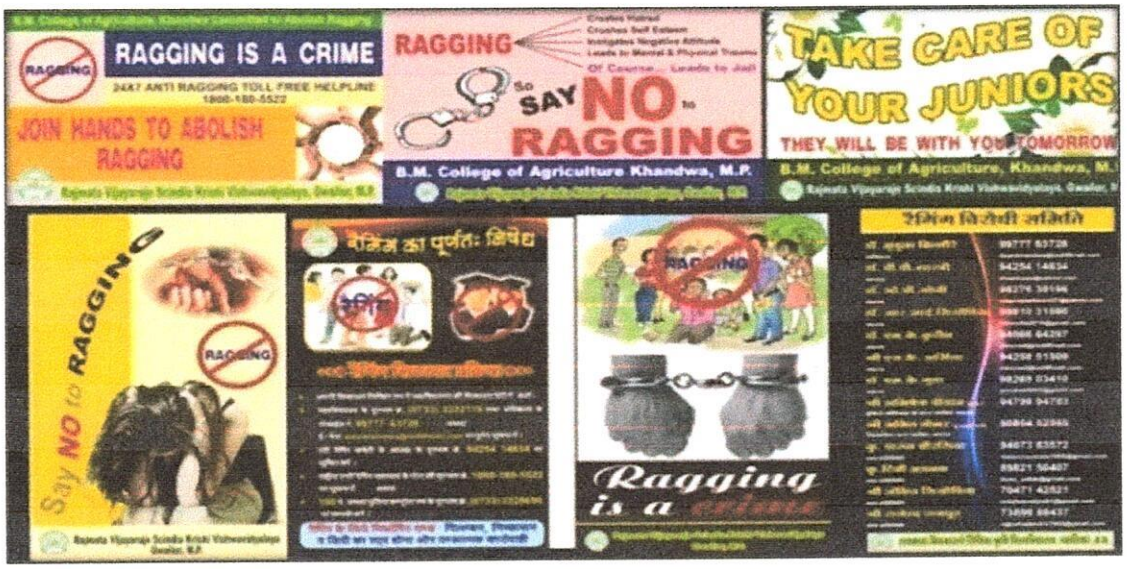
1. DETAILS OF THE COLLEGE

The college library has a collection of about 13158 books related to agricultural sciences, including text books, rule books, etc. CeRA facility in the college library has been initiated for effective learning both for students and teaching staff which provides an easy access to National and International journals. It subscribes to 1630 Periodicals/Magazines and 478 Research Journals and 02 newspapers. The computer and internet facilities are now available to the teachers, students and the library staff within the library itself. The hostel facility is available for 52 Girl students while the boy's hostel has the capacity of 64 students. The College also has a system for collecting Solar radiations and other atmospheric data under Solar Radiation Resource Assessment (SRRA) Project for Centre of Wind Energy Technology (MNRE, GoI), Chennai. Manekshaw is a Tech-Museum where almost all the technologies have been displayed. The college also has a Dr. Ambedkar Hall for conducting seminar, conferences and meetings. "Kokila"- "Exclusively Her" is a facility specially provided to girls as a common room. "Shakehands" Committee is a Student Counseling Cell and a Placement Cell function in college.

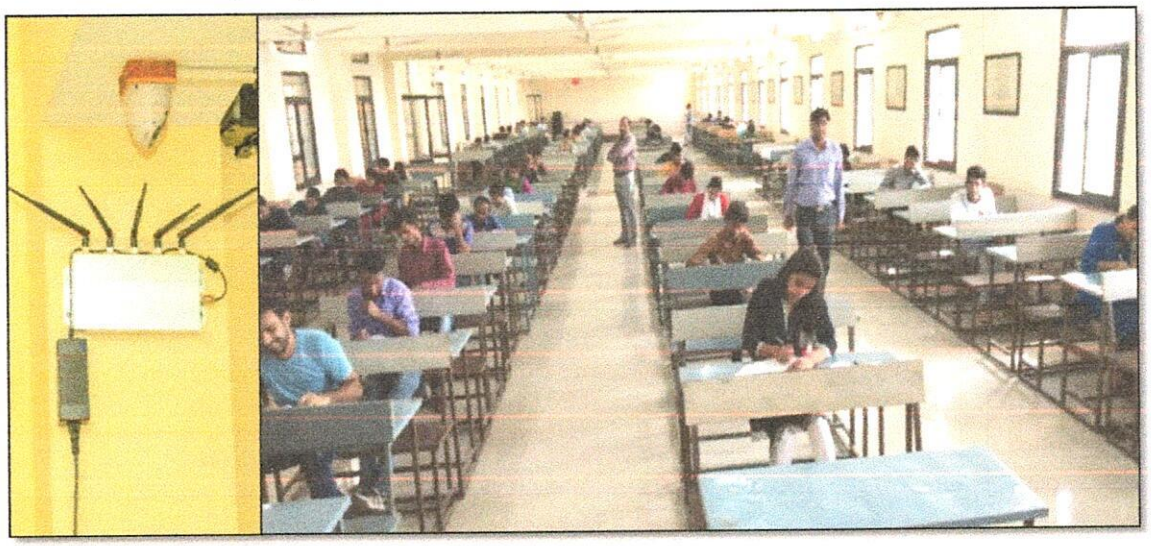
Innovative Initiatives:

2. Prayer of 15 minutes by staff and students are performed daily.
3. Use of Biometric system for attendance of staff and first year students.

4. Ragging free campus: Measures adopted for curbing of ragging as follows: -A large scale interactive Induction programme was organized in which both seniors and First year students all were present. The plan of action is given in Annexure- I.



5. Foolproof arrangements were made in examination hence no cases of unfair means happened/ observed during last year.



6. **CCTV Surveillance:** As per the UGC guidelines the college campus and associated units are under strict vigilance of CCTV surveillance which is centrally monitored from the Dean's Chamber.
7. **Sports Complex:**

- Well furnished and maintained Sports Complex with the indoor sports facilities of Badminton, Table Tennis, Chess, Carrom, Yoga etc…
- Facility of CCTV surveillance, changing room facility for boys and girls
- Well maintained Gym facility with modern and sophisticated equipments
- Maintenance of playground for outdoor games particularly for Volley ball, Kho-Kho, and other athletic activities

8. **Drinking water facilities:**
   Drinking water facilities with purifier and water cooler is available in College, Guest House, Hostels Sports Complex and other buildings in the premises.
9. **Different projects and facilities for students:**
   The influence of human personality upon the functional efficiency of an organization and its personnel has been widely recognized. The personality can also be modified to a certain extent. B.M. college of Agriculture has initiated several projects and activities for personality development of both the students and faculties. It provides them opportunities for effective communication and free interaction.

ACADEMIC HIGHLIGHTS:

Admission Procedure: Entry in the first year of B.Sc. (Honors) Agriculture is on the basis of merit list provided by Professional Examination Board of the State Government, Bhopal and in M.Sc. (Ag) by the merit list of JEE conducted by both the Universities of the state. The Board conducts a Pre Agriculture Test (PAT) for B.Sc. (Honors) Agriculture. The roster for reservation of seats for UG & PG as per provisions made by the state government for different categories is strictly followed. All possible efforts are made to fill vacant seats of different categories by repeated counselling of the students. The counselling is done at V.V. Head Quarters.

Particulars	2023-24	2022-23	2021-22	2020-21	2019-20
No. of Students	199	224	217	211	223
Teachers	22	16	17	15	18
Non-Teaching staff	07	10	13	15	14
Total	228	250	247	241	255
No. of Working days	250	251	243	246	240

LIBRARY AND DOCUMENTATION SERVICES:

Library Collection: -The existing book collection has been strengthened by adding new books and others reading materials edition in all agriculture and allied disciplines. This will help students, teachers/scientists and extension personnel to keep updated.

Books and Journals available:

S.No.	Particulars	No. of books
1.	Total No. of books available in College Library	13158
2.	New books purchased during 2023-24	Nil
3.	E-Books 2023-24	52

Library in B.M. College of Agriculture

The college library has a collection of about 13319 books related to agricultural sciences, including text books, rule books, etc. CeRA facility in the college library has been initiated for effective learning both for students and teaching staff which provides an easy access to National and International journals. It subscribes to 1630 Periodicals/Magazines and 478 Research Journals and 02 newspapers.

Competitive Exam: -The library has also been strengthened by adding books which an helpful in competitive examinations likes IAS, UPSC, ICAR–JRF /NET, PSC, ARS, SRF, Pre PG & Ph.D. Entrance, Bank, Private & Cooperatives service exams, interviews of all services etc. The books on personality development are also available in the library.

Library Circulation: - The library has OPAC facility through KOHA software for the circulation of library materials to uses.

E-Resources: - Electronic Information like India Agristat, CeRA, Krishikosh are also available for students for improvement of academic & research programmes. E-books and E-journals are also available for library users. Some Indian and Foreign journals are available for the teachers/scientist, researchers and extension personnel including UG, PG, Ph.D. Students.

CeRA Facility: - J-Gate Online database (Journals, Theses, Book Series, Conference Proceedings, and A/V Materials) is also provided to the users. This has made the reference services very fast and has saved a lot of time of the scientists and the students.

E-Books: -Agriculture and allied disciplines e-books are available for the students and university staff.

Computer –Facility are being available in this library on all working days.

Security etc.: - Improvement of Infrastructure like the implementation of wireless technology, CCTV, Fireproof server room, desktops etc.

Photocopy: - Photocopy and online printing are being available in this library on all working days.

Newspapers: - Library subscribes 03 News Paper acquaints users daily.

Students Counselling and Placement:

Career Counseling and Placement Cell monitors activities related to job notifications and opportunities, Interview preparation, development of entrepreneurial skills, organizing of campus Interviews besides ensuring maximum participation in campus recruitment and interviews. The cell works in coordination with all Head of departments to cater to diverse need of students. It is actively engaged in organizing Inspirational lectures by experts. It aims at guiding students towards cracking Civil Service exams, PCS, ICAR, and other examinations. The Cell also attempts at encouraging students by providing them opportunities to interact with young probation officers, senior civil servants, Defense Officers etc. who have already cracked the exams. The college is moving forward with a multi-pronged strategy towards excellence with a view to come out as an institution of the future that prepares the students equipped with knowledge, skill, aptitude, and social commitment.

General issues:

Awareness of Environmental policy	Yes
Environmental protection rules	Ban on single use plastic Proper disposal of discarded and unsafe materials of laboratories Controlled use of water
Housekeeping schedule	Regular dusting and mopping in class rooms, veranda, and laboratory areas
Activities done for environmental cleanliness	Plantation Awareness campaigns
Celebration of Important days	World Environment Day, Earth Day, Ozone Day, National Pollution prevention Day, Vishwa Diwas etc.
Participation in Local and National Environmental protection movements	Participation in Swachh Bharat Movement Activities through NSS, NCC etc

Energy Management

Energy Management is the strategy of adjusting and optimizing energy, using systems and procedures so as to reduce energy requirements per unit of output while holding constant or reducing total costs of producing the output from these systems"

Principle of Energy Management

- Procure energy at lowest possible price
- Manage energy use at highest energy efficiency
- Select low investment technology to meet present requirement and environment condition.

Electricity energy management plays a crucial role in reducing carbon footprints, making it a key mission in the fight against climate change. Here's how this mission can be structured:

1. Optimizing Energy Efficiency:

- **Smart Grid Technology:** Implementing smart grid systems that allow for real-time monitoring and management of electricity use, leading to reduced waste and optimized energy distribution.
- **Energy-Efficient Appliances:** Promoting and incentivizing the use of energy-efficient appliances that consume less electricity, thereby reducing overall demand.
- **Building Management Systems:** Integrating advanced building management systems that automatically adjust lighting, heating, and cooling based on occupancy and need, reducing unnecessary energy consumption.

