

Maharaja Agrasen Institute of Management Studies

(A unit of Maharaja Agrasen Technical Education Society)

Affiliated to GGSIP University; Recognized u/s 2(f) of UGC

Recognized by Bar Council of India; ISO 9001:2015 Certified Institution

Sector- 22, Rohini, Delhi- 110086, India



CRITERION 7



7.1 INSTITUTIONAL VALUES AND SOCIAL RESPONSIBILITIES

Metric 7.1.3



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Maharaja Agrasen Chowk, Sector 22, Rohini, Delhi – 110086, INDIA www.maims.ac.in

Criteria 7 – INSTITUTIONAL VALUES AND BEST PRACTICES

Key Indicator – 7.1.3

INSTITUTIONAL VALUES AND SOCIAL RESPONSIBILITIES

SUPPORTING DOCUMENT FOR 7.1.3

Quality Audits on Environment and Energy

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GREEN AUDIT REPORT



**Maharaja Agrasen Institute of Management Studies,
Sector-22, Rohini, Delhi-110086**

Prepared by

Praveen Kumar Singh

Chartered Engineer

Certified Energy Auditor (Bureau of Energy Efficiency)



Zing Enterprises

L- 15 / 860, Ashiana Aangan, Alwar Bypass Rd, Bhiwadi,
Rajasthan 301019



Director
Maharaja Agrasen Institute
of Management Studies
Sector-22 Rohini, Delhi-86

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Zing Enterprises

CERTIFICATE

PRESENTED TO

**MAHARAJA AGRASEN INSTITUTE OF MANAGEMENT
STUDIES**

PSP Area Sector-22, New Delhi-110086

has been assessed by **ZING ENTERPRISES** for the comprehensive study of green initiatives on institutional working framework to fulfil the requirement 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.



3 - Jan - 2022

DATE OF AUDIT

Zing Enterprises, L- 15 / 860, Ashiana Aangan, Alwar Bypass Rd, Bhiwadi,



Rajasthan 301019

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1.0 ACKNOWLEDGEMENT

Zing Enterprises Green Audit Team thanks the management of **Maharaja Agrasen Institute of Management Studies, Rohini, Delhi** for assigning this important work of Green Audit. We appreciate the co-operation of institute to our team for completion of study.

Our special thanks are due to the committee consisting of:

Name	Position/Department
Prof. (Dr.) Ravi Kumar Gupta	Director - MAIMS
Ms. Taranpreet Kaur	Assistant Professor – Department of Commerce
Dr. Gaurav Aggarwal	Associate Professor– Department of Economics
Mr. Jitender Vig	Assistant Professor – Department of Journalism and Mass Communication
Ms. Rachita Aggarwal	Associate Professor – Department of Commerce
Dr. Sushila Gupta	Assistant Professor – Department of Business Administration
Mr. Nirdosh Kumar	Assistant Professor – Department of Law

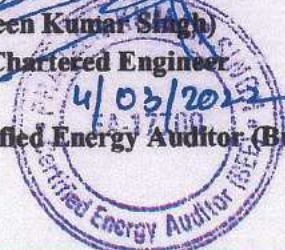
Students in the Green Initiatives Committee:

S.No.	Student Name	Dept.
1.	Ms. Vaishnavi Srivastava-	BA(JMC)
2.	Mr. Pratush Sharma-	BA (JMC)
3.	Mr. Sundaram Singh Rajput	BA(JMC)
4.	Anshumita Taparia	BBA (LAW)
5.	Ms.Simrit Chadha	BBA(LAW)
6.	Ms Vani Mittal	B.Com.(H)
7.	Ms. Kritika Garg	B.COM(H)
8.	Ms Sanya	BBA
9.	Ms Subhi Gupta	BBA
10.	Ms Sanjana	BA (ECO)
11.	Somya Singh	BA(ECO)

For giving us necessary inputs to carry out this very vital exercise of Green Audit. We are also thankful to other staff members who were actively involved while collecting the data and conducting field measurements.

Praveen Kumar Singh
Chartered Engineer

Certified Energy Auditor (Bureau of Energy Efficiency)



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2.0 DISCLAIMER

Zing Enterprises Green Audit Team has prepared this report for **Maharaja Agrasen Institute of Management Studies, Rohini, Delhi** based on input data submitted by the representatives of institute complemented with the best judgment capacity of the expert team.

Zing Enterprises & staff 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.

Conducted by:


(Praveen Kumar Singh)
Chartered Engineer

Certified Energy Auditor (Bureau of Energy Efficiency)





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3.0 CONTEXT

We are committed as a component of Corporate Social Responsibility for the Higher Education Institutions to ascertain that they contribute towards Green and reduce energy use to take care for Carbon Footprint.

MAIMS, Management decided to conduct an external Green Evaluation by a competent Green Auditor along with a Green Audit Assessment Team headed by Prof. (Dr.) Ravi Kumar Gupta, Director, Maharaja Agrasen Institute of Management Studies, New Delhi.

Green Audit focuses on the Green Campus, Waste Management, Water Management, Energy Management Air Quality, Noise Level & Carbon Footprint etc. being implemented by the College Management. The concept, structure, objectives, methodology, tools of analysis, objectives of the audit are mentioned below.




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4.0 CONCEPT

The term 'Green audit' means differently to different people. Terms like 'assessment', 'survey' and 'review' are also used to describe similar activities. There is no universal definition of Green Audit, many leading companies/institutions follow the basic philosophy and approach summarized by the broad definition adopted by the International Chambers of Commerce (ICC) in its publication of Environmental Auditing (1989).

The outcome of Green Audit should be established with concrete evidence that the measures undertaken and facilities in the institution under green auditing.




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5.0 INTRODUCTION

A nation's growth starts from its educational institutions, where the ecology is thought as a prime factor of development associated with environment. Educational institutions now a days are becoming more sensitive to environmental factors and more concepts are being introduced to make them eco-friendly. To preserve the environment within the campus, various viewpoints are applied by the several educational institutes to solve their environmental problems such as promotion of the energy savings, recycle of waste, water reduction, rain water harvesting etc. The activities pursued by colleges can also create a variety of adverse environmental impacts.

Green auditing is a process whereby an organisation's environmental performance is tested against its environmental policies and objectives. Green audit is defined as an official examination of the effects a college has on the environment. As a part of such practice, internal Green Audit is conducted to evaluate the actual scenario at the campus.

Green audit can be a useful tool for a college to determine how and where they are using the most energy or water or resources; the college can then consider how to implement changes and make savings. It can also be used to determine the type and volume of waste, which can be used for a recycling project or to improve waste minimization plan. Green auditing and the implementation of mitigation measures is a win-win situation for all the college. It can also create health consciousness and promote environmental awareness, values and ethics. It provides staff and students better understanding of green impact on campus.

Green auditing promotes financial savings through reduction of resource use. It gives an opportunity for the development of ownership, personal and social responsibility for the students and teachers. Thus, it is imperative that the college evaluate its own contributions toward a sustainable future. As environmental sustainability is becoming an increasingly important issue for the nation, the role of higher educational institutions in relation to environmental sustainability is more prevalent.

A clean and healthy environment aids effective learning and provides a conducive learning environment. There are various efforts around the world to address environmental education issues.




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Zing Enterprises has developed a very simple indigenized system to monitor the environmental performance of educational institutions. It comes with a series of questions to be answered on a regular basis. Environmental conditions may be monitored from angles that are relevant to Indian requirements, without stress on legal issues or compliance.




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6.0

ABOUT INSTITUTE

Maharaja Agrasen Institute of Management Studies (MAIMS) under the Charitable "Maharaja Agrasen Technical Education Society (MATES) has been in existence for approx. two decades which has been a period of significant accomplishments and fulfilment.

The Institute has an intake of 2880 students in 6 courses, namely BBA, B.COM (H), BA (JMC), BA (H) Eco., BBA LLB and BA LLB. It has a lush green campus with excellent infrastructural facilities to support the teaching-learning process. The institute has 33 clubs/societies which offer a platform to students for their overall development.

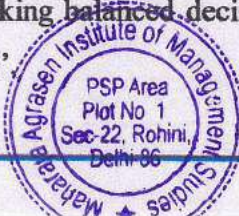


Education and Educators have always played an instrumental role in the development and advancement of society and humankind. We are living in an era of rapid change, with global expansion of skills and expertise in a variety of fields. The role of education has shifted from rote memorization to proactive learning. We at MAIMS are conscious of these needs and are continuously striving to attain them.

As part of our commitment to being at the forefront of education, we collaborate with and maintain excellent relationships with industry and leading corporate houses for training and internship opportunities. This gives our students an edge over others, which is reflected in our year after year high placement rates.

VISION

MAIMS envisions a value-based education which empowers the youth to bring positive change in society. They should become capable of taking balanced decisions keeping global interest in mind; in the true spirit of 'Vasudhaiva Kutumbakam'.




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MISSION

- To contribute towards generation and dissemination of Knowledge.
- To nurture creativity and encourage entrepreneurship.
- To enhance employability and contribute to human resource development.
- To instill sensitivity amongst the youth towards the community and environment.
- To develop global competencies amongst students.
- To foster the spirit of national development.

The purpose of education is to advance and disseminate knowledge, to stimulate critical and intellectual debate, to inspire future generations to have goals, and to prepare them to compete globally.

The college believes that its primary stakeholders are the students. All aspects of education focus on the core values of contributing to national development while fostering global competencies among students. The college admits students from all social milieus and empowers them through intensive mentoring and counselling to face the challenges of life and become responsible and sensitized citizens of the country.



[Handwritten Signature]

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Maharaja Agrasen Institute of Management Studies (MAIMS) imparts education to

Undergraduates in the following Departments:

- ☐ Department of Business Administration
- ☐ Department of Journalism and Mass Communication
- ☐ Department of Commerce
- ☐ Department of Law
- ☐ Department of Economics

Note: All undergraduate degree courses except BA LLB and BBA LLB are taught in three years, semester mode.




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7.0 OBJECTIVES OF THE STUDY

The main objective of the green audit is to promote the tree plantation and conservation in the institute's campus. The purpose of the green audit is to identify, quantify, describe and prioritize framework of environment sustainability in compliance with the applicable regulations, policies and standards.

The main objectives of carrying out Green Audit are:

- To introduce and aware students to real concerns of environment and its sustainability.
- To secure the environment and cut down the threats posed to human health by analyzing the pattern and extent of resource use of the campus.
- To establish a baseline data to assess future sustainability by avoiding the interruptions in environment that are more difficult to handle and their corrections requiring high cost.
- To bring out a status report on environmental compliance.



A handwritten signature in blue ink, appearing to read "Rajendra Kumar".

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8.0 METHODOLOGY

In order to perform green audit, the methodology included different tools such as preparation of questionnaire, physical inspection of the campus, observation and review of the documentation, interviewing key persons and data analysis, measurements and recommendations. The study covered the following areas to summarize the present status of environment management in the campus:

- Green area management
- Air Quality



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9.0 EXECUTIVE SUMMARY

A green audit is a snapshot in time, in which one assesses campus performance in complying with applicable environmental laws and regulations. Though a helpful benchmark, the audit almost immediately becomes outdated unless there is some mechanism in place to continue the effort of monitoring environmental compliance.

MAIMS already had done internal green assessment for continual improvements and doing their bit towards environmental protection and environmental awareness. Audit criterion is environmental cognizance, waste minimization and management, biodiversity conservation, water conservation, energy conservation and environmental legislative compliance by the campus. A questionnaire is used during audit. This audit report contains observations and recommendations for improvement of environmental consciousness.

9.1 GREEN AUDIT SUMMARY

S.NO	AREA	OBSERVATION	REMARK
1	Solid waste Management	Waste bins are placed separately for dry and wet waste at every corner of the corridor, Organic waste like leaves, food waste etc.	Good derivative taken by college towards use of solid waste Management System.
2	Liquid waste Management	However rain water harvesting is used to recharge the ground level water.	Good initiative taken by college towards water conservation.
3.	Green Area Management	The plants, greenery and sustainability of the campus to ensure that the buildings conform to green standards.	Lush green campus and Green belt management are commendable.




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10.0 GREEN AUDIT

10.1 GREEN AREA MANAGEMENT

This includes the plants, greenery and sustainability of the campus to ensure that the buildings conform to green standards. This also helps in ensuring that the Environmental Policy is enacted, enforced and reviewed using various environmental awareness programs.

a) Observations

Campus is located in the vicinity of many trees (species) to maintain the bio-diversity. Various tree plantation programs are being organized at college campus and surrounding villages through NSS (National Service Scheme) unit. This program helps in encouraging eco-friendly environment which provides pure oxygen within the institute and awareness among villagers. The plantation program includes various type of indigenous species of ornamental and medicinal wild plant species. The institute has also published a booklet on Medicinal Plants.

b) Recommendations

- Review periodically the list of trees planted in the garden, allot numbers to the trees and keep records. Assign scientific names to the trees.
- Promote environmental awareness as a part of course work in various curricular areas, independent research projects, and community service.
- Create awareness of environmental sustainability and take actions to ensure environmental sustainability.
- Establish a College Environmental Committee that will hold responsibility for the enactment, enforcement and review of the Environmental Policy. The Environmental Committee shall be the source of advice and guidance to staff and students on how to implement this Policy.
- Ensure that an audit is conducted annually and action is taken on the basis of audit report, recommendation and findings.
- Celebrate every year 5th June as 'Environment Day' and plant trees on this day to make the campus more Green.
- Indoor plantation to inculcate interest in students. Bonsai can be planted in corridor to bond a relation with nature.




