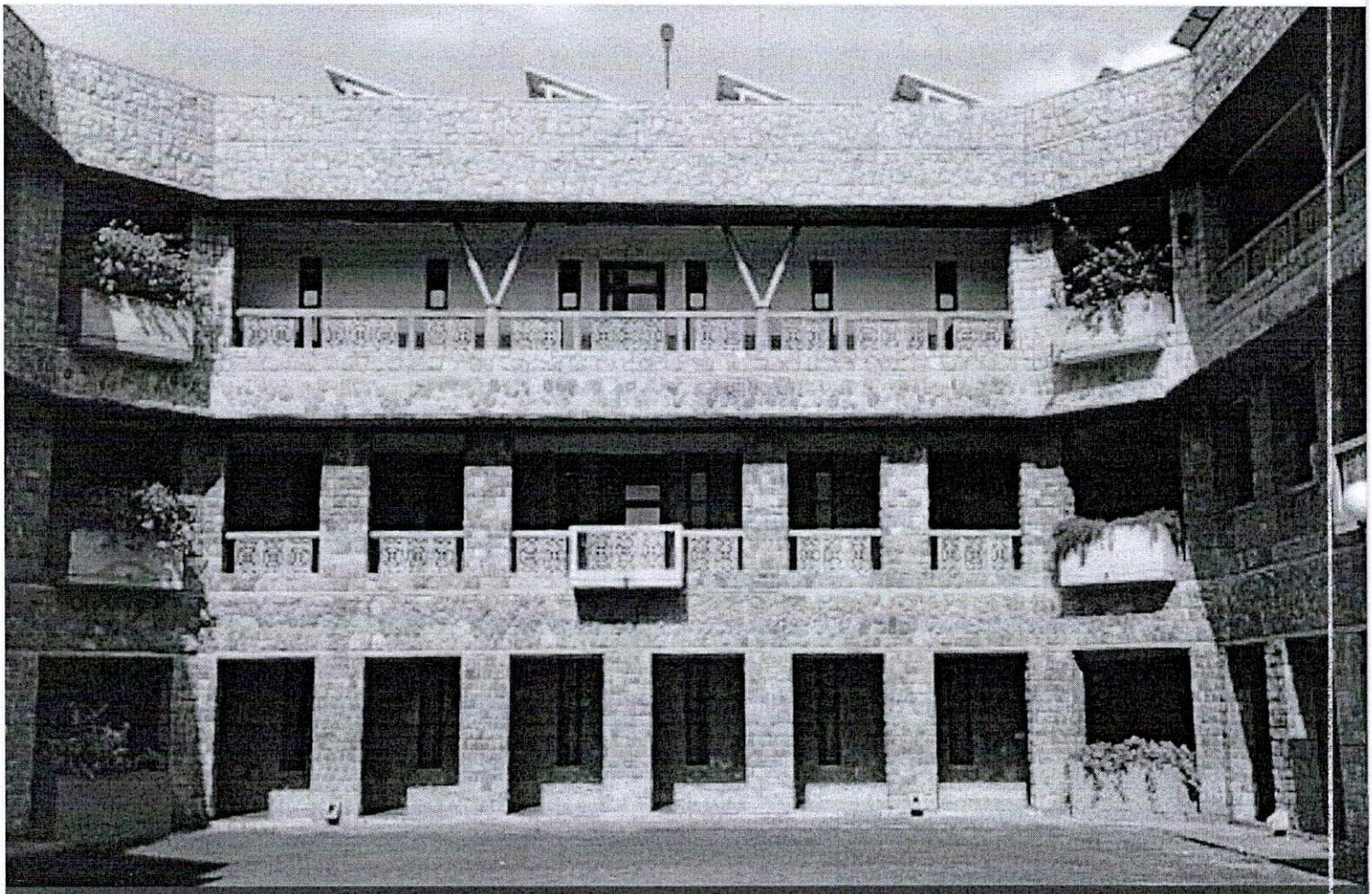
IIHMR UNIVERSITY



IIHMR UNIVERSITY

GREEN AUDIT REPORT

2021-2022

PREPARED BY

EHS ALLIANCE SERVICES

Registrar
The IIHMR University
1, Prabhu Dayal Marg
Near Sanganer Airport, Jaipur-302029