2. Integrating Renewable Energy Sources:

- **Solar Power:** Investing in and transitioning to renewable energy sources like solar power to reduce reliance on fossil fuels.
- **Energy Storage Solutions:** Developing advanced energy storage solutions to store excess energy generated from renewable sources, ensuring a stable supply even when natural conditions are not favorable.
- **Decentralized Energy Production:** Encouraging decentralized energy production, such as rooftop solar panels, which reduces transmission losses and the need for large-scale power plants.

3. Demand Response Programs:

- **Dynamic Pricing:** Implementing dynamic pricing models that encourage consumers to use electricity during off-peak hours, thus reducing the need for peak power generation, which often relies on less efficient and more polluting sources.

4. Reducing Transmission and Distribution Losses:

- **Upgrading Infrastructure:** Modernizing transmission and distribution networks to reduce energy losses during electricity delivery.
- **Distributed Generation:** Encouraging local generation and consumption of electricity to minimize the distance energy has to travel, thus reducing losses.

5. Energy Monitoring and Analytics:

- **Smart Meters:** Deploying smart meters that provide real-time data on electricity consumption, allowing both providers and consumers to make informed decisions to reduce waste.

6. Carbon Offsetting:

Carbon Offsetting Programs: Encouraging companies to invest in carbon offsetting projects, such as reforestation or renewable energy projects, to neutralize their carbon emissions.

7. Policy and Regulation:

- **Government Policies:** Advocating for policies that mandate higher energy efficiency standards, promote renewable energy adoption, and incentivize carbon reduction efforts.

8. Public Awareness and Education:

- **Consumer Education:** Educating the public on the impact of their energy consumption and ways to reduce their carbon footprint.
- **Behavioral Change:** Promoting behavior changes, such as reducing unnecessary energy usage, turning off lights, and unplugging devices when not in use.

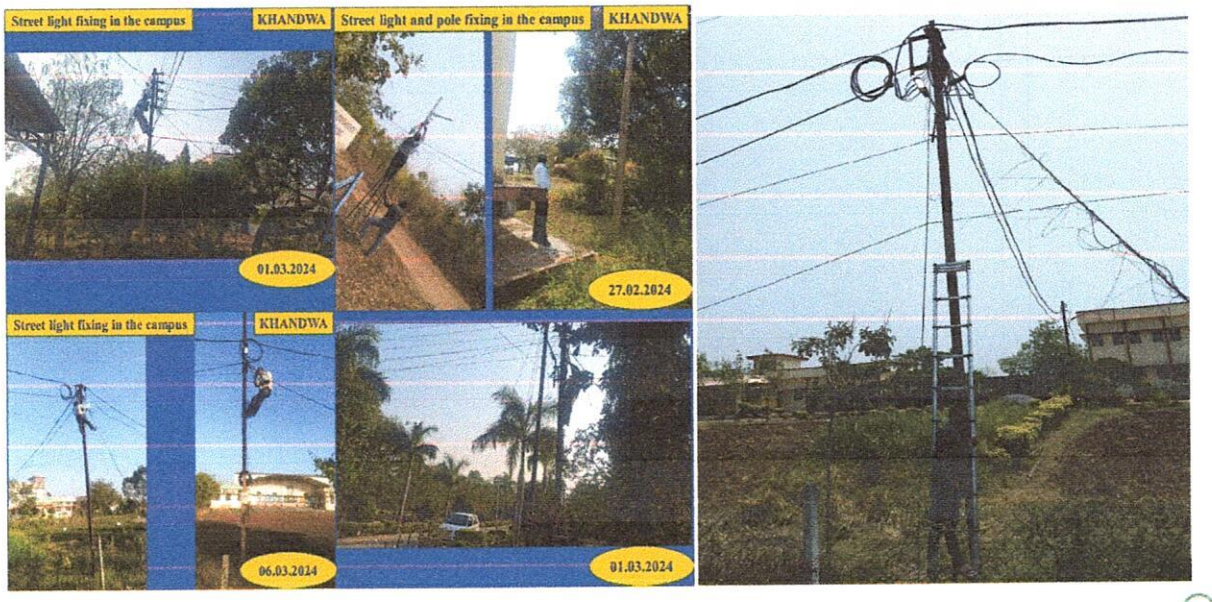
The mission of electricity energy management to reduce carbon footprints is essential for a sustainable future. By optimizing energy use, integrating renewable, and promoting efficiency, we can significantly reduce greenhouse gas emissions and mitigate climate change impacts.

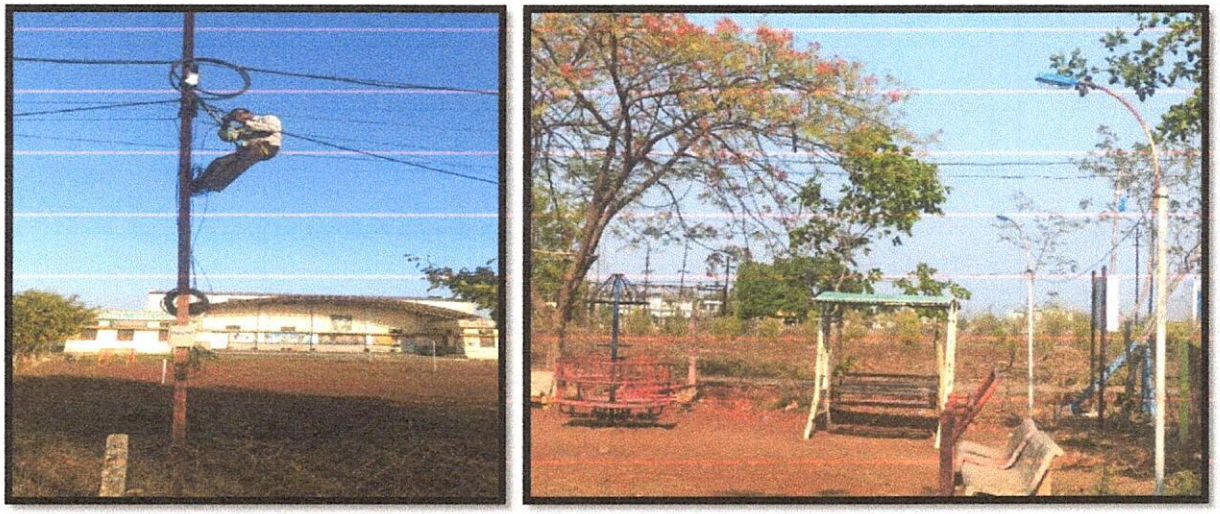
Electrical Energy Scenario at CoA, Khandwa

1. Madhya Pradesh State Power Distribution Company Limited supplies electrical energy. There are total 08 energy meters catering the electrical demand of CoA, Khandwa.
2. **Solar energy:** Solar light is a clean environment energy source which now a day's focus for installation in public places for generation of power for utilization for the mankind. The college has also initiated efforts for trapping this light energy in its campus, hostels and staff colony premises for lightning purpose in night by installing 20 solar plate equipped lamp posts.

Electricity generation from solar units

3. **Use of LED bulbs / power efficient equipment :** The entire campus premises inside and outside have LED bulbs/ LED tube light for conserving electric energy. The hostel premises also have LED bulbs/ LED tube lights for inside and outside lightning for saving of the energy. Prior to 2019-20 there were ordinary electric bulbs were functioning in the college premises. Keeping in view the saving of the electric energy these bulbs are replaced by LED lamps on all the lightning points.



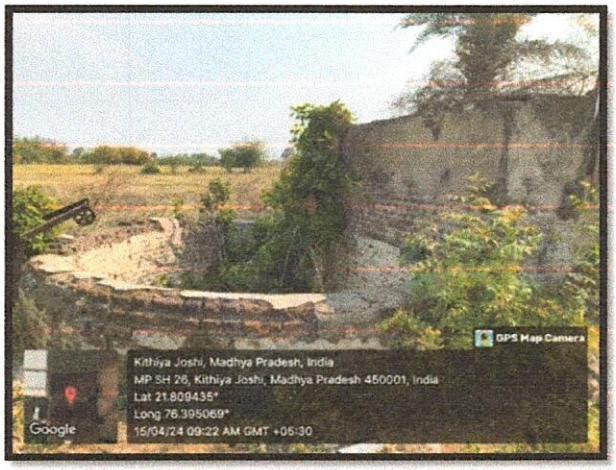


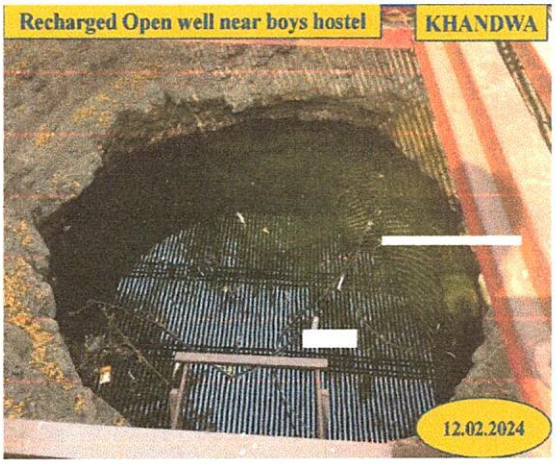
Installation of LED lights for power efficiency

Water Management

Water management is another critical aspect of reducing carbon footprints, as water and energy are deeply interconnected. Efficient water management can significantly lower the energy required for water treatment, distribution, and heating, thereby reducing greenhouse gas emissions. Water management is about water consumption, water sources, irrigation, storm water, appliances, and fixtures. Aquifer depletion and water contamination are taking place at unprecedented rates. It is therefore essential that any environmentally responsible institution should examine its water use practices. College of agriculture, Khandwa gets water from own tub wells.

1. **Rain water harvesting :** Water is precious natural resource on the earth which is the base of survival for the all type of life existing on the earth. Keeping in view the importance of this natural resource. This college has established 3 rooftop water harvesting systems in the college and hostels premise for channelizing the harvested rain water to the open dried dug well (Bawdi) and two tube wells in the girls hostels premise.
2. **Borewell / Open well recharge:** Water is essential for survival of life. For drinking and irrigation purpose, there are 5 borewells and 2 open wells in College campus and staff colony premises. Open wells are being used for ground water recharge.





3. **Construction of tanks and bunds :**

Percolation tank for rain water harvesting

Maintenance of water bodies and distribution system in the campus: The College and hostels premises are equipped with piped water supply system in the building utilities with tap on every outlet to promote efficient use of precious water.

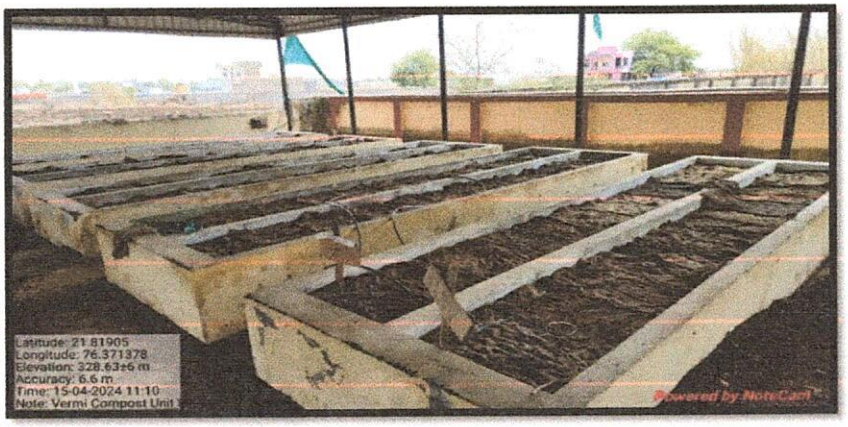
Establishment of sump well for water storage

Recharged open well near boys hostel

Waste Management

Implementing effective waste management practices is a vital mission for reducing carbon footprints and to create a more sustainable campus environment. Such practices not only minimize the environmental impact but also serve as an educational tool for students and staff. Waste management addresses waste production and disposal, plastic waste, paper waste, food waste, and recycling. Proper waste management is important for the health and well-being of the population, the environment, and the economy Municipal solid waste has a number of adverse environmental impacts, most of which are well known and not in need of elaboration. To reduce waste at institute, students and staff are educated on proper waste management practices through lectures, advertisement on notice boards, displaying slogan boards in the campus. Waste is collected on a daily basis from various sources and is separated as **dry and wet waste**. Colour coded dustbins are used for different types of wastes. Green for wet and blue for solid waste. Daily garbage is collected by housekeeping personnel and handed over to authorized personnel of District Municipal Corporation, Khandwa for further processing.