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Number of Trees in the institute

S.No.	Tree name in HINDI	SCIENTIFIC NAME	No. of Tree
1	बेल	Aegle marmelos	25
2	जामुन	Syzygium cumini	22
3	आंबला	Phyllanthus emblica	3
4	अमरुद	Psidium	13
5	गूलर	Ficus racemosa	27
6	पाकड़	Ficus virens	18
7	सहतूत	Morus alba	28
8	बरगद	Ficus benghalensis	21
9	नीम	Azadirachta indica	94
10	केला	Musa	21
11	पारस पीपल	Thespesia populnea	4
13	गुलमोहर	Delonix regia	8
14	बेर	Ziziphus mauritiana	7
15	मेहंदी	Lawsonia inermis	450
16	चिक्कू	Manilkara zapota	14
17	अनार	Punica granatum	8
18	संतरा	Citrus × sinensis	3
19	नीम्बू	Citrus limon	15
20	फाइकस	Ficus	70
21	सहजन	Moringa oleifera	18
23	इमली	Tamarindus indica	5
24	मोलसरी	Mimusops elengi	35
25	फंडाफाइकस	GARDEN FANDA	145
26	तुन	Toona ciliata	5
27	अशोक	Saraca asoca	14
28	अशोक पडोला	Polyalthia longifolia	40
30	कदम	Neolamarckia cadamba	25
31	चन्दन	Santalum album	1
33	पारिजात	Nyctanthes arbor-tristis	17
34	सरीफा	Annona squamosa	5
35	कढल	Cinnamomum camphora	2
36	करोँदा	Carissa carandas	10
37	बहेड़ा	Terminalia bellirica	
38	महवा	Madhuca longifolia	



(Signature)

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39	पॉप्लर	Populus	15
40	सरस	Albizia lebbeck	12
41	ढाक	Butea monosperma	5
44	गुड़हल	Hibiscus	30
45	मौसमी	Citrus limetta	4
46	किन्नु	Citrus reticulata	2
47	सीता अशोक	Saraca asoca	3
48	कनेर	Nerium oleander	20
49	अलस्टोनिआ	Alstonia	35
50	लसोड़ा	Cordia myxa	2
51	बोडल ब्रश	Callistemon	15
52	सिल्वर ओक	Grevillea robusta	5
53	ताड	Arecaceae	10
54	देसी पाम	Livistona rotundifolia	15
55	अशवगंधा	Withania somnifera	5
56	धतूरा	Withania somnifera	4
59	नारियल	Cocos nucifera	1
60	चांदनी	Tabernaemontana divaricata	10
61	अर्जुन	Terminalia arjuna	2
62	कीकर	Vachellia nilotica	1
63	सामी	Prosopis cineraria	10
64	सांगवान	Tectona grandis	16
65	सुदरसन	Amaryllidaceae	2

Carbon footprints describes long-term storage of carbon dioxide or other forms of carbon to either mitigate or defer global warming and avoid dangerous climate change. It has been proposed as a way to slow the atmospheric and marine accumulation of greenhouse gases, which are released by burning fossil fuels.

Vegetation carbon pool having the potential of 560 Pg (Pg: Petagram (10^{15} Gramme = billion ton) of carbon storage globally. In the current study the focus is given on the assessment of existing carbon stock stored in MAIMS campus in the form of woody vegetation by enumerating every tree species. There are approx. 1800 trees and plants in the institute. A single tree consumes approx. 21.8 kg of CO_2 annually, so approx. 39.240 Tons of CO_2 is consumed yearly by all woody vegetation in the college campus.

Oxygen released

A tree releases approx. 0.912 kg of Oxygen annually. From 1800 trees at MAIMS approx. 1641.6 kg Oxygen is available. It is assumed that a single tree supports oxygen demand of two people for their life. Thus, the 1800 woody vegetation in the college campus are supporting approx. 3600 people around the campus. We need to do more plantation to mitigate the pollution.

❖ Comparing it is quite evident that the Air Quality in the Institute is good. And AQI level is moderate. This is because of plantation.

S.No.	Location	CO	CO2	HCHO	AQI	TVOC
1	Faculty Room	0012	0523	0.021	02	0.2
2	Corridor	0058	0623	0.072	03	0.9
3	Class Room	0011	0523	0.020	02	0.2
4	Faculty Room 2 nd Floor	0033	0568	0.044	02	0.5
5	Canteen	0011	0521	0.020	02	0.2
6	Gate	0069	0647	0.084	03	1.0

S.No.		(Qualified) Excellent	(Qualified) Good	Slight Pollution	Moderately Polluted	Heavy Pollution	Serious Pollution
01	HCHO	0-0.08	0-0.81-0.1	0.101-0.2	0.201-0.5	0.501-1.0	1.001-1.999



02	TVOC	0-0.5	0.5-0.6	0.6-1.5	1.5-3.0	3.0-6.0	6.0-12
03	CO ₂	0-450	451-1000	1001-1500	1501-2000	2001-3000	3001-5000
04	CO	0-50	51-100	101-200	201-400	401-800	801-2400
05	AQI	01	02	03	04	05	06

- TABLE Reference for Air Quality Pollution Level



AIR QUALITY DETECTOR



[Signature]
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11.0 BEST PRACTICES FOR GREEN INITIATIVES

A	Biodiversity Conservation Flora conservation	They have lush green campus which provides habitat to various species of flora.
B	Tree Plantation Drive Every Guest is honored by a Tree Plantation Drive annually during Paryavaran Raksha Parv at the Campus.	Yes, periodically the plantation drives by students and staff of campus.




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12.0 RECOMMENDATIONS

- Formation of Green Policy and communicated to all students, faculties and other staff members.
- Green Monitoring i.e. (Ambient Air Quality monitoring).
- Display of Green Initiatives awareness posters should be there in the prominent areas of campus.
- Increase in Green promotional activities for spreading awareness at campus.
- Making tree plantation a regular feature.



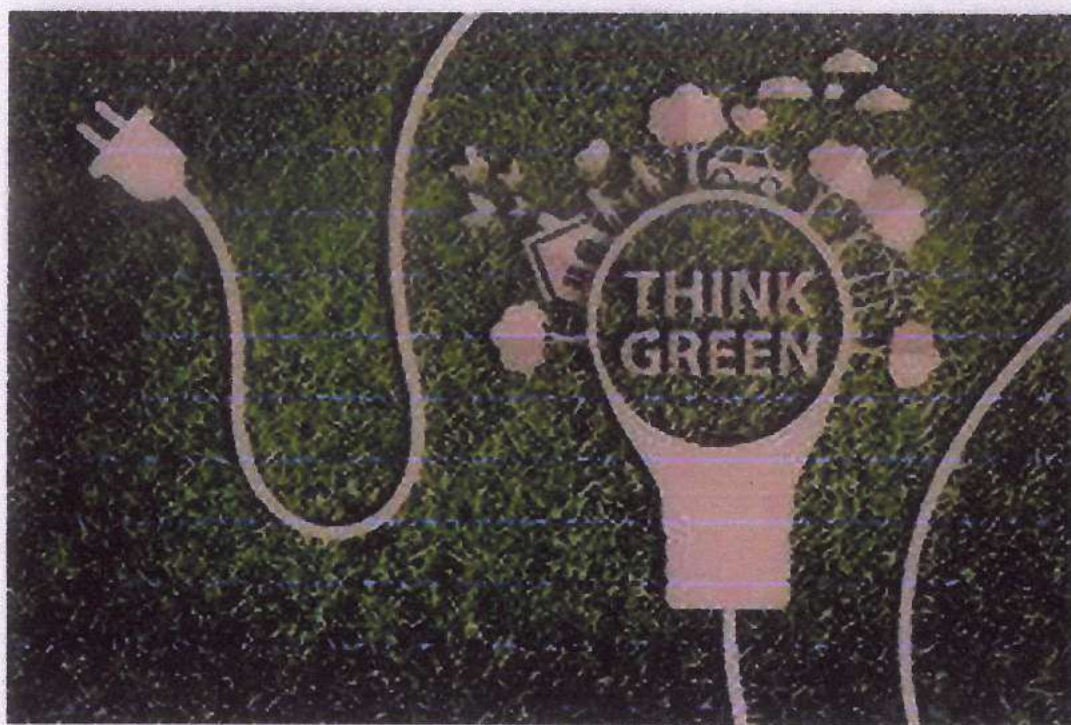

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13.0

CONCLUSION

This audit involved extensive consultation with all the campus team, interactions with key personnel on wide range of issues related to environmental aspects. Maharaja Agrasen Institute of Management Studies has Environmental Committee for sustainable use of resources. Overall, 40% of Institute campus is for landscaping. The audit has identified several observations for making the campus premise more environmentally friendly. The recommendations are also mentioned with observations for campus team to initiate actions.

The audit team opines that the overall site is maintained well from Green Initiatives perspective.



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- The Environment [Protection] Act – 1986 (Amended 1991) & Rules-1986 (Amended 2010)
- The Petroleum Act: 1934 – The Petroleum Rules: 2002
- The Central Motor Vehicle Act: 1988 (Amended 2011) and The Central Motor Vehicle Rules: 1989 (Amended in 2005)
- Energy Conservation Act 2010.
- The Water [Prevention & Control Of Pollution] Act – 1974 (Amended 1988) & the Water (Prevention & Control of Pollution) Rules – 1975
- The Air [Prevention & Control Of Pollution] Act – 1981 (Amended 1987) The Air (Prevention & Control of Pollution) Rules – 1982
- The Gas Cylinders Rules – 2016 (Replaces the Gas Cylinder Rules – 1981)
- E-waste management rules 2016
- Electrical Act 2003 (Amended 2001) / Rules 1956 (Amended 2006)
- The Hazardous Waste (Management and Handling and Trans-boundary Movement) Rules, 2008 (Amended 2016)
- The Noise Pollution Regulation & Control rules, 2000 (Amended 2010)
- The Batteries (Management and Handling) rules, 2001 (Amended 2010)
- Relevant Indian Standard Code practices
- Internal Records of the Campus




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15.0

SUMMARY OF GREEN INITIATIVES

Maharaja Agrasen Institute of Management Studies is committed to ecological sustainability in the campus and beyond the campus. We create awareness about the importance of our environment. Green Initiatives are created to identify various environmental issues and take necessary steps to achieve the goal of Environment conservation and find ways of solving ecological problems without harming the environment. We urge our students to make right usage of environmental resources to meet the needs of the present and future generations.

Maharaja Agrasen Institute of Management Studies understands the role of nature in a student's education from a holistic perspective and hence several measures are taken by our Institution. Planting trees and gardens at educational institutions helps beautify the community.

The institution has a green campus and gives top priority to keeping the campus eco-friendly and hygienic. Separate blue and green dustbins are kept at different places on the campus to dispose biodegradable, wet and non-biodegradable, dry waste. The solid waste is collected daily. It is processed as per the nature of the waste. Also, a dustbin is kept on every floor to collect the waste. Ban of plastic and use of stainless-steel utensils in the hostel and canteen, limited parking in the campus is a step towards saving our environment. Flower Show or Plant Show is conducted on the family day to spread awareness, establish clarity and emphasize benefits of usage of herbal plants. Display of herbal plants show and publication of a small booklet on herbal plants is a welcome step in this direction.

The institute has various plants which are even 100 years old like Alaskan (*Salix alaxensis*) which is used for arthritis, cancer, wounds, fever, tuberculosis, diabetes, low blood sugar, and pneumonia; Imli (*Tamarindus indica*) which is used to treat constipation, liver and gallbladder problems, and stomach disorders. It is also used to treat colds and fever; and many more plants are in Maharaja Agrasen Vatika.

Prayavaran Raksha Parv –Since last 7 years Maharaja Agrasen Institute of Managements Studies is celebrating Paryavaran Raksha Parv as a massive plantation drive in the campus spread over area of more than 11 thousand sq. meters. Every year in a month-long plantation drive Students, Staff, Faculty Members, and Trustees takes active part.

Maharaja Agrasen Institute of Management Studies has a green campus area of more than 11 thousand sq. meters with hundreds of trees and plants, and beautiful landscapes.



A handwritten signature in blue ink, likely belonging to the Director of the institution.

Director

Maharaja Agrasen Institute
of Management Studies

Our garden has become the pride of Maharaja Agrasen Institute of Management Studies. The garden is the spirit of our institution and its greenery symbolizes the liveliness of our campus. The flower show to showcase the importance of herbal plants has also resulted in great impact.

Prayavaran Raksha Parv is the highlight of our practice—

Prayavaran Raksha Parv is celebrated to give a tribute to nature, it's like thanksgiving to the nature for all its gifts. We all celebrate the existence of our garden, by planting more trees and trying to fulfil our bit in making this planet a beautiful one to live. In 2017, Bollywood celebrities like Divya Khosla Kumar and Manoj Tiwari also visited Maharaja Agrasen Institute of Management Studies to celebrate Prayavaran Raksha Parv. The guests were given saplings to plant them in their residential areas.

There were not many problems that were faced while creating the Green initiatives since the funds were well arranged by Maharaja Agrasen Institute of Management Studies and everything was well taken care of by the management.

Eco Club is committed to plant more trees and celebrating *Paryavaran Raksha Parv* every year. Faculty Staff & Students were present along with the staff and dignitaries who planted saplings and commenced the Paryavaran Raksha Parv.




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ANNEXURE I –PHOTOGRAPHS OF ‘PARYAVARAN RAKSHA PARV’



Paryavaran Raksha Parv 2021:

Maharaja Agrasen Institute of Management Studies, with a pledge to restore environment, started the month-long, *Paryavaran Raksha Parv* on 5th June 2021. Due to the pandemic there were some limitations yet *Paryavaran Raksha Parv* was never compromised.




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Sector-22 Rohini, Delhi-86



Trees With QR Code




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Maharaja Agrasen Institute
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Sector-22 Rohini, Delhi-86



In the esteemed presence of our Founder Chairman, Dr. Nand Kishore Garg, the *Paryavaran Raksha Parv* on 5th June 2021 was started by planting a sapling in the garden of Maharaja Agrasen Institute of Management Studies.