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CERTIFICATE

EHS alliance

CERTIFICATE

PRESENTED TO

IIHMR UNIVERSITY

1, Prabhu Dayal Marg,Near Sanganer Airport, Jaipur - 302029

Has been assessed by EHS Alliance Services for the comprehensive study of environmental impacts on institutional working framework to fulfill the requirement of

GREEN AUDIT

ACADEMIC YEAR 2021-22

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.

EHS ALLIANCE SERVICES GURGAON

SIGNATURE

16.09.2022
DATE OF AUDIT

EHS ALLIANCE SERVICES, PLOT A-72, SURYA VIHAR, GURUGRAM, 122001
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ACKNOWLEDGEMENT

EHS Alliance Services would like to thank the management of IIHMR University, Jaipur for assigning this important work of Green Audit. We appreciate the cooperation to the teams in the completion of the assessment.

First of all, we would like to thank **Dr. P. R. Sodani, President, IIHMR University** for allowing us to evaluate the environmental performance of the campus.

We would like to thank **Dr. Goutam Sadhu, Audit Coordinator** for his continuous support and guidance, without which the completion of the project would not have been possible.

We are also thankful to other staff members who were actively involved while collecting the data and conducting field measurements.

We are also thankful to

Mr. Hem K. Bhargava	Registrar
Dr. Tripti Bisawa	Coordinator, IQAC
Dr. Hemant Kumar Mishra	Faculty Member
Mr. Ramavtar Sahu	Accounts Department

DISCLAIMER

EHS Alliance Services Audit Team has prepared this report for IIHMR University based on input data submitted by the representatives of the University complemented with the best judgment capacity of the expert team.

While all sensible care has been taken in its preparation, details contained in this report have been compiled in good faith based on information gathered.

It is further informed that the conclusions are arrived following best estimates and no representation, warranty or undertaking, express or implied is made and no responsibility is accepted by Audit Team in this report or for any direct or consequential loss arising from any use of the information, statements or forecasts in the report.

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

EHS Alliance, its staff and agents shall keep confidential all information relating to your organisation and shall not disclose any such information to any third party, except that in the public domain or required by law or relevant accreditation bodies.

EHS Alliance staff, agents and accreditation bodies have signed individual confidentiality undertakings and will only receive confidential information on a 'need to know' basis.

Signature

LEAD AUDITOR

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CONCEPT AND CONTEXT

The National Assessment and Accreditation Council, New Delhi (NAAC) has made it mandatory from the academic year 2019–20 onwards that all Higher Educational Institutions should submit an annual Green, Environment and Energy Audit Report. Green Audit is assigned to the Criteria 7 of NAAC, National Assessment and Accreditation Council which is a self-governing organization of India that declares the institutions as Grade A, Grade B or Grade C according to the scores assigned at the time of accreditation. Moreover, it is part of Corporate Social Responsibility of the Higher Educational Institutions to ensure that they contribute towards the reduction of global warming through Carbon Footprint reduction measures.

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

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

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INTRODUCTION

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

The activities carried out by the institution can also create adverse environmental impacts. Green audit is defined as an official inspection of the effects an institution has on the environment. Green Audit is conducted to evaluate the actual scenario at the institution campus. Green audit can be a useful tool for a university /college to determine how and where they are using the most of the energy or water or resources; the institution can then decide how to implement changes and make savings. It can also be used to determine the nature and volume of waste, which can be used for a recycling project or to improve waste minimization plan.

