JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY

Established under H.P. Legislative Assembly Act No. 14 of 2002
and Approved by UGC under section 2(f)

GREEN AUDIT REPORT

Covering, Green Audit, Environment Audit, and Energy Audit

JUNE 14, 2023

REPORT PREPARED BY

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Prepared for

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Dated: 15th June 2023

To

Jaypee University of Information Technology,
P.O. Waknaghat Tehsil – Kandaghat,
Distt. Solan, Himachal Pradesh-173234.

Subject: Green Audit Report and Certificate - Jaypee University of Information Technology

Dear Sir/Madam,

This is in reference to Green Audit held at your campus by Dr. Sridhar, Lead Auditor on.14th,June 2023. Please find attached herewith Green Audit Report and Certificate. We would like to inform you that this report is based on facts and figures provided by your team and observations done by the auditor during the visit to your campus.

Once again, we congratulate Jaypee University of Information Technologyon their commitment to sustainability, and we believe that the Green Audit Report will serve as a valuable resource in their ongoing journey towards resource efficiency and environmental stewardship.

Thanking you,

Yours Sincerely,

Paramjeet Singh
Head – Operations

Date – 15/06/2023

Foreword

It gives me great pleasure to present the book of report for the Green Audit conducted at Jaypee University of information technology, P.O. Waknagat Tehsil- Kandaghat, Dist. Solan, Himachal Pradesh-173234. As a CII certified professional on resource efficiency and sustainability, I had the privilege of leading this audit on the 14th June, 2023.

The purpose of this comprehensive audit was to evaluate Jaypee University of information technology's environmental performance and identify opportunities for improvement in the realm of resource efficiency and sustainability. This book of report encapsulates the findings, insights, and recommendations gathered during the audit process.

Energy Audit and Efficiency:

The energy audit section of this report delves into the assessment of Jaypee University of information technology's energy consumption patterns, systems, and practices. It scrutinizes energy sources, distribution systems, and identifies potential areas where energy efficiency measures can be implemented. The aim is to promote the judicious use of energy, reduce carbon footprint, and enhance operational efficiency.

Green Audit:

The green audit component focuses on evaluating the university's overall environmental impact. It encompasses waste management, water usage, transportation, procurement practices, and environmental policies. By analyzing these aspects, we aim to encourage sustainable practices, minimize environmental risks, and foster a culture of environmental stewardship within the institution.

Environmental Audit:

The environmental audit section encompasses a broader assessment, considering factors such as compliance with environmental regulations, environmental incidents, and complaints management. It highlights the importance of maintaining a robust environmental management system, ensuring legal compliance, and continuously improving environmental performance.

The outcomes of this audit provide a foundation for Jaypee University of information technology to embark on a journey towards greater sustainability, resource efficiency, and environmental responsibility. The recommendations outlined in this report serve as a roadmap, offering practical solutions and strategies for achieving sustainable practices and reducing environmental impact.

I would like to express my sincere appreciation to the management, faculty, staff, and students of Jaypee University of information technology for their active participation and cooperation during the audit. Their commitment to environmental sustainability has been instrumental in facilitating this comprehensive evaluation.

I hope this book of report serves as a valuable resource for Jaypee University of information technology, empowering them to make informed decisions, implement sustainable practices, and contribute to a greener and more sustainable future.

H. Sridhar.

Dr. Sridhar Hari Krishnamoorthy

Lead Assessor, Green Audit, PQMS Quality Services Pvt Ltd, Punjab

& Founder, Orcci Eco Products, Chennai

ORCCI ECO PRODUCTS CHENNAI-129

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1 INTRODUCTION

This section provides background information about the purpose and importance of green auditing in educational institutions. It highlights how a clean and healthy environment promotes learning and is conducive to learning.

1.1 UNIVERSITY ESTABLISHMENT

Name	**:**	**Jaypee University of Information Technology Waknaghat** (Established by H.P. State Legislature vide Act No. 14 of 2002 and approved by University Grants Commission vide its Notification No. F.9-10/2002(CPP-I) dated December 9, 2002)
Year of Establishment	:	2002
Status	:	State Private University with effect from 23 May2002
Location	:	Waknaghat, P.O. Waknaghat Tehsil – Kandaghat, Distt. Solan (H.P.)
Pin	:	173234
District	:	Solan
State	:	Himachal Pradesh
Chancellor	:	Shri Rajendra Vishwanath Arlekar Hon'ble Governor of Himachal Pradesh
Pro-Chancellor	:	Shri Manoj Gaur Executive Chairman, Jaiprakash Associates Ltd
Vice Chancellor		Prof (Dr) Rajendra Kr. sharma
Registrar	:	Maj Gen Rakesh Bassi, SM (Retd)

1.2 BACKGROUND INFORMATION ABOUT THE INSTITUTE

About Jaiprakash Sansthan (JSS)

The Jaypee Group of Companies has consistently displayed full awareness of its social responsibilities through the Jaiprakash Sansthan (JSS), a '**not for profit'** trust registered under the Income Tax Act, 1961.

Four higher technical education campuses have been established in the emerging areas of technology – the Jaypee University of Information Technology (JUIT) at Waknaghat, Himachal Pradesh [July 2002]; the Jaypee Institute of Information Technology (JIIT), Noida [August 2001]; the Jaypee University of Engineering & Technology (JUET) at Guna, Madhya Pradesh [July 2003] and Jaypee University, Anoopshahr [July 2014].

Genesis

Set up by Act No. 14 of 2002 vide Extraordinary Gazette notification of Government of Himachal Pradesh dated May 23, 2002 and approved by the University Grants Commission under section 2(f) of the UGC Act, the sponsoring body of the University is Jaiprakash Sansthan (JSS).

The University commenced academic activities w.e.f. July 2002 with Undergraduate (UG) programmes for award of BTech degrees in Biotechnology, Bioinformatics, Computer Science & Engineering, Electronics & Communication Engineering, Information Technology and Civil Engineering. Post Graduate and Doctoral programmes leading to award of MTech and PhD degrees were added subsequently and are being conducted in the University.

Vision

To become a Center of Excellence in the field of IT & related emerging areas in education, training and research comparable to the best in the world for producing professionals who shall be leaders in innovation, entrepreneurship, creativity and management.

Mission

- To develop as a benchmark University in emerging technologies.
- To provide state-of-the-art teaching learning process and a stimulating R&D environment.
- To harness human capital for sustainable competitive edge and socialrelevance.

Objectives of the University

As provided for in the JUIT Act, the objectives of the University shall be to disseminate, create and advance knowledge, wisdom and understanding, and tooffer technical education of the highest standards by teaching, research, training andextension activities.

Governance

The JUIT is governed in accordance with the JUIT Act and the Statutes. Thestatutory bodies are as follows:-

Governing Council

As per the Act of the University, the Governing Council is the supreme body of the University and its powers and functions shall be such as may be prescribed by the statutes. Responsibility for the general superintendence, direction and control of the affairs of the university is vested with the Governing Council.

Executive Council and Finance Committee

The Executive Council is responsible for the general management and administration of the University.

Academic Council

The Academic Council is the premier and august body of the University, which decides and monitors the implementation of academic policies of the university. The powers and functions of the Council are defined in the University Act. Amongst other major functions, the Academic Council controls and approves the courses in various curricula, defines the thrust areas, objectives and constantly reviews the activities of the departments to ensure improvements in standards.

Location and Area of Land

The University is located 3 km. off the Chandigarh-Shimla highway from Waknaghat. Land measuring 114.01 bighas comprising Khasra No. 408/4 and 429/185 situated in Village Rachhiana, Tehsil Kandaghat, District Solan, H.P. has been allotted on lease by the Govt of HP for JUIT.

Infrastructure

The university is situated in a sprawling campus with a total area of 85,834.03 square meters. The campus encompasses a well-constructed building area of 34,333.61 square meters, providing ample space for academic and administrative facilities. The remaining 51,500.42 square meters is dedicated to open spaces, fostering a pleasant and green environment.

With a total strength of 1,874 students, Jaypee University of Information Technology promotes a diverse and inclusive educational atmosphere. Among the student population, there are 1,352 boys and 522 girls. The university also offers comfortable hostel facilities, accommodating 1,608 students. This includes 1,188 boys and 420 girls, ensuring a conducive living environment for both genders.

To support academic excellence, the university boasts a dedicated and qualified teaching staff of 94 individuals. Out of these, 73 are male teachers, and 21 are female teachers, promoting gender parity in the faculty. Additionally, the non-teaching staff, consisting of 118 individuals, contributes to the efficient functioning of the university. Among them, 105 are male employees, while 13 are female employees, forming a cooperative work environment.

Jaypee University of Information Technology values a diverse workforce and employs a total of 522 individuals. Among the employees, 470 are male, and 52 are female, fostering equal opportunities for both genders in the institution.

The campus of Jaypee University of Information Technology emphasizes the importance of open spaces, with a ratio of 40:60 for open space area to the total area. The campus features a substantial area of 36,644.26 square meters covered in forest vegetation and planted greenery, contributing to a refreshing and eco-friendly ambiance.

Considering the campus population, the open space area divided by the total campus population results in an impressive ratio of 98.65, indicating ample open space available per individual. This allows students and staff to enjoy spacious outdoor areas for recreation, relaxation, and various extracurricular activities.

Education System

An academic year consists of two semesters. The education system is based on credit system alongwith continuous evaluation of students' performance. System provides flexibility in choice of courses of interest and to pursue the same at an optimum pace suited to student's ability and convenience. Each course is assigned certain number of credits depending upon the class contact hours. A specified number of credits, attainment of minimum CGPA and completion of Industrial Training satisfactorily are essential in order to qualify for a degree. The medium of instruction is English.

Figure 1- The infrastructure aerial view of the campus

1.3 PURPOSE OF GREEN AUDIT

The purpose of a Green Audit, also known as an Environmental Audit or Sustainability Audit, is to assess and evaluate the environmental performance and sustainability practices of an organization or a specific project. The goal of a Green Audit is to identify areas where improvements can be made to reduce environmental impact, conserve resources, and promote sustainability.

Green Audits typically involves a comprehensive examination of various aspects of an organization's operations, including energy usage, waste management, water consumption, greenhouse gas emissions, transportation practices, and adherence to environmental regulations. The audit may also assess the organization's policies, procedures, and management systems related to environmental sustainability.

The scope of a Green Audit typically includes three main areas: environmental audit, energy audit, and green audit. Let's take a closer look at each of these components:

Environmental Audit: This aspect focuses on assessing an organization's overall environmental performance. It involves evaluating various environmental aspects, such as air and water pollution, waste management practices, biodiversity conservation, and compliance with environmental regulations. The environmental audit provides insights into an organization's impact on the environment and helps identify areas for improvement.

Energy Audit: Energy audits specifically focus on evaluating an organization's energy consumption patterns and identifying opportunities for energy efficiency improvements. This includes assessing energy usage in buildings, industrial processes, transportation, and other operational aspects. The audit may involve analyzing energy bills, conducting on-site inspections, and recommending energy-saving measures, such as upgrading equipment, optimizing energy systems, and implementing renewable energy solutions.

Green Audit: The green audit component of the assessment concentrates on evaluating an organization's sustainability practices and their impact on the environment. It examines the organization's commitment to environmental sustainability, resource conservation, and social responsibility. The purpose is to identify opportunities for implementing environmentally friendly practices and promoting a culture of sustainability within the organization.

Combining these three components—environmental audit, energy audit, and green audit—provides an evaluation of an organization's environmental performance, energy efficiency, and overall sustainability practices. By assessing these areas, organizations can identify and implement measures to minimize their environmental footprint, reduce resource consumption, and enhance their commitment to sustainable practices.

1.3.1 THE KEY OBJECTIVES OF A GREEN AUDIT ARE:

Identifying environmental risks and opportunities: The audit helps identify potential environmental risks associated with an organization's activities, such as pollution, habitat destruction, or resource depletion. It also identifies opportunities for reducing environmental impact, improving efficiency, and implementing sustainable practices.

Assessing resource consumption and waste management: The audit examines the organization's resource consumption patterns, such as energy, water, and raw materials, and evaluates its waste management practices. This helps identify opportunities for reducing resource consumption, optimizing processes, and implementing recycling or waste reduction strategies.

Enhancing sustainability performance: By identifying areas for improvement, a Green Audit helps organizations enhance their sustainability performance. It provides recommendations

and action plans to implement eco-friendly practices, reduce environmental impact, and promote sustainable development.

Promoting transparency and accountability: Green Audits increase transparency by evaluating and reporting an organization's environmental performance to stakeholders, including employees, Students, Parents, investors, and regulatory authorities. It demonstrates the organization's commitment to environmental responsibility and accountability.

Facilitating continuous improvement: A Green Audit is not a one-time assessment but an ongoing process. It helps organizations establish baseline environmental performance metrics, set targets, and monitor progress over time. Regular audits enable continuous improvement and ensure that sustainability practices are integrated into the organization's culture and operations.

Overall, the purpose of a Green Audit is to drive environmental responsibility, identify opportunities for improvement, and guide organizations toward sustainable practices that benefit both the environment and their bottom line.

2 PRE-AUDIT STAGE

This section explains the scope and goals of green auditing, which is an effective and sustainable method for handling environmental issues. It also describes the data collection methodology used in the audit process, including tools used for data collection and steps taken for data collection.

2.1 AUDIT SCOPE AND METHODOLOGY

2.1.1 INTRODUCTION:

This section provides an overview of the audit process and its objectives.

It outlines the scope of the audit, which includes sustainability, environment, and energy management practices at the institution. The section also describes the methodology used in conducting the audit, which involves a combination of document reviews, site inspections, and interviews with relevant stakeholders.

2.1.2 AUDIT OBJECTIVES:

These objectives include evaluating waste management practices, water conservation measures, biodiversity conservation efforts, sustainable transportation options, air quality management strategies, hazardous waste management procedures, noise pollution control measures, energy efficiency initiatives, and renewable energy sources.

The objectives are based on national building code requirements for sustainability and energy efficiency as well as guidelines for environmental and sustainability audits from NAAC & NABCB.

The objectives are designed to promote sustainable practices that reduce environmental impact while improving occupant comfort and health.

The results of the audit will be used to develop recommendations for improving sustainability practices at the institution.

The objectives will be evaluated based on their effectiveness in achieving these goals.

2.1.3 AUDIT CRITERIA:

These criteria include compliance with national building code requirements for sustainability and energy efficiency; adherence to guidelines for environmental and sustainability audits from NAAC & NABCB; use of best practices for waste management, water conservation, biodiversity conservation, sustainable transportation, air quality management, hazardous waste management, noise pollution control, energy efficiency measures, and renewable energy sources.

The criteria are designed to promote sustainable practices that reduce environmental impact while improving occupant comfort and health.

The results of the audit will be used to develop recommendations for improving sustainability practices at the institution.

The criteria will be evaluated based on their effectiveness in achieving these goals.

Compliance with the criteria will be assessed through document review, site inspections, and interviews with relevant

2.2 AUDIT SCOPE

The audit covers sustainability, environment, and energy management practices at the institution.

The audit is conducted under National Building Code 2016 - Part 11 and directives of NAAC & NABCB.

The physical area covered by the audit is 60 acres of campus area consisting of 11 blocks covering instructional, laboratory, staff residence, Student Hostel, and administrative infrastructure.

The audit scope includes an evaluation of waste management, water conservation, biodiversity conservation, sustainable transportation, air quality management, hazardous waste management, noise pollution control, energy efficiency measures, and renewable energy sources.

The audit criteria are based on national building code requirements for sustainability and energy efficiency as well as guidelines for environmental and sustainability audits from NAAC & NABCB.

The audit process involves pre-audit planning and preparation, on-site audit activities (e.g., interviews, document review, site inspections), and post-audit reporting and follow-up.

2.3 DATA COLLECTION METHODOLOGY

The data collection methodology for green auditing involves two phases: preliminary data collection and detailed data collection. During the preliminary data collection phase, tools such as questionnaires, surveys, and interviews are used to gather information about an organization's operations. The steps taken during this phase include identifying key stakeholders, defining the scope of the audit process, developing a data collection plan, and selecting appropriate tools for data collection. During the detailed data collection phase, more in-depth information is collected using tools such as energy meters, water meters, and waste audits. This phase involves collecting quantitative data on energy use, water consumption, waste generation rates, and other relevant parameters.

2.4 PRELIMINARY DATA COLLECTION PHASE:

The preliminary data collection phase is the first step in the green audit process. It involves collecting basic information about an organization's operations and identifying areas where environmental improvements can be made. The following are the two main aspects of the preliminary data collection phase:

2.4.1 TOOLS USED FOR DATA COLLECTION:

During the preliminary data collection phase, various tools are used to collect information about an organization's operations. These tools include observation, surveys, questionnaires, interviews, and measurements. Observation involves visually inspecting an organization's facilities and operations to identify areas where environmental improvements can be made. Surveys and questionnaires are used to gather information from staff and students about their environmental practices and attitudes toward sustainability. Interviews are conducted with key stakeholders to gain a deeper understanding of an organization's operations and identify areas where improvements can be made. Measurements involve collecting quantitative data on energy use, water consumption, waste generation rates, and other relevant parameters.

2.4.2 STEPS TAKEN FOR DATA COLLECTION:

The following steps are taken during the preliminary data collection phase:

- Identify key stakeholders: The first step is to identify key stakeholders who will be involved in the green audit process.
- Define the scope of the audit process: The scope of the audit process is defined by identifying which areas of an organization's operations will be audited.
- Develop a data collection plan: A data collection plan is developed that outlines which tools will be used for data collection and how they will be used.
- Select appropriate tools for data collection: The appropriate tools for data collection are selected based on the scope of the audit process.