[Signature]

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Paryavaran Raksha Parv 2019:

Maharaja Agrasen Institute of Management Studies, with a pledge to restore environment, started the month-long, *Paryavaran Raksha Parv*. Students, faculty and dignitaries of the institution participate in this wonderful initiative.

Environment protection must become an important content of civic education as a field of social impact.

In the esteemed presence of Founder Chairman, Dr. Nand Kishore Garg, Joint convener of the RSS Environment & Water Conservation activity Shri Rakesh Jain, our Chief Guest inaugurated the *Paryavaran Raksha Parv, 2019* by planting a sapling in the campus garden.



[Signature]

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Paryavaran Raksha Parv 2019:

Joint convener of the RSS Environment & Water Conservation activity Shri Rakesh Jain, our Chief Guest while planting a sapling in the campus of Maharaja Agrasen Institute of Management Studies.

Joint convener of the RSS Environment & Water Conservation activity Shri Rakesh Jain, our Chief Guest addressing the dignitaries, faculty and students during the ceremony and preaching the importance of planting a tree by each one present in the audience.




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Paryavaran Raksha Parv 2018:

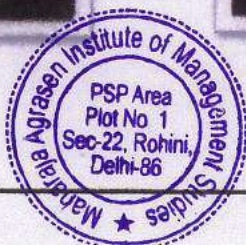
In the esteemed presence of our Chief Guest and Founder Chairman, Dr. Nand Kishore Garg, the *Paryavaran Raksha Parv* was commenced by planting a sapling in the garden of Maharaja Agrasen Institute of Management Studies.




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Paryavaran Raksha Parv 2017:

At Maharaja Agrasen Institute of Technology and Management the inauguration of the environmental protection festival was done by MP Manoj Tiwari by planting a sapling.




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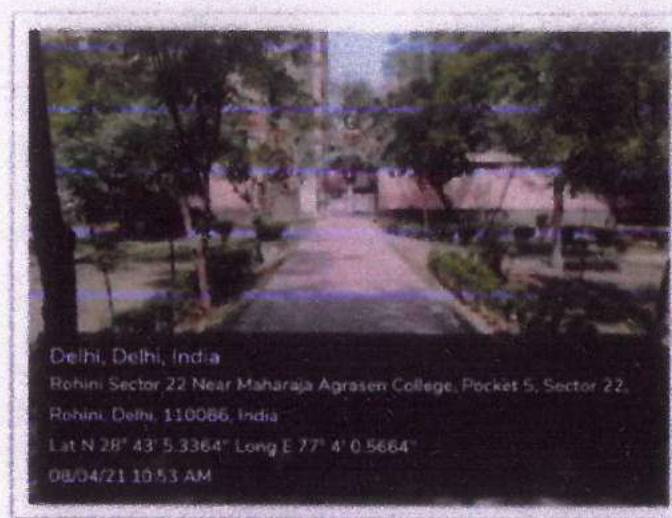
On this occasion, Bollywood actress and producer-director Divya Khosla Kumar also interacted with the students and planted a sapling during the month-long *Paryavaran Raksha Parv* 2017.





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Green Belt-

The Green Initiatives are created to identify various environmental issues and take necessary steps to achieve the goal of Environment conservation. Planting trees and gardens at educational institutions helps beautify the community. The institute has various plants which are even 100 years. Limited parking in the campus is a step towards saving our environment.

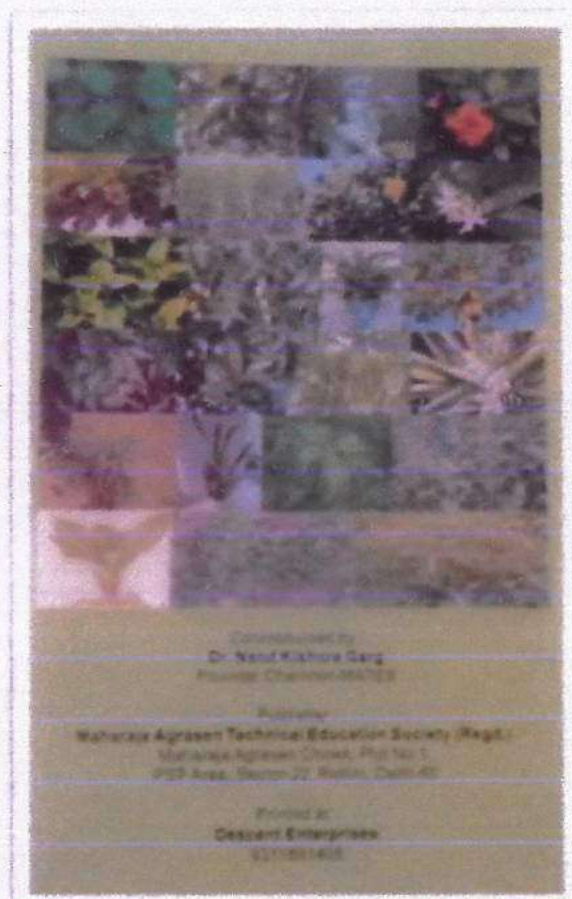




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Flower Show in Campus on Family Day-

Flower Show or Plant Show is conducted on the family day to spread awareness, establish clarity and emphasize benefits of usage of herbal plants. Display of herbal plants show and publication of a small booklet on herbal plants is a welcome step in this direction.




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ENVIRONMENT AUDIT REPORT



**Maharaja Agrasen Institute of Management Studies,
Sector-22, Rohini, New Delhi-110086**

Prepared by

Praveen Kumar Singh
Chartered Engineer
Certified Energy Auditor (Bureau of Energy Efficiency)



Zing Enterprises

L- 15 / 860, Ashiana Aangan, Alwar Bypass Rd, Bhiwadi,
Rajasthan 301019



Director
Maharaja Agrasen Institute
of Management Studies
Sector-22 Rohini, Delhi-86

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Zing Enterprises

CERTIFICATE

PRESENTED TO

**MAHARAJA AGRASEN INSTITUTE OF MANAGEMENT
STUDIES**

PSP Area Sector-22, New Delhi-110086

has been assessed by **ZING ENTERPRISES** for the comprehensive study of environmental impacts on institutional working framework to fulfil the requirement of

ENVIRONMENT AUDIT

The environment protection saving initiatives carried out by the institution have been verified in the report submitted and was found to be satisfactory.

The efforts taken by the administration, faculty, students at the campus and local community/adopted green belt in the area environment management and greenery, waste management, energy conservation and sustainability are highly appreciated and commendable.

SIGNATURE

EA-17700

3 - Jan - 2022

DATE OF AUDIT

Zing Enterprises, L- 15 / 860, Ashiana Aangan, Alwar Bypass Rd, Bhiwadi,

Rajasthan 301015



Director

Maharaja Agrasen Institute
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Sector-22 Rohini Delhi-86

1.0 ACKNOWLEDGEMENT

Zing Enterprises Environment Audit Team thanks the management of **Maharaja Agrasen Institute of Management Studies, Rohini, Delhi** for assigning this important work of Environment Audit. We appreciate the co-operation of institute to our team for completion of study.

Our special thanks are due to the committee consisting of:

Name	Position/Department
Prof. (Dr.) Ravi Kumar Gupta	Director - MAIMS
Ms. Taranpreet Kaur	Assistant Professor – Department of Commerce
Dr. Gaurav Aggarwal	Associate Professor– Department of Economics
Mr. Vijay Pal Singh	Assistant Professor – Department of Journalism and Mass Communication
Ms. Nidhi Chaudhry	Assistant Professor – Department of Journalism and Mass Communication
Dr. Deepak Dagar	Assistant Professor – Department of Business Administration
Mr. Nirdosh Kumar	Assistant Professor – Department of Law

Students in the Environment Committee:

S.No.	Student Name	Dept.
1.	Ms. Deepali Channa	BA(JMC)
2.	Mr. Bhavya Sharma	BA (JMC)
3.	Mr. Sundaram Singh Rajput	BA(JMC)
4.	Ms. Anshumita Taparia	BBA (LAW)
5.	Ms. Sneha Aggarwal	BBA(LAW)
6.	Ms. Vani Mittal	B.Com.(H)
7.	Ms. Kritika Garg	B.COM(H)
8.	Ms. Sanya	BBA
9.	Mr. Shubham Gupta	BBA
10.	Ms. Sanjana	BA (ECO)
11.	Ms. Somya Singh	BA(ECO)

For giving us necessary inputs to carry out this very vital exercise of Environment Audit. We are also thankful to other staff members who were actively involved while collecting the data and conducting field measurements.


Praveen Kumar Singh
Chartered Engineer

Certified Energy Auditor (Bureau of Energy Efficiency)




Director
Maharaja Agrasen Institute
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Sector-22 Rohini, Delhi-86

2.0 DISCLAIMER

Zing Enterprises Environment Audit Team has prepared this report for **Maharaja Agrasen Institute of Management Studies, Rohini, Delhi** based on input data submitted by the representatives of institute complemented with the best judgment capacity of the expert team.

Zing Enterprises & staff 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.

Conducted by:

(Praveen Kumar Singh)
Chartered Engineer

Certified Energy Auditor (Bureau of Energy Efficiency)




Director
Maharaja Agrasen Institute
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3.0 CONTEXT

We are committed as a component of Corporate Social Responsibility for the Higher Education Institutions to ascertain that they contribute towards Environment and reduce energy use to take care for Carbon Footprint.

MAIMS, Management decided to conduct an external Environment Evaluation by a competent Environment Auditor along with Environment Audit Assessment Team headed by Prof. (Dr.) Ravi Kumar Gupta, Director, Maharaja Agrasen Institute of Management Studies, New Delhi.

Environment Audit focuses on the Green Campus, Waste Management, Water Management, Energy Management Air Quality, Noise Level & Carbon Footprint etc. being implemented by the College Management. The concept, structure, objectives, methodology, tools of analysis, objectives of the audit are mentioned below.




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4.0 CONCEPT

The term 'Environmental audit' means differently to different people. Terms like 'assessment', 'survey' and 'review' are also used to describe similar activities. Furthermore, some organizations/institutions believe that an 'environmental audit' addresses only environmental matters, whereas others use the term to mean an audit of health, safety and environment-related matters. Although there is no universal definition of Environment Audit, many leading companies/institutions follow the basic philosophy and approach summarized by the broad definition adopted by the International Chambers of Commerce (ICC) in its publication of Environmental Auditing (1989).

The ICC defines Environmental Auditing as:

"A management tool comprising a systematic, documented, periodic and objective evaluation of how well environmental organization, management and equipment are performing with the aim of safeguarding the environment and natural resources in its operations/projects."

The outcome of Environment Audit should be established with concrete evidence that the measures undertaken and facilities in the institution under environment auditing.



A handwritten signature in blue ink, appearing to read "R. K. Sharma".

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5.0 INTRODUCTION

A nation's growth starts from its educational institutions, where the ecology is thought as a prime factor of development associated with environment. Educational institutions now a days are becoming more sensitive to environmental factors and more concepts are being introduced to make them eco-friendly. To preserve the environment within the campus, various viewpoints are applied by the several educational institutes to solve their environmental problems such as promotion of the energy savings, recycle of waste, water reduction, rain water harvesting etc. The activities pursued by colleges can also create a variety of adverse environmental impacts.

Environmental auditing is a process whereby an organisation's environmental performance is tested against its environmental policies and objectives. Environment audit is defined as an official examination of the effects a college has on the environment. As a part of such practice, internal environmental audit is conducted to evaluate the actual scenario at the campus.

Environment audit can be a useful tool for a college to determine how and where they are using the most energy or water or resources; the college can then consider how to implement changes and make savings. It can also be used to determine the type and volume of waste, which can be used for a recycling project or to improve waste minimization plan. Environment auditing and the implementation of mitigation measures is a win-win situation for all the college. It can also create health consciousness and promote environmental awareness, values and ethics. It provides staff and students better understanding of green impact on campus.

Environment auditing promotes financial savings through reduction of resource use. It gives an opportunity for the development of ownership, personal and social responsibility for the students and teachers. Thus, it is imperative that the college evaluate its own contributions toward a sustainable future. As environmental sustainability is becoming an increasingly important issue for the nation, the role of higher educational institutions in relation to environmental sustainability is more prevalent.

A clean and healthy environment aids effective learning and provides a conducive learning environment. There are various efforts around the world to address environmental education issues.




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Zing Enterprises has developed a very simple indigenized system to monitor the environmental performance of educational institutions. It comes with a series of questions to be answered on a regular basis. Environmental conditions may be monitored from angles that are relevant to Indian requirements, without stress on legal issues or compliance.




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Maharaja Agrasen Institute of Management Studies (MAIMS) under the Charitable "Maharaja Agrasen Technical Education Society (MATES) has been in existence for approx. two decades. which has been a period of significant accomplishments and fulfilment.

The Institute has an intake of 2880 students in 6 courses, namely BBA, B.COM (H), BA (JMC), BA (H) Eco., BBA LLB and BA LLB. It has a lush green campus with excellent infrastructural facilities to support the teaching-learning process. The institute has 33 clubs/societies which offer a platform to students for their overall development.

Education and educators have always played an instrumental role in the development and advancement of society and humankind. We are living in an era of rapid change, with global expansion of skills and expertise in a variety of fields. The role of education has shifted from rote memorization to proactive learning. We at MAIMS are conscious of these needs and are continuously striving to attain them.

As part of our commitment to being at the forefront of education, we collaborate with and maintain excellent relationships with industry and leading corporate houses for training and internship opportunities. This gives our students an edge over others, which is reflected in our year after year high placement rates.



VISION

MAIMS envisions a value-based education which empowers the youth to bring about change in society. They should become capable of taking balanced decisions keeping global interest in mind, in the true spirit of 'Vasudhaiva Kutumbakam'.