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

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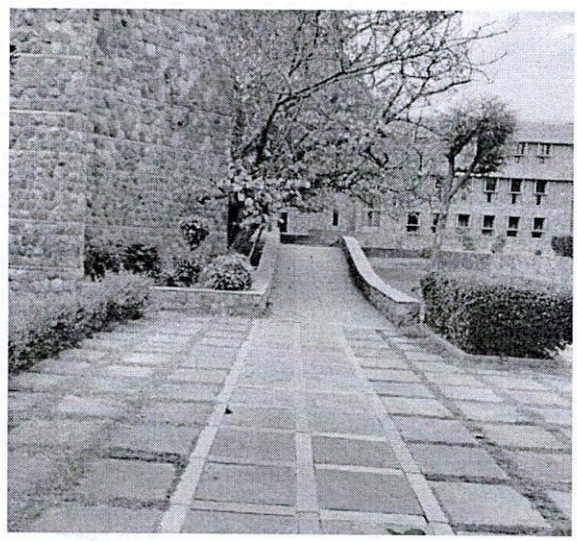
OVERVIEW OF THE UNIVERSITY

The genesis of IIHMR University dates to October 5, 1984, when its sponsoring body, the Indian Institute of Health Management Research, was established. In 2014, IIHMR University was established and incorporated as a postgraduate research university by the Government of Rajasthan vide the IIHMR University, Jaipur Act, 2014 (Act No. 3, of 2014).

The University has four Schools:

- Institute of Health Management Research (IHMR)
- School of Pharmaceutical Management (SPM)
- School of Development Studies (SDS)
- S. D. Gupta School of Public Health (SDG-SPH)



IIHMR University has a multi-disciplinary faculty team that is extensively engaged in academics, research, training, consultancy, partnerships, and collaborations. IIHMR University offers the following postgraduate programs: MBA (Hospital and Health Management), MBA (Pharmaceutical Management), MBA (Development Management). The IIHMR University also offers Ph.D.programs in public health, health management, hospital management, digital health, anddevelopment studies.

IIHMR University has significantly contributed to the Executive Development and Management Development Programs by consistently engaging in EDPs/MDPs for national and international participants, working with government, national and international NGOs, and private sector organizations. Participants from more than 40 countries benefitted from the EDPs/MDPs.

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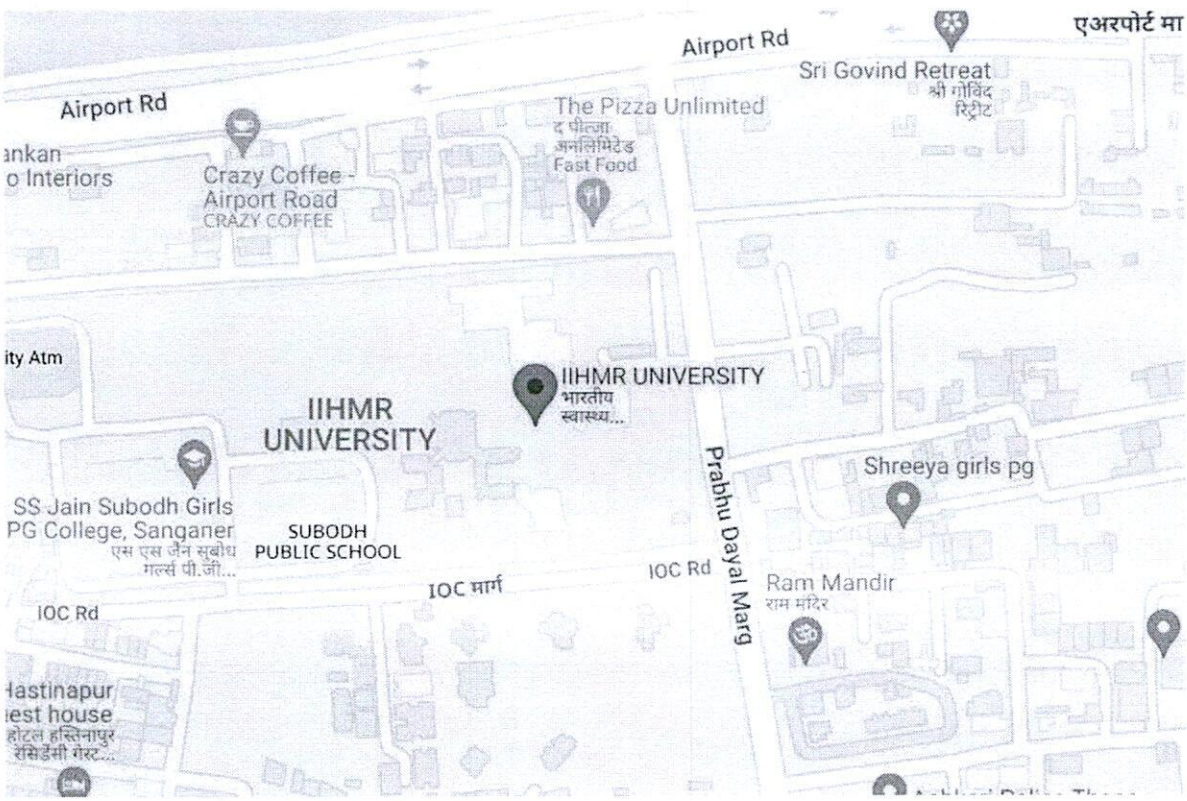
MISSION