2.5 DETAILED DATA COLLECTION PHASE:

The detailed data collection phase is the second step in the green audit process. It involves collecting more in-depth information about an organization's operations using specialized tools such as energy meters, water meters, and waste audits. The following are some aspects of detailed data collection:

Energy audits: Energy audits involve collecting detailed information about an organization's energy use, including electricity, gas, and other fuels. This information is used to identify areas where energy conservation measures can be implemented.

Water audits: Water audits involve collecting detailed information about an organization's water consumption, including the amount of water used for different purposes. This information is used to identify areas where water conservation measures can be implemented.

Waste audits: Waste audits involve collecting detailed information about an organization's waste generation rates and the types of waste generated. This information is used to identify areas where waste reduction and recycling programs can be implemented.

The detailed data collection phase involves collecting quantitative data on an organization's operations using specialized tools and techniques. The data collected during this phase is more detailed and specific than the data collected during the preliminary data collection phase. The following are some steps taken during the detailed data collection phase:

Develop a detailed data collection plan: A detailed data collection plan is developed that outlines which tools and techniques will be used for data collection and how they will be used.

Analyze the collected data: The collected data is analyzed to identify areas where environmental improvements can be made.

Identify opportunities for improvement: Based on the analysis of the collected data, opportunities for improvement are identified in areas such as energy conservation, water conservation, waste reduction, and recycling.

Develop recommendations: Recommendations are developed based on the identified opportunities for improvement. These recommendations may include specific actions that an organization can take to reduce its environmental impact.

In summary, the preliminary data collection phase involves collecting basic information about an organization's operations using various tools such as observation, surveys, questionnaires, interviews, and measurements. The detailed data collection phase involves collecting more in-depth information about an organization's operations using specialized tools such as energy meters, water meters, and waste audits. Both phases are essential in identifying areas where environmental improvements can be made and developing recommendations for reducing an organization's environmental impact.

3 AUDIT STAGE

This section covers Energy Efficiency Design Features in Jaypee University's Buildings, and energy conservation measures such as lighting systems, air conditioning systems, and electrical appliances. It also discusses water conservation measures such as water supply systems and sanitation systems. Additionally, it covers waste management measures such as solid waste management and liquid waste management. Comprehensive Analysis of Energy Efficiency Design Features in Jaypee University's Buildings: Correlation with National Building Code of India, Chapter 11

3.1 INTRODUCTION:

This report provides a detailed examination of the energy-efficiency design features integrated into the buildings at Jaypee University. The aim is to optimize energy consumption, reduce carbon emissions, and create a sustainable built environment. The following sections elaborate on the various aspects of the energy efficiency design, highlighting their correlation with specific provisions of Chapter 11 of the National Building Code of India (NBC).

3.1.1 BUILDING ENVELOPE:

INSULATION: Jaypee University has implemented advanced insulation materials in the construction of its buildings, ensuring efficient thermal insulation throughout the walls, roofs, and floors. This strategic choice aligns with the guidelines outlined in Section 11.2.1.1 of the National Building Code (NBC), specifically detailed on pages 11-3. By prioritizing thermal insulation, the university aims to minimize the transfer of heat between the interior and exterior spaces, thereby reducing heat gain or loss. This proactive approach not only promotes energy efficiency but also adheres to the NBC's recommendations regarding thermal insulation to create a comfortable and sustainable environment within the university's buildings.

WINDOWS AND GLAZING: The buildings at Jaypee University incorporate energy-efficient windows that are equipped with low emissivity coatings and multiple panes of glass, such as double or triple glazing. These design choices align with the guidelines provided in Section 11.2.2 of the National Building Code (NBC), as detailed on pages 11-4. By utilizing such energy-efficient glazing systems, the university aims to achieve several benefits. Firstly, these windows effectively reduce solar heat gain, minimizing the amount of heat transferred into the buildings. Secondly, they enhance daylighting, allowing natural light to illuminate the interiors and reducing the reliance on artificial lighting. Lastly, the optimized energy performance of these windows contributes to overall energy efficiency within the buildings.

Additionally, the buildings at Jaypee University feature double windows and doors made of wood and glass. This thoughtful design not only facilitates ventilation but also serves the purpose of insulating the buildings during sub-zero temperatures. The combination of wood and glass in the construction of these windows and doors helps to retain heat inside the buildings, ensuring a warm and comfortable environment even in extremely cold weather conditions.

Figure 2 Double doors and Windows in all the buildings

AIR SEALING: Effective air sealing techniques are employed to minimize air leakage through gaps or cracks in the building envelope in all the buildings to reduce loss of temperature from the building (NBC Section 11.2.1.3, pages 11-4). This aligns with NBC's requirements for airtightness in building envelopes to enhance thermal performance and reduce energy wastage.

3.1.2 PASSIVE SOLAR DESIGN:

BUILDING ORIENTATION: The buildings are strategically oriented to maximize solar exposure during the winter months, allowing for passive solar heating (NBC Section 11.3.1,

pages 11-7). This aligns with NBC's recommendations for optimal building orientation to harness solar energy for passive heating and minimize solar heat gain during summer.

Figure 3 - Arial view of campus, showing the orientation of the buildings facing towards sun path

SHADING DEVICES: Overhangs, brise-soleil, louvers, or shading fins are installed to block direct sunlight and prevent excessive heat gain (NBC Section 11.3.3, pages 11-8). This corresponds to NBC's provisions for shading devices to reduce solar heat gain, enhance occupant comfort, and improve energy efficiency.

THERMAL MASS: Jaypee University employs construction materials with high thermal mass, such as concrete or masonry, which effectively absorb and store heat energy. This strategic choice aligns with the recommendations provided in Section 11.3.2 of the National Building Code (NBC), as outlined on pages 11-8. By utilizing materials with high thermal mass, the university aims to achieve several advantages. Firstly, these materials facilitate the regulation of indoor temperatures by absorbing and releasing heat slowly, resulting in a

more stable and comfortable environment. This helps to reduce the dependence on heating and cooling systems, subsequently minimizing energy consumption and associated costs.

Furthermore, the university emphasizes the use of locally available rock stones for building purposes. By sourcing materials from the local region, the university not only supports the local economy but also reduces the environmental impact associated with transportation. The incorporation of locally available rock stones showcases a sustainable approach to construction, reflecting the university's commitment to environmentally friendly practices and promoting a sense of connection with the surrounding landscape.

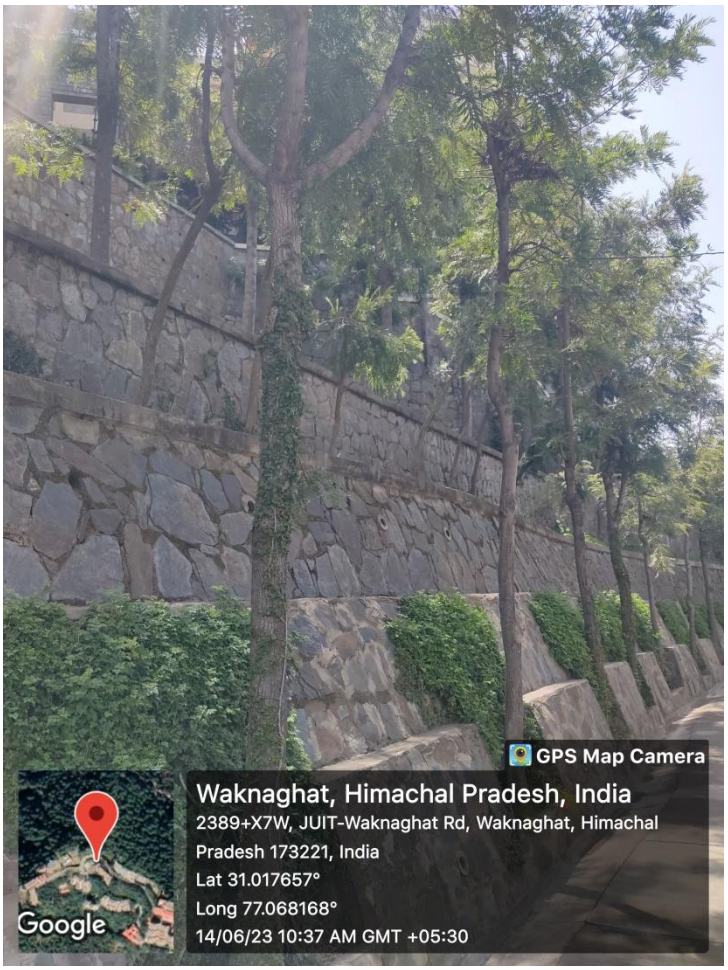


Figure 4 - High Thermal Mass Rock stones used for construction

3.1.3 NATURAL VENTILATION:

WINDOW PLACEMENT: Jaypee University's buildings are thoughtfully designed with strategically placed windows and openings to promote effective cross-ventilation. This

design approach aligns with the guidelines presented in Section 11.4.1 of the National Building Code (NBC), as detailed on pages 11-10. By incorporating these design features, the university prioritizes natural ventilation strategies, aiming to achieve multiple benefits. Firstly, the strategic placement of windows and openings allows for the efficient circulation of fresh air, enhancing indoor air quality and creating a healthier environment for occupants. Secondly, by maximizing the utilization of natural ventilation, the reliance on mechanical ventilation systems is reduced, resulting in energy savings and improved energy efficiency. This holistic approach to building design showcases Jaypee University's commitment to providing a comfortable, sustainable, and environmentally conscious atmosphere for its occupants.

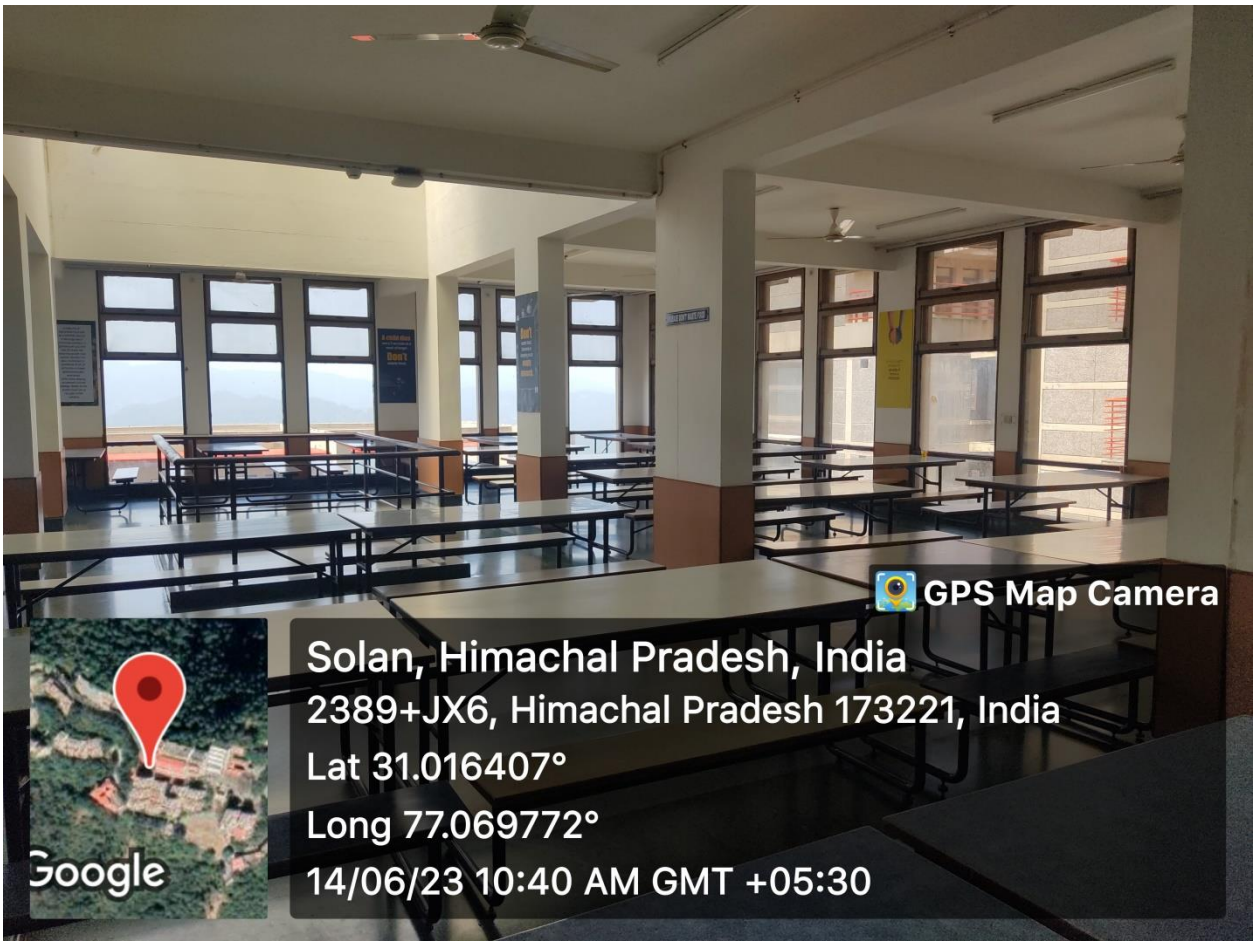


Figure 5 - Wider and bigger Windows to allow natural light into the building

3.1.4 EFFICIENT LIGHTING DESIGN:

DAYLIGHT HARVESTING: The buildings maximize the use of natural daylight through ample windows, skylights, and light wells (NBC Section 11.6.2, pages 11-18). This aligns with NBC's provisions for daylight harvesting techniques to reduce artificial lighting loads and optimize energy consumption.

Figure 6 - Daylight Harvesting Feature

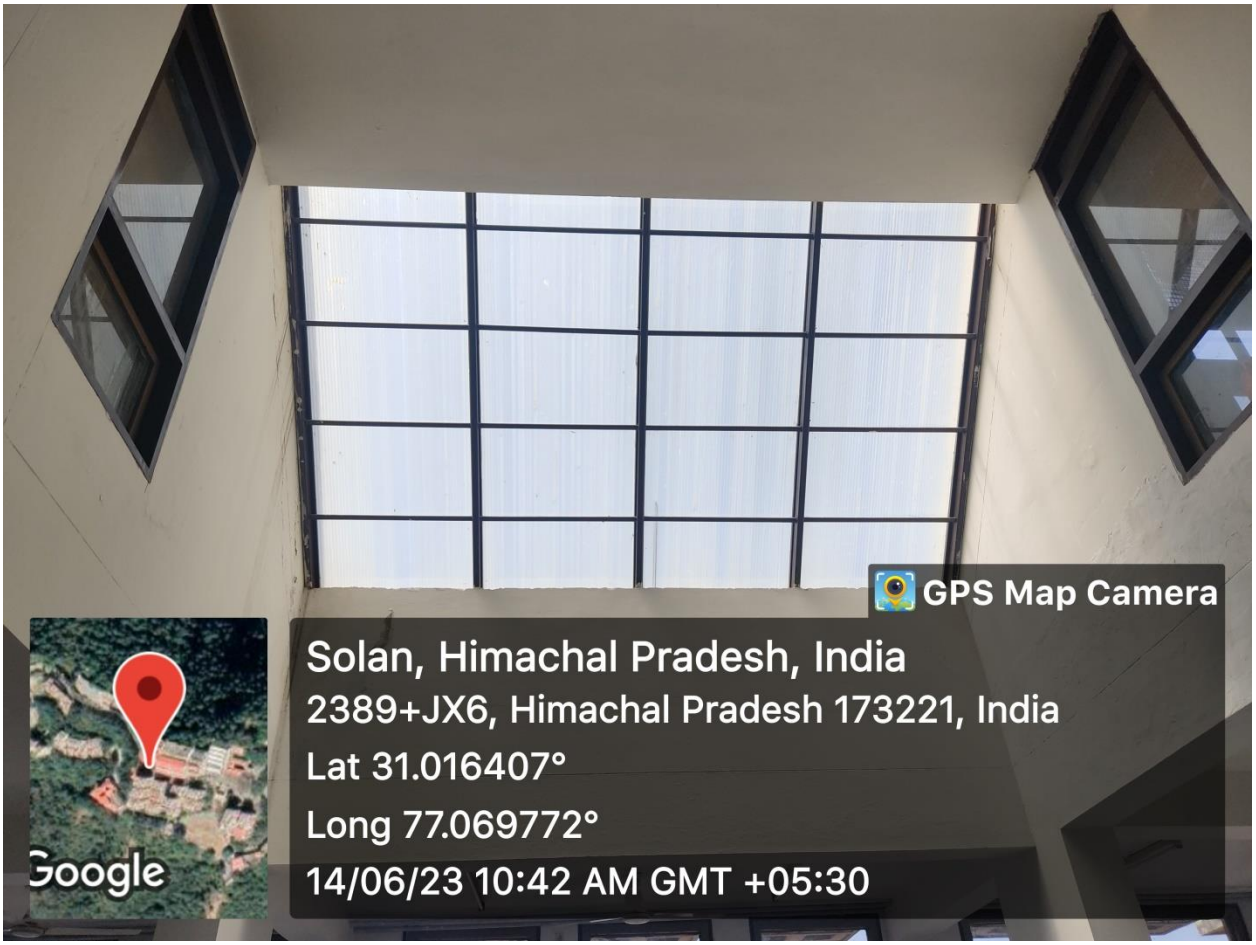


Figure 7 - Daylight Harvesting Feature

3.1.5 CONCLUSION:

Jaypee University'senergy efficiency design features in its buildings closely align with the sustainability criteria specified in Chapter 11 of the National Building Code of India. The emphasis on insulation, windows and glazing, air sealing, passive solar design, natural ventilation, and efficient lighting design demonstrates a commitment to energy conservation, thermal comfort, and environmental sustainability as outlined in the NBC. By incorporating these design elements, Jaypee University sets a positive example for promoting sustainable building practices and reducing energy consumption in line with the guidelines provided by the National Building Code of India.