[Signature]
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MISSION

- To contribute towards generation and dissemination of Knowledge.
- To nurture creativity and encourage entrepreneurship.
- To enhance employability and contribute to human resource development.
- To instill sensitivity amongst the youth towards the community and environment.
- To develop global competencies amongst students.
- To foster the spirit of national development.

The purpose of education is to advance and disseminate knowledge, to stimulate critical and intellectual debate, to inspire future generations to have goals, and to prepare them to compete globally.

The college believes that its primary stakeholders are the students. All aspects of education focus on the core values of contributing to national development while fostering global competencies among students. The college admits students from all social milieus and empowers them through intensive mentoring and counselling to face the challenges of life and become responsible and sensitized citizens of the country.




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Maharaja Agrasen Institute of Management Studies (MAIMS) imparts education to *Undergraduates* in the following Departments:

- ☐ Department of Business Administration
- ☐ Department of Journalism and Mass Communication
- ☐ Department of Commerce
- ☐ Department of Law
- ☐ Department of Economics

Note: All undergraduate degree courses except BA LLB and BBA LLB shall be taught in three years, semester mode.



A handwritten signature in blue ink, appearing to read "Rajendra".

Director

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7.0 OBJECTIVES OF THE STUDY

The main objective of the Environment Audit is to promote the Environment Conservation in the Institute Campus. The purpose of the audit is to identify, quantify, describe and prioritize framework of Environment Sustainability in compliance with the applicable regulations, policies and standards.

The main objectives of carrying out Environment Audit are:

- To introduce and aware students to real concerns of environment and its Sustainability.
- To secure the environment and cut down the threats posed to human health by analyzing the pattern and extent of resource use of the campus.
- To establish a baseline data to assess future sustainability by avoiding the interruptions in environment that are more difficult to handle and their corrections requiring high cost.
- To bring out a status report on environmental compliance.




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8.0 METHODOLOGY

In order to perform environment audit, the methodology included different tools such as preparation of questionnaire physical inspection of the campus, observation and review of the documentation, interviewing key persons and data analysis, measurements and recommendations. The study covered the following areas to summarize the present status of environment management in the campus:

- Water management
- Waste management
- Waste paper management
- Green area management
- Air Quality
- Noise Level



A handwritten signature in blue ink, appearing to read "Rajendra Kumar".

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9.0 EXECUTIVE SUMMARY

An environmental audit is a snapshot in time, in which one assesses campus performance in complying with applicable environmental laws and regulations. Though a helpful benchmark, the audit almost immediately becomes outdated unless there is some mechanism in place to continue the effort of monitoring environmental compliance.

MAIMS already had done internal environment assessment for continual improvements and doing their bit towards environmental protection and environmental awareness. Audit criterion is environmental cognizance, waste minimization and management, biodiversity conservation, water conservation, energy conservation and environmental legislative compliance by the campus. A questionnaire is used during audit. This audit report contains observations and recommendations for improvement of environmental consciousness.



A handwritten signature in blue ink, appearing to read "Rajendra Kumar".

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10.0 ENVIRONMENT AUDIT

10.1. Water Management:

This indicator addresses water consumption, water sources, irrigation, rain water, appliances and fixtures. A water audit is to determine the water use and hence improving the efficiency of its use.

a) Observations:

The study observed that the major sources of water in college and the hostels is through water supplied by Delhi Jal Board, DDA & bore well water. Water is used for drinking purpose, toilets and gardening. There is RO plant of the capacity of 3150 lts. installed in the institute. The waste water from the RO water purifier is used for gardening purpose. During the survey no loss of water is observed neither by any leakages nor by overflow of water from overhead tanks. The data collected from all the departments is examined and verified. On an average the total use of water in the college is 20,000 L/day. There are 4 tanks on the top of the building of capacity 5000lts each. Rain water harvesting units are also functional for recharging ground water level.

Result of analysis of water samples from the Institute

S. No.	Water Sample (Place)	Hardness (ppm)	Dissolved Oxygen (ppm)	Alkalinity (ppm)
1	RO Water	40	8	Nil
2	Ground Water	260	12	Nil
3	Water from Washroom	960	10	Nil



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Recommendations:

- Minimize wastage of water. RO filtration process and other equipment's used for such usage are regularly serviced.
- Ensure that all cleaning products used by college staff have a minimal detrimental impact on the environment, i.e. they are biodegradable and non-toxic.
- Gardens should be watered by using drip/sprinkler irrigation system to minimize water use.

10.2 WASTE MANAGEMENT

This indicator addresses waste production and disposal of different wastes like paper, food, plastic, biodegradable, construction, glass etc. and recycling. Furthermore, solid waste often includes wasted material resources that could otherwise be channeled into better service through recycling, repair, and reuse. Solid waste generation and management is a burning issue. Unscientific handling of solid waste can create threats to everyone. The survey focused on volume, type and current management practice of solid waste generated in the campus.

a) Observations

Waste generation from tree droppings and lawn management is a major solid waste generated in the campus. The waste is segregated at source by providing separate dustbins for Bio-degradable and Plastic waste.

Single sided used papers reused for writing and printing in all departments and recently both side printing is carried out as per requirements. The waste generated by newspapers 250 kg/year, magazine 200 kg/year and of cartons is 20kg/year. Very less plastic waste (0.1Kg/day) is generated by the department, office, garden etc. MoU has been signed with **JAAGRUTI™ Waste Paper Recycling Services**. Metal waste and wooden waste is stored and given to authorized scrap agents for further processing. Tree dropping and food waste from the canteen is being composted in composting pits.

The solid waste is collected by the municipal corporation and disposed by their methods.

b) Recommendations

- Reduce the absolute amount of waste that is produced from college staff offices.
- Make full use of all recycling facilities provided by Municipality and private suppliers, including glass, cans, white, colored and waste paper, plastic bottles, batteries, printer cartridges, cardboard and furniture.



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- Provide sufficient, accessible and well-publicized collection points for recyclable waste, with responsibility for recycling clearly allocated.
- Important and confidential papers after their validity to be sent for recycling.
- Vermi composting should be adopted.

10.3 E-WASTE MANAGEMENT

E-waste can be described as consumer and business electronic equipment that is near or at the end of its useful life. This makes up about 5% of all municipal solid waste worldwide but is much more hazardous than other waste because electronic components contain cadmium, lead, mercury, and Polychlorinated biphenyls (PCBs) that can damage human health and the environment.

a) Observations

E-waste generated in the campus is very less in quantity. Administration conducts the awareness programs regarding E-waste Management with the help of various departments. The E-waste and defective item from computer laboratory is being stored properly. The institution has done a MOU with ATTERO recycling 173; Village Bhagwanpur, Raipur Industrial Area Roorkee-247661 Uttarakhand an approved E-waste management and disposal facility in order to dispose E-waste in scientific manner.

b) Recommendations

- Recycle or safely dispose of electronics or electrical goods, computers and electrical Appliances.
- Use reusable resources and containers and avoid unnecessary packaging where possible.

10.4 GREEN AREA MANAGEMENT

This includes the plants, greenery and sustainability of the campus to ensure that the buildings conform to green standards. This also helps in ensuring that the Environmental Policy is enacted, enforced and reviewed using various environmental awareness programs.

a) Observations

Campus is located in the vicinity of many trees (species) to maintain the bio-diversity. Various tree plantation programs are being organized at college campus and surrounding villages through NSS (National Service Scheme) unit. This program helps in encouraging eco-friendly environment which provides pure oxygen within the institute and awareness among villagers. The plantation program includes various type of indigenous species of ornamental and medicinal wild plant species. The institute has also published a booklet on Medicinal Plants.

b) Recommendations

- Review periodically the list of trees planted in the garden, allot numbers to the trees and keep records. Assign scientific names to the trees.




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- Promote environmental awareness as a part of course work in various curricular areas, independent research projects, and community service.
- Create awareness of environmental sustainability and take actions to ensure environmental sustainability.
- Establish a College Environmental Committee that will hold responsibility for the enactment, enforcement and review of the Environmental Policy. The Environmental Committee shall be the source of advice and guidance to staff and students on how to implement this Policy.
- Ensure that an audit is conducted annually and action is taken on the basis of audit report, recommendation and findings.
- Celebrate every year 5th June as 'Environment Day' and plant trees on this day to make the campus more Green.
- Indoor plantation to inculcate interest in students, Bonsai can be planted in corridor to bond a relation with nature.

Number of Trees in the institute

S.No.	Tree name in HINDI	SCIENTIFIC NAME	No. of Tree
1.	बेल	Aegle marmelos	25
2.	जामुन	Syzygium cumini	22
3.	आंबला	Phyllanthus emblica	3
4.	अमरुद	Psidium	13
5.	गूलर	Ficus racemosa	27
6.	पाकड़	Ficus virens	18
7.	सहतूत	Morus alba	28
8.	बरगद	Ficus benghalensis	21
9.	नीम	Azadirachta indica	94
10.	केला	Musa	21
11.	पारस पीपल	Thespesia populnea	04
12.	गुलमोहर	Delonix regia	08
13.	बेर	Ziziphus mauritiana	07
14.	मेहंदी	Lawsonia inermis	450
15.	चिक्कू	Manilkara zapota	14
16.	अनार	Punica granatum	08
17.	संतरा	Citrus × sinensis	03
18.	नीम्बू	Citrus limon	
19.	फाइकस	Ficus	
20.	सहजन	Moringa oleifera	



[Signature]

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21.	इमली	Tamarindus indica	05
22.	मोलसरी	Mimusops elengi	35
23.	फंडाफाइकस	GARDEN FANDA	145
24.	तुन	Toona ciliata	05
25.	अशोक	Saraca asoca	14
26.	अशोक पडोला	Polyalthia longifolia	40
27.	कदम	Neolamarekia cadamba	25
28.	चन्दन	Santalum album	1
29.	पारिजात	Nyctanthes arbor-tristis	17
30.	सरीफा	Annona squamosa	05
31.	कढल	Cinnamomum camphora	02
32.	करोदा	Carissa carandas	10
33.	बहेड़ा	Terminalia bellirica	02
34.	महुवा	Madhuca longifolia	05
35.	पाप्लर	Populus	15
36.	सरस	Albizia lebbeck	12
37.	ढाक	Butea monosperma	05
38.	गुड़हल	Hibiscus	30
39.	मोसमी	Citrus limetta	04
40.	किन्नू	Citrus reticulata	02
41.	सीता अशोक	Saraca asoca	03
42.	कनेर	Nerium oleander	20
43.	अलस्टोनिआ	Alstonia	35
44.	लसोड़ा	Cordia myxa	02
45.	बोडल ब्रश	Callistemon	15
46.	सिल्वर ओक	Grevillea robusta	05
47.	ताड	Arecaceae	10
48.	देसी पाम	Livistona rotundifolia	15
49.	अशवगंधा	Withania somnifera	05
50.	धतूरा	Withania somnifera	04
51.	नारियल	Cocos nucifera	01
52.	चांदनी	Tabernaemontana divaricata	10
53.	अर्जुन	Terminalia arjuna	02
54.	कीकर	Vachellia nilotica	01
55.	सामी	Prosopis cineraria	10
56.	सांगवान	Tectona grandis	16
57.	सुदरसन	Amaryllidaceae	02



[Signature]

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58.	चंपा	Michelia	18
59.	आखड़ा	Tinospora cordifolia	05
60.	अमर बेल	Cuscuta	06
61.	मधु मालती	Combretum indicum	05
62.	तुलसी	Ocimum tenuiflorum	10
63.	चकोतरा	Citrus maxima	01
64.	कड़ी पत्ता	Murraya koenigii	10
65.	अंजीर	Ficus carica	02
66.	अमलतास	Cassia fistula	11
67.	नोलिना	Nolina	08



Trees With QR Code




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Carbon Foot Print

Carbon sequestration describes long-term storage of carbon dioxide or other forms of carbon to either mitigate or defer global warming and avoid dangerous climate change. It has been proposed as a way to slow the atmospheric and marine accumulation of greenhouse gases, which are released by burning fossil fuels.

Vegetation carbon pool having the potential of 560 Pg (Pg: Petagram (10^{15} Gramme = billion ton) of carbon storage globally. In the current study the focus is given on the assessment of existing carbon stock stored in MAIMS campus in the form of woody vegetation by enumerating every tree species. There are approx. 1800 trees and plants in the institute. A single tree consumes approx. 21.8 kg of CO_2 annually, so approx. 39.240 Tons of CO_2 is consumed yearly by all woody vegetation in the college campus.

Oxygen released

A tree releases approx. 0.912 kg of Oxygen annually. So from 1800 trees at MAIMS approx. 1641.6 kg Oxygen is available. It is assumed that a single tree supports oxygen demand of two people for their life. Thus, the 1800 woody vegetations in College campus are supporting approx. 3600 people around the campus. We need to do more plantation to mitigate the pollution.

10.5 AIR QUALITY

Ambient Air Quality Status:

Ambient air sampling is important part of environmental monitoring. Air quality detector, hand held was used at various places in the institute.

TABLE

Air Quality in the Institute



A handwritten signature in blue ink, appearing to read "Rajendra".

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S.No.	Location	CO	CO2	HCHO	AQI	TVOC
1	Faculty Room	0012	0523	0.021	02	0.2
2	Corridor	0058	0623	0.072	03	0.9
3	Class Room	0011	0523	0.020	02	0.2
4	Faculty Room 2 nd Floor	0033	0568	0.044	02	0.5
5	Canteen	0011	0521	0.020	02	0.2
6	Gate	0069	0647	0.084	03	1.0

S.No.		(Qualified) Excellent	(Qualified) Good	Slight Pollution	Moderately Polluted	Heavy Pollution	Serious Pollution
01	HCHO	0-0.08	0-0.1	0.1-0.2	0.2-0.5	0.5-1.0	1.0-1.999
02	TVOC	0-0.5	0.5-0.6	0.6-1.5	1.5-3.0	3.0-6.0	6.0-12
03	CO2	0-450	451-1000	1001-1500	1501-2000	2001-3000	3001-5000
04	CO	0-50	51-100	101-200	201-400	401-800	801-2400
05	AQI	01	02	03	04	05	06

TABLE Reference for Air Quality Pollution Level

By Comparing it is quite evident that the Air Quality in the Institute is good. And AQI level is moderate. This is because of plantation.