1. **Solid & liquid waste management :** On the college farm premises 28 vermi composting pits are functional in dairy unit for production valuable vermi-compost form available crop residues and trees traces matter with the help of cow dung and vermin worms. Agricultural bio waste management for producing vermin compost for enhancing crop productivity



Agricultural bio waste management, CoA, Khandwa

2. **Biological waste management:** No harmful chemicals, biological, radioactive material etc. are generated by the college. However, college has formulated a committee for safe disposal of biological wastes. All operations regarding waste disposal by the college have been adopted as per government guidelines.

3. **Biomedical waste management** : sanitary pad vending & burning machines installed at Girls Hostels, B.M.College of Agriculture, Khandwa

Installation of sanitary napkins vending machines in girls hostel

Sanitary Pad Vending & Burning machines

Installation of sanitary napkins destroyer machines in girls hostel

E-waste management : Nil

Paper & Bio Waste Recycling Unit : Nil

Environment Management Policy: Leading the way to a cleaner and healthier Environment

- Reducing degradable and non-degradable waste in the campus.
- Reducing pollution through gases, heat, odor, chemicals and hazardous microorganisms.
- Reducing water consumption and wastage.
- Appropriate training to staff and students for environmental awareness through academic programmes and campus awareness initiatives

Sr. No	**Measures Adopted**	**Impression**
1.	Organization of awareness campaigns and promotion of green attitude through physical displays, awareness lectures	Acquiring the knowledge and importance of environment, ensuing environmental protection rules, development of necessary environmental and health related skills.
2.	Regular plantation, maintenance of plants having air purification properties are preferred near conference room and laboratories.	Sustenance of Green environment in the campus
3.	Introduction of uniform solid waste management system through segregation bins and landfills.	Reduction in the amount of solid waste generated and environmental waste burden in the campus

Green Campus Management

GREEN CAMPUS MANAGEMENT

All plant and animal species - including humans - are linked together in a complex web of life; we depend upon biodiversity for our survival. Biodiversity is the key to healthy ecosystems and ultimately a healthy planet. It keeps the air and water clean, regulates our climate and provides us food, shelter, clothing, medicine, and other useful products. Each part within this complex web diminishes a little when one part weakens or disappears.

Area under green cover (in sq ft or in acre)	14.32 Hect
Availability of Nursery on Campus (Yes / No)	Yes
Plant Protection Management	Yes
Number of plantations done in the year 2023-24	2000
Extent of area (% of area) under tree/medicinal/horticultural and crop plants cover	48

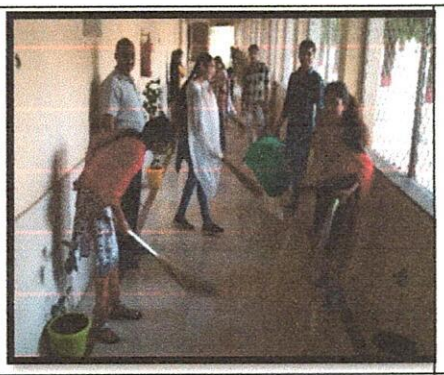
Green campus initiative includes

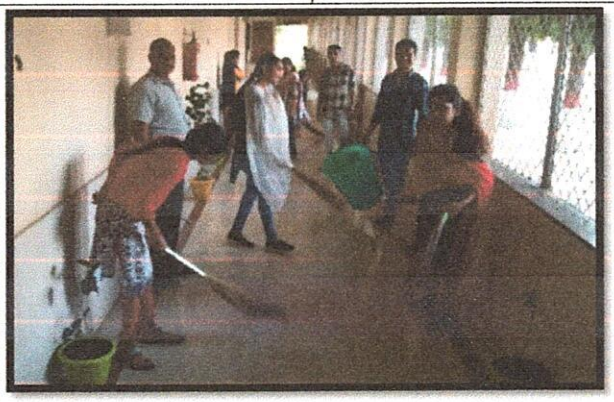
1. Restricted entry of automobiles
2. Use of Bicycles / Battery powered vehicles
3. Pedestrian Friendly pathways
4. Ban on use of plastic
5. Landscaping with trees and plants:

The college premise has good landscaping with trees and plants providing a green and clean environment in the college premises. The college has also adopted green graduation schemes as per 5th dean's recommendation from 2019-20 and is continuously running in the college with the fresh in trends taking admission in the under-graduation course.

The trees work hard to keep the air we breathe clean and healthy. They are like sponges. Their leaves take in much of the poisonous unwanted carbon dioxide in the air, and replace it with the oxygen we need for healthy living. This system of absorbing gases on which all plants rely for their food is called photosynthesis. In this process, the plants with the help of sunlight, water, minerals, and the green material called Chlorophyll within the leaves change the carbon-dioxide into food for themselves. When doing this they release oxygen into the air which is vital for all life on earth. At night when there is no sunlight the plant no longer makes food, so it does not release the same amount of oxygen.

1.

		
Cleaning Labs in college	Swachhata Abhiyan Program	Ditribution of Dustbins
		
Distribution of Plants to villages	Awareness programmes	Cleanliness drive in coleege campus by the Students and faculties.



Average Electricity Consumption per month - 239686.2*12=2768234.6

Power factor =0.85

Co2 vibration due to electricity used by college in a year= Power Factor* Elec. Consumed =

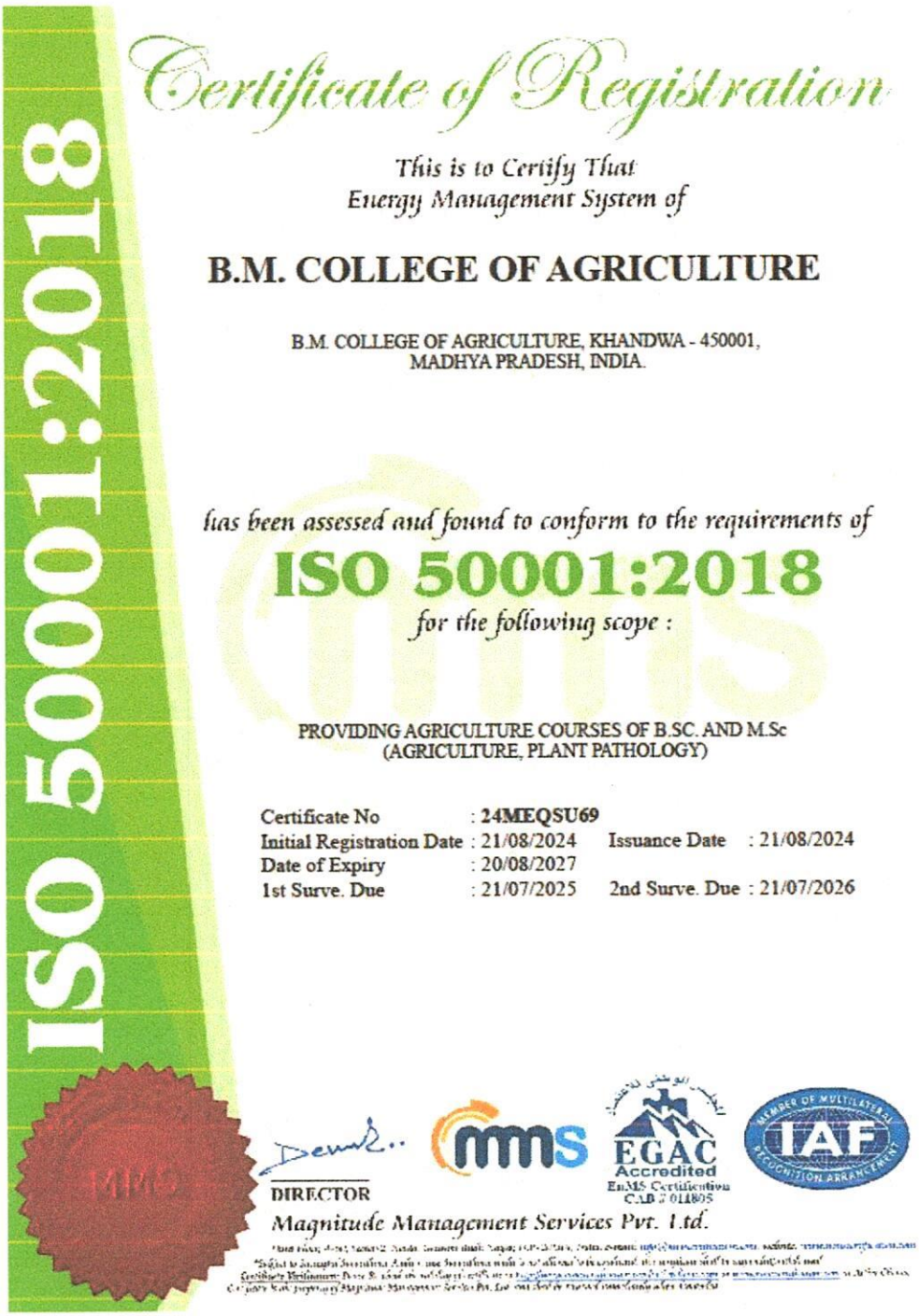
2768234.6 * 085= 2352999.0 Kg's /year

Remarks/ Recommendations-B.M.College of Agriculture has adopted good housekeeping and maintenance practices to reduce Co2, generation load, Ban on single use plastic
Proper disposal of discarded and unsafe materials of laboratories
Controlled use of water,Plantation on regular basis, Awareness campaigns like -World Environment Day, Earth Day,
Ozone Day, National Pollution prevention Day, Vishwa Diwas, Participation in Swachh Bharat Movement, Integrating Renewable Energy, Like-istallation and use of Solar energy,Use of LED bulbs / power efficient equipment, Rain water collection and

harvesting;solid waste management; green campus management, decomposition of solid organic waste and production of vermi compost; E-waste Management.Reducing degradable and non-degradable waste in the campus.Reducing water consumption and wastage, GHP and GMP's practices by involving staff and students to keep sustainable environment .

CERTIFICATES --

Energy Management System - ISO -5001:2018



ISO 50001:2018

Certificate of Registration

This is to Certify That
Energy Management System of

B.M. COLLEGE OF AGRICULTURE

B.M. COLLEGE OF AGRICULTURE, KHANDWA - 450001,
MADHYA PRADESH, INDIA.

has been assessed and found to conform to the requirements of

ISO 50001:2018

for the following scope :

PROVIDING AGRICULTURE COURSES OF B.SC. AND M.Sc
(AGRICULTURE, PLANT PATHOLOGY)

Certificate No	: **24MEQSU69**		
Initial Registration Date	: 21/08/2024	Issuance Date	: 21/08/2024
Date of Expiry	: 20/08/2027		
1st Surve. Due	: 21/07/2025	2nd Surve. Due	: 21/07/2026

DIRECTOR
Magnitude Management Services Pvt. Ltd.

EGAC Accredited
EnMS Certification
CAB # 014805

IQCS Certification

CERTIFICATE of SUCCESSFUL COMPLETION

IRCA CERTIFIED TRAINING COURSE

CERTIFICATION

This is to certify that

MR. RAJIV KUMAR DALELA

Attended and passed the Quality Management Systems (QMS) Auditor/Lead Auditor (ISO 9001:2015) Training Course No.: A18126 certified by IRCA

This course is certified by the International Register of Certificated Auditors and satisfies part of the formal training requirements for individuals seeking certification under the IRCA QMS 2015 Auditor Certification Scheme

Held in

INDIA

on

15th – 19th July 2016

Course Leader/Examiner:

IQCS CERTIFICATION

Certificate Number:

A18126/418/2016

Note: This Certificate is valid for three years for the purposes of IRCA Auditor Certification.