3.2 ENERGY CONSERVATION MEASURES AT JAYPEE UNIVERSITY

The University relies on energy sources for its power consumption, including grid electricity and electricity generated from diesel generators. Typically, electricity is utilized to operate all electrical devices, whereas diesel is specifically employed to run the diesel generating sets.

In terms of power supply, the building is connected to Himachal Pradesh State Electricity Board Limited through an 11kV line. This line directly connects to a transformer that reduces the voltage from 11kV to 433V.

Table - Energy Consumption from the Grid by the university for 2021 - 2022

DETAILS OF ELECTRICITY CONSUMPTION FOR THE 2021-2022									
MONTH	KWH CONSUMPTION	KVAH CONSUMPTION	FIXED CHARGE	ENERGY CHARGES (INR)	PF	CONTRACT DEMAND (KVA)	MAX DEMAND (KVA)	BILLING DEMAND (KVA)	NET AMOUNT PAYABLE (INR)
May-21	108375	109970	156870	516624	0.99	1245	316	1121	689543
Jun-21	106930	107210	156870	503887	1.00	1245	227	1121	676424
Jul-21	101440	101665	156870	477826	1.00	1245	234	1121	601331
Aug-21	107970	108305	156870	509034	1.00	1245	226	1121	681725
Sep-21	114530	114760	156870	539372	1.00	1245	272	1121	712973
Oct-21	123680	124140	156870	583458	1.00	1245	394	1121	758382
Nov-21	196840	197435	156870	927945	1.00	1245	496	1121	1113202
Dec-21	239320	240050	156870	1128235	1.00	1245	604	1121	1319502
Jan-22	323920	326945	156870	1536642	0.99	1245	679	1121	1740161
Feb-22	208665	208885	156870	981760	1.00	1245	538	1121	1168632
Mar-22	218620	218635	156870	1027585	1.00	1245	647	1121	1215832
Apr-22	284445	284445	156870	1336892	1.00	1245	644	1121	1534379

3.2.1 LIGHTING SYSTEM:

The lighting system is one of the major energy-consuming systems in any building.

In terms of lighting, Jaypee University has made significant progress in enhancing energy efficiency and reducing its environmental impact. The following measures have been implemented:

LED LIGHTING**:** The University has upgraded its lighting system by replacing traditional incandescent bulbs and fluorescent tubes with energy-efficient LED lights. LED lights consume less energy and have a longer lifespan compared to conventional lighting options. This switch has resulted in substantial energy savings across campus.

Table – Nos of LED lighting in the campus

Sr	Building Name	Tube Rod Light (20/18/10Watt).Approx.	LED Bulb(9/5Watt)Approx.	Remark
1	Academic Block Area	1816	400	
2	Civil Area with ESS & Laundry	242	4	
3	Mess, Annapurna(20/18W)	196	15	
4	Hostels(H1-H-15)	1630	1900	
5	Hospital, Temple, SOR, Telephone Exchange	124	115	
6	Family Accommodation (A, B, C, D, E)	335	200	
	Total Qty.	**4343**	**2634**	

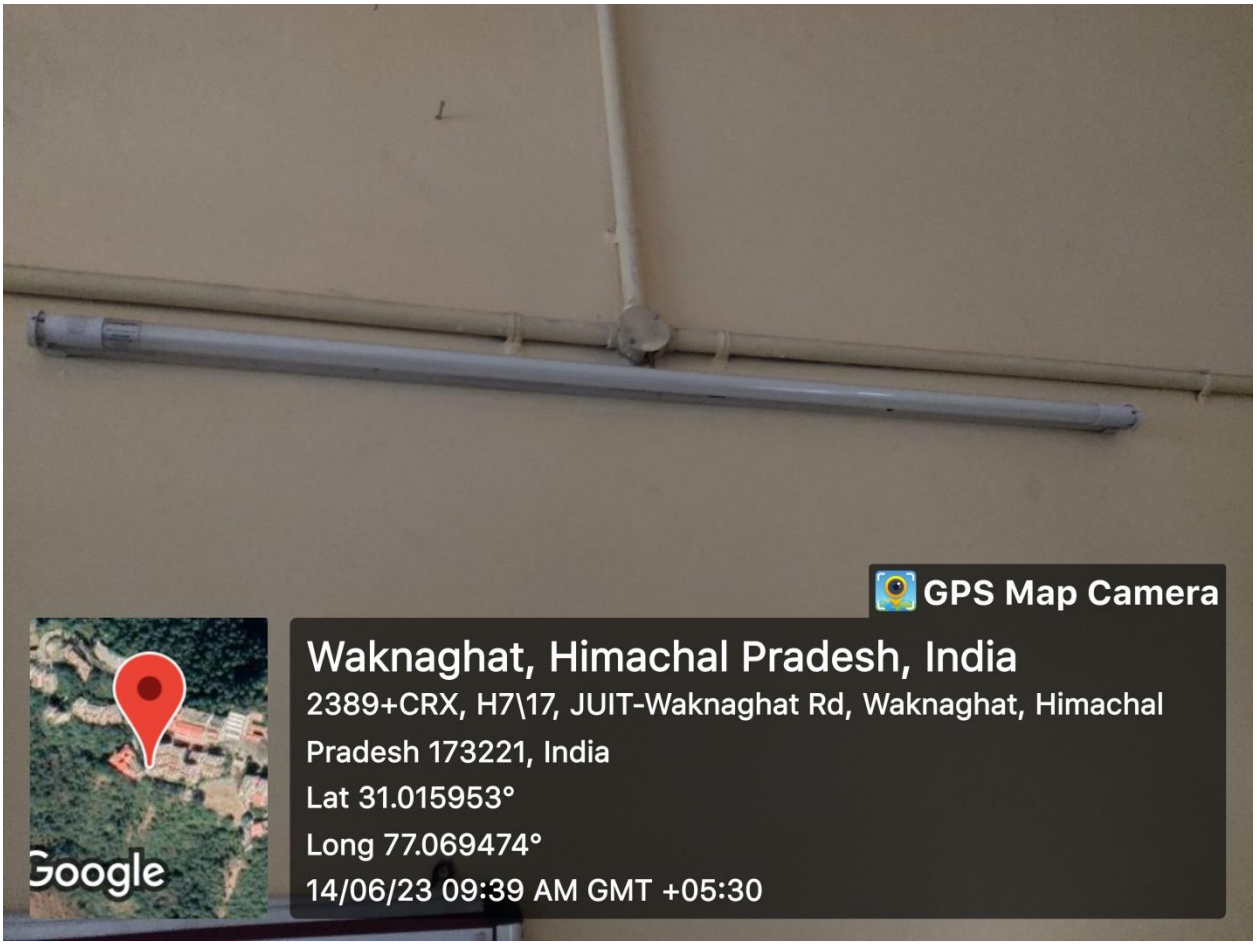


Figure 8 - LED Lighting fixtures

OCCUPANCY SENSORS**:** To avoid unnecessary energy consumption, occupancy sensors have been installed in Corridors. These sensors detect the presence or absence of individuals within a room and automatically turn off the lights when a space is unoccupied. This ensures that lights are only in use when needed, reducing energy waste.

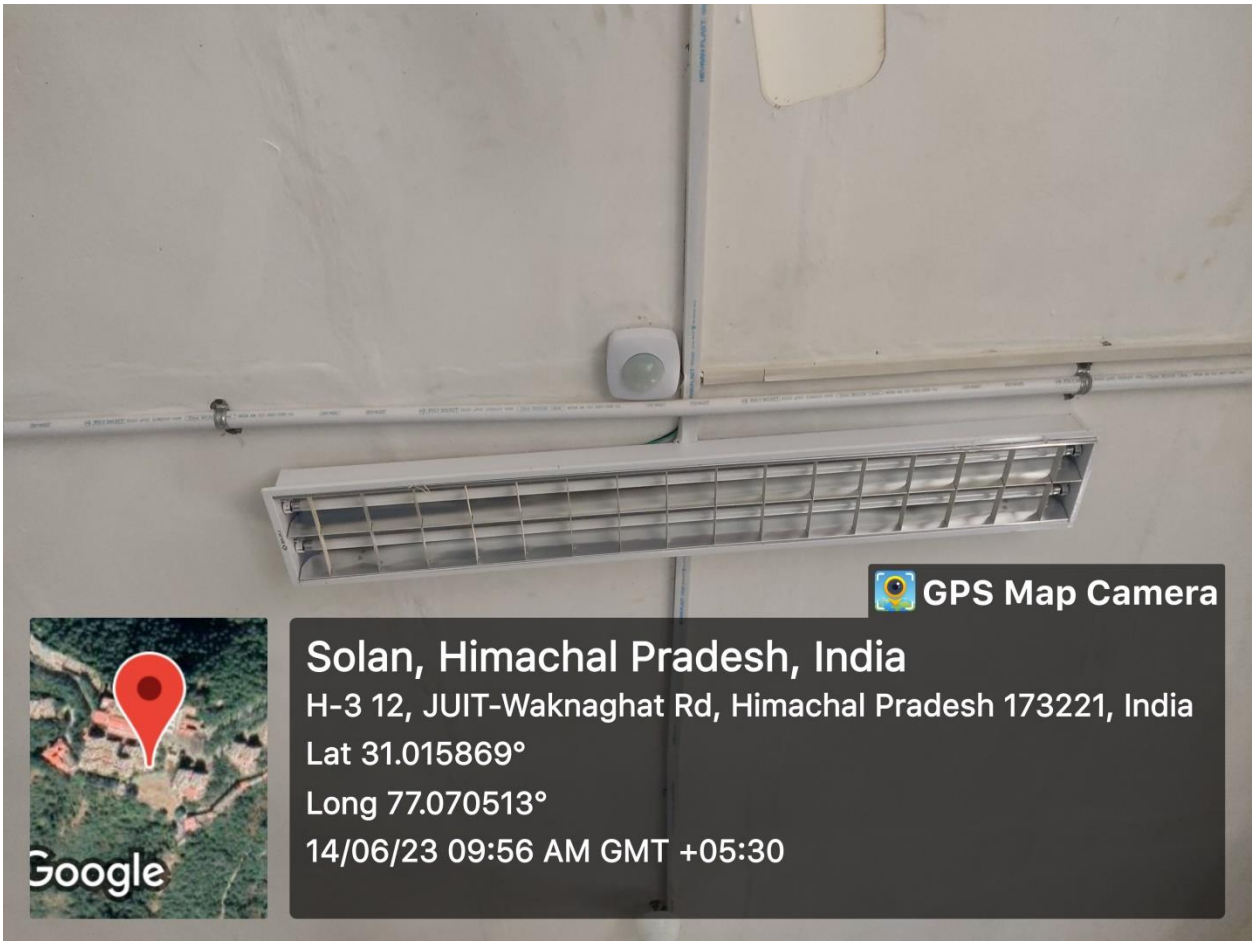


Figure 9 - Occupancy sensor installed in Class room

TASK LIGHTING**:** The university encourages the use of task lighting instead of relying solely on overhead lighting. Task lighting provides focused illumination where it is required, allowing individuals to efficiently carry out their activities without illuminating an entire room unnecessarily. This approach reduces energy usage by targeting lighting precisely where it is needed.

In terms of lighting, Jaypee University has made significant progress in enhancing energy efficiency and reducing its environmental impact. The following measures have been implemented:

NATURAL LIGHT UTILIZATION: Jaypee University has incorporated the use of natural light by installing windows and skylights in buildings. By maximizing daylight penetration, the university reduces the dependence on artificial lighting during daylight hours. This not

only minimizes energy consumption but also creates a more pleasant and sustainable indoor environment.

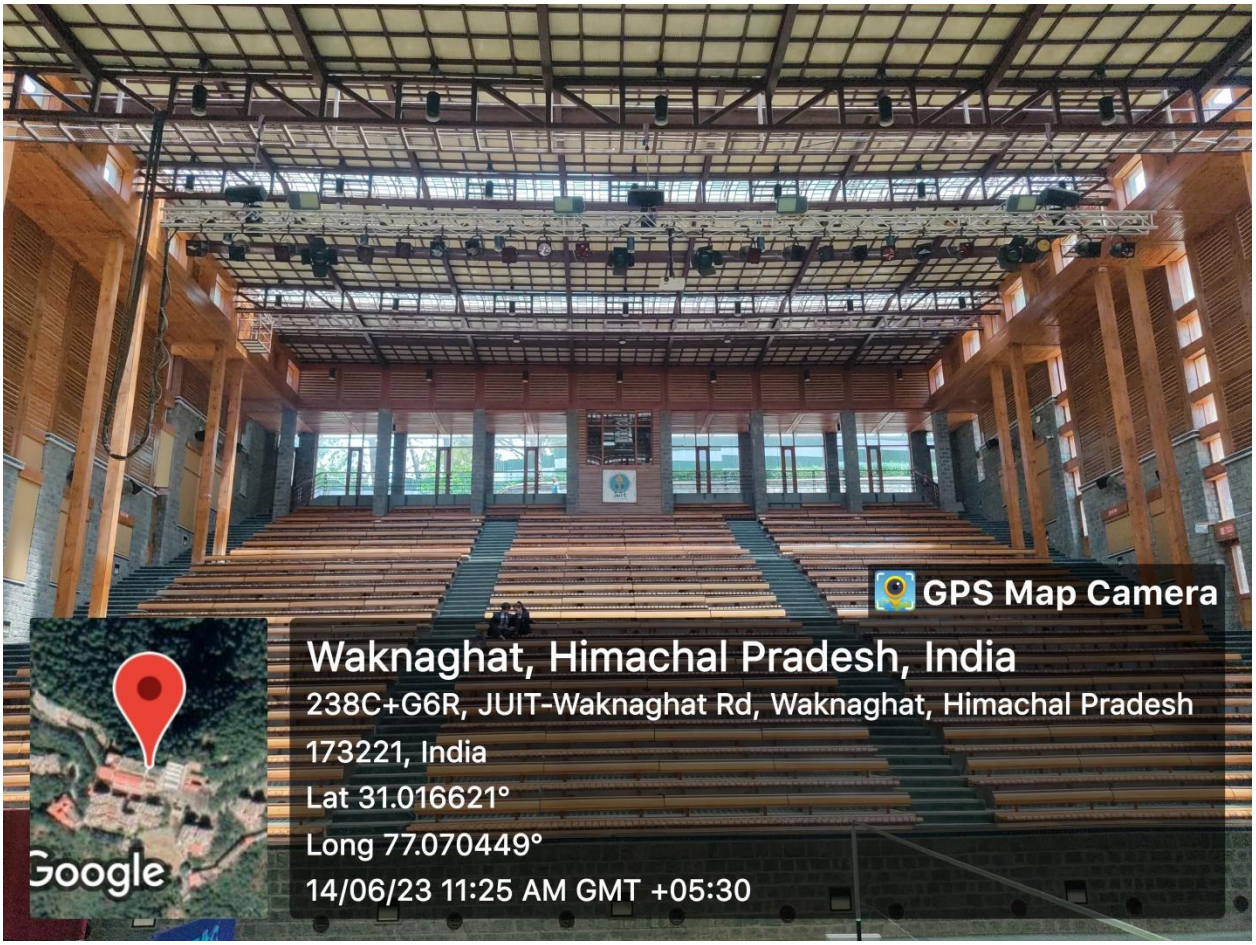


Figure 10 – The Entire Auditorium is fully illuminated with Natural light

These availability measures demonstrate Jaypee University'scommitment to energy efficiency and sustainability specifically in the lighting domain. By adopting LED lighting, implementing occupancy sensors, harnessing natural light, and promoting task lighting, the university significantly reduces energy consumption and contributes to a greener campus environment.

3.2.2 AIR CONDITIONING SYSTEM:

Air conditioning systems are another major energy-consuming system in buildings.

Jaypee University has implemented various measures to enhance energy efficiency and optimize its air conditioning systems. The following initiatives are in place:

ENERGY-EFFICIENT AIR CONDITIONERS: The university has upgraded its air conditioning units to energy-efficient models that comply with industry standards for energy performance. These units utilize advanced technologies such as variable-speed compressors, improved insulation, and smart thermostats to minimize energy consumption while maintaining optimal comfort levels.

The university installed an AC only in the Data center, t0o maintain the servers. 99% of the buildings were avoid of AC, making the campus highly energy efficient.

Figure 11 - AC installed in Data center

REGULAR MAINTENANCE AND TUNE-UPS: The University follows a comprehensive maintenance program for its air conditioning systems. This includes regular cleaning, filter replacements, and inspections to optimize performance and energy efficiency. Well-maintained units operate more efficiently, consume less energy, and have a longer lifespan.

BUILDING ENVELOPE IMPROVEMENTS: Jaypee University has invested in improving the insulation and sealing of its buildings to minimize heat gain or loss. Enhanced insulation, weather-stripping, and efficient windows reduce the workload on air conditioning systems, resulting in energy savings and improved cooling efficiency.