IIHMR University is dedicated to the improvement in standards of health through better management of health care and related programmes. It seeks to accomplish this through management education, research, training, consultation and institutional networking in a national and global perspective.

VISION

To become a world-class higher education institution by promoting education and research for betterment of society.



Geo Coordinates from Google maps: *26.820572, 75.816055*

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AUDIT PARTICIPANTS

On behalf of IIHMR University

Name	Designation
Dr. P.R. Sodani,	President of IIHMR
Dr. Goutam Sadhu	Audit Coordinator
Sh.Hem K Bhargava	Registrar
Dr. Tripti Bisawa	Coordinator, IQAC
Dr. Hemant Kumar Mishra	Faculty Member
Mr. Ramavtar Sahu	Account Department

On behalf of EHS Alliance Services

Name	Position	Qualifications
Dr. Uday Pratap	Lead Auditor	Ph.D., EMS: Lead Auditor ISO14001:2015, QCI–WASH
Mr. Vijay Singh	Co-Auditor	M.Sc. M. Tech (Environment Science & Engineering), Energy Auditor, Post Diploma in Industrial Safety Management

EXECUTIVE SUMMARY

Green auditing is an essential step to identify and determine whether the institutional practices are sustainable and ecological. Traditionally, we were upright and efficient users of natural resources. But over the period of time, excessive usage of resources like water, electricity, petrol, etc. have become habitual for everyone especially, in urban and semi-urban areas. It is actually the right time to check if we (our process) are consuming more than required resources? Whether we are using resources sensibly?

Green audit standardizes all such practices and provides an efficient way to use natural resources. In the time of climate change and resource exhaustion it is necessary to re-check the processes and convert then in to green and sustainable. Green audit provides an approach for the same. It also increases overall awareness among the folks working in institution towards the eco-friendly environment.

This is the first attempt to conduct green audit of this campus for fulfilment of NAAC criteria. This audit was mainly focused on greening indicators like consumption of energy in terms of electricity and fossil fuel, quality of soil, water usage, vegetation, waste management practices and carbon foot print of the campus. Initially a questionnaire was shared to know about the existing resources of the campus and resource consumption pattern of the students and staff in the campus.

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GREEN AUDIT - ANALYSIS

1.1 GENERAL INFORMATION

1. Does any Green Audit conducted earlier?

No, this is the first external audit organized by the University

2. What is the total strength (people count) of the Institute?

Category	*Male*	*Female*	*Total*
Students	206	358	564
Teachers	23	13	36
Non-Teaching Staff	17	16	33
Total Strength	246	387	633

3. What is the total number of working days of your campus in a year?

There are one hundred and eighty working days in a year.