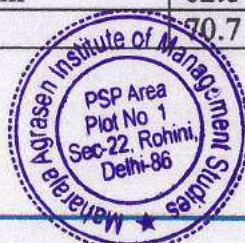

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AIR QUALITY DETECTOR

10.6 Noise Level

S. No	PLACE	db level
1	Main Hall at Entrance	63.5
2	Garden	60.8
3	Lift	56.6
4	Range for different Class Room	62.8--67
5	Main Gate	60.7



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NOISE METER

Noise level in the college and class room are within permissible limits




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11.0 BEST PRACTICES/ INITIATIVES FOR ENVIRONMENT

A	Biodiversity Conservation Flora conservation	They have lush green campus which provides habitat to various species of flora.
B	Tree Plantation Drive Every Guest is honored by a Tree Plantation Drive annually during Paryavaran Raksha Parv at the Campus.	Yes, periodically the plantation drives by students and staff of campus.
C	Ground Water Recharge Rain Water Harvesting System.	Yes, 100% recharge of the rain water
D	Pollution Reduction Vehicles (Students) not allowed at campus	Reduction in Air Pollution through vehicular emission.
E	E Waste Management Collection of e-waste by staff	E waste is sent to the authorized recyclers for adequate disposal
F	Solid Waste Management Lifting of garbage from campus on alternate day by Municipal Corporation.	Yes, different mechanisms for proper disposal and recycling of e-waste, plastic waste, biodegradable waste and MSW
G	Adoption of Village/society	Yes. Under UNNAT BHARAT ABHIYAN
H	Water Conservation	Yes, water saving push taps fitted in the drinking water zone and the toilets to avoid the wastage. They are re-using RO waste water in their washrooms.




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12.0

RECOMMENDATIONS

- Formation of Environment Policy and communicated to all faculties and other staff members.
- Environmental Monitoring i.e. (Ambient Air Quality monitoring, Stack Monitoring of DG sets, Water monitoring need to be conducted by Delhi State Pollution Control Committee, approved laboratory with frequency of six month.
- Reduction in use of paper work by go digital system.
- Water Meter should be installed at institute for monitoring of water consumption for landscape.
- . Display of environment awareness posters should be there in the prominent areas of campus.
- Increase in Environmental promotional activities for spreading awareness at campus.
- As practically feasible avoid use of personal vehicles inside the campus.



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

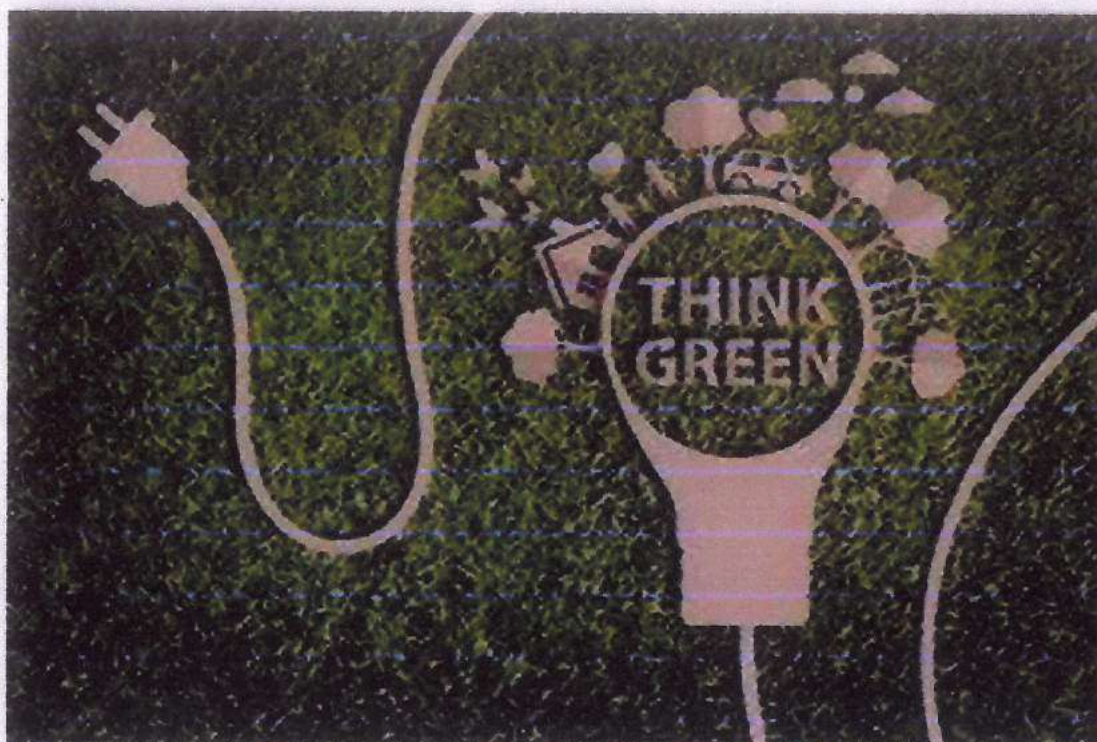
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13.0

CONCLUSION

This audit involved extensive consultation with all the campus team, interactions with key personnel on wide range of issues related to Environmental aspects. Maharaja Agrasen Institute of Management Studies has Environmental Committee for sustainable use of resources. Overall, 40% of Institute campus is for landscaping. The audit has identified several observations for making the campus premise more environmentally friendly. The recommendations are also mentioned with observations for campus team to initiate actions.

The audit team opines that the overall site is maintained well from environmental perspective. There are no major observations but few things are important to initiate urgently are waste management records, rainwater harvesting recharge; water balance cycle and periodic inspection of buildings housekeeping and environment policy.



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- The Environment [Protection] Act – 1986 (Amended 1991) & Rules-1986 (Amended 2010)
- The Petroleum Act: 1934 – The Petroleum Rules: 2002
- The Central Motor Vehicle Act: 1988 (Amended 2011) and The Central Motor Vehicle Rules: 1989 (Amended in 2005)
- Energy Conservation Act 2010.
- The Water [Prevention & Control Of Pollution] Act – 1974 (Amended 1988) & the Water (Prevention & Control of Pollution) Rules – 1975
- The Air [Prevention & Control Of Pollution] Act – 1981 (Amended 1987) The Air (Prevention & Control of Pollution) Rules – 1982
- The Gas Cylinders Rules – 2016 (Replaces the Gas Cylinder Rules – 1981)
- E-waste management rules 2016
- Electrical Act 2003 (Amended 2001) / Rules 1956 (Amended 2006)
- The Hazardous Waste (Management and Handling and Trans-boundary Movement) Rules, 2008 (Amended 2016)
- The Noise Pollution Regulation & Control rules, 2000 (Amended 2010)
- The Batteries (Management and Handling) rules, 2001 (Amended 2010)
- Relevant Indian Standard Code practices
- Internal Records of the Campus




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15.0 SUMMARY OF ENVIRONMENT INITIATIVES

Maharaja Agrasen Institute of Management Studies is committed to ecological sustainability in the campus and beyond the campus. We create awareness about the importance of our environment. Environment Initiatives are created to identify various environmental issues and take necessary steps to achieve the goal of Environment conservation and find ways of solving ecological problems without harming the environment. We urge our students to make right usage of environmental resources to meet the needs of the present and future generations.

Maharaja Agrasen Institute of Management Studies understands the role of nature in a student's education from a holistic perspective and hence several measures are taken by our Institution. Planting trees and gardens at educational institutions helps beautify the community.

The institution has a green campus and gives top priority to keeping the campus eco-friendly and hygienic. Separate blue and green dustbins are kept at different places on the campus to dispose biodegradable, wet and non-biodegradable, dry waste. The solid waste is collected daily. It is processed as per the nature of the waste. Also, a dustbin is kept on every floor to collect the waste .. Ban of plastic and use of stainless-steel utensils in the hostel and canteen, limited parking in the campus is a step towards saving our environment. Flower Show or Plant Show is conducted on the family day to spread awareness, establish clarity and emphasize benefits of usage of herbal plants. Display of herbal plants show and publication of a small booklet on herbal plants is a welcome step in this direction.

The institute has various plants which are even 100 years old like Alaskan (*Salix alaxensis*) which is used for arthritis, cancer, wounds, fever, tuberculosis, diabetes, low blood sugar, and pneumonia; Imli (*Tamarindus indica*) which is used to treat constipation, liver and gallbladder problems, and stomach disorders. It is also used to treat colds and fever; and many more plants are in Maharaja Agrasen Vatika.

Prayavaran Raksha Parv –Since last 7 years Maharaja Agrasen Institute of Managements Studies is celebrating Paryavaran Raksha Parv as a massive plantation drive in the campus spread over area of more than 11 thousand sq. meters. Every year in a month-long plantation drive Students, Staff, Faculty Members, and Trustees takes active part.

Maharaja Agrasen Institute of Management Studies has a green campus area of more than 11 thousand sq. meters with hundreds of trees and plants, and beautiful landscapes.



A handwritten signature in blue ink, likely of the Director, written over the printed name.

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Our garden has become the pride of Maharaja Agrasen Institute of Management Studies. The garden is the spirit of our institution and its greenery symbolizes the liveliness of our campus. The flower show to showcase the importance of herbal plants has also resulted in great impact.

Prayavaran Raksha Parv is the highlight of our practice–

Prayavaran Raksha Parv is celebrated to give a tribute to nature, it's like thanksgiving to the nature for all its gifts. We all celebrate the existence of our garden, by planting more trees and trying to fulfil our bit in making this planet a beautiful one to live. In 2017, Bollywood celebrities like Divya Khosla Kumar and Manoj Tiwari also visited Maharaja Agrasen Institute of Management Studies to celebrate Prayavaran Raksha Parv. The guests were given saplings to plant them in their residential areas.

There were not many problems that were faced while creating the Green initiatives since the funds were well arranged by Maharaja Agrasen Institute of Management Studies and everything was well taken care of by the management.

Eco Club is committed to plant more trees and celebrating *Paryavaran Raksha Parv* every year. Faculty Staff & Students were present along with the staff and dignitaries who planted saplings and commenced the Paryavaran Raksha Parv.



A handwritten signature in blue ink, appearing to read "Rajendra Kumar".

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ANNEXURE I –PHOTOGRAPHS OF ENVIRONMENT CONSIOUSNESS



Paryavaran Raksha Parv 2021:

Maharaja Agrasen Institute of Management Studies, with a pledge to restore environment, started the month-long, *Paryavaran Raksha Parv* on 5th June, 2021. Due to the pandemic there were some limitations yet *Paryavaran Raksha Parv* was never compromised.



[Signature]
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Trees With QR Code



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On the occasion of World Environment Day, a panel discussion was organized on 5th June, 2021 in collaboration with Centre of excellence or research on Clean Air, IIT Delhi and Indian Council of Media Research. The topic of discussion was- "Delhi's Air Quality Control."



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In the esteemed presence of our Founder Chairman, Dr. Nand Kishore Garg, the *Paryavaran Raksha Parv* on 5th June, 2021 was started by planting a sapling in the garden of Maharaja Agrasen Institute of Management Studies.




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Paryavaran Raksha Parv 2019:

Maharaja Agrasen Institute of Management Studies, with a pledge to restore environment, started the month-long, *Paryavaran Raksha Parv*. Students, faculty and dignitaries of the institution participate in this wonderful initiative.

Environment protection must become an important content of civic education as a field of social impact.

In the esteemed presence of Founder Chairman, Dr. Nand Kishore Garg, Joint convener of the RSS Environment & Water Conservation activity Shri Rakesh Jain, our Chief Guest inaugurated the *Paryavaran Raksha Parv, 2019* by planting a sapling in the campus garden.



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Paryavaran Raksha Parv 2019:

Joint convener of the RSS Environment & Water Conservation activity Shri Rakesh Jain, our Chief Guest while planting a sapling in the campus of Maharaja Agrasen Institute of Management Studies.

Joint convener of the RSS Environment & Water Conservation activity Shri Rakesh Jain, our Chief Guest addressing the dignitaries, faculty and students during the ceremony and preaching the importance of planting a tree by each one present in the audience.



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Paryavaran Raksha Parv 2018:

In the esteemed presence of our Chief Guest and Founder Chairman, Dr. Nand Kishore Garg, the *Paryavaran Raksha Parv* was commenced by planting a sapling in the garden of Maharaja Agrasen Institute of Management Studies.



[Signature]

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Paryavaran Raksha Parv 2017:

At Maharaja Agrasen Institute of Technology and Management the inauguration of the environmental protection festival was done by MP Manoj Tiwari by planting a sapling.



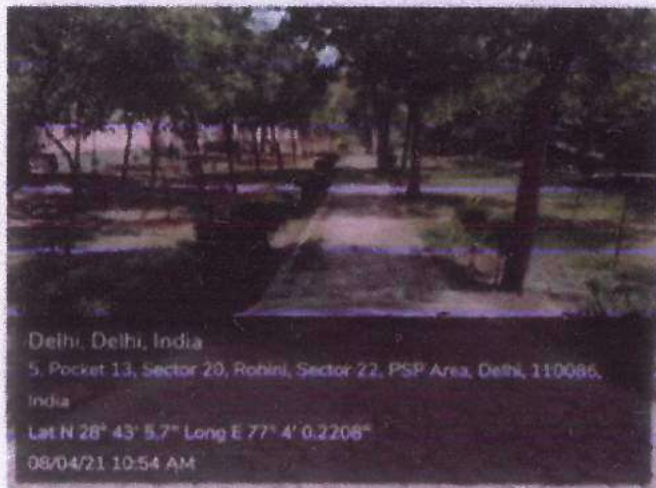

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On this occasion, Bollywood actress and producer-director Divya Khosla Kumar also interacted with the students and planted a sapling during the month-long *Paryavaran Raksha Parv 2017*.