3.3 ENERGY CONSERVATION MEASURES FOR ELECTRICAL APPLIANCES AT JAYPEE UNIVERSITY

3.3.1 INTRODUCTION:

This report highlights the successful implementation of energy conservation measures for electrical appliances at Jaypee university. The university has taken specific actions to address energy consumption, focusing on appliances such as computers, printers, and refrigerators. By adopting the recommended strategies, Jaypee university has achieved significant reductions in energy usage, cost savings, and positive environmental impacts. The following sections outline the measures that have been effectively implemented to conserve energy within the context of Jaypee university.

3.3.2 UTILIZATION OF ENERGY-EFFICIENT APPLIANCES:

Jaypee university has prioritized the procurement of energy-efficient models when acquiring electrical appliances. The university carefully selects appliances with high energy efficiency ratings and certifications, such as the bureau of energy efficiency (BEE) star rating in India. By opting for energy-efficient appliances, Jaypee university ensures that electricity consumption is minimized while maintaining the desired functionality of the appliances.

3.3.3 POWER MANAGEMENT AND USAGE:

Jaypee university has successfully instilled a culture of responsible energy consumption among its faculty, staff, and students. The university promotes the habit of powering off electrical appliances, including computers, printers, and other equipment when they are not in use. This proactive approach has

significantly reduced energy wastage, as appliances are no longer left on standby mode, which still consumes electricity. The collective effort to power off appliances when not needed has resulted in substantial energy savings.

3.3.4 REGULAR CLEANING AND MAINTENANCE:

Jaypee university has implemented a robust maintenance program to ensure optimal energy efficiency of electrical appliances. The university has prioritized regular cleaning of coils in refrigerators, air conditioners, and other cooling equipment across the campus. By preventing dust and debris accumulation on the coils, Jaypee university maintains efficient heat exchange and minimizes energy consumption. Furthermore, the university diligently maintains the filters of appliances like air purifiers and HVAC systems as recommended by the manufacturer. This proactive filter maintenance ensures unrestricted airflow, enhances appliance performance and reduces energy usage.

3.3.5 CONCLUSION:

Jaypee university has successfully implemented energy conservation measures for electrical appliances, resulting in notable reductions in energy consumption. The university's commitment to utilizing energy-efficient appliances, promoting the power-off habit, employing power strips with timers, and practicing regular maintenance has significantly contributed to energy efficiency and environmental sustainability. By raising awareness and fostering a culture of responsible energy consumption among its faculty, staff, and students, Jaypee university serves as an exemplary institution, leading the way toward a greener and more sustainable future.

3.4 SUCCESSFUL IMPLEMENTATION OF WATER CONSERVATION MEASURES IN BUILDING WATER SUPPLY SYSTEMS

3.4.1 INTRODUCTION:

This report provides a comprehensive overview of the successful implementation of water conservation measures in the building water supply systems at Jaypee University. The university, has demonstrated a strong commitment to sustainable water management practices. By effectively utilizing various components such as overhead tanks, RO purifying plants, STPs, rainwater harvesting systems, storm water percolation ponds, and treated water for gardening, Jaypee University has achieved remarkable water savings, efficient water management, and environmental sustainability.

3.4.2 OVERHEAD TANK MANAGEMENT:

Jaypee University has implemented efficient management strategies for overhead tanks to minimize water wastage and optimize water distribution. The following practices have been adopted:

Regular inspections and proactive maintenance of the tanks to identify and promptly repair any leaks or issues in the water distribution system.

Installation of advanced water level sensors and automatic control systems that accurately monitor and regulate water levels, preventing overflow and unnecessary filling.

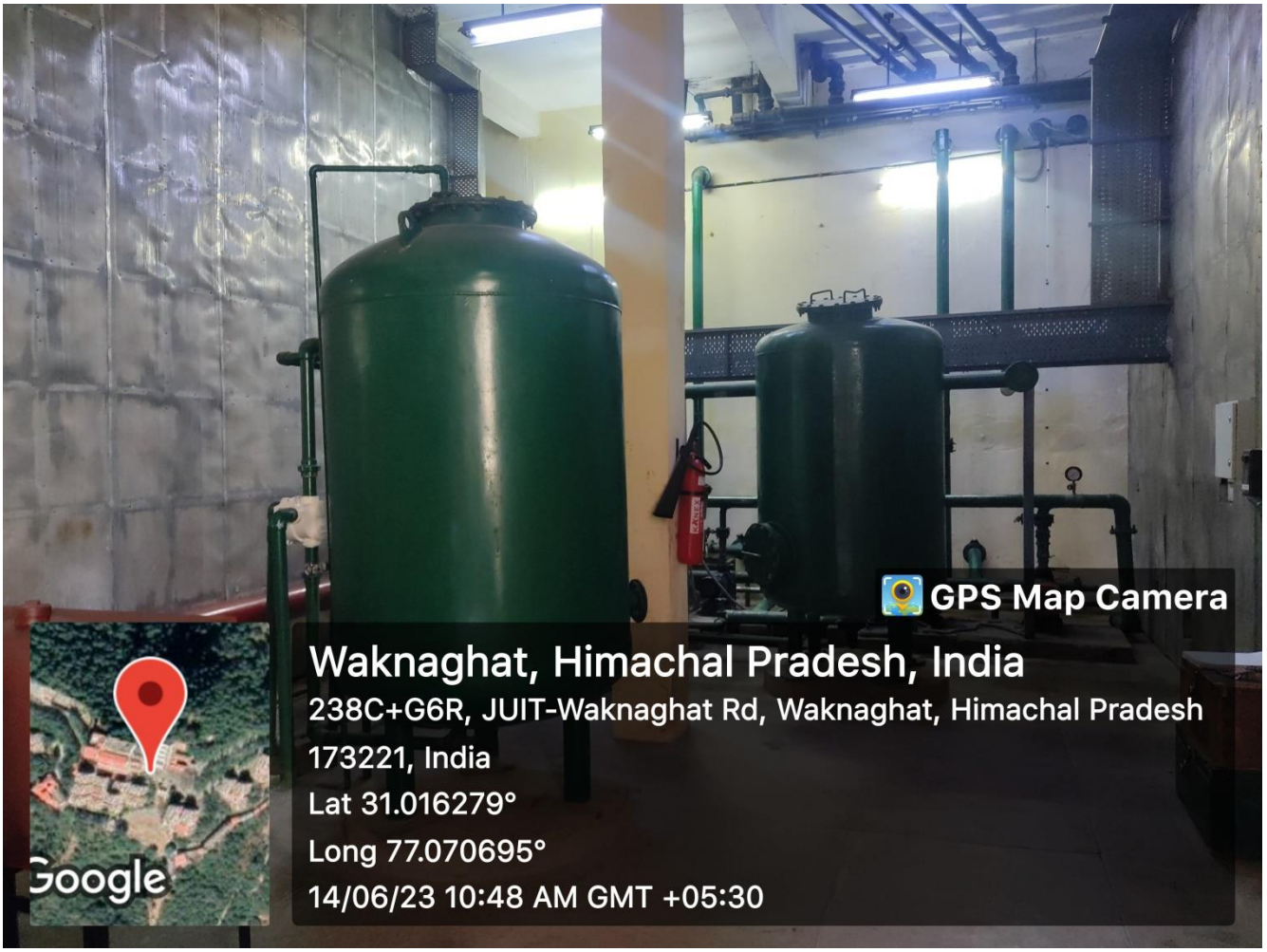


Figure 12 – Raw water Polishing system before pumping to overhead tanks

3.4.3 RO PURIFYING PLANT:

The university has installed an RO purifying plants that ensures optimal water conservation while meeting the demands of purified water. The following measures have been undertaken:

Regular maintenance and servicing of the RO plant to maximize its efficiency and minimize water losses resulting from system inefficiencies.

Figure 13 - RO Plant

Installation of water flow meters and comprehensive monitoring systems that provide real-time data on water usage, enabling the identification of any anomalies or excessive wastage.

Implementation of innovative techniques to reuse rejected water from the purification process for non-potable purposes, significantly reducing water waste.

3.4.4 GE TREATMENT PLANT (STP):

Jaypee University has established a state-of-the-art STP to effectively treat wastewater and minimize freshwater usage. Key practices include:

Consistent maintenance and monitoring of the STP to ensure optimal performance and water treatment efficiency.

Figure 14 - STP Plant

Utilization of treated water from the STP for non-potable purposes, such as flushing toilets, cleaning, and irrigation. This practice reduces reliance on freshwater sources and conserves water resources.

3.4.5 EFFLUENT (LAUNDRY) TREATMENT PLANT

At Jaypee University, they have implemented a centralized laundry facility with a focus on water conservation. To minimize water usage, they have incorporated a specialized Effluent Treatment Plant (ETP) specifically designed to treat the laundry water.

The ETP effectively treats the laundry water, removing contaminants and ensuring its quality meets the required standards. Once treated, the water is then transferred to a ge Treatment

Plant (STP). The STP further purifies the water, making it suitable for non-potable purposes such as irrigation.

This sustainable water management system allows Jaypee University to repurpose the treated laundry water, reducing their overall water consumption and promoting eco-friendly practices. By utilizing the treated water for irrigation, they effectively conserve water resources while supporting the greenery and landscaping around the campus.

Figure 15 - ETP for laundry waste water

3.4.6 RAINWATER HARVESTING SYSTEM:

Jaypee University, situated on a hilly slope, faces challenges when it comes to harvesting rainwater due to the topography. However, the university has implemented an innovative

solution by maintaining a small pond at the hill's summit. This pond serves as a reservoir that collects water during the rainy season.

Recognizing the importance of water conservation, Jaypee University has taken proactive measures to capture and store rainwater despite the limitations posed by the terrain. By maintaining the pond, the university maximizes its water collection potential, ensuring a sustainable supply for various purposes throughout the year.

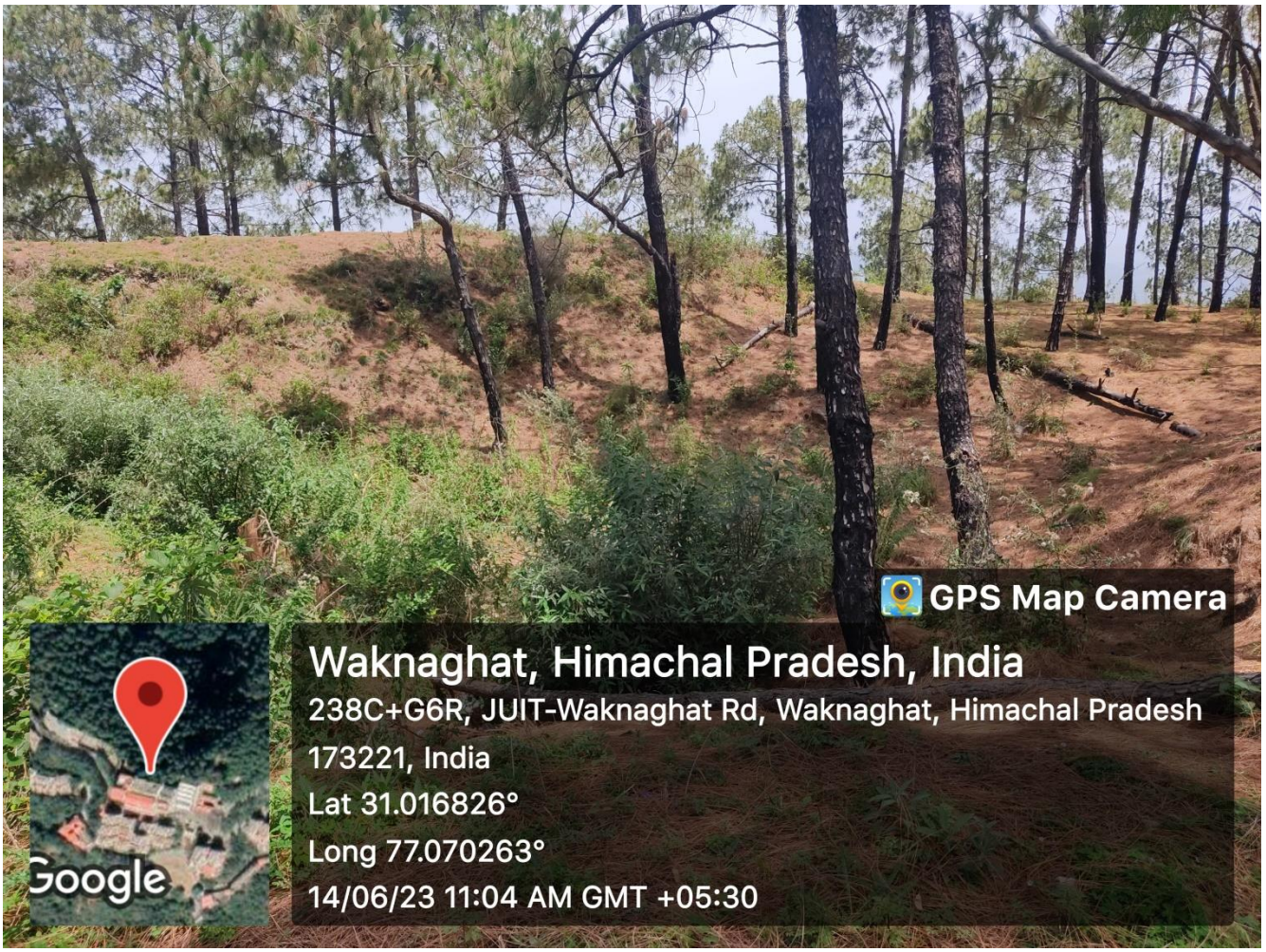


Figure 16 - Rain water Pond next to the campus maintained by the university to harvest rain water during the rainy season

Integration of rainwater harvesting into building designs, ensuring efficient collection, storage, and utilization of rainwater for various purposes, including irrigation and toilet flushing.

3.4.7 TERRACED RAINFOREST METHOD

To address the challenges posed by the slopes and to further enhance rainwater harvesting while preventing erosion, Jaypee University has implemented a step-by-step tree plantation approach “Terraced Rainforest Method”. This strategic planting of trees serves multiple purposes, including facilitating rainwater capture and minimizing soil erosion.

By carefully planting trees in a step-like manner along the slopes, the university creates natural barriers that slow down the flow of rainwater. This allows the water to seep into the ground gradually, replenishing groundwater sources and reducing surface runoff. Additionally, the tree roots help bind the soil together, preventing erosion caused by heavy rains and promoting soil stability.

The tree plantation initiative at Jaypee University serves as an effective and environmentally friendly solution to optimize rainwater harvesting while safeguarding the slopes from erosion. It exemplifies the university's commitment to sustainable practices and maintaining a harmonious balance with the surrounding natural environment.

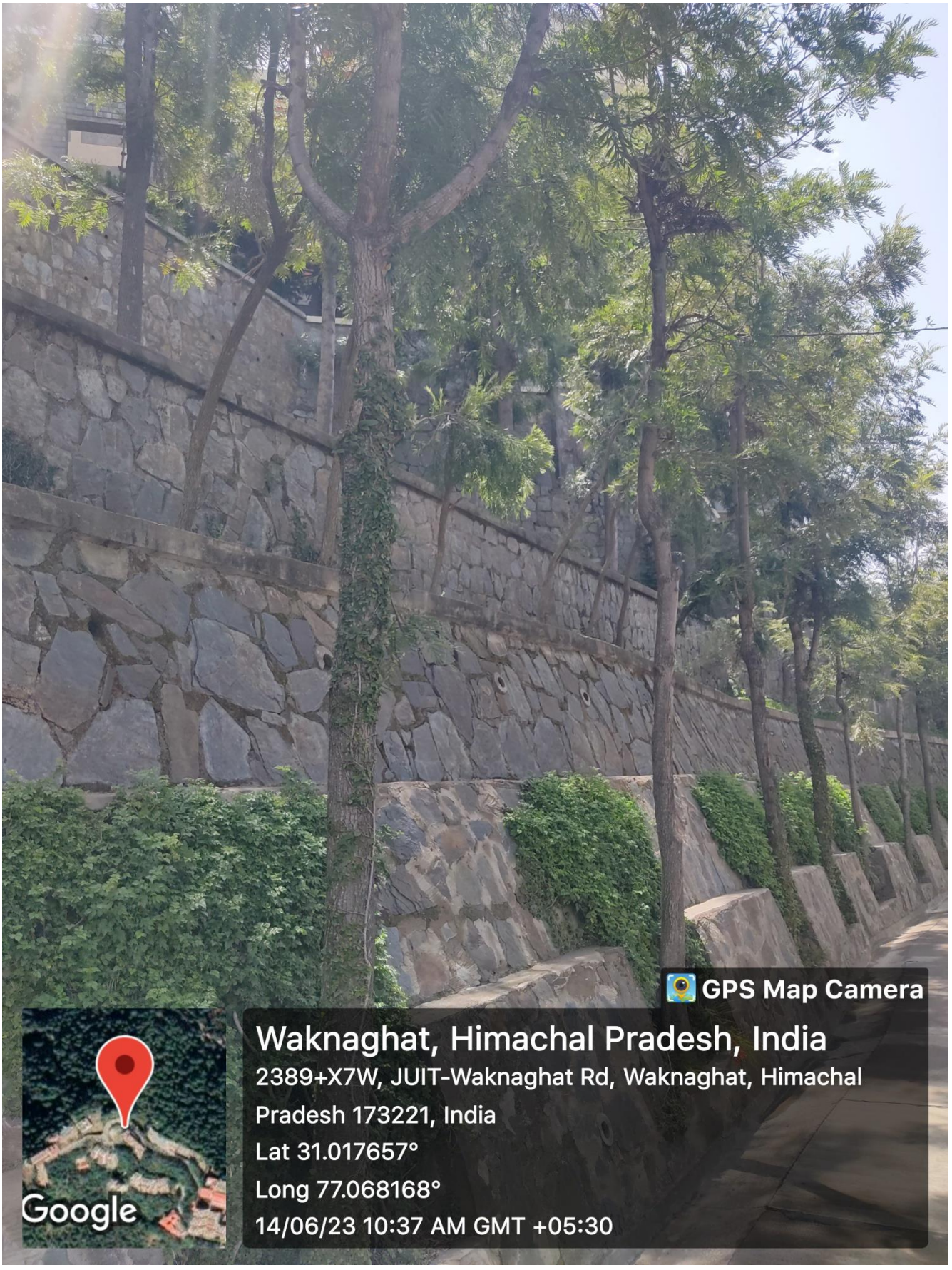


Figure 17 - Terraced Rainforest Method

3.4.8 UTILIZATION OF TREATED WATER FOR GARDENING:

Jaypee University demonstrates a sustainable approach to gardening by utilizing treated water from the STP for irrigation purposes. Key initiatives include:

Installation of separate distribution systems to deliver treated water specifically for gardening and landscape irrigation.