4. Where is the campus located?

The campus is located at 1, Prabhu Dayal Marg, Near Sanganer Airport, Jaipur - 302029

5. Which of the following are available in your institute?

Garden area	*Available*
Playground	*Available*
Kitchen	*Available*
Toilets	*Available*
Garbage Or Waste Store Yard	*Available*
Laboratory	*Available*
Canteen	*Available*
Hostel Facility	*Available*
Guest House	*Available*

6. Which of the following are found near your institute?

Municipal dump yard	*Not in vicinity of institute*
Garbage heap	*No Garbage heaps*
Public convenience	*Public convenience is available*
Sewer line	*Approximately 2.0 KM sewer line within campus*
Stagnant water	*No stagnant water*
Open drainage	*No*
Industry – (Mention the type)	*No*
Bus / Railway Station	*Jaipur Bus Stop, Jaipur Junction Station*
Market / Shopping complex	*Available*

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.2 WASTE MINIMIZATION AND RECYCLING

1. Does your institute generate any waste? If so, what are they?

Yes, Solid waste, Canteen waste, paper, plastic, horticulture, laboratories waste, e-waste, etc.

2. What is the approximate amount of waste generated per day? (in Kg approx.)

Biodegradable waste - 25 Kg
Non-biodegradable waste -5 Kg
Hazardous Waste - 2 Kg
Others < 1 Kg

3. How is the waste managed in the institute? By Composting, Recycling, Reusing, Others (specify)

IIHMR University is using composting for solid waste management, water harvesting pond is there for water conservation, STP (22 KLD) is fully operational for waste water treatment.

4. Do you use recycled paper in institute?

No

5. How would you spread the message of recycling to others in the community?

The university is spreading awareness about recycling through different activities and campaigns to students and staff

6. Can you achieve zero garbage in your institute? If yes, how?

Not yet achieved.

1.3 GREENING THE CAMPUS

1. Is there a garden in your institute?

Yes, about 571507 sq. ft areas are developed as Gardens.

2. Do students spend time in the garden?

Yes, students spend around 2-4 Hours during winters.

3. Total number of Plants in Campus?

Plant type with approx. count	
Full-grown Trees	*326*
Small Trees	*428*
Hedge Plants	*3400*
Grass Cover sqm	*571507 sq. ft*

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4. **Is the campus having any Horticulture Department? (If yes, give details)**

Yes, 10 staff (maali) deployed in horticulture department

5. **How many Tree Plantation Drives organized by campus per annum?**

Plantation Drive is carried out annually.
Survival rate is more than 75%.

6. **Is there any Plant Distribution Program for Students and Community?**

No

8. **Is there any Plant Ownership Program?**

No

1.4 WATER AND WASTEWATER MANAGEMENT

1. **List uses of water in your institute**

Basic use of water in campus:

Drinking – 18.33 KL/month

Gardening – 1194.63 Kl/month

Kitchen and Toilets – 120.21 KL/month

Others – 52.55 KL/month

Hostel – 315.90 KL/Month

Total = 1701.61 KL/Month

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

University stores water in underground and overhead tanks.

Saving Techniques

- *Avoid overflow of water-controlled valves are provided in water supply system.*
- *Close supervision for water supply system.*

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3. Locate the point of entry of water and point of exit of waste water in your institute.

Entry *- Water comes from borewell*
Exit*- From Canteen, Toilets, Hostel, bathrooms and Labs through covered drainage which is connected to sewage treatment Plant (22 KLD)*

4. Write down ways that could reduce the amount of water used in your institute

Basic ways:

- *Close the taps after usage*
- *Water Conservation awareness for new students*
- *Maintenance and monitoring of valves in supply system to avoid overflow, leakage and spillage*

1.5 ANIMAL WELFARE

1. List the animals (wild and domestic) found on the campus (dogs, cats, squirrels, birds, insects, etc.)

5 dogs, 4 Cats, 100+ butterfly species, 200+ Squirrels and 200+ Birds are found in campus. A variety of bird's species and other flora and fauna are available, so institute is doing their bit for bio diversity conservation.