Green Belt-

The Green Initiatives are created to identify various environmental issues and take necessary steps to achieve the goal of Environment conservation. Planting trees and gardens at educational institutions helps beautify the community. The Institute has various plants which are even 100 years. Limited parking in the campus is a step towards saving our environment.

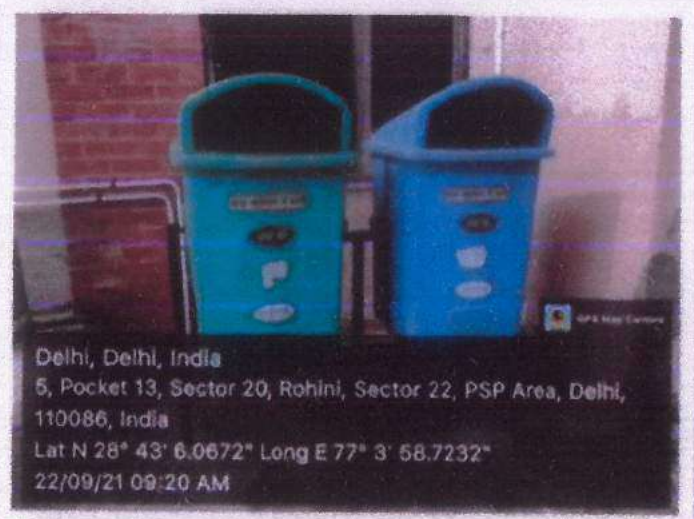


[Signature]
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Biodegradable and non-biodegradable dustbins-

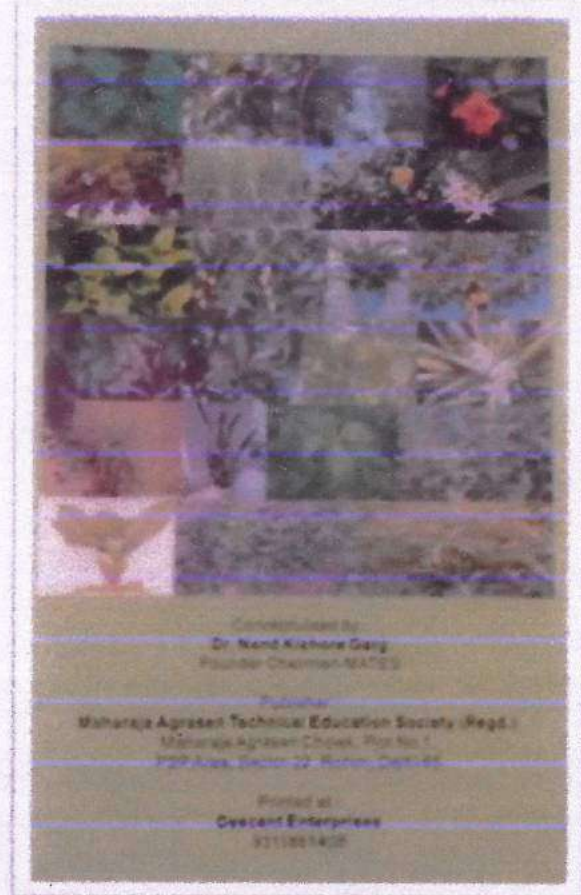
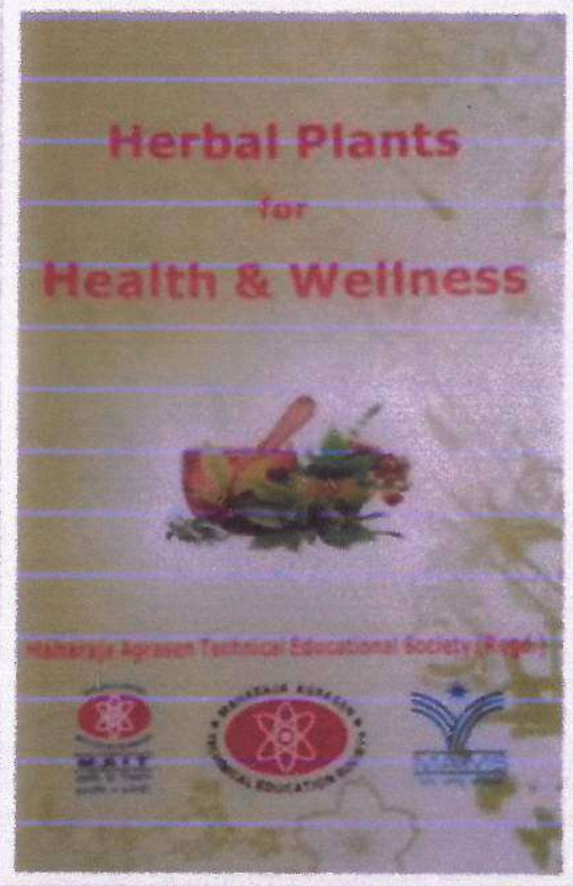
The institution has a green campus and gives top priority to keeping the campus eco-friendly and hygienic. Separate blue and green dustbins are kept at different places on the campus to dispose biodegradable, wet and non-biodegradable, dry waste. The solid waste is collected daily. Waste is collected twice in a day. It is processed as per the nature of the waste. Also, a dustbin is kept in every room to collect the waste twice in a day.




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Flower Show in Campus on Family Day-

Flower Show or Plant Show is conducted on the family day to spread awareness, establish clarity and emphasize benefits of usage of herbal plants. Display of herbal plants show and publication of a small booklet on herbal plants is a welcome step in this direction.



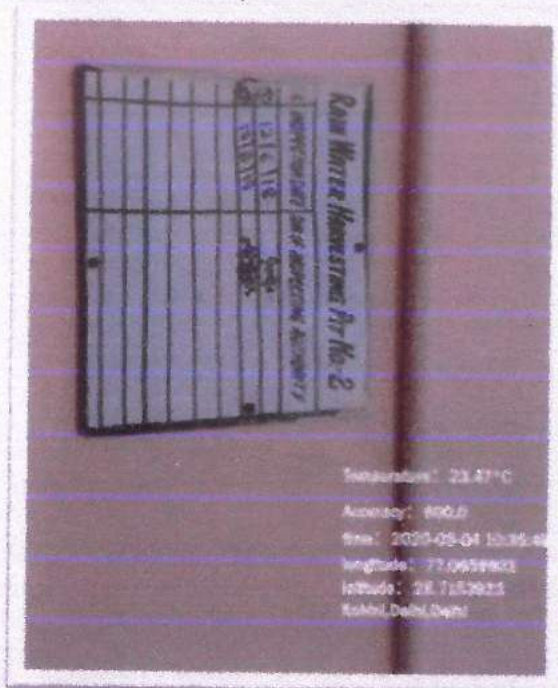

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Waste water recycling system-

It is maintained on the campus by utilizing the waste RO water to water the plants and trees. Regular maintenance of drinking water taps, RO water filters, tanks, drainage and water pipelines is kept.

Waste water recycled daily: 3,500 Lt.

Water is reused for gardening and other purposes, which was previously going in sewage. This 3,500 Lt water is wasted by Ros.



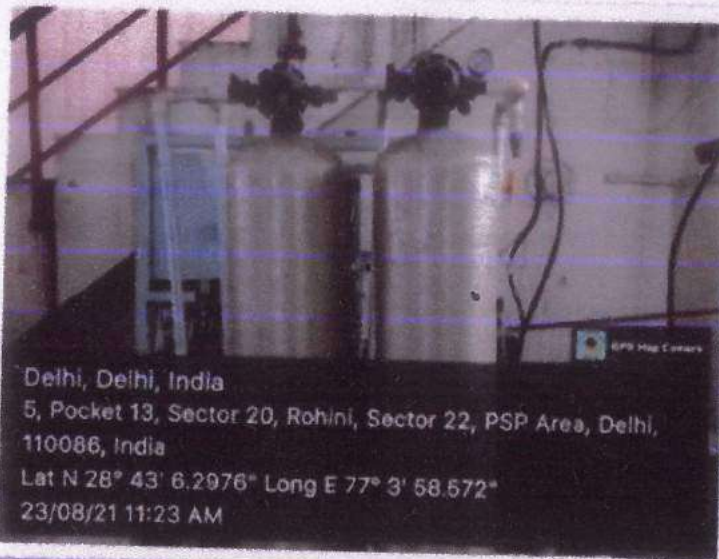

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Delhi, Delhi, India
5, Pocket 13, Sector 20, Rohini, Sector 22, PSP Area,
Delhi, 110086, India
Lat N 28° 43' 6.2976" Long E 77° 3' 58.644"
23/08/21 11:23 AM



Delhi, Delhi, India
5, Pocket 13, Sector 20, Rohini, Sector 22, PSP Area,
Delhi, 110086, India
Lat N 28° 43' 6.2976" Long E 77° 3' 58.5756"
23/08/21 11:23 AM



Delhi, Delhi, India
5, Pocket 13, Sector 20, Rohini, Sector 22, PSP Area, Delhi,
110086, India
Lat N 28° 43' 6.2976" Long E 77° 3' 58.572"
23/08/21 11:23 AM



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ENERGY AUDIT REPORT



Maharaja Agrasen Institute of Management Studies,
Sector-22, Rohini, Delhi-110086

Prepared by

Praveen Kumar Singh
Chartered Engineer
Certified Energy Auditor (Bureau of Energy Efficiency)



Zing Enterprises

L- 15 / 860, Ashiana Aangan, Alwar Bypass Rd, Bhiwadi,
Rajasthan 301019




Director
Maharaja Agrasen Institute
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Sector-22 Rohini, Delhi-86

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Zing Enterprises

CERTIFICATE

PRESENTED TO

**MAHARAJA AGRASEN INSTITUTE OF MANAGEMENT
STUDIES**

PSP Area Sector-22, New Delhi-110086

has been assessed by **ZING ENTERPRISES** for the comprehensive study of energy audit
on institutional working framework to fulfil the requirement of

ENERGY AUDIT

The energy-saving initiatives carried out by the institution have been verified in the
report submitted and was found to be satisfactory.

The efforts taken by the management and the faculty towards all types of energy
used in the institution and sustainability are appreciated and noteworthy.



3-Jan.-2012
DATE OF AUDIT

Zing Enterprises, L- 15 / 860, Ashiana Aangan, Alwar Bypass Rd, Bhiwadi,

Rajasthan 301019

Director

Maharaja Agrasen Institute
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Sector-22 Rohini, Delhi-86



1.0 ACKNOWLEDGEMENT

Zing Enterprises Energy Audit Team thanks the management of **Maharaja Agrasen Institute of Management Studies Rohini** for assigning this important work of Energy Audit. We appreciate the co-operation of institute to our team for completion of study.

Our special thanks are due to the committee consisting of:

Name	Position/Department
Prof. (Dr.) Ravi Kumar Gupta	Director - MAIMS
Dr. Rachna Jian	Associate Professor – Department of Commerce
Dr. Gaurav Aggarwal	Associate Professor– Department of Economics
Prof. (Dr.) Vinita Gupta	Professor – Department of Journalism and Mass Communication
Ms. Rachita Aggarwal	Assistant Professor – Department of Commerce
Dr. Sushila Gupta	Assistant Professor – Department of Business Administration
Mr. Shridul Gupta	Assistant Professor – Department of Law

Team gave us necessary inputs to carry out this very vital exercise of Energy Audit. We are also thankful to other staff members who were actively involved while collecting the data and conducting field measurements.


(Praveen Kumar Singh)
Chartered Engineer

Certified Energy Auditor (Bureau of Energy Efficiency)




Director
Maharaja Agrasen Institute
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Sector-22 Rohini, Delhi-86

2.0 DISCLAIMER

Zing Enterprises Energy Audit Team has prepared this report for **Maharaja Agrasen Institute of Management Studies Rohini Delhi** based on input data submitted by the representatives of institute complemented with the best judgment capacity of the expert team.

Zing Enterprises & staff 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.

Conducted by:


(Praveen Kumar Singh)
Chartered Engineer

Certified Energy Auditor (Bureau of Energy Efficiency)




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Maharaja Agrasen Institute
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3.0 CONTEXT

We are committed as a component of Corporate Social Responsibility for the Higher Education Institutions to ascertain that they contribute towards reduction of energy use to take care for Carbon Footprint.

MAIMS, Management decided to get Energy Audit from an external Energy Audit Agency. So internal team with following faculty and students were formed under the Director Prof. (Dr.) Ravi Kumar Gupta.

The concept, structure, objectives, methodology, tools of analysis, objectives of the audit are mentioned below.

Faculty & Student in Energy Audit Committee:

S.No.	Student Name	Dept.
1.	Ms. Tanshika Mittal	BA(JMC)
2.	Mr. Bhavya Sharma	BA (JMC)
3.	Ms. Riya Gupta	BA(JMC)
4.	Ms. Nikita Verma	BBA (LAW)
5.	Ms. Simrit Chadha	BBA(LAW)
6.	Mr. Shubham Kapoor	B.Com.(H)
7.	Ms. Kritika Garg	B.COM(H)
8.	Ms. Sanya	BBA
9.	Mr. Rahul Gupta	BBA
10.	Mr. Harshit	BA (ECO)
11.	Ms. Saloni Sharma	BA(ECO)




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4.0 INTRODUCTION

A nation's growth starts from its educational institutions, where the ecology is thought as a prime factor of development associated with environment. Educational institutions now a days are becoming more sensitive to environmental factors and more concepts are being introduced to make them eco-friendly. To preserve the environment within the campus, various viewpoints are applied by the several educational institutes to solve their environmental problems such as promotion of the energy savings, recycle of waste, water reduction, rain water harvesting etc. The activities pursued by colleges can also create a variety of adverse environmental impacts.