Regular monitoring of irrigation schedules and water usage to optimize water application, prevent overwatering, and maintain healthy landscapes.

3.4.9 SPRINKLER SYSTEMS:

To efficiently irrigate larger areas such as lawns and open spaces, Jaypee University has incorporated sprinkler systems. These systems effectively distribute water over a designated area, minimizing water waste. Noteworthy practices include:

Use of high-efficiency sprinkler heads that deliver water uniformly and effectively, minimizing overspray and runoff.

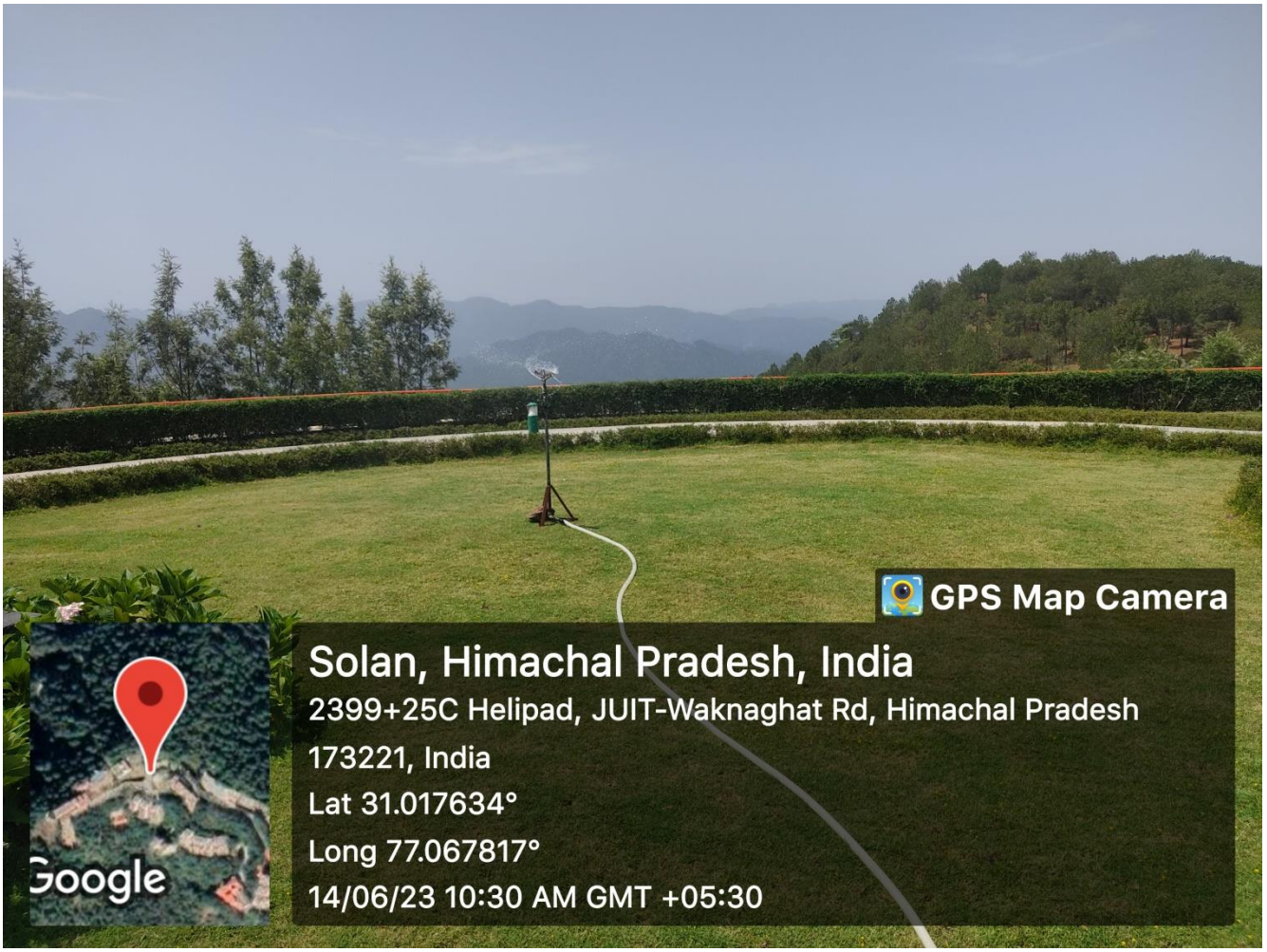


Figure 18 - Sprinklers installed at the Lawn maintained

Regular inspections and maintenance of the sprinkler system to ensure proper functioning, including checking for clogged nozzles, adjusting spray patterns, and repairing any leaks or damaged components.

3.4.10 CONCLUSION:

Jaypee University'ssuccessful implementation of water conservation measures in its building water supply systems serves as a notable example of sustainable water management practices. Through their proactive approach and diligent efforts in managing overhead tanks, RO purifying plants, STPs, and rainwater harvesting systems.

3.5 COMPREHENSIVE WASTE MANAGEMENT MEASURES FOR SUSTAINABLE PRACTICES:

3.5.1 INTRODUCTION:

This report focuses on the comprehensive waste management measures implemented at Jaypee University, showcasing their commitment to sustainability and responsible waste disposal. In addition to effective solid waste management practices, the university has partnered with an authorized third-party waste management company, to handle inorganic e-waste, recyclable waste, and hazardous waste. These initiatives ensure proper disposal, recycling, and responsible handling of different types of waste, minimizing environmental impact and promoting a cleaner and greener campus.

3.5.2 SOLID WASTE MANAGEMENT:

Waste segregation at source, as per NBC Chapter 11 (Section 11.3.1), promotes proper waste management and facilitates recycling.

Installation of recycling bins throughout the campus, following NBC Chapter 11 (Section 11.3.2), to encourage waste segregation and facilitate recycling of materials such as paper, plastic, metal, and glass.

Figure 19 - Colour coded dust bins

Regular waste audits, as recommended by NBC Chapter 11 (Section 11.3.3), assess waste composition, identify opportunities for waste reduction, and develop targeted waste management strategies.

3.5.3 INORGANIC E-WASTE MANAGEMENT:

Jaypee University recognizes the importance of responsible e-waste disposal and has taken the following measures:

Collaboration with Waste Management Company, an authorized waste management service provider specializing in the collection and recycling of electronic waste.

Regular awareness campaigns and workshops to educate students, faculty, and staff about the hazards of improper e-waste disposal and the importance of recycling electronic devices.

Dedicated collection points and drop-off locations for e-waste across the campus, making it convenient for the university community to dispose of their electronic devices safely.

Regular pickups by Management Company to ensure the proper handling, dismantling, and recycling of e-waste in compliance with relevant regulations and guidelines.

Figure 20 - an E-waste storage place

3.5.4 RECYCLABLE WASTE MANAGEMENT:

Jaypee University actively promotes recycling by implementing the following practices:

Collaboration with Waste Management Company to collect and recycle various recyclable materials, such as paper, plastic, metal, and glass.

Placement of designated recycling bins in key areas throughout the campus, clearly labeled for specific recyclable materials, ensuring proper segregation and easy disposal.

Regular collection and transportation of recyclable waste by Waste Management Company to authorized recycling facilities.

Monitoring and auditing the recycling process to ensure compliance with recycling standards and guidelines.

3.5.5 HAZARDOUS WASTE MANAGEMENT:

Jaypee University gives high priority to the safe handling and disposal of hazardous waste by taking the following measures:

Identification and proper labeling of hazardous waste generated within the campus, including chemicals, batteries, and other potentially harmful materials.

Collaboration with Waste Management Company, which specializes in the collection, transportation, and disposal of hazardous waste in compliance with regulatory requirements.

Implementation of strict protocols and guidelines for the safe storage, handling, and transportation of hazardous waste to prevent environmental contamination and ensure the well-being of the university community.

3.5.6 BIOGAS PLANT:

Jaypee University has established a state-of-the-art biogas plant to harness the energy potential of food waste. Key features and practices include:

Collection and segregation of food waste from dining halls, cafeterias, and other food preparation areas.

Figure 21 - Biogas Plant

Anaerobic digestion process: The collected food waste is transferred to the biogas plant, where it undergoes anaerobic digestion, a biological process that converts organic matter into biogas.

Biogas utilization: The biogas produced is utilized as a renewable energy source for cooking.

Reduction of greenhouse gas emissions: The anaerobic digestion process significantly reduces methane emissions, a potent greenhouse gas that contributes to climate change.

3.5.7 COMPOSTING MACHINE

Jaypee University has taken significant steps towards sustainable waste management by operating a composting machine on its premises. This machine efficiently processes approximately 1000 kg of food waste every day, effectively diverting it from landfills.

Through the composting process, the food waste undergoes natural decomposition, facilitated by the controlled conditions within the machine. Over time, this decomposition transforms the food waste into nutrient-rich compost or manure.

Figure 22 - Composting machine to process 1000 kg of food waste daily

The university recognizes the value of this compost and utilizes it for gardening purposes. The nutrient-rich manure serves as a natural fertilizer, enriching the soil and promoting healthy plant growth. By utilizing the compost produced from the food waste, Jaypee University demonstrates its commitment to sustainability, reducing waste, and maintaining a greener environment on its campus.

Figure 23 - Composting Pit for dry waste

3.5.8 CONCLUSION:

Jaypee University'scomprehensive waste management measures, including the partnership with Waste Management Company, demonstrate their commitment to sustainable practices and responsible waste disposal. By effectively managing inorganic e-waste, recyclable waste, and hazardous waste, the university ensures proper disposal, recycling, and safe handling of different types of waste. These initiatives contribute to minimizing environmental impact, reducing landfill waste, and promoting a cleaner and healthier campus environment. Jaypee University serves as a role model for other educational institutions in adopting comprehensive waste management practices and fostering a culture of sustainability.

3.6 SUSTAINABLE LIQUID WASTE MANAGEMENT STRATEGIES IN COMPLIANCE WITH NBC CODE:

3.6.1 INTRODUCTION:

This report highlights Jaypee University'ssustainable liquid waste management strategies, aligning with the guidelines outlined in the National Building Code (NBC) of India. The university has implemented measures to effectively manage liquid waste, including wastewater generated on campus. By adopting these strategies, Jaypee University aims to minimize water waste, optimize water usage, and ensure the safe and environmentally sound disposal of liquid waste under the NBC Code.

3.6.2 WASTEWATER TREATMENT SYSTEM:

Sustainable ge Treatment Practices for Effective Liquid Waste Management: A Focus on Jaypee University's Water Treatment Plant (STP & ETP)

3.6.2.1 INTRODUCTION:

This report provides an in-depth analysis of Jaypee University'sge Treatment Plant (STP) and its role in sustainable liquid waste management. The STP plays a vital role in treating ge generated on campus, ensuring the safe and environmentally responsible disposal of liquid waste. By employing advanced treatment technologies and adhering to regulatory guidelines, Jaypee University demonstrates its commitment to sustainable practices and compliance with relevant standards.

3.6.2.2 STP INFRASTRUCTURE:

The STP at Jaypee University is designed and constructed two numbers of STP plants under the National Building Code (NBC) guidelines (Chapter 11, Section 11.7.5) and relevant regulatory frameworks.

The plant incorporates primary, secondary, and tertiary treatment processes to effectively remove contaminants and ensure the quality of treated wastewater.

Details of STP plants

S.NO	Particulars	Recycling	Saving Per Day	Saving Per month
1	STP	300000 liters	300000 liters	9000000 liters
2	ETP	7500 liters	7500 liters	225000 liters

3.6.2.3 PRIMARY TREATMENT:

The primary treatment stage involves the removal of large solid particles and floating debris from the water through processes such as screening and sedimentation.

Mechanisms such as screens and grit chambers are employed to capture solid materials, preventing them from entering subsequent treatment stages.

3.6.2.4 SECONDARY TREATMENT:

The secondary treatment stage utilizes the activated sludge process, a widely adopted biological treatment method.

In the activated sludge process, ge is mixed with a culture of microorganisms (activated sludge) in an aeration tank. These microorganisms consume organic matter present in the ge, breaking it down into harmless byproducts.

The process creates a stable and efficient microbial ecosystem, allowing for effective organic matter degradation and nutrient removal.

Figure 24 - STP Plant

3.6.2.5 TERTIARY TREATMENT:

The tertiary treatment stage is employed to further enhance the quality of treated effluent, ensuring it meets specified standards for reuse or safe discharge.

Processes like filtration, disinfection, and advanced oxidation may be implemented to remove residual contaminants and pathogens.

3.6.2.6 EFFLUENT REUSE:

The treated wastewater from the STP is utilized for non-potable purposes, such as irrigation, landscaping, or toilet flushing, reducing reliance on freshwater resources.

The NBC Code (Chapter 11, Section 11.7.5) promotes the use of treated effluent for various applications, emphasizing the importance of water conservation.

3.6.2.7 COMPLIANCE WITH REGULATORY STANDARDS:

The STP at Jaypee University strictly adheres to relevant regulatory guidelines and standards, including those outlined in the NBC Code, to ensure compliance with environmental norms and quality parameters.

Routine monitoring, sampling, and testing of treated effluent are conducted to assess the plant's performance and verify compliance with regulatory requirements.

3.6.3 CONCLUSION:

Jaypee University'sge Treatment Plant (STP) plays a critical role in sustainable liquid waste management on campus. Through the activated sludge process and other treatment stages, the STP effectively removes contaminants from ge, ensuring the safe and environmentally responsible disposal of liquid waste. By complying with the NBC guidelines and relevant regulatory standards, Jaypee University demonstrates its commitment to sustainable practices and the preservation of water resources. The STP serves as a model for other institutions, emphasizing the significance of advanced treatment technologies and responsible liquid waste management in achieving a more sustainable future.

3.6.4 ETP

Jaypee University has installed a 7.5 KLD (Kiloliters per day) Effluent Treatment Plant (ETP) to treat laundry wastewater. An ETP is designed to remove contaminants and pollutants from industrial wastewater before it is discharged into the environment.

The installation of an ETP for treating laundry wastewater indicates the university's commitment to environmental sustainability and responsible waste management. By treating the wastewater generated from laundry activities, the university can ensure that harmful substances are removed, and the water can be safely reused or released back into the environment without causing pollution.

Implementing an ETP for laundry wastewater not only helps protect the environment but also promotes water conservation and reduces the strain on natural water resources. It

showcases the university's efforts to minimize its environmental footprint and sets a positive example for other institutions and industries.

Overall, the installation of a 7.5 KLD ETP at Jaypee University is a commendable step towards sustainable wastewater management, promoting clean water practices, and contributing to a healthier and greener campus environment.

Figure 25 - ETP for Laundry waste water

3.7 HAZARDOUS LIQUID WASTE MANAGEMENT:

Adoption of NBC Code guidelines for the safe handling, storage, and disposal of hazardous liquids (Chapter 11, Section 11.7.3).

Jaypee University gives high priority to the safe handling and disposal of hazardous liquid waste by taking the following measures:

Identification and proper labeling of hazardous Liquid waste generated within the campus, and disposed of safely with the Collaboration of Waste Management Company, which specializes in the collection, transportation, and disposal of hazardous Liquid waste in compliance with regulatory requirements.

Implementation of strict protocols and guidelines for the safe storage, handling, and transportation of hazardous waste to prevent environmental contamination and ensure the well-being of the university community.

3.8 CONCLUSION:

Jaypee University's sustainable liquid waste management strategies exemplify its commitment to environmental sustainability and compliance with the NBC Code. By implementing a wastewater treatment system, maintaining plumbing systems, managing hazardous liquid waste, and embracing rainwater harvesting, the university ensures responsible liquid waste management practices. These initiatives not only contribute to water conservation but also align with the guidelines set forth by the NBC Code. Jaypee University serves as a model for other institutions, demonstrating the importance of sustainable liquid waste management and inspiring collective efforts toward a greener and more sustainable future.

3.9 BIODIVERSITY CONSERVATION EFFORTS

3.9.1 INTRODUCTION:

This report highlights Jaypee University's commendable efforts towards biodiversity conservation on its campus, aligning with the principles outlined in the National Building Code (NBC) of India. The university recognizes the importance of preserving biodiversity and has implemented various initiatives to protect and enhance the natural ecosystems present within its premises. This report showcases Jaypee University's commitment to biodiversity conservation, showcasing its adherence to the guidelines set forth by NBC.