2. Does your institute have a Biodiversity Program or a KARUNA CLUB?

Yes, IIHMR University's ***Eco club*** *actively organizes awareness through various campaigns and activities including seminars, poster competition, etc.*

1.6 CARBON FOOTPRINT - EMISSION & ABSORPTION

1. Electricity used per year - CO2 emission from Electricity

(electricity used per year in kWh/1000) x 0.84
941770 kWh/1000 x 0.84

= 941770/1000x0.84
= 791.09 tons

2. LPG/PNG used per year - CO2 emission from LPG/PNG

(LPG/PNG used per year in KG) x 2.99
8368.92 x 2.99
=8368.92 x 2.99
=25.02 tons

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3. **Diesel used per year CO2 emission from HDS (Diesel)**

(Diesel used per year in litres) x 2.68
=6278 x 2.68
= 6278 x 2.68
=16.83 tons

4. **Transportation per year (car) CO2 emission from transportation (Bus and Car)**

There are 2 university owned vehicles, 1 car, and 1 van
*=2*4*2*180/100*0.02*
=0.58
=0.58 tons

Total CO2 emission per year cumulative by electricity usage + bus and car is 833.51 tons

After considering the carbon absorption capacity of the campus, the total carbon emission is 801.89 tons

CARBON ABSORPTION BY FLORA IN THE INSTITUTION

There are 326 full-grown trees and 428 semi-grown trees of different species, on the campus spread over 571507 sq ft.

The carbon absorption capacity of one full-grown tree 22 kg Co2 Therefore Carbon absorption capacity of 80 full-grown trees 326 x 22 kg Co2 = 7.17 tons of Co2.

The carbon absorption capacity of 428 semi-grown trees is 50% of that of full-grown trees. Hence the carbon absorption 428 x 6.8 kg of Co2 = 2.91 tons of Co2

There are approximately Hedge Plants 3400 of various species being raised in the gardens and grown in the areas where no buildings are built Carbon absorption of bush plants varies widely with their species. Certain bushes absorb very high level of Co2 where as some others absorb very low level of Co2. In the absence of a detailed scientific study, 200g of Co2, absorption is taken per bush (in consultation with Environmental Science specialists). Based on this, total carbon absorption of bushes is 3400 x 200 g = 0.68 ton of Co2

The lawns on the campus have buffalo grass, Mexican grass and indigenous grass species and cover a total area of 37673 sq. ft. Carbon absorption capacity of a 10 sq. ft. area of lawn is 1 g per day Therefore, carbon absorption by lawn area 571507 x 365 x 0.1 g Co2 = 20.86 tons Co2 per year.

Grand total of carbon absorption capacity of the campus is 31.62 tons.

GREEN INITIATIVES

- The institution uses composting for organic solid waste management.
- There is ban on single use plastic and plastic crockery in the campus.
- University has a separate storeroom for the safe storage of electronic waste. After a certain interval of time university disposes of the E-waste to concerned agencies through the auction process.
- The university has installed approximately solar panels (100 kWp)
- Personal Vehicles (Students) are not allowed in the campus

RECOMMENDATIONS

- Green building guidelines for future expansion projects of the campus.
- Environmental parameters shall be included in purchase policy to achieve a cradle-to-grave approach for sustainability.
- University should start the use of Sprinklers for gardening purpose
- Increase plantation drives in nearby villages, local bodies, NGO and Municipal Corporation in order to balance the carbon emission and absorption.
- University should initiate a practice where all guests should be given a planter as a gift rather than a bouquet of flowers. Also, plantation should be carried out in nearby villages.
- Involve lower hierarchy staff in environmental awareness programmes and campaigns.
- Increase in Environmental promotional activities for spreading awareness at the campus.
- Enhance recycling. This can be done by creating a group where students can recycle books, personal clothes and other materials for needy students. This can be an initiative under the green program.
- Regular workshops related to Plastic free campus, plantation drives, 3R implementation, e-waste collection, menstrual hygiene, etc. should be carried out.