CERTIFICATE

ICL
Integral Certification (P) Ltd.

This is to Certified That

Mr. Rajiv Kumar Dalela

Has Successfully Completed

Has passed the ongoing assessment and written examination required for successful completion of an ICL Certified

ISO 14001:2015 (Environmental Management System)
Transition Auditor Training Course

Integral Certification (P) Ltd.

Location of course: Lucknow

Date of Course: 14/12/2015

Certificate No: ICL/EMS/15/0021 *Course No: ICL/TR-E-15/15*

Training Head

ICL TRAINING

Integral Certification (P) Ltd.
(Formerly Indraprastha Certification (P) Ltd.)
U-60 (3rd Floor), Shakar Pur,Laxmi Nagar, Delhi-110092
email: info@iclcert.com
Website : www.iclcert.com
Contact No. : +91-11-33257055

For Precise and Updated information concerning this certificate visit at www.iclcert.com

GREEN, ENERGY & ENVIRONMENTAL AUDIT REPORTS

OF

CoH, Mandsaur

2022-2025

GREEN AUDIT REPORT, 2024

KNK, COLLEGE OF HORTICULTURE, MANDSAUR (M.P.) 458001

1. INDEX

2. ACKNOWLEDGEMENT

We express our sincere thanks to Dr. I. S. Tomar, Dean, KNK College of Horticulture, Mandsaur (MP) India for his kind support and giving us the assignment to contribute in their effort towards Green initiatives and efficient energy management in the college.

We are highly indebted to IQAC Coordinator and IQAC Members for their guidance, intellectual advice and their kind support in completing the project.

Our boundless gratitude to other teaching and non-teaching staff associated with this Energy Audit, Environment Audit & Green Audit study of KNK College of Horticulture, Mandsaur (M.P.) for extending cooperation during collection of data and field study work.

We trust that the findings of this study will help the college in improving Green initiative towards creating awareness for healthy and sustainable environment.

3. DISCLAIMER

Warranties and Liability

While every effort is made to ensure that the content of this report is accurate, the details provided "as is" makes no representations or warranties in relation to the accuracy or completeness of the information found on it. While the content of this report is provided in good faith, we do warrant that the information will be kept up to date, be true and not misleading, or that this report will always (or ever) be available for use.

While implementing the recommendations site inspection should be done to constitute professional approach and adequacy of the site to be established without ambiguity and we exclude all representations and warranties relating to the content and use of this report.

In no event We will be liable for any incidental, indirect, consequential or special damages of any kind, or any damages whatsoever, including, without limitation, those resulting from loss of profit, loss of contracts, goodwill, data, information, income, anticipated savings or business relationships, whether or not advised of the possibility of such damage, arising out of or in connection with the use of this report.

Exceptions

Nothing in this disclaimer notice excludes or limits any warranty implied by law for death, fraud, personal injury through negligence, or anything else which it would not be lawful for to exclude.

We trust the data provided by the KNK College of Horticulture, Mandsaur (M.P.) personnel is true to their best of knowledge.

4. CERTIFICATE

ISO 50001:2018

Certificate of Registration

This is to Certify That
Energy Management System of

KNK COLLEGE OF HORTICULTURE

KNK COLLEGE OF HORTICULTURE, MANDSAUR (M.P.)

has been assessed and found to conform to the requirements of

ISO 50001:2018

for the following scope :

PROVIDING Horticulture COURSES OF B.Sc AND M.Sc VEGETABLE SCIENCE, FRUIT SCIENCE, FLORICULTURE AND PSMA.

Certificate No	: **24MEQSB79**		
Initial Registration Date	: 21/08/2024	Issuance Date	: 21/08/2024
Date of Expiry	: 20/08/2027		
1st Surve. Due	: 21/07/2025	2nd Surve. Due	: 21/07/2026

MMS

DIRECTOR

EGAC Accredited
EnMS Certification
CAB # 011805

MEMBER OF MULTILATERAL RECOGNITION ARRANGEMENT IAF

Magnitude Management Services Pvt. Ltd.

Third Floor, A-60, Sector-2, Noida, Gautam Budh Nagar, U.P.-201301, India. e-mail: info@mmscertification.com, website: www.mmscertification.com

**Subject to Successful Surveillance Audit n case Surveillance audit is not allowed to be conducted, this certificate shall be suspended/withdrawal*

***Certificate Verification:** Please Re-check the validity of certificate at http://www.mmscertification.com/activeclients.aspx or www.mmscertification.com at Active Clients.*

Certificate is the property of Magnitude Management Services Pvt. Ltd. and shall be returned immediately when demanded.

5. AUDITOR'S CERTIFICATE

IQCS Certification

CERTIFICATE of SUCCESSFUL COMPLETION

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email: info@iclcert.com
Website : www.iclcert.com
Contact No. : +91-11-33257055

ST

ICL TRAINING

For Precise and Updated information concerning this certificate visit at www.iclcert.com

6. INTRODUCTION

1. INTRODUCTION

About KNK College of Horticulture, Mandsaur:

The College is located in Malwa Plateau of Madhya Pradesh. Mandsaur lies between 22 °13 to 24°50'N latitude and 74°23' to 77°15' E Longitude at 452 meters MSL. It is located approximate 600 km away from the University Headquarter *i.e.* RVSKVV, Gwalior by train and 222 km away from Indore Airport. Mandsaur is situated on Ratlam Ajmer broad gauge 85 km north from Ratlam junction.

1.	Name of Institution	KNK College of Horticulture, Mandsaur (M.P.)
2.	Address of the Institution	**Near Sitamahu Phatak, Mandsaur (M.P.) 452001**
3.	University Affiliated to	Rajmata Vijayaraje Scindia Krishi Vishwa Vidyalaya, Gwalior (M.P.)
6.	Name of the Dean	Dr. I. S. Tomar
7.	Contact Number	91+ 9425188028
8.	E Mail ID	dean.mandsaur@rvskvv.net

About College
Organizational setup –

The First Horticulture College of the State at Mandsaur was established in the name of Shri Kailash Nath Kataju, the former Chief Minister of undivided Madhya Pradesh on October 4, 2002. Prior to this the College was established as College of Agriculture since March 28, 1987. The first batch of B.Sc. (Hort.) was admitted in the year 2002 and M.Sc. (Hort) in 2006-07.

The Honorable Chief Minister of Madhya Pradesh Shri Motilal Vora laid down the foundation stone of the College under the jurisdiction of parent University, Jawaharlal Nehru Krishi Vishwa Vidyalaya, Jabalpur. The College came under the jurisdiction of Rajmata Vijayaraje Scindia Krishi Vishwa Vidyalaya, (RVSKVV) Gwalior on 19th August, 2008. The College offers four-year Under Graduate degree programme in Horticulture. It runs Post graduate Degree Programme in four disciplines *viz.,* Vegetable Science, Fruit Science, Floriculture and Landscaping and Plantation, Spices and Medicinal and Aromatic Crops since 2006.The total intake capacity of this college is 56 including payment, ICAR and NRI seats under different categories in UG programme and 48 in PG Programmes. The College of Horticulture caters to the educational needs in the fields of horticulture, in Malwa plateau and beyond. The plateau is prosperous in crop biodiversity and offers a wide range of variability in Spices, Vegetables, Fruits, Medicinal and Aromatic Crops, Oil Seeds, Cereals and Pulse crops.

DEPARTMENTS:

Department of Vegetable Science
Department of Fruit Science
Department of Plantation Species Aromatic and Medicinal Crop
Department of Floriculture and Landscaping

RESEARCH STATIONS & KRISHI VIGYAN KENDRA
Research stations:
Malwa plateau zone
Regional Horticulture Research Station - Jaora

(B) Krishi Vigyan Kendras: Mnadsaur and Neemuch

Presently the college is one of the prime colleges in Madhya Pradesh, a lead College Mandsaur that provides research, teaching and extension services in the field of Horticulture. The college has the student strength of more than 200 students in the current academic session 2023-24. It holds the unique opportunity of being a mixed bowl of urban and rural students with satisfactory gender equality. The college, since its commencement is serving the society and the nation in a significant way by providing various research activities through AICRP projects including varieties in Opium, Kalemegh, Chandsaur, Isagol Tulsi, soybean, maize, wheat Chick-pea onion, garlic, Ber, Anola, Beal, Guava, Citrus, Pomegranate, Mango Gamum, Sapota, custard apple, Tomato, Brinjal, onion, Garlic, okra, cowpea, Bottle gourd etc. and deeply involved in of higher education to learners, making this a distinctive feature of this institution.

	2023-24	2022-23	2021-22	2020-21	2019-20
Number of students	**241**	**251**	**275**	**274**	**282**
Teachers	**27**	**27**	**27**	**29**	**34**
Non- Teaching Staff	24	25	25	29	30
Total	**292**	**303**	**327**	**332**	**346**
Number of Working days	240	235	242	176	232

Library

The college library is fully automated with CERA, KOHA library software, online database facility and is well equipped with books, journals, periodicals and reading rooms. Book bank facility is available for SC and ST students.

Career Counseling and Placement Cell

Career Counseling and Placement Cell monitors activities related to job notifications and opportunities, Interview preparation, development of entrepreneurial skills, organizing of campus interviews besides ensuring maximum participation in campus recruitment and interviews. The cell works in coordination with all Head of departments to cater to diverse need of students. It is actively engaged in organizing Inspirational lectures by experts.

It aims at guiding students towards cracking Civil Service exams, State Agriculture Department examination like RAEO, RHEO, ADA, ADH, Banking sector AOs, examinations like JRF, SRF, NET, ARS etc. The Cell also attempts at encouraging students by providing them opportunities to interact with young officers, researchers, newly appointed Asstt. Directors in agriculture/ Horticulture, Agriculture Officer in Banks etc. who have already cracked the exams.

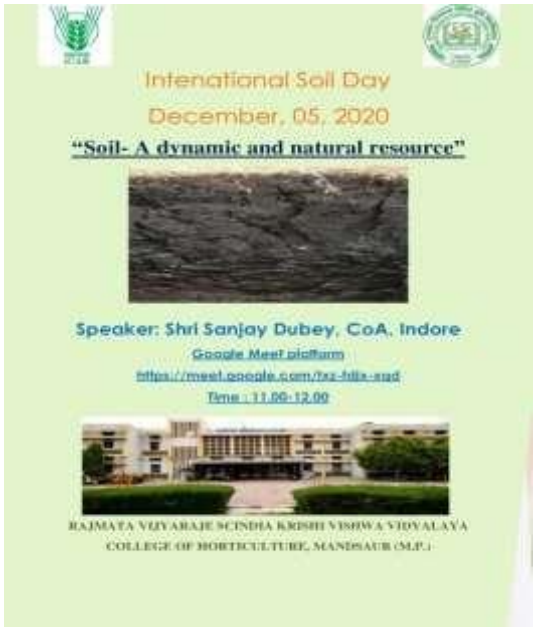
The college is moving forward with a multi-pronged strategy towards excellence with a view to come out as an institution of the future that prepares the students equipped with knowledge, skill, aptitude and social commitment.