3.9.2 FLORA AND FAUNA OF THE UNIVERSITY

3.9.2.1 LIST OF FLORA WITH DETAILS ENCLOSED. JAYPEE UNIVERSITY

Provided in Annexure

3.9.2.2 LIST OF FAUNA WITH IN JAYPEE UNIVERSITY

Provided in Annexure

3.9.3 TREE COVER AND GREEN SPACES:

Jaypee University adheres to NBC's recommendations for creating green spaces and preserving tree cover (NBC, Chapter 11, Section 11.7.3).

The university has meticulously maintained a substantial tree cover, incorporating indigenous and native species to support local biodiversity.

The presence of green spaces and preserved tree cover not only enhances the aesthetic appeal but also provides habitat and food sources for various fauna.

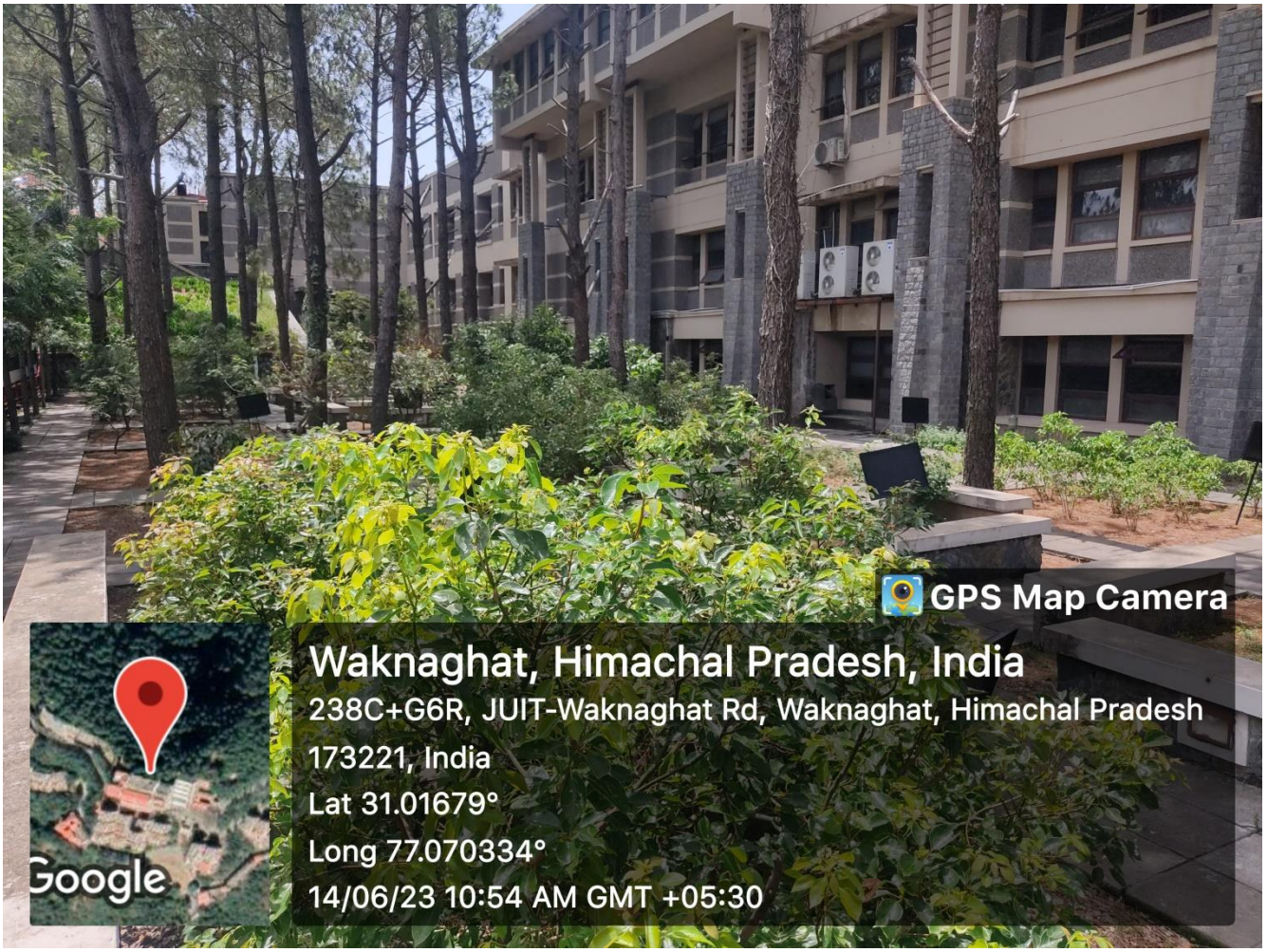


Figure 26 - Dense tree cover inside the campus

3.9.4 ECOLOGICAL RESTORATION:

The university's ecological restoration initiatives comply with the NBC's emphasis on environmental sustainability and ecological balance (NBC, Chapter 11, Section 11.2.3).

Figure 27 - Aerial view of the Dense tree cover on the campus

Restoration projects, such as reforestation, and meadow creation, aim to revive and enhance native habitats.

These efforts align with the NBC's guidelines for promoting ecological restoration and conserving natural ecosystems (NBC, Chapter 11, Section 11.2.4).

3.9.5 NATIVE PLANT LANDSCAPING:

Jaypee University'sfocus on using native plants for landscaping aligns with NBC's recommendations for promoting local biodiversity (NBC, Chapter 11, Section 11.7.4).

Native plants require less maintenance, conserve water, and support local flora and fauna.

The university's landscaping practices prioritize the use of indigenous and native species, contributing to the conservation of biodiversity as encouraged by the NBC.

Figure 28 - Green scape inside the campus

3.9.6 WILDLIFE HABITAT CREATION:

The creation of designated wildlife habitats on campus complies with the NBC's emphasis on promoting biodiversity conservation (NBC, Chapter 11, Section 11.5.4).

Bird nesting boxes, butterfly gardens, provide shelter, breeding grounds, and food sources for wildlife.

These habitat creation efforts support the NBC's recommendations for enhancing wildlife habitats and promoting biodiversity within built environments.

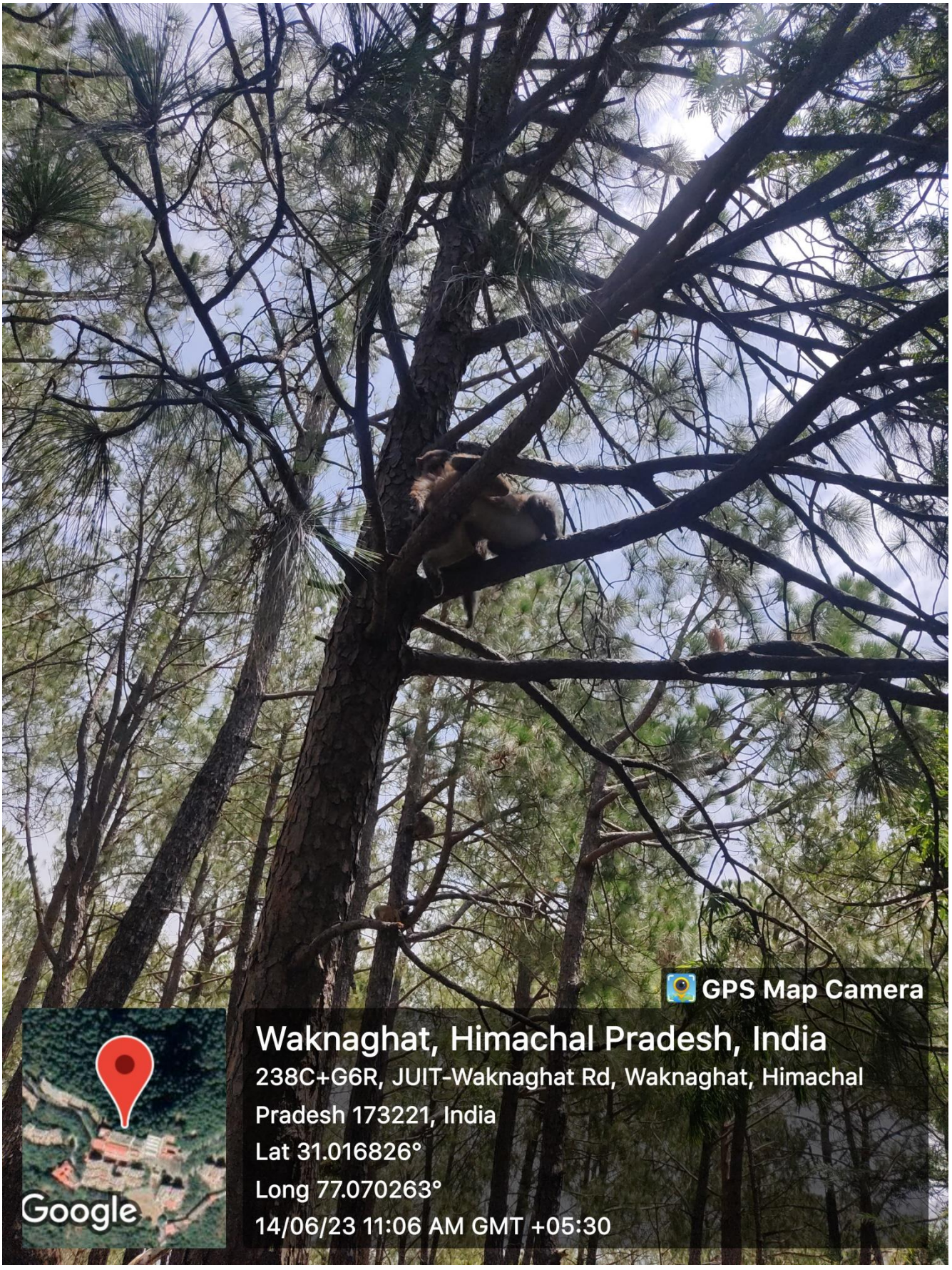


Figure 29 - Monkeys habitation inside the campus

3.9.7 EDUCATION AND OUTREACH:

Jaypee University'seducational programs and outreach initiatives regarding biodiversity conservation align with NBC's call for promoting environmental awareness (NBC, Chapter 11, Section 11.4.4).

Workshops, seminars, and nature walk organized by the university foster a deeper understanding of biodiversity and encourage community involvement.

These initiatives demonstrate the university's commitment to NBC's guidelines on raising awareness about biodiversity conservation.

community about the importance of waste reduction and recycling.

Figure 30 Swachh Bharat Mission: Vicinity of JUIT Date:3rd April 2022

Figure 31 Swachh Bharat Mission: Vicinity of JUIT Date: 14th May 2022

Figure 32 - Tree Plantation Drive

3.9.8 CONCLUSION:

Jaypee University'sbiodiversity conservation efforts align with the principles outlined in the National Building Code (NBC) of India. By preserving tree cover, undertaking ecological restoration projects, prioritizing native plant landscaping, creating wildlife habitats, and promoting environmental education, the university demonstrates its commitment to complying with NBC's guidelines for biodiversity conservation. These efforts contribute to the preservation of local ecosystems, support wildlife habitats, and inspire the campus community to embrace sustainable practices. Jaypee University serves as a role model for integrating biodiversity conservation into built environments while adhering to the principles set forth by the NBC.

3.10 SUSTAINABLE TRANSPORTATION OPTIONS AND TRAFFIC REGULATION AND SAFETY MEASURES: A CASE STUDY OF JAYPEE UNIVERSITY

3.10.1 INTRODUCTION:

This report highlights Jaypee University's commendable efforts in promoting sustainable transportation options and implementing effective traffic regulation and safety measures on its campus. The university acknowledges the importance of reducing carbon emissions, enhancing mobility choices, and ensuring the safety of its community. This report examines Jaypee University's commitment to sustainable transportation practices, aligning with the guidelines provided by the National Building Code of India (NBC) Chapter 11 - Sustainability Criteria.

3.10.2 BUS TRANSPORTATION:

Jaypee University operates a fleet of buses to provide sustainable transportation options for students and staff, aligning with NBC Chapter 11.3.4, which emphasizes the promotion of public transportation systems.

The buses are regularly maintained to meet safety standards and provide comfortable seating for the university community, complying with NBC Chapter 11.3.5 regarding passenger comfort and safety.

3.10.3 CARPOOLING INITIATIVES:

Jaypee University actively encourages carpooling among staff and officials, in line with NBC Chapter 11.3.6, which promotes the efficient use of private vehicles.

The university provides owned cars for carpooling, complying with NBC Chapter 11.3.7, which emphasizes the utilization of shared vehicles to reduce congestion and carbon emissions.

3.10.4 BICYCLE INFRASTRUCTURE AND PARKING FACILITIES:

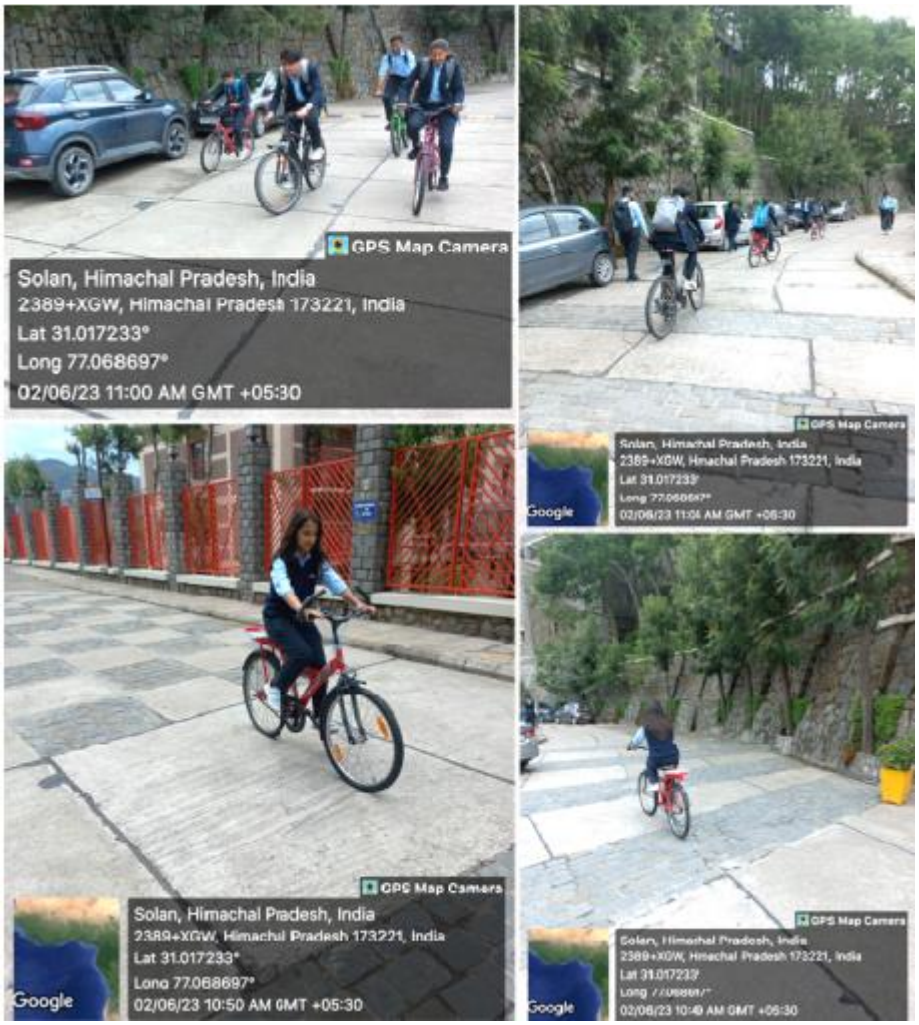


Figure 33 - Bicycles Used by the students

Jaypee University prioritizes cycling as a sustainable mode of transportation and encourages its community to use bicycles for commuting within the campus.

Jaypee University has taken a proactive step towards promoting sustainability by providing bicycles to its students for campus transportation. This initiative encourages eco-friendly commuting and reduces carbon emissions within the university premises. By offering

bicycles, Jaypee University aims to foster a culture of sustainable transportation among its student community. This commitment to promoting green mobility contributes to a greener and more environmentally conscious campus environment.

Even though the hilly terrain is not suitable to use bicycles, still the university encourages the young students to use bicycles with the campus to their best.

3.10.5 TRAFFIC REGULATIONS:

Figure 34 - Traffic Regulations inside the campus

Figure 35 Traffic Regulations inside the campus

Figure 36 - Separate Parking space for Vehicles

To minimize congestion and promote sustainable transportation, Jaypee University has implemented a restricted private vehicle access policy.

Private vehicles are not permitted beyond the entrance point of the campus, ensuring a pedestrian-friendly and environmentally conscious campus environment.

This policy encourages the use of alternative modes of transportation such as bicycles, electric buggies, and electric bikes, reducing carbon emissions and traffic congestion within the campus.

3.10.6 AWARENESS AND EDUCATION:

Jaypee University conducts regular awareness campaigns and educational programs to promote sustainable transportation practices and enhance traffic safety awareness, aligning with NBC Chapter 11.4.5 on promoting sustainable transportation modes.

Workshops, seminars, and training sessions are organized to educate the community about the benefits of carpooling, responsible driving, and adherence to traffic regulations, under NBC Chapter 11.4.6.