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CONCLUSION

This audit involves considerable team discussions and meetings with key staff members on a variety of environmental-related topics. The eco club of IIHMR University promotes conservation of resources.

Overall 70% of IIHMR University is for landscaping. The University makes a significant effort to act in an environmentally responsible manner and takes into account the environmental effects of the majority of its activities. The recommendations in this report suggests some more ways in which the university can work to improve its practices and develop into a more sustainable institution.

It's important to begin a few things, such as initiating sprinklers for irrigation and conservation awareness message display at different locations in campus. Additionally, we strongly advise to increase awareness amongst the students, staff and local societies for 3R principle and conservation of water and energy.

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

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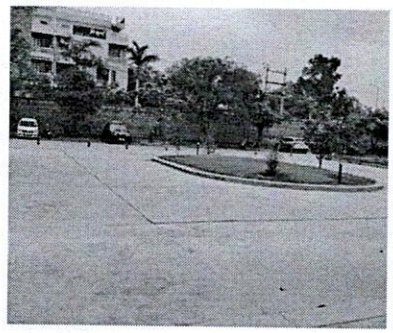
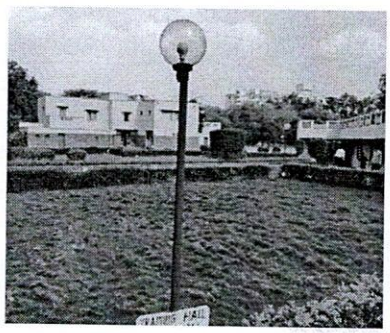
ANNEXURE –ENVIRONMENT CONSCIOUSNESS PHOTOS

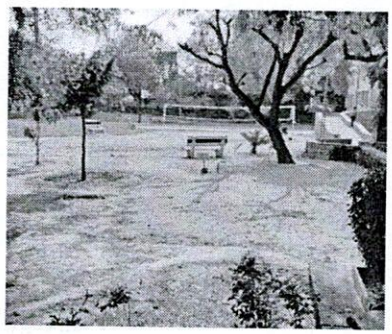
Well ventilated building structure



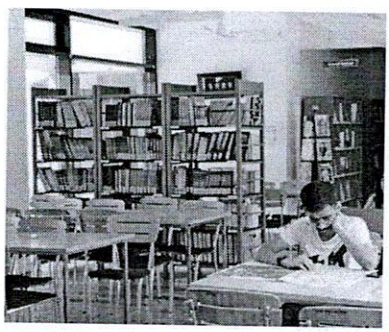
Well maintained campus



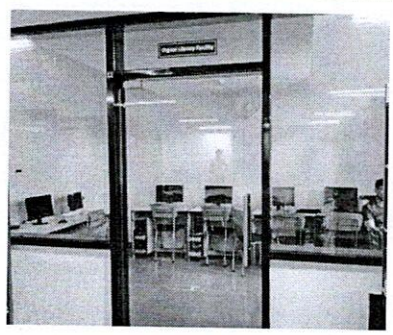
Lush green campus



Sports Ground



Library



Computer lab

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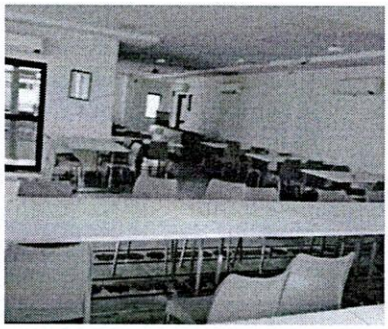
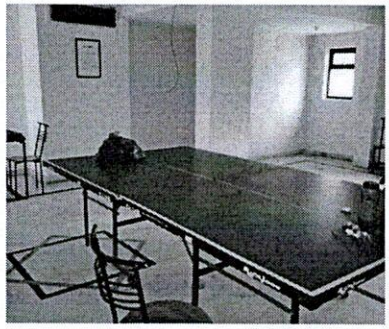
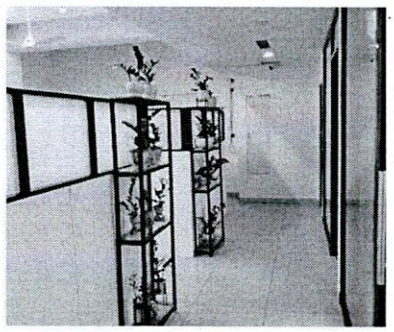