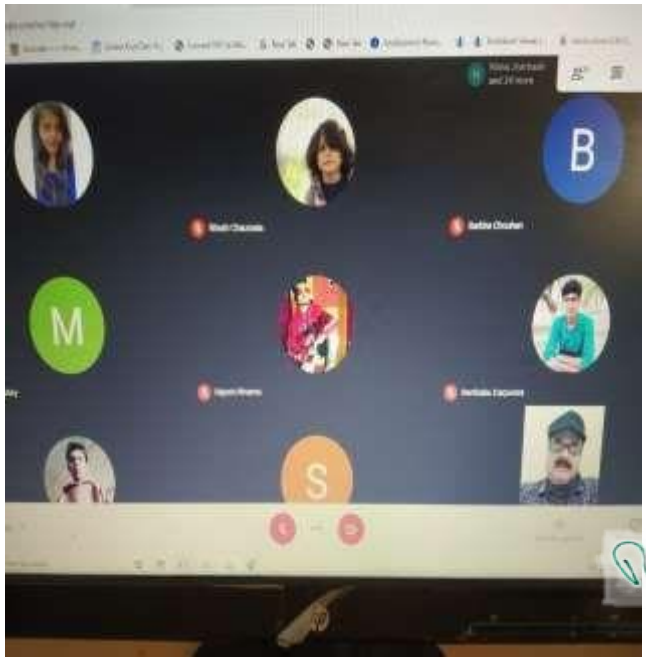
General issues:

➢ **Awareness of Environmental policy**	Yes
➢ **Environmental protection rules**	• Ban on single use plastic • Proper disposal of discarded and unsafe materials of laboratories • Periodic use of bicycles • Controlled use of water

➢ **Housekeeping schedule**	• Regular dusting and mopping in class rooms, veranda and laboratory areas
➢ **Activities done for Environmental cleanliness**	• Plantation • Awareness campaigns
➢ **Celebration of Important days**	• World Environment Day, Earth Day, world water Day, World soil day , world biodiversity day, Shivna Cleanliness Campaign, Swachhta Abhiyan, Parthenium awareness week etc.
➢ **Participation in Local and National Environmental protection movements**	• Participation in Swachh Bharat Movement • Activities through NSS, YRC

World environment days





World soil day celebration at online mode

Shivna river cleanliness campaign


Rural cleanliness campaign

Parthenium eradication awareness days

INTERNATIONAL SOIL DAY CELEBRATON ON 5TH DECEMBER, 2023
AT
COLLEGE OF HORTICULTURE, MANDSAUR

MARCH PAST OF STUDENTS AND STAFF ON SOIL DAY


MARCH PAST OF STUDENTS AND STAFF ON SOIL DAY

SOIL DAY COMPETITION OF STAFF

SOIL DAY COMPETITION OF STUDENTS

LECTURE ON SOIL DAY

LECTURE DELIVERED BY DR. PRADEEP KUMAR, GUEST SPEAKER

PARTICIPANTS DURING LECTURE

GROUP PHOTO WITH GUEST SPEAKER

National Unity Day

Campaign Nasha Mukti Abhiyan

VISION

To impart education, conduct research and extension activities for enhancing productivity, optimization of profit and sustainability of horticulture and allied sectors and improving rural livelihood in the state of Madhya Pradesh.

"Social Transformation through Education."

Our objective is to evolve through collective leadership into a centre of academic excellence which, while retaining its regional roots, is able to surmount and objectify global concerns and their wide social perspective we tend to achieve a balance between academic practices, social empathy, cultural inclination and co-curricular activities so that we should gain our best in shaping young minds.

MISSION

- To create an environment for teaching, research and extension, which encourages the students to make use of their learning potential and opportunities maximally and imbibe knowledge, skills and values with ease.

- To offer learning opportunities to the students which lead to realization of their career objectives and life goals and enable them to become industrious and dexterous in the field of their choice.

- To support the learning experiences of students with a host of participative projects and community engagement activities like RHWE, NSS, Experiential Learning programmes *etc,* which contribute to the development of their social consciousness, teamwork, interpersonal communication and relationship skills, *etc.*

- To undertake need based location specific problem oriented research through the faculties of the college and Thesis Research Programme of the PG students.

- To make available the technologies developed by the VV to the farmers through constant interaction with them.

"OAMSS"-The Institutional Development Project:

The Institutional Development Project with an acronym ***"OAMASS"(***pronounced as OMS) is detailed as ***"Over All Mentoring of Staff and Students"*** is operational in the College with six component clubs as appended below:

- To foster the pursuit of excellence and the spirit of healthy competition and stimulate the students for the real world by facilitating their participation in competitive and academic activities under the project named as ***"Learners' First "club.***

- To lend a hand to the learners to nurture a creativity potential and utilize their talents and build on their physical and psychological strength with an added advantage of personality grooming through active participation in Co-Curricular and Extra-Curricular activities under the project named as ***"Shine and Divine" club.*** It also aims to shape and sharpen the personality of the learners while inculcating in them moral, ethical and spiritual values.

7. ENERGY MANAGEMENT

Energy Management is the strategy of adjusting and optimizing energy, using systems and procedures so as to reduce energy requirements per unit of output while holding constant or reducing total costs of producing the output from these systems"

Principle of Energy Management

- ✓ Procure energy at lowest possible price
- ✓ Manage energy use at highest energy efficiency
- ✓ Reusing and recycling energy
- ✓ Select low investment technology to meet present requirement and environment condition
- ✓ Make use of wastes generated within the plant as sources of energy and reducing the component of purchased fuels and bills

7.1 Energy Scenario

Electrical energy is supplied by Madhya Pradesh State Power Distribution Company Limited. There are total three energy meters catering the electrical demand of College of Horticulture, Mandsaur (M.P.) One of the LT connection meter is only for hostel and other five LT connections are catering the electrical demand of college premises.

Sl. No.	Name of Connections	IVRS Number	Service Number	Contract Demand in load	Tariff Category
1	New boys Hostel	N3355014225	N3355014225	45.0KW	LV2(LV2.1)
2	New Girls Hostel	N3355014420	N3355014420	12.0 KW	- LV2(LV2.2)
3	College Building	N3355014223	N3355014223	33.0 KW	LV2(LV2.1)
	Total				

Table 1 :Analysis of billings of meters of College premise for the year 2024- 25

7.2 Electricity Bill Analysis

7.3 Connected Load of College premises

Segment	Electrical Equipment	Wattage	Quantity	Total load in Watt
Lighting	TL	40	320	12800
	LED TL	36	20	720
	Fl. street Light	50	15	750
	LED Bulb	30	20	600
	LED Bulb	23	70	1610
	LED Bulb	12	30	360
	LED street light (Lamp)	40	20	800
	Total Lighting Load			**17640**
HVAC	Ceiling Fan	60	293	17580
	Wall Fan	60	08	480
	Cooler18"	70	20	1400
	AirConditioner1.5T	1500	16	24000
	Total HV AC Load			**43460**
Office Equipment	Computer	100	62	6200
	Printer	40	22	880
	Photo Copy Machine	300	03	900
	U.P.S.	400	34	13600
	Total Office Equipment Load			**21580**
Water Supply	Submersible pump	750	7	45000
	Total Water Supply Load			**45000**
	Water Cooler Big	600	1	600
	Smart Board	200	4	800
	Inverter	1 KW	3	3000
	Generator	-	-	
	Total Other Connected Load			**4400**
Total Connected Load in Watt				**132080**
Total Connected Load in Kilo Watt (Say)				**132.080**

Table3 : Connected load of college

7.4 Segment wise connected load and their percentages

Segment	Total load in Kilo Watt	Load in Percentage
Lighting	**17.64**	13.36
HVAC	**43.46**	32.90
Water Supply	**21.58**	16.34
Office Equipment	**45.00**	34.07
Others	**4.40**	3.33

Table4: Segment wise connected load and their percentages

7.5 Connected Load of Hostel

Segment	Electrical Equipment	Wattage	Quantity	Total
Lighting	Ceiling FAN	60	62	3720
	LED Bulb	23	125	2875
	LED Street Light	50	5	250
	Total Lighting Load			
	Water Cooler	230	1	600
	Total HV AC Load			
Others	Others			7445
Total Connected Load in Watt				**7.445**
Total Connected Load in Kilo Watt				**-**

Girls Hostel :

Segment	Electrical Equipment	Wattage	Quantity	Total
Lighting	Ceiling FAN	60	26	1560
	LED Bulb	23	60	1380
	LED Street Light	50	3	150
	Computer	100	5	500
	Inverter	2000	1	2000
	Total Lighting Load			
	Water Cooler	230	1	230
	Total HVAC Load			**5820**
Others	Others			
Total Connected Load in Watt				**5.820**
Total Connected Load in Kilo Watt				**-**

Table5: Connected load of hostel

Total Connected Load in College

Connected Load of College of Horticulture	**132.080**
Connected Load of Hostel	**7.445**
Total Connected Load of College including Hostel	**5.820**


GPS Map Camera
Mandsaur, Madhya Pradesh, India
337Q+575, MP SH 14, Madhya Pradesh 458895, India
Lat 24.062904°
Long 75.088298°
29/08/24 04:22 PM GMT +05:30
Google


GPS Map Camera
Mandsaur, Madhya Pradesh, India
337Q+575, MP SH 14, Madhya Pradesh 458895, India
Lat 24.062897°
Long 75.088259°
29/08/24 04:21 PM GMT +05:30
Google

- **Auditing for Water Management of the institute for Environmental Consciousness and Sustainability**

- **Rain water harvesting structures and utilization in the campus**

8. WATERMANAGEMENT

This indicator addresses water consumption, water sources, irrigation, storm water, appliances and fixtures. Aquifer depletion and water contamination are taking place at unprecedented rates. It is therefore essential that any environmentally responsible institution should examine its water use practices.

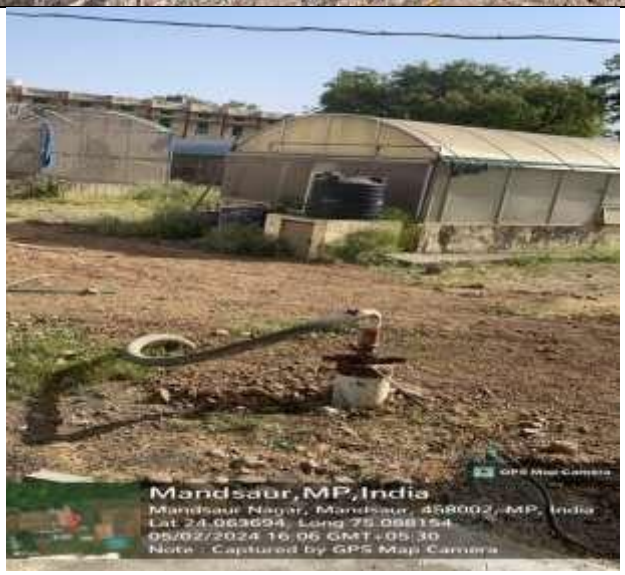
8.1 Water conservation faculties available in the Institution

College of Horticulture located in outside the city, there is no Municipal Water supply for the college. The college depends on ground water for all its water needs. Hence, efficient usage of available water and adaptation of water conservation measures are essential. The daily requirement of water including college, hostels and staff quarter in the campus is around 80,000.00 lit.

a. **Open well:** Total number of five open well are constructed for water supply for daily needs and irrigation in field. These well also use for conservation and recharging the ground water through rainwater harvesting

Open Well present in Krishi Nagar and Field

B. Bore wells: Bore water or groundwater is the most common source of water, assessed by drilling the ground and pumping water from the aquifers. The Institution campus depends on ground water for all its need. In College of Horticulture, Mandsaur: Total 10 bore well are available to meet the water requirement of institute, hostels and Staff qurters.



8.2 STORAGE STRUCTURE OF COLLEGE, KRISHI NAGAR AND COLONY

Total seven storage structure (sump well) are constructed in college for judicious use , proper supply and meaningful distribution of drinking water, daily use and irrigation of different production and research field.

Storage tank in colony

Storage tank in College campus

Overhead water storage tank capacity in College and Hostels: In College has presently 21 overhead water storage tanks each having capacity of average 1000 litre. Thus, college has total 24500 litre of water storage capacity.

Sl. No.	Water Tank Capacity	Numbers	Total Capacity
1	2000	4	8000
2	1000	16	16000
3	500	01	500
Total Consumption of water in Liter		24500 lit	

Boys Hostel

Sl. No.	Water Tank Capacity	Numbers	Total Capacity
1	2000	6	12000L
Total Capacity in Liter			**12000 L**

Table 8 : Overhead water storage tank capacity in hostel

Girls Hostel

Sl. No.	Water Tank Capacity	Numbers	Total Capacity
1	2000 lit	4	8000
Total Capacity in lit.			**8000 L**

Staff quarter

Sl. No.	Water Tank Capacity	Numbers	Total Capacity
1	1000 lit	20	20000L
Total Capacity in lit.			**20000 L**

Quantities of water taps and water coolers

Description	College	Hostel (Boy and Girls)
Water Taps	60	110
Water Coolers	01	02

8.3 RAIN WATER HARVESTING

Construction Of Trenches- A tranche of size 3000 m x 1m x 1m is also placed along with fencing of the college research farm for the percolation of rain water.