Environmental auditing is a process whereby an organisation's environmental performance is tested against its environmental policies and objectives.

A clean and healthy environment aids effective learning and provides a conducive learning environment. There are various efforts around the world to address environmental education issues.

Zing Enterprises has developed a very simple indigenized system to monitor the environmental performance of educational institutions. It comes with a series of questions to be answered on a regular basis. Environmental conditions may be monitored from angles that are relevant to Indian requirements, without stress on legal issues or compliance.




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5.0 ABOUT INSTITUTE

Maharaja Agrasen Institute of Management Studies (MAIMS) under the Charitable "Maharaja Agrasen Technical Education Society (MATES) has been in existence for approx. two decades. which has been a period of significant accomplishments and fulfilment.

The Institute has an intake of 2880 students in 6 courses, namely BBA, B.COM (H), BA (JMC), BA (H) Eco., BBA LLB and BA LLB. It has a lush green campus with excellent infrastructural facilities to support the teaching-learning process. The institute has 33 clubs/societies which offer a platform to students for their overall development.



Education and Educators have always played an instrumental role in the development and advancement of society and humankind. We are living in an era of rapid change, with global expansion of skills and expertise in a variety of fields. The role of education has shifted from rote memorization to proactive learning. We at MAIMS are conscious of these needs and are continuously striving to attain them.

As part of our commitment to being at the forefront of education, we collaborate with and maintain excellent relationships with industry and leading corporate houses for training and internship opportunities. This gives our students an edge over others, which is reflected in our year after year high placement rates.

VISION

MAIMS envisions a value-based education which empowers the youth to bring positive change in society. They should become capable of taking balanced decisions keeping global interest in mind; in the true spirit of 'Vasudhaiva Kutumbakam'.



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MISSION

- To contribute towards generation and dissemination of Knowledge.
- To nurture creativity and encourage entrepreneurship.
- To enhance employability and contribute to human resource development.
- To instill sensitivity amongst the youth towards the community and environment.
- To develop global competencies amongst students.
- To foster the spirit of national development.

The purpose of education is to advance and disseminate knowledge, to stimulate critical and intellectual debate, to inspire future generations to have goals, and to prepare them to compete globally.

The college believes that its primary stakeholders are the students. All aspects of education focus on the core values of contributing to national development while fostering global competencies among students. The college admits students from all social milieus and empowers them through intensive mentoring and counselling to face the challenges of life and become responsible and sensitized citizens of the country.




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Maharaja Agrasen Institute of Management Studies (MAIMS) imparts education to

Undergraduates in the following Departments:

- ☐ Department of Business Administration
- ☐ Department of Journalism and Mass Communication
- ☐ Department of Commerce
- ☐ Department of Law
- ☐ Department of Economics

Note: All undergraduate degree courses except BA LLB and BBA LLB shall be taught in three years, semester mode.



A handwritten signature in blue ink, likely of the Director, positioned above the printed name.

Director
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6.0 OBJECTIVES OF THE STUDY

The main objective of the Energy Audit is to promote the environment & energy management and conservation in the institute campus. The purpose of the audit is to identify, quantify, describe and prioritize framework of environment sustainability in compliance with the applicable regulations, policies and standards.

The main objectives of carrying out Energy Audit are:

The primary objectives of energy audit are to identify and evaluate opportunities to reduce energy consumption per unit of product output and reduce operating costs through energy conservation and planning. Energy audit provides a "bench- mark" for managing energy in the organization and also provides the basis for planning a more effective use of energy throughout the organization.

7.0 METHODOLOGY

ENERGY AUDIT

In order to perform energy audit, the methodology included different tools such as preparation of questionnaire, physical inspection of the campus, observation and review of the documentation, interviewing key persons and data analysis, measurements and recommendations. The study covered the following areas to summarize the present status of environment management in the campus:

- Observation on electricity bill analysis
- Connected load list



A handwritten signature in blue ink, likely of the Director, positioned above the printed name.

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Connected Load List

S.No	FLOOR NO.	LIGHT (W)	LIGHT (18W)	LIGHT (20W)	LIGHT (40W)	COMPUTER SYSTEMS	WATER COOLER	PRINTER S	ONLINE UPS	OVEN	REFRIGERATOR	A.Cs (1.5T) 3 STAR	A.Cs (1.5T) 5 STAR	CEILING FAN (75W)	CEILING FAN (53W)	EXHAUST FAN	PROJECTOR
01	BASEMENT	61	0	2	16	1	0	0	0	0	0	1	1	19	10	8	0
02	GROUND	35	25	4	20	20	1	6	10KVA	0	2	3	4	11	11	3	2
03	FIRST	2	17	5	31	0	1	1	0	0	1	1	0	11	5	2	6
04	SECOND	27	24	5	33	2	1	1	(20KVA, 15 KVA)	1	1	3	3	22	8	2	1
05	THIRD	0	0	23	27	140	1	1	0	0	0	4	3	28	15	2	1
06	FOURTH	0	21	23	22	0	1	1	0	1	0	2	1	26	20	2	0
07	FIFTH	2	22	21	30	8	1	4	0	1	1	8	5	35	12	2	0
08	SIXTH	2	22	39	10	1	1	2	0	1	0	7	6	26	11	2	0
09	SEVENTH	2	20	29	20	1	1	1	0	0	0	7	2	18	10	2	0
10	EIGHT	3	21	23	20	61	1	1	0	1	1	12	3	12	20	2	6
11	NINTH	2	22	5	21	1	1	1	0	1	1	10	5	21	11	2	2
TOTAL		136	194	179	250	235	10	18	3	6		38	33	229	135	29	19

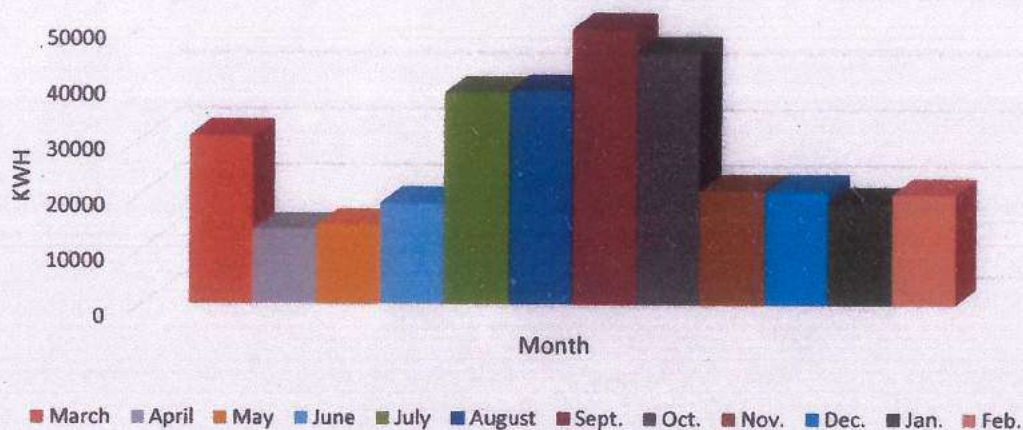


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Summary of Monthly Electricity Consumption & Total Bill Amount

SL.No.	Month	Year	KWh	30% Consumed by MAIMS	Cost of Electricity INR
1	March	2021	30228	9068	77078.0
2	April	2021	13524	4057	34484.5
3	May	2021	14527	4358	37043.0
4	June	2021	18183	5456.0	46376
5	July	2021	38006	11401	96908.5
6	August	2021	38306	11491	97673.5
7	Sept.	2021	49459	14837	126114.5
8	Oct.	2021	45240	13632	116127
9	Nov.	2021	20592	12355	105017.5
10	Dec.	2021	20592	5482	46597.0
11	Jan.	2022	18276	5979	50821.50
12	Feb.	2022	19932	8818	74953.0

Electricity Bill

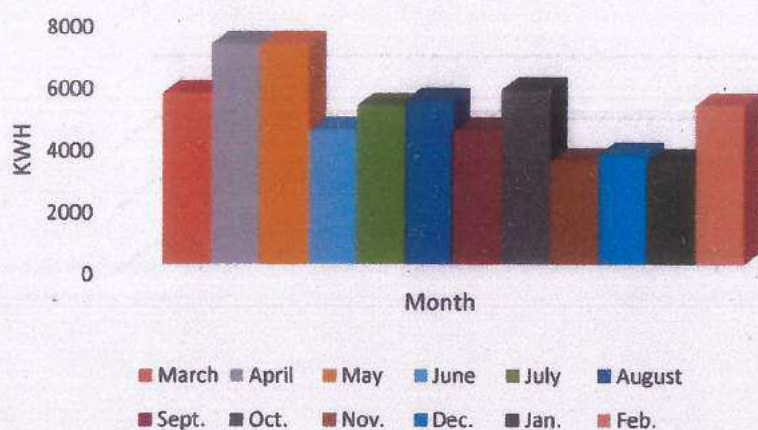



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Summary of Monthly Solar Bills Electricity Generations & Total Bill Amount

S.No.	Month	Year	KWh	Cost of Electricity INR
1	March	2021	5510	42647
2	April	2021	7113	55054
3	May	2021	7113	55054
4	June	2021	4323	33460
5	July	2021	5097	39450
6	August	2021	5268	40774
7	Sept.	2021	4305	33320
8	Oct.	2021	5620	43498
9	Nov.	2021	3326	25743
10	Dec.	2021	3518	27229
11	Jan.	2022	3306	25588
12	Feb.	2022	5115	39590

Electricity Bill



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8.0. ENERGY AUDIT

This indicator addresses energy consumption, energy sources, energy monitoring, lighting, appliance, natural gas and vehicles. Energy use is clearly an important aspect of campus sustainability and thus requires no explanation for its inclusion in the assessment.

a) Observations

Energy source utilized by the campus is electricity, Diesel and PNG gas in kitchen. Tata Power Delhi Distribution Ltd is supplier of Electricity. The entire campus including common facility centers are equipped with LED lamps and LED tube lights, except at few locations. Besides this, solar lights panel is installed in campus Delhi. Solar panel has been supplied by Saubhagya Infratech Pvt. Ltd. This is connected with GRID. Computers are set to automatic power saving mode when not in use. Also, campus administration runs switch-off drill on regular basis.

b) Recommendations

- In campus premises electricity should be shut down from main building supply after occupancy time, to prevent power loss due to eddy current.
- Support renewable and carbon-neutral electricity options on any energy purchasing consortium, with the aim of supplying all college properties with electricity that can be attributed to renewable and carbon-neutral sources.
- It is preferable to purchase electricity from a company that invests in new sources of renewable and carbon-neutral electricity.
- Installation of LED lamps instead of CFL and replacing the old tube lights with the new LED tubes.
- 5-star rated Air Conditioners, in place of 3 star rated Air conditioner
- Cleaning of tube-lights/bulbs to be done periodically, to remove dust over it.

8.1 ENERGY AUDIT SUMMARY

S.No	Equipment	Proposed action	Result for proposed action
1	Lighting equipment 40W	Replaced 40W conventional light with 18W LED Tube light	Total no. of light fittings- 429 Total no. of presently operated-429 Total no. of light fitting to be replaced=250 Nos Total energy consumption =2000KWH Expected Energy Consumption=900KWH Total energy Saved per month=1100KWH




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2	Fan System	Replace present ceiling fan consuming 78W with 53W. In the campus where usage is high this conservation measure will produce good saving	Total no. of fans in the campus=358Nos. Total no. of fans used in campus =358Nos No. of fans to be replaced=222 Nos The total current consumption=5584.8 KWH The expected fan consumption =2353.2 KWH Total KWH saved per month=5584.4-2353.2 KWH=3231.6
3	Air conditioner	Replace present 3 star Air conditioner consuming 1104 W with 5 star AC consuming 840W.	Total no. of AC in the campus=91 Nos. Total no. of AC used in campus =91Nos No. of AC to be replaced=56 Nos The total consumption= 5584.8 KWH The expected consumption =2353.2 KWH Total KWH saved per month=5584.4-2353.2 KWH=3231.6

8.2 PAYBACK CALCULATION FOR LIGHT

40W FTL vs 18W LED Tube Light

A. Saving Operation(per month analysis)

Particular	FTL	LED
Luminaire Type	40W	18W
Wattage	40	18
Total no. of Luminaire	250	250
Working hour per day(Hrs)	8	8
Working Day per month (Day)	25	25
Electrical Units consumed per month (KwHr)	2000	900
Per Unit Electrical cost(Rs.)	8.50	8.50
Total Electricity cost per month(Rs.)	17000	7650
Electrical Saving with use of LED(Rs.)		9350
Investment	Rs.105408	
Payback in month	11 MONTH	
Per Annum Saving	Rs.112200	



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8.3 PAYBACK CALCULATION FOR FAN**75w Existing Fan vs 50W Fan****A. Saving Operation(per month analysis)**

Particular	Existing fan	Purposed fan
ELECTRIC FAN	75W	53W
Wattage	75	53
Total no. of ELECTRIC FAN	222	222
Working hour per day(Hrs)	8	8
Working Day per month (Day)	25	25
Electrical Units consumed per month (Kw-Hr)	3330	2353
Per Unit Electrical cost(Rs.)	8.50	8.50
Total Electricity cost per month(Rs.)	28305	20,000
Electrical Saving with use of LED(Rs.)		8305
Investment	Rs.109120	
Payback in month	14 MONTHS	
Per Annum Saving	Rs.99660	