3.10.7 CONCLUSION:

Jaypee University'scommitment to sustainable transportation options and adherence to traffic regulation and safety measures exemplify its dedication to creating an eco-friendly and safe campus environment, in line with the guidelines provided by the National Building Code of India (NBC) Chapter 11 - Sustainability Criteria. By providing bus transportation, encouraging carpooling initiatives, and implementing stringent traffic regulations, the university not only reduces carbon emissions and traffic congestion but also promotes a culture of sustainability and safety within its community. These efforts align with the principles of the NBC, contributing to a greener and safer campus environment in accordance with national sustainability standards.

3.11 POLLUTION CONTROL AND ENVIRONMENTAL PROTECTION: A COMPREHENSIVE APPROACH AT JAYPEE UNIVERSITY

3.11.1 INTRODUCTION:

This report highlights Jaypee University'sproactive measures and comprehensive approach towards pollution control and environmental protection on its campus. The university recognizes the importance of preserving the environment and minimizing pollution to create a sustainable and healthy ecosystem. This report showcases Jaypee University'sinitiatives and adherence to environmental protection guidelines, focusing on pollution control measures, waste management practices, and conservation efforts.

3.11.2 AIR POLLUTION CONTROL:

Jaypee University is committed to reducing air pollution on its campus by implementing various measures.

The university follows guidelines outlined in the National Building Code of India (NBC) Chapter 11, Section 5, which emphasizes the control of air pollution in buildings and surroundings.

The university promotes the use of renewable energy sources and encourages energy-efficient practices to minimize air pollution from fossil fuel combustion.

3.11.3 WATER POLLUTION CONTROL:

Jaypee University prioritizes water pollution control through sustainable water management practices.

The university adheres to NBC Chapter 11, Section 6, which emphasizes the prevention of water pollution in buildings and surroundings.

Water treatment plants (STPs) are in place to treat and recycle wastewater, ensuring minimal discharge of pollutants into water bodies.

Rainwater harvesting systems are implemented to conserve water and reduce the strain on local water resources.

Regular monitoring and maintenance of plumbing systems are carried out to prevent leaks and minimize water contamination.

3.11.4 WASTE MANAGEMENT:

Jaypee University implements effective waste management practices to minimize environmental impact.

The university follows the guidelines outlined in NBC Chapter 11, Section 7, which emphasizes waste management principles.

Recycling bins are strategically placed throughout the campus to encourage waste segregation and recycling.

Organic waste, including food waste and garden waste, is composted using a dedicated composting yard, reducing the amount of waste sent to landfills.

Authorized third-party waste management companies are engaged in the proper collection and disposal of hazardous and inorganic waste.

Awareness campaigns and educational programs are conducted to educate the university

3.11.5 BIODIVERSITY CONSERVATION:

Jaypee University places significant emphasis on biodiversity conservation within its campus.

The university promotes the preservation of green spaces, including gardens, parks, and natural vegetation, in line with NBC Chapter 11, Section 8, which emphasizes biodiversity conservation.

Tree cover and natural vegetation are preserved, providing habitat for local flora and fauna.

The campus landscaping is designed to support biodiversity and ecological balance, creating a harmonious environment.

3.11.6 CONCLUSION:

Jaypee University'scommitment to pollution control and environmental protection is reflected in its proactive measures and comprehensive approach. By adhering to guidelines outlined in the National Building Code of India (NBC), the university ensures the implementation of sustainable practices for air pollution control, water pollution control, waste management, and biodiversity conservation. These efforts contribute to creating a healthy and eco-friendly campus environment, fostering environmental awareness and sustainability among the university community. Jaypee University serves as a model institution for pollution control and environmental protection, aligning with national standards and inspiring others to adopt similar practices for a greener and more sustainable future.

3.12 HARNESSING RENEWABLE ENERGY RESOURCES FOR SUSTAINABLE POWER GENERATION

3.12.1 INTRODUCTION:

This report showcases Jaypee University'scommitment to harnessing renewable energy resources for sustainable power generation on its campus. The university recognizes the importance of transitioning to clean and renewable energy sources to reduce carbon emissions and promote environmental sustainability. This report highlights Jaypee University'sutilization of renewable energy technologies, including a biogas plant, solar water heaters, and the associated benefits in line with national energy conservation guidelines.

3.12.2 BIOGAS PLANT:

Jaypee University has implemented a biogas plant as an innovative and eco-friendly solution for cooking purposes.

The biogas plant utilizes organic waste, such as food scraps and garden waste, to generate biogas through the process of anaerobic digestion.

Biogas produced from the plant is utilized as a renewable fuel source for cooking in campus canteens and hostels.

The utilization of biogas not only reduces the dependence on fossil fuels but also helps in waste management by converting organic waste into valuable energy.

3.12.3 SOLAR STREET LAMPS:

The installation of automated solar lamps at Jaypee University demonstrates a proactive approach towards harnessing renewable energy and promoting sustainable practices.

Solar lamps, also known as solar-powered streetlights or solar-powered outdoor lights, utilize solar panels to convert sunlight into electricity. This renewable energy is then stored in

batteries and used to power the lamps during nighttime or low-light conditions. By utilizing solar energy, these lamps reduce dependence on traditional electricity sources and contribute to a greener and cleaner environment.

Automated solar lamps offer additional benefits by incorporating sensors or timers to automatically turn the lights on and off based on ambient light levels or predetermined schedules. This feature ensures optimal energy efficiency and eliminates the need for manual intervention.

Figure 37 - Solar street lamps installed inside the campus

3.12.4 ENVIRONMENTAL AND ECONOMIC BENEFITS:

The adoption of renewable energy resources at Jaypee University brings several environmental and economic benefits.

By utilizing biogas and solar energy, the university significantly reduces greenhouse gas emissions, contributing to the mitigation of climate change.

The utilization of renewable energy also helps in reducing the university's dependence on non-renewable fossil fuels, leading to long-term energy cost savings.

These initiatives align with the national objectives of promoting renewable energy and sustainable development outlined in various energy conservation guidelines.

3.12.5 CONCLUSION:

Jaypee University'sfocus on renewable energy resources, including the biogas plant and solar water heaters, demonstrates its commitment to environmental sustainability and energy conservation. By harnessing the power of renewable energy, the university significantly reduces its carbon footprint, promotes waste management, and achieves long-term cost savings. These initiatives align with national energy conservation guidelines and serve as an inspiration for other institutions to embrace renewable energy technologies. Jaypee University sets a commendable example of utilizing renewable energy resources to create a sustainable and eco-friendly campus environment.

3.13 CARBON FOOTPRINT ANALYSIS: SCOPE 1 AND SCOPE 2 EMISSIONS AT JAYPEE UNIVERSITY

3.13.1 INTRODUCTION:

This report presents an analysis of the carbon footprint at Jaypee University, focusing on Scope 1 and Scope 2 emissions. The carbon footprint assessment is a crucial step in understanding the environmental impact of the university's activities and identifying opportunities for emission reduction. This report highlights the sources of emissions, the efforts taken by the university to mitigate them, and the importance of addressing Scope 1 and Scope 2 emissions for sustainable campus operations.

3.13.2 SCOPE 1 EMISSIONS:

Scope 1 emissions include direct greenhouse gas (GHG) emissions from sources that are owned or controlled by Jaypee University.

The combustion of fossil fuels for heating, cooking, and transportation on campus contributes to Scope 1 emissions.

The Cooking in the canteen is operated by the university. The LPG used for cooking in the canteens comes under the University scope 1. The University utilized 2197 nos of 19 Kg LPG cylinders were used during the FY 22-23 for cooking which amounts to 124.39 tons of Equivalent CO_2 emission.

The biogas plant, which utilizes organic waste to generate biogas for cooking purposes, helps reduce the reliance on fossil fuels, thereby lowering Scope 1 emissions, if the university starts to operate the canteen under its control.

Regular maintenance and optimization of combustion equipment and vehicles help minimize emissions and improve energy efficiency.

3.13.3 SCOPE 2 EMISSIONS:

Scope 2 emissions include indirect GHG emissions associated with the consumption of purchased electricity, heat, or steam by Jaypee University.

The Overall Annual Purchased Electricity by the institute is 3473880 Kwh for the FY 22-23, accounting for 2848.58 tons of Equivalent CO_2 emission

3.13.4 EMISSION REDUCTION STRATEGIES:

Jaypee University is committed to reducing its carbon footprint and implementing sustainable practices to mitigate GHG emissions.

The adoption of renewable energy technologies, such as the biogas plant and solar water heaters, helps reduce dependence on fossil fuels and contributes to emissions reduction.

The university promotes energy conservation and efficiency measures through awareness campaigns, regular maintenance of equipment, and implementation of energy-efficient practices.

Also, the university has created a thick Agroforestry inside its campus in the last 12 years. Most of the trees are fully grown and mature, capable of absorbing CO2 from the atmosphere. Thus, moving towards a carbon Neutral in the coming years.

Ongoing monitoring and assessment of energy consumption and GHG emissions assist in identifying areas for further improvement and implementing targeted reduction strategies.

3.13.5 CONCLUSION:

Jaypee University recognizes the importance of addressing its carbon footprint to mitigate climate change and promote sustainable practices. Through the analysis of Scope 1 and Scope 2 emissions, the university has identified key sources of emissions and implemented measures to reduce its environmental impact. The adoption of renewable energy sources, such as the biogas plant and solar water heaters, demonstrates the university's commitment to carbon reduction. By prioritizing emission reduction strategies, Jaypee University serves as a role model for other educational institutions, contributing to a greener and more sustainable future. Continued efforts in monitoring and improving the carbon footprint will help Jaypee University further mitigate its impact on the environment.

4 POST-AUDIT STAGE

This section explains how to evaluate and monitor green audit results to ensure that they are effective in achieving their goals. It highlights how useful recommendations, alternatives, and observations obtained through audits have improved campus administration.

5 RECOMMENDATIONS AND ACTION PLAN

5.1 SUGGESTIONS FOR IMPROVING SUSTAINABILITY, ENVIRONMENT, AND ENERGY MANAGEMENT PRACTICES AT THE INSTITUTION

The Green Audit Report provides several recommendations for improving sustainability, environment, and energy management practices at the institution. The report identifies areas where the institute can improve its practices to reduce its environmental impact and promote sustainable development. The following are some of the key suggestions made in the report:

1. Reduce Energy Consumption: The institution should take measures to reduce its energy consumption by Expanding energy-efficient technologies such as LED lighting, motion sensors, and smart thermostats to all the infrastructure. This will not only reduce energy bills but also help in reducing carbon emissions.

2. Promote Sustainable Transportation: The institute should introduce reduce the usage of EVs for short distances. It can also provide incentives for carpooling or electric vehicle usage.

3. Waste Reduction: The institution should implement a waste reduction program that includes recycling. It can also encourage students and staff to reduce waste by using reusable water bottles, coffee cups, and food containers.

4. Water Conservation: The report suggests that the institution should implement water conservation measures such as low-flow toilets and faucets to reduce water consumption on campus.

5. Sustainable Procurement: The report recommends that the institution should adopt sustainable procurement policies that prioritize environmentally friendly products and services.

6. Feasibility Studies: Renewable energy sources, such as solar, wind, and hydroelectric power, offer numerous advantages, including reduced greenhouse gas emissions, cost savings in the long run. We strongly Recommend Conducting feasibility studies specific to Waknaghat is crucial to assess the viability, costs, potential energy generation, and environmental impact of various renewable energy systems. These studies can help determine the most suitable technology and scale for the university's energy needs.

5.2 PROPOSED ACTION PLAN FOR IMPLEMENTING RECOMMENDATIONS

To implement these recommendations effectively, the Green Audit Report proposes an action plan that outlines specific steps that the institution can take to improve its sustainability practices. The following are some of the key actions proposed in the report:

1. Establish a Sustainability Committee: The institution should establish a sustainability committee comprising representatives from different departments to oversee sustainability initiatives on campus.

2. Conduct Awareness Campaigns: The report recommends conducting much more awareness campaigns among students and staff about sustainable practices such as energy conservation, waste reduction, and sustainable transportation options.

3. Develop an Energy Management Plan: The institution should develop an energy management plan that includes measures to reduce energy consumption, such as installing energy-efficient technologies and implementing a building automation system.

4. Implement Sustainable Procurement Policies: The report recommends that the institution should adopt sustainable procurement policies that prioritize environmentally friendly products and services.

5. Develop a Waste Reduction Program: The institution should develop a waste reduction program that includes recycling and composting facilities on campus. It can also encourage students and staff to reduce waste by using reusable water bottles and coffee cups.

6 CONCLUSION AND CERTIFICATION

Summary of Initiatives Taken by the University as Elucidated from the Audit

The Green Audit Report is a comprehensive analysis of an institution's sustainability, environment, and energy management practices. The report evaluates the institute's performance against specific criteria and provides recommendations for improving its practices. The following are some of the initiatives taken by the university as elucidated from the audit:

1. Energy Conservation: The university has implemented several energy conservation measures on campus, such as installing solar panels for street lights, LED lighting, and motion sensors in buildings. These measures have resulted in a significant reduction in energy consumption and carbon emissions.

2. Sustainable Transportation: The university has taken several initiatives to promote sustainable transportation options on campus, such as providing bicycles to students, promoting carpooling among students and staff.

3. Waste Management: The university has implemented several waste management initiatives on campus, such as setting up a mechanism to recycle paper, plastic, and glass waste. The university also encourages composting of organic waste generated on campus.

4. Water Conservation: The university has implemented several water conservation measures on campus, such as installing STP, using treated water for irrigation, and sprinkler in buildings to reduce water consumption.

5. Green Campus Initiative: The university has launched a Green Campus Policy and initiative that aims to promote sustainable development practices on campus through awareness campaigns, workshops, seminars, and other activities.

In conclusion, the Green Audit Report highlights several initiatives taken by the university to promote sustainability, environment, and energy management practices on campus. These initiatives demonstrate the institution's commitment to environmental responsibility and accountability towards stakeholders. The university has an opportunity to lead by example and inspire others to adopt sustainable practices. By continuing to implement eco-friendly initiatives, the university can reduce its carbon footprint, conserve resources, and promote a healthier environment for all stakeholders.

The report also identifies areas for improvement and provides recommendations for implementing eco-friendly practices to reduce environmental impact and promote sustainable development. The institution has an opportunity to lead by example and inspire others to adopt sustainable practices. By implementing the recommendations outlined in the report, the institution can reduce its carbon footprint, conserve resources, and promote a healthier environment for all stakeholders. The certification of compliance with sustainability standards demonstrates the institution's commitment to environmental responsibility and accountability. Overall, the Green Audit Report provides a positive outlook for the institution's future as a leader in sustainable development.

7 APPENDICES

Supporting documents for the Report are annexed in the upcoming pages of the report.

5.0 List of Assets & Electrical Equipment's

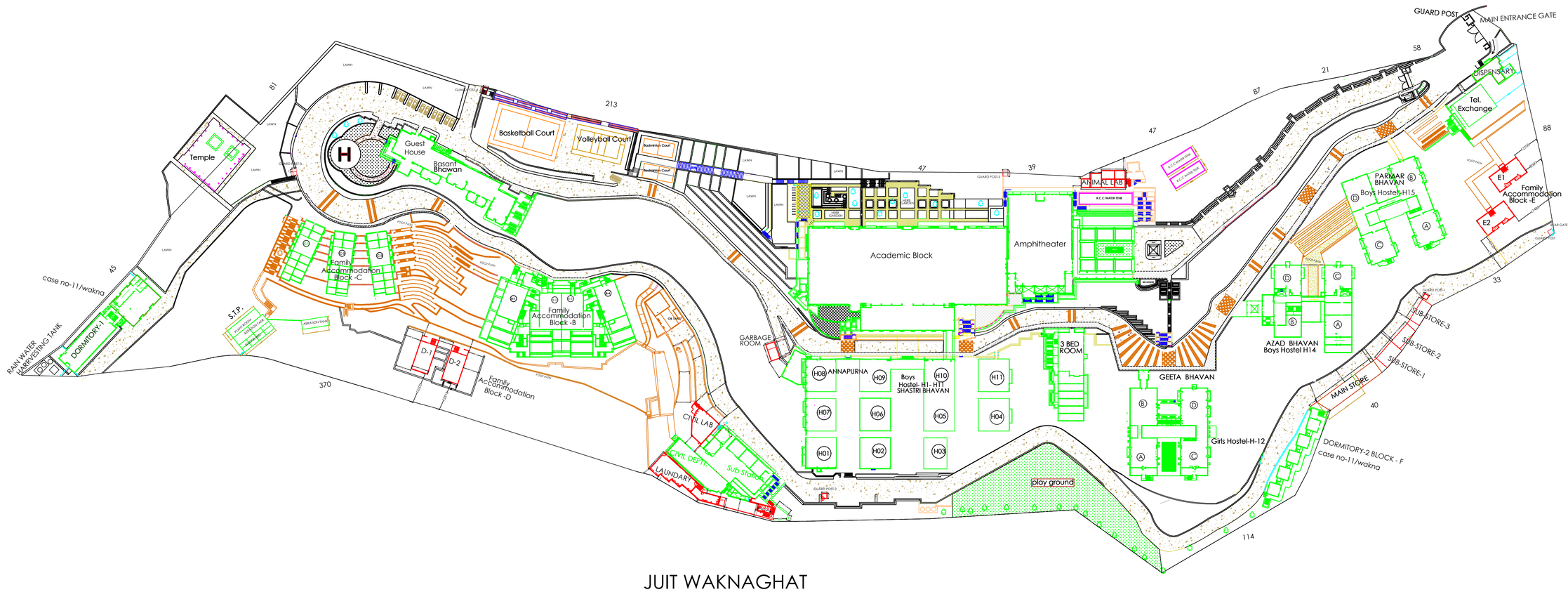
JAYPEE UNIVERSITY OF INFORMATION TECHANOLOGY, WAKNAGHAT					
Electrical Items List					
Sl.	**Item Name**	**Item Description**	**Unit**	**Total Qty.**	**Remark**
I) Electrical Sub- Station					
1	Distribution Transformer	1500KVA, 11/.440, ONAN Type, Dyn11, Current HV Side - 78.73A, LV Side- 2000A, Oil capacity - 1350 Ltr, Sr. No.5041 & 5042, Make- Pan Electro Technic, Manufacturing Year- 2006	No.	2	
2	DG Set- AC Generator	750 KVA, Type HC163441 Ref No.- N17A030739, , Phase- 3 RPM- 1500, Voltage- 415, Aps-1250, Make- Stamford	No.	1	
3	DG Set- Engine	Model- KTA 38- G13, Sr. No.- 25423921, Mfg. date-2017, Make- Cummins	No.	1	
4	DG Set- AC Generator	750 KVA, Type HC163441 Ref No.- N17A02064, , Phase- 3 RPM- 1500, Voltage- 415, Aps-1250, Make- Stamford	No.	1	
5	DG Set- Engine	Model- KTA 38- G13, Sr. No.- 25423920, Mfg. date-2017, Make- Cummins	No.	1	
6	DG Set	50 KVA, Engine model- S308G6, Product Model- JSPF 50, Engine Sr. No.- 110632034, Make- Jakson, MFG- 2011	No.	1	
7	HT Panel	11KV, 3feeder (1 incomer + 2 Outgoing), Enclosure, Type- VMX, Rated Amp- 400A, SER No.- 8231012/1-3, CT Ratio - 200/5A, Mfg.- 2002, Make-Alstrom	Set	1	
8	LT Panel- Normal Supply	ACB- 2500A, Type- CN-CS-2500C, Volt- 415, ACB Make- L& T, Panel - Advance Electro Control System Pvt. Ltd.	Set	1	
9	LT Panel - Emergency Supply	ACB- 1600A, Type- CN-CS-1600C, Volt- 415, ACB Make- L& T, Panel - Advance Electro Control System Pvt. Ltd.	Set	1	
10	Capacitor panel	25KVAR- 8 Step, Voltage- 415, Make- Advance Electro Control System	Set	1	
11	DG Air Cooling Motor	KW/ HP- 15/11, RPM- 1455, A-22, Voltage- 415, Make- ABB	No.	2	
12	DG Exhaust Motor	KW/ HP- 15/11, RPM- 1455, A-22, Voltage- 415, Make- ABB	No.	2	