Percolation Tank: Mohamadpura tank comes under college and it harvests every drop of rainwater and optimizes water usage on campus and staff colony also helps reduce waste of rain water.

Rain water collection tanks – College lab buildings have rainwater harvesting and collection system and have more than 50000 liter water collection capacity

8.4 . Maintenance of water bodies and distribution system in the campus

- Deeping and cleaning of wells bore well by removal of mud and other material form well and bore well.
- Use of drip irrigation to watering the crop and plants

- **Auditing for Waste Management of the institute for Environmental Consciousness and Sustainability.**
- **Waste Management steps including:**
- **Solid waste management**
- **Liquid waste management**
- **E-waste management**

WASTE MANAGEMENT

This indicator addresses waste production and disposal, plastic waste, paper waste, food waste, and recycling. Municipal solid waste has a number of adverse environmental impacts, most of which are well known and not in need of elaboration. To reduce waste at institute, students and staff are educated on proper waste management practices through lectures, advertisement on notice boards, displaying slogan boards in the campus.

Waste is collected on a daily basis from various sources and is separated as dry and wet waste. Colour coded dustbins are used for different types of wastes: Green for wet and blue for solid waste.

Daily garbage is collected by housekeeping personnel and handed over to authorized personnel of District Municipal Corporation, Mandsaur for further processing.

9.1. Solid Waste Management

The Institution implements solid waste management by enforcing the waste segregation rules. Dustbins are placed in every classroom, laboratory, rest room, and mess at different locations in the campus. Sweepers are allotted to each floor who manages all the waste generated in the campus.

Solid waste can be divided into two categories: general waste and hazardous waste. General waste includes what is usually thrown away in College such as paper, plastics tins and glass bottles. Hazardous waste is waste that is likely to be a threat to one's health or the environment like chemicals and petrol. Small bucket and big buckets are used for solid waste.

- Small Plastic bucket = 40 Nos.
- Big Plastic Bucket = 18 Nos.
- Total Production of Solid Waste (Bio degradable) : 20-25 Kg
- Total Production of Solid Waste (Non Bio degradable) : 3-5 Kg/ day
- College also has two numbers of Napkins/Wending/Burning Machine

9.1.1 Non Bio Degradable Waste – Plastic Bottles / Waste Paper etc.

- Non-biodegradable are those waste, which cannot be decomposed by biological processes. These are of two types - Recyclable: waste having economic values but destined for disposal can be recovered and reused along with their energy value. e.g. Plastic, paper, old cloth etc. Non-recyclable: waste which do not have economic value of recovery. e.g. Carbon paper, thermocol, tetra packs etc. Disposal of non-biodegradable waste is a major concern, not just plastic, a variety of waste being accumulated. There are a few ways to help non-biodegradable waste management. The impact of non- biodegradable waste on the environment and also focus on its safe disposal for sustainable environment.
- Waste material like plastic, papers etc. are collected and sold out to scrap vendor from time to time.
- College has also compost pit to produce compost manure from the research areas, dairy unit, hostels, residential areas, canteen solid waste and waste from other sources. Manure will be used for the purpose of research area, garden and for planted tree.

- The solid organic waste heaped from various agrarian activities is duly utilized by generating the very precious organic manure and Vermiwash by "**Akshara**" the vermi-compost unit of the College, which not only provides the much needed non-chemical, natural nourishment to the plants in campus but at the same time remains in great demand by the community of the farmers who rely on organic farming, which is in great vogue these days. Needless to mention here that the unit is generating fund too for the institute.

Dustbins are placed outside every department for collection of paper and other waste	
	
Dustbins are placed for degradable and non-dirigible waste in college campus and hostels	Compost unit setup for deposal of dry leaves
	

“Akshara” the vermi-compost unit	
	
	

कार्यालय नगरपालिका परिषद मंदसौर (म0प्र0)

दूरभाष कार्यालय-4059[illegible] फैक्स 244246

ई-मेल: cmomandsaur@[illegible].gov.in

क्रमांक 247 /क्या. शाखा/2024 मंदसौर दिनांक- 01 /05/2024

प्रमाणीकरण

एतद द्वारा प्रमाणित किया जाता है, कि के. एन. के. उद्यानिकी महाविद्यालय, मंदसौर के ठोस अपशिष्ट प्रबंधन के अंतर्गत वर्ष (2019-20, 2020-21, 2021-22, 2022-23 एवं 01.04.2023 से 31.03.2024) में महाविद्यालय में उत्पन्न होने वाले ठोस अपशिष्ट का निदान (डिस्पोज) का कार्य निकाय द्वारा किया गया। उक्त प्रमाण-पत्र के. एन. के. उद्यानिकी महाविद्यालय, मंदसौर की मांग अनुसार प्रदान किया जाता है।

मुख्य नगर पालिका अधिकारी
नगर पालिका परिषद मंदसौर

Solid waste management pit at college campus by DMC, Mandsaur at college campus

Liquid waste management

Institute wastewater management has been crucial towards our sustainability models for reducing and reusing water at our campuses. The students and staff use water for daily use. Additionally, departments use water for many purposes including processes, laboratory uses, and cleaning or rinsing of parts, air conditioning. Used water enters the wastewater stream, and it flows to the wastewater collection area.

Proper sewage system is available with septic tanks and soak pit.

- Total 12 septic tanks are available at college, Hostels and Krishi Nagar
- Total three soak pit at college, Hostels and Krishi Nagar have been constructed

Septic tank for waste water of colleg

a) Organization of awareness campaigns and promotion of green attitude through physical displays, awareness lectures	**a) Acquiring the knowledge and importance of environment, ensuing environmental protection rules, development of necessary environmental and health related skills, and values, understanding the concept of grey water and continuous education to focus Reduce, Reuse & Recycle**
b) Regular plantation, maintenance of plants having air purification properties are preferred near conference room and laboratories.	**b) Sustenance of Green environment in the campus**
C) Introduction of uniform solid waste management system through segregation bins and landfills.	**c) Reduction in the amount of solid waste generated and environmental waste burden in the campus**
d) Provision of sanitary napkin dispensers in girl's common room and efficient disposal of waste through incinerators	**d) No accumulation of waste**
e) Regular monitoring of overhead water storage PVC tanks for leakage, accumulation of water nearby and proper closure of lid	**e) Effective and efficient use of efflux water for gardening, washing and mopping. No entry and accumulation for litter and overflowed water near overhead water tanks and rarer possibility of mosquito breeding around the area**
f) Rain water harvesting for judicious utilization of natural water resource through channelization of roof top rain water for ground water recharge.	**f) 'Catch the rain where it falls' Supporting ground water recharge in support of water recycling**

E-waste Management: Disposing of old, out dated and non-working electronic items such as monitors, computers, keyboards, mouse, power supplies, printers, batteries etc. is a big problem because these material contain some kind of hazardous materials like lithium, lead, zinc etc. and improper disposal of these items is harmful for living beings.

The institute has identified certified vendors for E-waste disposal. The electronic equipment that needs to be disposed is collected at a central store and then handed over to the certified

vendors. We get certificate from the vendor ensuring that the E-waste will be disposed as per prevailing norms without harming the environment.

Documentary evidence for E waste management

8.5 Environment Management Policy: Leading the way to a cleaner and healthier Environment

- Reducing degradable and non-degradable waste in the campus.
- Reducing pollution through gases, heat, odor, chemicals and hazardous microorganisms
- Reducing water consumption and wastage
- Appropriate training to staff and students for environmental awareness through academic programmes and campus awareness initiatives
- Facilitation of research in sustainability

9.5. Corrective Measure Adopted by college

Measures adopted	Impression
Use of energy conservation devises, Promotion of paper less work, Reduction in e-waste	Safety during experimentation, power saving, reduction in solid waste
Timely disposal of spent materials, periodic cleaning and disinfection of tools, equipment and microscope.	Limited accumulation of waste, limited risk of health hazards
Use of lab coats during experiments, land filling of animal waste and neutralization of strong chemicals before release in the environment disposal after use	Restricted accumulation of waste, limited risk of health hazards
Compulsion of Lab coats and hand gloves during experiments, use of biosafety cabinets during microbial transfer, Separate storage compartments for bacteria and fungi, Separate area for decontamination and washing, periodic cleaning and disinfection of working area, microscopes, deep refrigerators and incubators	Safety and protection during experimentation,Reduction of generation of microbial aerosol, less chances of cross contamination during experiments, limited risk of health hazards
Compulsion of Lab coats and hand gloves during experiments.	Safety during experimentation
Segregation of paper and disposable plastic waste in separate bins and daily	Reduction in the accumulated waste

- ✓ **Green Campus Management and Carbon Footprint of the institute for Environmental Consciousness and Sustainability.**
- ✓ **Green Practices**
- ✓ **Students, staff using**
  a) **Bicycles**
  b) **Public Transport**
  c) **Pedestrian friendly roads**
- ✓ **Plastic-free campus**
- ✓ **Paperless office**
- ✓ **Green landscaping with trees and plants**

9 GREENCAMPUSMANAGEMENT

Outcomes – Planting the trees helps to maintain clean, eco-friendly environment reduce pollution & improves the green ambience. As we know that trees are the foremost source for producing oxygen in the environment, they help to reduce the level of CO_2. As the whole world is facing the problem of global warming and other environmental related issue and to recover from such a problem planting the trees is the most vital steps in present day situation.

Objective of Green Graduation: -

1. To create awareness about importance of environment, benefits of trees in premises and surrounding.
2. This is a student – centric programme having academic support, opportunity of research, commercial use and preservative of rare species.
3. To promote healthier, kinder, smarter more effective more resilient, more beautiful more vital populace.

Concept: -

The Green Graduation Programme is a "One student- one tree" concept and is a part of the sustainable development goal by World Health Organization. As per this programme, students have to plant a sapling and nurture it all through four years degree. At the end of their graduation, they are awarded with a Green Graduation Certificate along with photo of plant nurtured by them. The seniors have the option of passing on the plant to their juniors too.

Our University has also initiated a unique and novel initiative known as Green Graduation Programme so as to provide every individual student a regular and diverse advantage of green wealth.

College of Horticulture, Mandsaur intends to implement it in its true spirit by assigning a student who gets enrolled to plant a sapling so as to develop environmental consciousness and love of nature among them thereby leaving an everlasting impression.