8.4 PAYBACK CALCULATION FOR A/C**3 STAR A/C TO 5 STAR A/C****A. Saving Operation(per month analysis)**

Particular	Existing A/C 3 STAR	Purposed A/C 5 STAR
AIR CONDITIONER 1.5 T		
Wattage	1104 WATT	840 WATT
Total no. of AIR CONDITIONER	56	56
Working hour per day(Hrs)	8	8
Working Day per month (Day)	25	25
Electrical Units consumed per month (Kw-Hr)	12364.8	9408.0
Per Unit Electrical cost(Rs.)	8.50	8.50
Total Electricity cost per month(Rs.)	105100.8	79968
Electrical Saving with use of LED(Rs.)		25132.0
Investment	Rs. 672000	
Payback in month	27 MONTHS	
Per Annum Saving	Rs. 301584	

Total Saving per annum=Rs 5,13,444.20




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9.0 DIESEL CONSUMPTION

Below is the diesel consumption details in litre from March 2021 to Feb.2022

SL.No.	Month	Year	Diesel consumption(Ltr)	30% Consumed by MAIMS
1	March	2021	3	1
2	April	2021	NIL	NIL
3	May	2021	NIL	NIL
4	June	2021	NIL	NIL
5	July	2021	NIL	NIL
6	August	2021	4	1.2
7	Sept.	2021	5	1.5
8	Oct.	2021	7	2.1
9	Nov.	2021	8	2.4
10	Dec.	2021	8	2.4
11	Jan.	2022	NIL	NIL
12	Feb.	2022	4	1.2

The grid supply is good so diesel generator is used occasionally. Any how it is suggested to convert diesel generator to Dual fuel mode seeing the air quality condition of Delhi

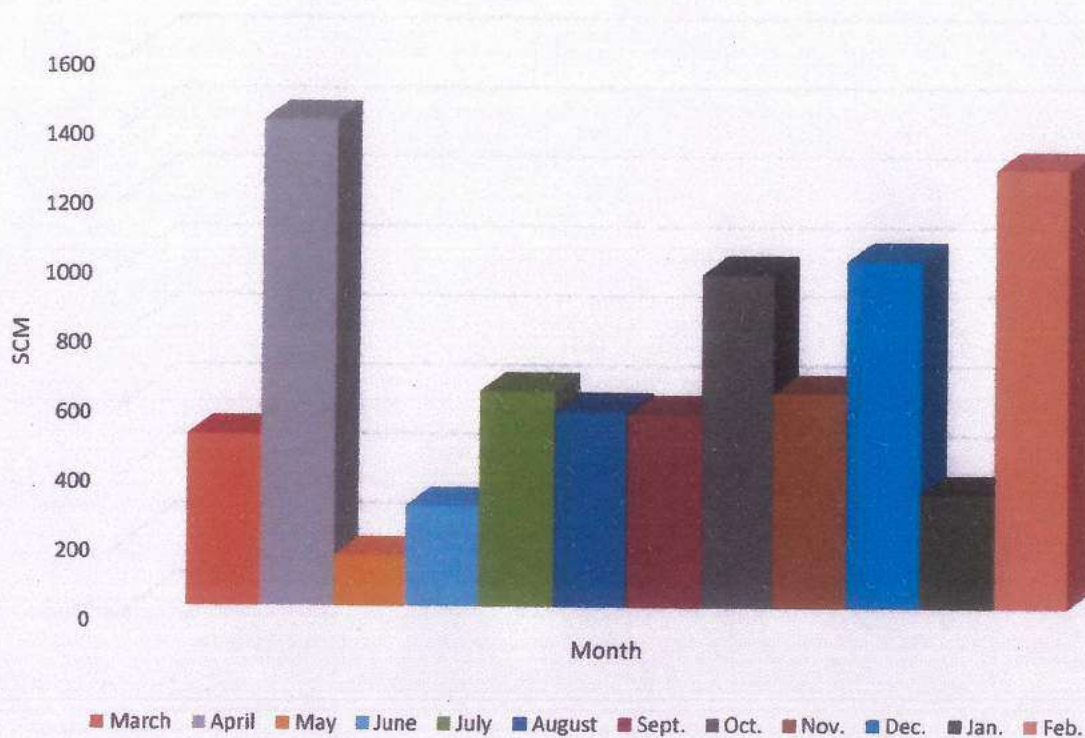
10.0 PNG GAS CONSUMPTION

SL.No.	Month	Year	PNG Consumption (SCM)	Cost of Gas
1	March	2021	493	13370
2	April	2021	1401	37927
3	May	2021	145	3927
4	June	2021	288	7792
5	July	2021	620	17361
6	August	2021	563	15996
7	Sept.	2021	554	16324
8	Oct.	2021	957	31219
9	Nov.	2021	616	20599
10	Dec.	2021	998	33372
11	Jan.	2022	326	17065
12	Feb.	2022	1262	42793

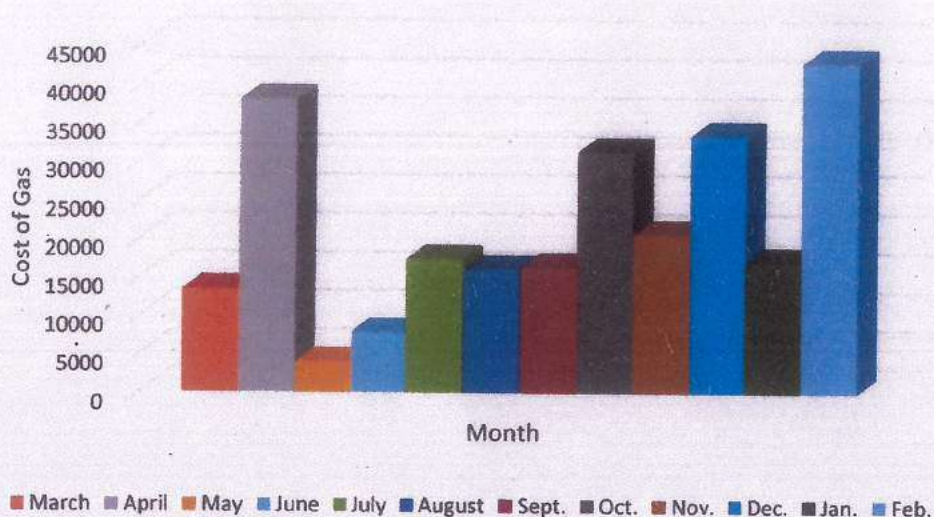


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PNG Gas Consumption



Cost of PNG Gas Consumption



11.0 Capacitor Bank

There are seven Capacitor for 25KVAR and Six Capacitor for 20 KVAR

Total Capacitor Bank is 295 KVAR



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12.0 Carbon Foot Prints

Carbon sequestration describes long-term storage of carbon dioxide or other forms of carbon to either mitigate or defer global warming and avoid dangerous climate change. It has been proposed as a way to slow the atmospheric and marine accumulation of greenhouse gases, which are released by burning fossil fuels.

Vegetation carbon pool having the potential of 560 Pg (Pg: Petagram (1015 Gramme = billion ton) of carbon storage globally. In the current study the focus is given on the assessment of existing carbon stock stored in MAIMS campus in the form of woody vegetation by enumerating every tree species. There are approx. 1800 trees and plants in the institute. A single tree consumes approx. 21.8 kg of CO₂ annually, so approx. 39.240 Tons of CO₂ is consumed yearly by all woody vegetation in the college campus.

Oxygen released

A tree releases approx. 0.912 kg of Oxygen annually. From 1800 trees at MAIMS approx. 1641.6 kg Oxygen is available. It is assumed that a single tree supports oxygen demand of two people for their life. Thus, the 1800 woody vegetations in College campus are supporting approx. 3600 people around the campus. We need to do more plantation to mitigate the pollution.




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13.0 CONCLUSIONS

This audit involved extensive consultation with all the campus team, interactions with key personnel on wide range of issues related to Environmental aspects. Maharaja Agrasen Institute of Management Studies has Environmental Committee for sustainable use of resources. Overall, 40% of Institute campus is for landscaping. The audit has identified several observations for making the campus premise more environmentally friendly. The recommendations are also mentioned with observations for campus team to initiate actions.




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10.0

REFERENCE

- The Environment [Protection] Act – 1986 (Amended 1991) & Rules-1986 (Amended 2010)
- The Petroleum Act: 1934 – The Petroleum Rules: 2002
- The Central Motor Vehicle Act: 1988 (Amended 2011) and The Central Motor Vehicle Rules: 1989 (Amended in 2005)
- Energy Conservation Act 2010.
- The Water [Prevention & Control Of Pollution] Act – 1974 (Amended 1988) & the Water (Prevention & Control of Pollution) Rules – 1975
- The Air [Prevention & Control Of Pollution] Act – 1981 (Amended 1987) The Air (Prevention & Control of Pollution) Rules – 1982
- The Gas Cylinders Rules – 2016 (Replaces the Gas Cylinder Rules – 1981)
- E-waste management rules 2016
- Electrical Act 2003 (Amended 2001) / Rules 1956 (Amended 2006)
- The Hazardous Waste (Management and Handling and Trans-boundary Movement) Rules, 2008 (Amended 2016)
- The Noise Pollution Regulation & Control rules, 2000 (Amended 2010)
- The Batteries (Management and Handling) rules, 2001 (Amended 2010)
- Relevant Indian Standard Code practices
- Internal Records of the Campus

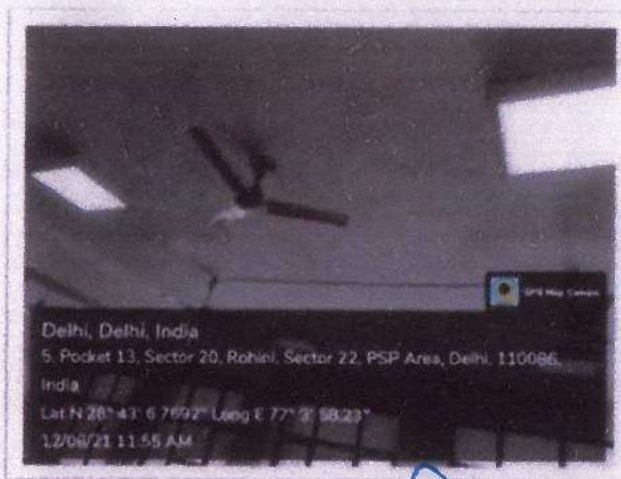



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ANNEXURE-I 'PHOTOGRAPHS OF LED LIGHTS AND SOLAR PANELS'

LED bulbs in Classrooms:

The Institute has installed energy efficient lighting fixtures like LED bulbs in all classrooms.



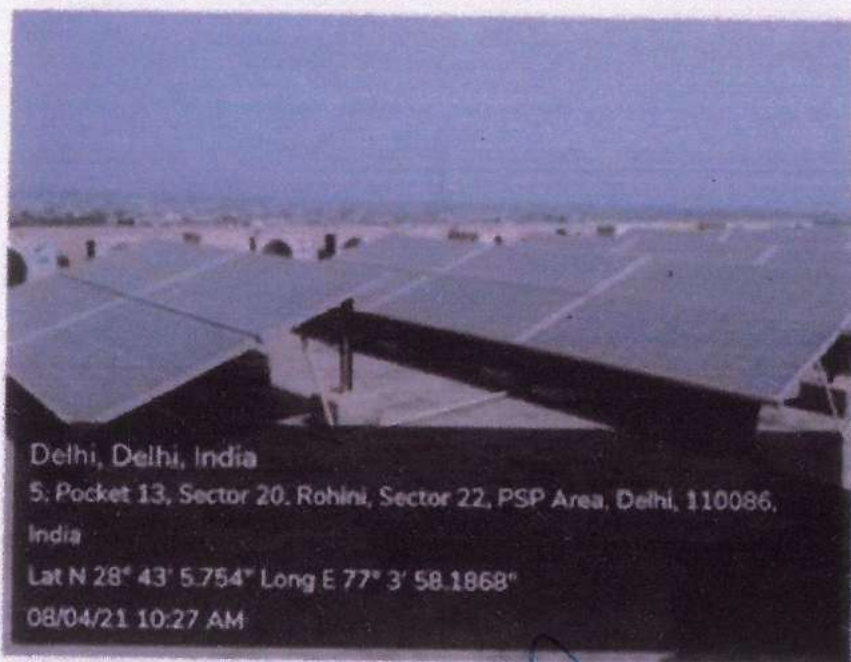
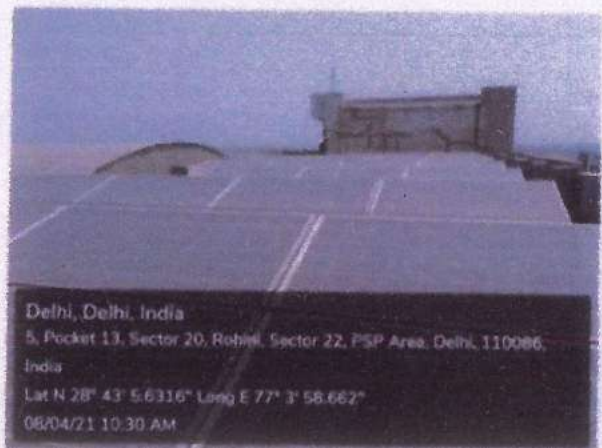
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Solar Energy Capacity:

Maharaja Agrasen Institute of Management Studies has always taken environment friendly initiatives and thus always strives for energy saving. The institution has facilities for alternate source of energy and energy conversation measures with the same objective has been utilizing solar energy as an alternate energy source.

MAIMS has 140 solar panels with the capacity of 50 Kilowatts each having the size of 6*3 feet.



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