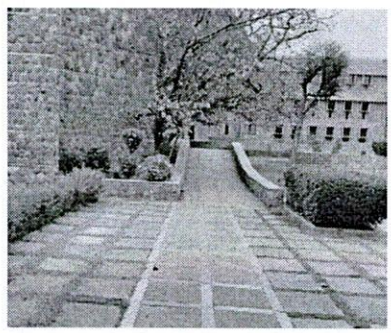
Canteen



Indoor games centre

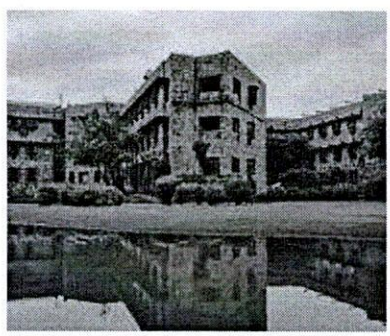


indoor plants



ornamental plants

Water cooler for drinking water



Pond for ground water recharge

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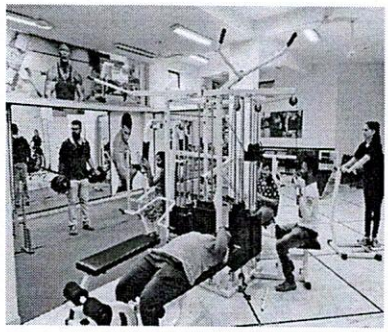
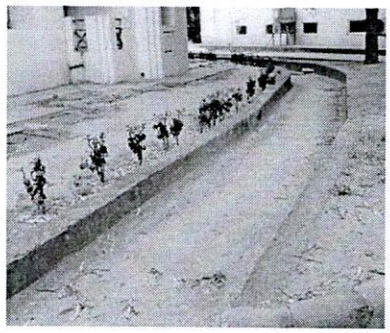
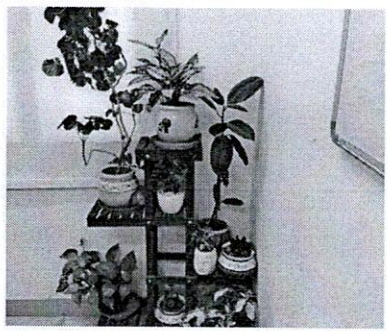


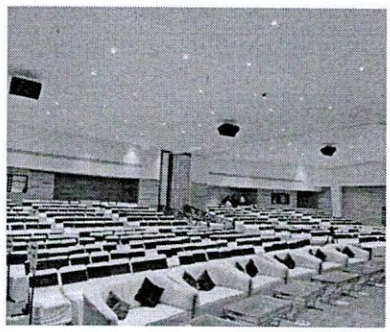
Gym



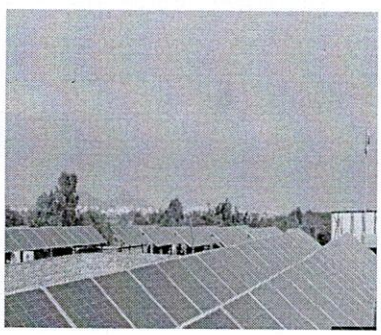
Strom water drainage system



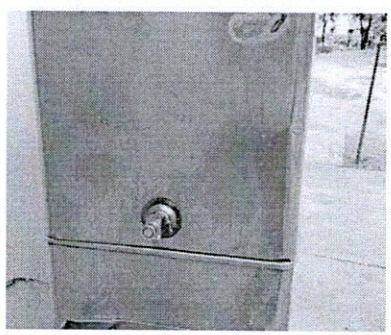
Indoore plants



Auditorium



Solar PV



Push Taps for water conservation

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

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