KNK COLLEGE OF HORTICULTURE, MANDSAUR (M.P.)
YEAR :……2020-24……

S.N.	NAME OF STUDENT	BOTANICAL NAME	VENUE
1.	Mukesh Solanki	*Thevetia peruviana*	college campus
2.	Piyush Makwane	*Thevetia peruviana*	college campus
3.	Abhishek Kushwah	*Thevetia peruviana*	college campus
4.	Abhishek Sharma	*Thevetia peruviana*	college campus
5.	Ajay	*Thevetia peruviana*	college campus
6.	Ajit Singh Gujar	*Thevetia peruviana*	college campus
7.	Amit Birgodiya	*Thevetia peruviana*	college campus
8.	Ankit Kumar	*Thevetia peruviana*	college campus
9.	Arun Solanki	*Thevetia peruviana*	college campus
10.	Arun Waktiya	*Thevetia peruviana*	college campus
11.	Ashok Kumawat	*Thevetia peruviana*	college campus
12.	Bablu Patidar	*Thevetia peruviana*	college campus
13.	Chandra Sekhar Patidar	*Thevetia peruviana*	college campus

14.	Damini Chauhan	*Thevetia peruviana*	college campus
15.	Dharmesh Rathore	*Thevetia peruviana*	college campus
16.	Hariom Nagar	*Thevetia peruviana*	college campus
17.	Jaya	*Thevetia peruviana*	college campus
18.	Kavita Kankar	*Thevetia peruviana*	college campus
19.	Krishan Lal Meena	*Thevetia peruviana*	college campus
20.	Krishna	*Thevetia peruviana*	college campus
21.	Kundan Mandawliya	*Thevetia peruviana*	college campus
22.	Mandakini Baghel	*Thevetia peruviana*	college campus
23.	Meera Parmar	*Thevetia peruviana*	college campus
24.	Mohit Yadav	*Thevetia peruviana*	college campus
25.	Monu Mahajan	*Thevetia peruviana*	college campus
26.	Nikhil Patel	*Thevetia peruviana*	college campus
27.	Nirmala Merat	*Thevetia peruviana*	college campus
28.	Pawan Patidar	*Thevetia peruviana*	college campus
29.	Prachi Joshi	*Plumeria spp.*	college campus
30.	Pragati	*Plumeria spp.*	college campus
31.	Prem Prakash	*Plumeria spp.*	college campus
32.	Rahul Rawat	*Plumeria spp.*	college campus
33.	Rajesh Ninama	*Plumeria spp.*	college campus
34.	Ramgopal Malviya	*Plumeria spp.*	college campus
35.	Ravi	*Plumeria spp.*	college campus
36.	Ravindra Kumar Maholi	*Plumeria spp.*	college campus
37.	Raymal	*Plumeria spp.*	college campus
38.	Samrath Dhakad	*Plumeria spp.*	college campus
39.	Sanjana Patel	*Plumeria spp.*	college campus
40.	Shivanee Devada	*Plumeria spp.*	college campus
41.	Shivani Dashore	*Plumeria spp.*	college campus
42.	Shubham	*Plumeria spp.*	college campus
43.	Sukhdev Uikey	*Plumeria spp.*	college campus
44.	Sumit Baghel	*Plumeria spp.*	college campus
45.	Teena Malviya	*Plumeria spp.*	college campus
46.	Yash Rathore	*Plumeria spp.*	college campus
47.	Nihal	*Hibiscus rosa sinensis*	college campus
48.	Aadarsh Patel	*Hibiscus rosa sinensis*	college campus
49.	Aashish Sharma	*Hibiscus rosa sinensis*	college campus
50.	Akash Malviya	*Hibiscus rosa sinensis*	college campus
51.	Aklesh	*Hibiscus rosa sinensis*	college campus
52.	Akshat	*Hibiscus rosa sinensis*	college campus
53.	Anil Khelwal	*Hibiscus rosa sinensis*	college campus
54.	Anju Patidar	*Hibiscus rosa sinensis*	college campus
55.	Antim Alve	*Hibiscus rosa sinensis*	college campus
56.	Arvind Sekwaria	*Hibiscus rosa sinensis*	college campus
57.	Avantika Singh	*Hibiscus rosa sinensis*	college campus
58.	Ayush Amratiya	*Hibiscus rosa sinensis*	college campus
59.	Baijnath Patel	*Hibiscus rosa sinensis*	college campus
60.	Deepak Kumawat	*Hibiscus rosa sinensis*	college campus
61.	Deepak Nagar	*Hibiscus rosa sinensis*	college campus

62.	Devendra Ahir	*Hibiscus rosa sinensis*	college campus
63.	Gargi Tripathi	*Hibiscus rosa sinensis*	college campus
64.	Hemant Nagar	*Hibiscus rosa sinensis*	college campus
65.	Khushi	*Hibiscus rosa sinensis*	college campus
66.	Lakhan Bamboriya	*Hibiscus rosa sinensis*	college campus
67.	Mahesh	*Hibiscus rosa sinensis*	college campus
68.	Manu Jain	*Hibiscus rosa sinensis*	college campus
69.	Mohabbat Bhuriya	*Carisa carandas*	college campus
70.	Narendra Singh	*Carisa carandas*	college campus
71.	Neeraj Lodhi	*Carisa carandas*	college campus
72.	Neha Dhakad	*Carisa carandas*	college campus
73.	Neha Verma	*Carisa carandas*	college campus
74.	Pramila Kawreti	*Carisa carandas*	college campus
75.	Priyanshi Uikey	*Carisa carandas*	college campus
76.	Pushkar Raj Malviya	*Carisa carandas*	college campus
77.	Rahul	*Carisa carandas*	college campus
78.	Ritika Bhalavi	*Carisa carandas*	college campus
79.	Saksham Mehra	*Carisa carandas*	college campus
80.	Saloni Panchal	*Carisa carandas*	college campus
81.	Saloni Sharma	*Carisa carandas*	college campus
82.	Shubham Prajapat	*Carisa carandas*	college campus
83.	Soniya Solanki	*Carisa carandas*	college campus
84.	Suman Saini	*Carisa carandas*	college campus
85.	Surbhi Acharya	*Carisa carandas*	college campus
86.	Tarun Kumar Kalma	*Carisa carandas*	college campus
87.	Virendra Singh Sisodiya	*Carisa carandas*	college campus
88.	Yashsvi Kanash	*Carisa carandas*	college campus
89.	Yogesh Yadav	*Carisa carandas*	college campus
90.	Yuvraj Patel	*Carisa carandas*	college campus
91.	Abhay Bhimavad	*Plumeria spp.*	college campus
92.	Aditi Lodhi	*Plumeria spp.*	college campus
93.	Aryan Kanase	*Plumeria spp.*	college campus
94.	Ashutosh Rokade	*Plumeria spp.*	college campus
95.	Bablu Kushwaha	*Plumeria spp.*	college campus
96.	Bhupendra Paraste	*Plumeria spp.*	college campus
97.	Chanchal Sekwadiya	*Plumeria spp.*	college campus
98.	Chetan Nagar	*Plumeria spp.*	college campus
99.	Darpan Soni	*Plumeria spp.*	college campus
100.	Dileep Kumar Bairwa	*Plumeria spp.*	college campus
101.	Dileep Patidar	*Plumeria spp.*	college campus
102.	Divya Patidar	*Plumeria spp.*	college campus
103.	Durga	*Plumeria spp.*	college campus
104.	Gopal Patidar	*Plumeria spp.*	college campus
105.	Govind	*Plumeria spp.*	college campus
106.	Himanshu Parte	*Plumeria spp.*	college campus
107.	Jaideep Singh Rathore	*Plumeria spp.*	college campus
108.	Jaydeep Mandloi	*Plumeria spp.*	college campus
109.	Jitendra Kaddchhale	*Plumeria spp.*	college campus

110.	Kamlesh Darji	*Plumeria spp.*	college campus
111.	Krishna Kunwar	*Plumeria spp.*	college campus
112.	Lokesh Meena	*Plumeria spp.*	college campus
113.	Mahesh Raykwar	*Plumeria spp.*	college campus
114.	Manish	*Plumeria spp.*	college campus
115.	Mohit Nakhate	*Plumeria spp.*	college campus
116.	Ms. Saroj Yadav	*Plumeria spp.*	college campus
117.	Ram Kumar Prajapati	*Plumeria spp.*	college campus
118.	Ramlal Solanki	*Plumeria spp.*	college campus
119.	Robin Tiwari	*Plumeria spp.*	college campus
120.	Shrikrishna	*Plumeria spp.*	college campus
121.	Teesa Malviya	*Plumeria spp.*	college campus
122.	Virendra Yadav	*Plumeria spp.*	college campus
123.	Priyanshu Patel	*Plumeria spp.*	college campus
124.	Kishan Lal	*Plumeria spp.*	college campus
125.	Mamta Dhurway	*Annona squamosa*	college campus
126.	Ravi Garg	*Annona squamosa*	college campus
127.	Sakshi Raman	*Annona squamosa*	college campus
128.	Satendra	*Annona squamosa*	college campus
129.	Anchal Rai	*Annona squamosa*	college campus
130.	Ankita Bhilavekar	*Annona squamosa*	college campus
131.	Anujnath Chouhan	*Annona squamosa*	college campus
132.	Ashish Kumawat	*Annona squamosa*	college campus
133.	Dipti Uikey	*Annona squamosa*	college campus
134.	Eshant Pathak	*Annona squamosa*	college campus
135.	Foolchand Jatav	*Annona squamosa*	college campus
136.	Hariom Sondhiya	*Annona squamosa*	college campus
137.	Harsh Karveti	*Annona squamosa*	college campus
138.	Harsh Nirala	*Annona squamosa*	college campus
139.	Jivan Patidar	*Annona squamosa*	college campus
140.	Jyoti	*Annona squamosa*	college campus
141.	Kanishk Ojha	*Annona squamosa*	college campus
142.	Khushbu Yadav	*Annona squamosa*	college campus
143.	Kundan Singh Sisodiya	*Annona squamosa*	college campus
144.	Lokesh Dhakad	*Annona squamosa*	college campus
145.	Mahendra Pal Sendhav	*Annona squamos*	college campus
146.	Mahesh Kumar Lodha	*Annona squamosa*	college campus
147.	Manohar Patidar	*Annona squamosa*	college campus
148.	Mohit Amode	*Annona squamosa*	college campus
149.	Narendra Kumar	*Annona squamosa*	college campus
150.	Nikhil Mehta	*Annona squamosa*	college campus
151.	Pratyaksh Khatik	*Annona squamosa*	college campus
152.	Priyanshu Bhatt	*Annona squamosa*	college campus
153.	Radha Pandey	*Annona squamosa*	college campus
154.	Rahul Badsha	*Annona squamosa*	college campus
155.	Rituraj Singh	*Annona squamosa*	college campus
156.	Sakshi Pandey	*Annona squamosa*	college campus
157.	Satyam Prajapati	*Annona squamosa*	college campus

158.	Subham Rathor	*Annona squamosa*	college campus
159.	Tamanna Kunwar Rathore	*Annona squamosa*	college campus
160.	Arti Dodiyar	*Annona squamosa*	college campus
161.	Ankit Solanki	*Annona squamosa*	college campus
162.	Chetan Mali	*Annona squamosa*	college campus
163.	Laxmi Narayan	*Annona squamosa*	college campus
164.	Mahendra Pal Sendhav	*Annona squamosa*	college campus
165.	Nikita Pargi	*Annona squamosa*	college campus
166.	Oshin Badodiya	*Annona squamosa*	college campus
167.	Shiv Kumar Netam	*Annona squamosa*	college campus
168.	Aaditya Nagraj	*Annona squamosa*	college campus
169.	Abhinay Shrivastav	*Annona squamosa*	college campus
170.	Adesh Mishra	*Annona squamosa*	college campus
171.	Akshara Shrivastava	*Annona squamosa*	college campus
172.	Aman Yadav	*Annona squamosa*	college campus
173.	Ansh Katariya	*Annona squamosa*	college campus
174.	Arpit Aanjana	*Annona squamosa*	college campus
175.	Avani Pandey	*Annona squamosa*	college campus
176.	Bhavya Jha	*Annona squamosa*	college campus
177.	Bhuvnesh Verma	*Annona squamosa*	college campus
178.	Dali	*Annona squamosa*	college campus
179.	Deepak Singh Chouhan	*Annona squamosa*	college campus
180.	Deepesh Popandiya	*Annona squamosa*	college campus
181.	Dhruv Kumar Tyagi	*Annona squamosa*	college campus
182.	Dungar Singh Meena	*Annona squamosa*	college campus
183.	Gajendra Singh	*Annona squamosa*	college campus
184.	Gopal Balke	*Annona squamosa*	college campus
185.	Harendrapal Lodhi	*Annona squamosa*	college campus
186.	Jaydeep Dhakad	*Annona squamosa*	college campus
187.	Jayesh Verma	*Annona squamosa*	college campus
188.	Jayshree Parmar	*Annona squamosa*	college campus
189.	Jitendra Dodwe	*Annona squamosa*	college campus
190.	Kajal	*Annona squamosa*	college campus
191.	Kavita Damor	*Annona squamosa*	college campus
192.	Lakhan Anjana	*Annona squamosa*	college campus
193.	Lakhan Chouhan	*Annona squamosa*	college campus
194.	Laxmi	*Annona squamosa*	college campus
195.	Livanshi Rathod	*Annona squamosa*	college campus
196.	Mayank Mehra	*Annona squamosa*	college campus
197.	Nandani Shringi	*Annona squamosa*	college campus
198.	Niranjan Patidar	*Annona squamosa*	college campus
199.	Payal	*Annona squamosa*	college campus
200.	Piyush Patidar	*Annona squamosa*	college campus
201.	Pooja Solanki	*Annona squamosa*	college campus
202.	Priti Kumawat	*Annona squamosa*	college campus
203.	Rajkumari Parte	*Annona squamosa*	college campus

204.	Rani Randa	*Annona squamosa*	college campus
205.	Ravindra Verma	*Annona squamosa*	college campus
206.	Rohit Tomar	*Annona squamosa*	college campus
207.	Sachin Nargave	*Annona squamosa*	college campus
208.	Sonam Ivanati	*Annona squamosa*	college campus
209.	Tushar Sahu	*Annona squamosa*	college campus
210.	Vaishali Rana	*Annona squamosa*	college campus
211.	Vasudev Patidar	*Annona squamosa*	college campus

GREEN GRADUATION PROGRAMME
COLLEGE OF HORTICULTURE, MANDSAUR
B.Sc. (Ag.): Batch 2020-2024

Ashish Sharma 2020-2021

Aklesh 2020-2021

Anil Khelwal 2020-21

Akshat Patidar 2020-21

KNK College of Horticulture, Mandsaur (M.P.)
Green Graduation Degree Programme Admission
Year : 2019-20 Degree Year: 2022-23

	
Mukesh Solanki 18144521 **2019-2020**	**Abhishekh Kushwah 19144501** **2019-2020**
	
Ajit Singh Gurjar 19144504 **2019-2020**	**Abhishekh Sharma 19144502** **2019-2020**

9.4 Green Audit

Green Audit defined as documented, verification process of specified environmental activities, events, conditions, management system. Green Audit can create awareness in college staff as well as students which are our responsibility too, to save our environment and also can find the ways to improve environmental issues which are increasing day by day. Environmental problems such as recycling of waste, water conservation and recycling, pollution control, plantation, biodiversity conservation etc. can be solved through Green Auditing. Good growth comes from good education as well as good mental and physical health if we protect our environment, we can also protect our health.

Green Audit means assessing environmental performance. It is a systematic documented periodic and objective review. It is otherwise the systematic examination of the interactions between any operation and its surroundings. This includes all emissions to air, land and water, legal constraints, the effects on the neighboring community, landscape and ecology, the public's perception of the operating company in the local area. Green audit does not stop all compliance with legislation. Nor is it a 'green washing' public relations exercise. Rather it is a total strategic approach to the organization's activities.

College Green Committee

The college Green committee was established in the college with a proactive attitude towards conservation of the environment and objective of generating awareness and promoting environmental care at both individual and community level. The committee aims to create an atmosphere facilitating conversation, action and feedback on environmental issues engaging faculty, students and the general public. The institution looks at the macro-environmental perspective in the college and the society and envisions nurturing the environment with a greener future.

9.5 Green Campus Policy of College

KNK College of Horticulture, Mandsaur is committed to develop its campuses as places where education is combined with environmental friendly practices to promote Sustainable Development by restricted entry of automobiles, promoting the use of Bicycles and provision of Pedestrian Friendly pathways, ban on use of disposable Plastics in line with the State Government Guidelines creating awareness with stakeholders on the need for maintaining greenery in the campus for sustainable ambience.

Encouraging all stakeholders to support and participate in ensuring green cover in

the campus, preserving age old trees and protect them to have prolonged life, enhancement of green cover by landscaping with trees and plants, conduct of green audit at regular intervals and implementing the suggestions towards creating green campus are some of the steps taken by the college. The faculty, staff and students are encouraged to contribute collectively to develop an eco-friendly sustainable campus and disseminate the concept of eco-friendly culture to the nearby community and wherever possible.

College of Horticulture, Mandsaur envisions a clean and green university campus where ecological friendly practices and education combine to encourage sustainable and eco-friendly systems in the campus and beyond the campus. The green campus offers the organization a prospect to take the lead in redefining its green culture through promoting environmental ethics among students and staff. The Institute also promotes clean and green campus through adopting, practicing and promoting environmental friendly practices among students and staff to generate Eco consciousness among them and in the world around them.

Objectives of the policy: To develop the understanding amongst the students for understanding the importance of environment and its problem areas.

- To train students to create responsiveness amongst public.
- To encourage students to keep environment safe and clean.
- To encourage students to adopt environment friendly practices which include use of paper bags etc.
- To help the students to minimize the use of polluting product.

Why Green Audit

The excessive environmental degradation is creating the "Environmental poverty". Thus, academic leaders should initiate the knowledge and benefits of resources so that their institutions respond to environmental issues and challenges. We believe that there is an urgent need to address these problems and reverse the trends of environment degradation.

OBJECTIVES-

- ✓ To assess environmental performance
- ✓ To promote environmental awareness
- ✓ To improve health
- ✓ To conserve resources

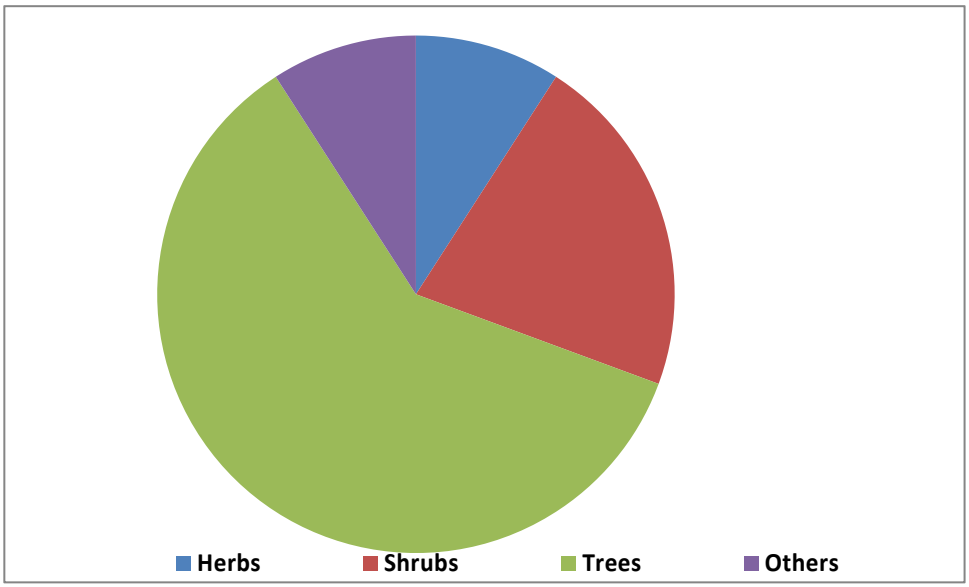
- ✓ To reduce waste
- ✓ To improve environmental standards
- ✓ The sustainable use of natural resources
- ✓ To develop responsibility about environment
- ✓ To enhance college profile

PLANTATION-

To create Environmental awareness at the college campus we organize plantation program with all the staffs and students of our college. We try to plant more trees. To keep the greeneries in the campus we maintain the garden by paid staff under the guidance of garden committee members.

To create- green cover, eco-friendly atmosphere, pure oxygen at the college campus, plantation program is organized every year with involving all students, principal, and all departments faculty members. In this session van mahotsav program was organized and about 150 ornamentals, avenue, medicinal plant with rare and exotic beautiful trees was planted in campus. Moreover, every year we try to plant new trees. There are so many plants planted in our college campus which are categorized as under-

Category	Numbers(Approx.)
Herbs	650
Shrubs	1535
Trees	4299
Others	650



IDENTIFICATION OF PLANTSPECIES:

There are so many plant species present at college campus.

9.6 Carbon Footprint

A carbon footprint is the amount of greenhouse gases—primarily carbon dioxide—released into the atmosphere by an individual, event, organization, service, or product, expressed as carbon dioxide equivalent. The release of carbon dioxide gas into the Earth's atmosphere through human activities is commonly known as carbon emissions.An important aspect of doing an audit is to be able to measure our impact so that we can determine better ways to manage the impact. In addition to the water, waste, energy and biodiversity audits we can also determine what our carbon footprint is, based on the amount of carbon emissions created.

A) The following activity/utility is responsible for carbon emission:-

- ✓ Transportation
- ✓ Electricity purchased from Distribution companies.

10.4.1 Carbon Emission by Transportation

The dean, teaching and non-teaching staff and students comes to college either by two wheelers & four wheelers. The two major fuels used by the transport sector are petrol and diesel. These fuels are carbon intensive as they contain 80-85% of carbon by weight.

Sl. No.	Fuel Used	Types of Transport	Persons	Numbers of Persons	A	B	C	D= C/B	E	F=E x D	G	H=G x F x A
					Nos. of Vehicle Used	mileage	Av. distance in KM	Fuel Consumed per Day per Vehicle in ltr	Total working days	Petrol Consumption Per Vehicle in a year	Emission factor	Total emission
	No		Students	150	25							
1	Fuel	Bicycle	Non Teaching	2	2							
2	Petrol	Two Wheeler	Staff	50	50	40	20	0.6	176	88	2.67	140976
			Students	91	25	40	4	0.1	176	17.6	2.67	1174.8
			Non Teaching Staff	7	7	40	5.71429	0.14286	176	25.1429	2.67	469.92
3	Petrol	Four Wheeler	Teaching Staff	20	20	40	3	0.075	176	13.2	2.67	704.88
Total Co2 emission in Kg Co2 eq per Year												**3524.4**

Thus, total emission by the transport is 3524.4 KG CO2 eq. Per year

10.4.2. Carbon Emission by Electricity

Electricity is taken by grid which uses coal for generating electricity or DG set which uses diesel for electricity generation.

Parameter	Emission Factor (A)	Unit in KWH (B)	Total emission (C= A x B)
Electricity	0.85	137.9	117.22
Total Kg CO2 Eq. Emission by Electricity			

Table 9: Carbon Emission by Electricity

Thus, total emission by purchased electricity is 1,30,590 Kg CO_2 Eq.

Total Carbon dioxide emission at College of Horticulture, Mandsaur

Area	CO2 eq. emission in KG
Electricity	117.22
Transport	3524.4
Total	3641.61

10.5 Reduction of Carbon Emission

B) Thefollowinginstallation/activityisresponsibleforreductionincarbon emission:-

- ✓ Composting
- ✓ Tree plantation

10.5.1 Reduction of Carbon Emission due to absorption of CO_2 by Tree Plantation

Planting is a great way to help sequester carbon emissions. Through photosynthesis *trees absorb carbon dioxide to produce oxygen, food and wood.*

ParticularsofFlora	Numbers	Carbon absorption by one tree Per year	Total Carbon Dioxide in Kg
Full grown Tree	4049	22.916	27533
Semi grown Tree	900	3.06	2754
Quarter grown plants	1535	2.60	3991
Total Carbon dioxide absorption by trees	**6484**		**34278**

Table11: Carbon absorption by tree plantation.

10.5.2 Total Reduction in Carbon dioxide emission at KNK College of Horticulture, Mandsaur

Area	Reduction in CO_2eq.emission in KG
Trees	**34278**

Table12: Total Reduction in Carbon dioxide emission

10 RECOMMENDATIONS

KNK College of Horticulture Mandsaur has policy for plantation of trees in or outside of campus to reduce carbon footprints, as the ratio : Co2 generation and reduction is quit low. College has adopted good housekeeping and maintenance practices to reduce Co2, generation load like - Use of Bicycles, Public Transport, Plastic-free campus; use of solar energy; Paperless office,Green landscaping with trees and plants, Rain water collection and harvesting;solid waste management; decomposition of solid organic waste and production of vermi compost; E-waste Management.

Management should continue GHP and GMP's practices by involving staff and students to keep sustainable environment .

KNK COLLEGE OF HORTICULTURE, MNDSAUR (MP)