JAYPEE UNIVERSITY OF INFORMATION TECHANOLOGY, WAKNAGHAT					
Electrical Items List					
Sl.	**Item Name**	**Item Description**	**Unit**	**Total Qty.**	**Remark**
13	Boiler Room forwater pumping	KW/ HP- 15/20, RPM- 1450, A-28, Voltage- 415, Make- ABB	No.	2	
14	Diesel Motor forBoiler	KW/ HP- 0.75/1, RPM- 910, Voltage- 415, Type- PAA62-258, Make- Kirloskar	No.	1	
15	Air Blower	5HP, 415V	No.	1	
II) Plant Room					
1	Motor (Use for firefighting Pump)	KW/HP- 45/60, RPM- 2955, Ampere- 75A, Voltage -415, Make- ABB	No.	1	
2	Motor (Use for firefighting Pump)	KW/HP- 5/ 7.5, RPM- 2875, Ampere- 10.5A, Voltage- 415, Make- ABB	No.	1	
3	Diesel Pump (Use for firefighting Pump)	Head - 55M, Discharge- 171lpm, Type-CE 100/32, Make- Kirloskar	No.	1	
4	Motor/ Pump	KW/ HP- 7.5/10, RPM-2900, Voltage- 415, 3 phase, Type- KDS- 1050+, Size- 65X 65mm, Imp. Dia- 191mm, Head- 32- 49, Make- Kirloskar	No.	3	
5	Motor / Pump	KW/ HP- 2.2/3, RPM-2840, Voltage- 415, 3 phase, Type- KDS- 335++, Size- 50X 40mm, Imp. Dia- 165mm, Head- 22-33, Make- Kirloskar	No.	4	
III) Laundry Area					
1	Washing M/C	Washing Machine-Model- WME -15	No.	1	
2	Dryer M/C	Cloth Dryer M/C- HX-25	No.	1	
3	Washing M/C	Washing Machine-Model- LXS 25	No.	1	
4	Dryer M/C	Cloth Dryer M/C- HX-15	No.	2	
5	Dryer M/C	Dryer Model DRE-15, 490 Kg	No.	1	
6	Dryer M/C	Dryer Model DRS-30, 570 Kg	No.	2	
7	Drycleaner	Drycleaner Model DMX15, 950 Kg	No.	1	
8	Press Machine	Press Machine Model-DRS-12	No.	1	
9	Electric Overhead Traveling Crane	10 Ton	No.	1	
10	Air Compressor	1420 RPM, 3 HP	No.	1	
11	Boiler	Steam boiler make heatax capacity 800 Kg/hr.	No.	2	

JAYPEE UNIVERSITY OF INFORMATION TECHANOLOGY, WAKNAGHAT					
Electrical Items List					
Sl.	**Item Name**	**Item Description**	**Unit**	**Total Qty.**	**Remark**
12	Hot air boiler	Capacity 10,00000 kL/hr.	No.	1	
13	Dryer	DRE 30, 30kg, 26kW, 415V	No.	1	
14	Washing M/C	LE 30, 30kg, 19kW, 415V	No.	1	
IV) Hostels Calorifier					
1	Calorifier	Capacity- 600 Ltr	No.	27	
2	Calorifier	Capacity-800 Ltr	No.	28	
3	Calorifier	capacity-1000 Ltr	No.	6	
4	Pump	1HP, 415V, Make-Kirloskar	No.	16	
V) Annapurna & Cafeteria					
1	Cold system for garbage		No.	1	
2	Cold Store		No.	2	
3	Water Cooler		No.	6	
4	Ceiling Fan		No.	68	
5	Water Dispenser		No.	5	
VI) STP Area					
1	Collage Pump	Type- SP-OM, Head 6.5-13, Volt-415,KW-0.75/1HP, RPM 2700, Make-Kirloskar	No.	3	
2	Horticulture Pump	Type- KP-1388+, Head 75.5M, Volt-415, RPM 2900, KW-9.3/12.5HP, Make-Kirloskar	No.	2	
3	Filter Pump	Type-KDS-538, Head-30M, RPM-2870, KW-3.5/5HP, Volt-415, Make-Kirloskar	No.	2	
4	Air Blower	Model- M5075, Capacity-90CPM, Speed-1070 RPM, Pressure- 6 PSI, Make-Everest Blower, Motor- 5.5 KW,415 Volts, Make- Kirloskar	No.	4	
5	ge Pump	HP-7.5, 415 Volts, Make- Ground Force	No.	6	
VII) Academic Block					

JAYPEE UNIVERSITY OF INFORMATION TECHANOLOGY, WAKNAGHAT					
Electrical Items List					
Sl.	**Item Name**	**Item Description**	**Unit**	**Total Qty.**	**Remark**
1	Ceiling Fan	60Watt, 240 volt	No.	609	
2	Split AC	1.8 Ton	No.	23	
3	Window AC	1.5 Ton	No.	5	
5	Wall Fan		No.	15	
6	Industrial AC	4 Ton	No.	1	
7	Industrial AC	8 Ton	No.	1	
8	Pump	Centrifugal, 3HP, 415V	No.	1	
9	Water Cooler		No.	6	
10	Passenger Lift	Machine No. MM0711	No.	1	
11	Water Dispenser		No.	1	1 New Install
VIII) Civil Engineering Area					
1	Ceiling Fan	60Watt, 240 volt	No.	88	
2	Water Dispenser		No.	1	1 New Install
3	Water Cooler		No.	1	
IX) SOR					
1	Ceiling Fan	60Watt, 240 volt	No.	30	
2	Split AC	1.8 Ton	No.	13	
3	Standing AC	3.3 Ton	No.	1	
4	AC- Window	2 Ton	No.	1	
X) Dormitory & JAL Mess					
1	Ceiling Fan	60Watt, 240 volt	No.	51	
2	Water Cooler		No.	1	
XI) Hostel = H1- H15					
1	Ceiling Fan	60Watt, 240 volt	No.	953	
3	Water Cooler		No.	15	
4	Passenger Lift	Machine No. P03767	No.	1	
5	Water Dispenser		No.	6	
6	Field Coil Unit	30W, 750 RPM, 240V	No.	970	

JAYPEE UNIVERSITY OF INFORMATION TECHANOLOGY, WAKNAGHAT					
Electrical Items List					
Sl.	**Item Name**	**Item Description**	**Unit**	**Total Qty.**	**Remark**
XII) Exchange Block, Dispensary, Store, Security Main Gate					
1	Ceiling Fan	60Watt, 240 volt	No.	34	
3	Water Dispenser (Dispensary)		No.	1	
XIII) Malavya Bhawan (A, B, C, D, E)					
1	Ceiling Fan	60Watt, 240 volt	No.	362	
XIV) Security Check posts					
1	Ceiling Fan	60Watt, 240 volt	No.	5	



JUIT WAKNAGHAT
MASTER PLAN

H.P.STATE POLLUTION CONTROL BOARD

SHIMLA

HPSPCB/BMW :8491308 **Date:04/04/2023**

FORM III

AUTHORISATION ISSUED UNDER RULE 10 OF BIO MEDICAL WASTE MANAGEMENT RULES ,2016

To,

Jaypee University Of Information Technology
VPO Waknaghat, Tehsil Kandaghat, District Solan, H.P.Waknaghat
Arki
Solan Parwanoo

Subject: Grant of Authorization for operating a facility for Generation,Segregation, Storage, Treatment or Processing or Conversion, Disposal or Destruction, of Bio-Medical Wastes under Bio-Medical Waste Management Rules, 2016.

(a) Number of authorization	:	BMW/SOL-092 (Solan)
(b) Validity from - Validity Upto	:	18/03/2023 - 31/03/2026
(c) No. of beds	:	4
(d) Quantity of waste	:	Solid 0.070 Kgs per Day Liquid 15 Ltr per Day
(e) Mode of Disposal	:	M/s Enviro Engineers CBWTF Sandli Solan

As per powers delegated by the State Board vide Notification No. HPSPCB/BMW Notification (2)/22426-74 dated 01-03-2017, authorisation is hereby granted under Bio-Medical Waste Management Rules, 2016 to Jaypee University Of Information Technology, VPO Waknaghat, Tehsil Kandaghat, District Solan, H.P.Waknaghat, Solan Parwanoo for the following activities and term & conditions:

1. Generation,Segregation, Storage, Treatment or Processing or Conversion, Disposal or Destruction, of various categories of Bio-medical waste generated from your institution strictly as per the provisions/standards prescribed under the said rules.
2. The grant of authorization shall be synchronised with the validity of Consents from the date of issue and ensure the final treatment & disposal of liquid waste in accordance with Water (Prevention and Control of Pollution) Act, 1974.
3. The authorization is subject to the terms & conditions as stated overleaf and also to such conditions as may be specified in the rules for the time to time-in force under the Environment (Protection) Act, 1986.
4. The log book for the all categories of bio-medical waste generated should also be maintained and shall submit annual report on form-IV before 30th June every year to the State Board.
5. The mercury containing waste or mercury spillage shall be stored separately & record shall be maintained in the log book.
6. The plastic waste shall be handed over to the authorised operator of CBWTF or plastic waste recycling units registered under the Plastic Waste (Management & Handling) Rules, 2011.

7. The Chemical Liquid waste generated from the HCF/UNIT shall be segregated at source and shall be pre-treated or neutralized before mixing with other effluent generated from the HCF.

8. This authorisation is subject to the condition mentioned above and also to such conditions as may be specified in the rules from time to time in force under Environment (Protection) Act, 1986.

9. The HCF/UNIT shall apply for the renewal of an authorization within 3 months prior to expiry of the previous authorization, if applicable.

SPECIAL CONDITIONS

1. The authorization granted is subject to the condition that the HCF shall seek prior permissions (CTE/CTO/Authorization) before any expansion and/or increase in bed capacity from the State Board.

Approved By
Member Secretary
(H. P. State Pollution Control Board)

Copy To:
The In-charge, HPSPCB, Central Lab. Parwanoo, Distt. Solan for information and directed to inspect the Unit as per prescribed schedule and ensure compliance of norms by the Unit as per provisions under Water Act, 1974/ Air Act, 1981 & BMW Rules, 2016.

APOORV DEVGAN
Digitally signed by APOORV DEVGAN
Date: 2023.04.04 11:38:17 +05'30'

Apoorv Devgan, IAS
Member Secretary
For & on behalf of
(H. P. State Pollution Control Board)

TERMS AND CONDITIONS OF AUTHORIZATION

1. The unit/ operator/ generator of Bio-medical waste or transporter so authorized shall comply with the provisions of the Environment (Protection) Act, 1986, and the rules made there under.

2. The authorization or its renewal shall be produced for inspection at the request of an officer authorized by the Prescribed Authority.

3. The occupier shall make a provision within the premises for a safe, ventilated and secured location for storage of segregated biomedical waste in colored bags or containers in the manner as specified in Schedule I, to ensure that there shall be no secondary handling, pilferage of recyclables or inadvertent scattering or spillage by animals and the bio-medical waste from such place or premises shall be directly transported in the manner as prescribed in these rules to the common bio-medical waste treatment facility or for the appropriate treatment and disposal, as the case may be, in the manner as prescribed in Schedule I.

4. The occupier shall pre-treat the laboratory waste, microbiological waste, blood samples and blood bags through disinfection or sterilization on-site in the manner as prescribed by the World Health Organisation (WHO) or National AIDs Control Organisation (NACO) guidelines and then sent to the common bio-medical waste treatment facility for final disposal.

5. The occupier shall provide training to all its health care workers and others, involved in handling of bio medical waste at the time of induction and thereafter at least once every year and the details of training programmes conducted, number of personnel trained and number of personnel not undergone any training shall be provided in the Annual Report.

6. The occupier shall immunise all its health care workers and others, involved in handling of bio-medical waste for protection against diseases including Hepatitis B and Tetanus that are likely to be transmitted by handling of bio-medical waste, in the manner as prescribed in the National Immunisation Policy or the guidelines of the Ministry of Health and Family Welfare issued from time to time;

7. The occupier shall establish a Bar- Code System for bags or containers containing bio-medical waste to be sent out of the premises or place for any purpose.

8. The occupier shall ensure segregation of liquid chemical waste at source and ensure pre-treatment or neutralisation prior to mixing with other effluent generated from health care facilities.

9. The occupier shall ensure treatment and disposal of liquid waste in accordance with the Water (Prevention and Control of Pollution) Act, 1974 (6 of 1974).

10. The occupier shall maintain and update on day to day basis the bio-medical waste management register and display the monthly record on its website according to the bio-medical waste generated in terms of category and colour coding as specified in Schedule I.

11. The occupier/ operator of the facility shall maintain proper housekeeping in the premises where the Bio-medical wastes are handled.

12. The occupier/ operator of the facility shall not change or alter either the quality or the quantity or the rate of discharge of liquid/ emission or temperature or the route of discharge without pervious written permission from the Prescribed Authority.

13. The occupier shall dispose of solid waste other than bio-medical waste in accordance with the provisions of respective waste management rules made under the relevant laws and amended from time to time.

14. The occupier/ operator of the facility, its heirs, legal representatives etc., shall have no claim whatsoever to the continuation or renewal of this authorization after the expiry of the period of authorization.

15. The occupier/ operator of a facility shall report in Form-I to the Prescribed Authority in case of any accident occur at any institution or facility or any other site where Bio-medical waste is handled or during transportation of such waste.

16. The occupier/ operator of the facility shall ensure that, the facility is handled, operated by only qualified personals in the field. The occupier/ operator of the facility shall also appoint qualified personals and create a separate cell/ department for compliance under the various conditions of the authorization.

17. The authorized person shall take prior permission of the Prescribed Authority to close down the facility.

18. The occupier/ operator of a facility shall treat and dispose the Bio-medical waste in accordance with the Rules.

19. The occupier/ operator of the facility are required to maintain equipments for requisite treatment of Bio-medical waste like, Incinerator, Autoclave, Microwave system, etc. The occupier/ operator shall comply with the standards for incinerator, autoclave and microwave system, deep burial pits etc. as the case may be as prescribed in the Rules

20. The occupier/ operator of the facility shall maintain records of handling Bio-medical waste in Form-IV as per rule and submit the Annual Report by 30th June every year to the Prescribed Authority. The report shall include information about the categories and quantities of Bio-medical waste handled during the preceding year. All the record shall be subjected to inspection and verification by the Prescribed Authority/ authorized person at any time.

21. The occupier/ operator of the facility shall ensure that the Bio-medical waste shall not be mixed with other waste.

22. The occupier/ operator of the facility shall segregate the Bio-medical waste and collect in the container bags at the point of generation in accordance with the Rules prior to storage, transportation, treatment and disposal. The containers shall be labelled in accordance with Schedule-IV.

23. The occupier/ operator of the facility shall ensure that no untreated Bio-medical waste shall be kept/ stored beyond a period of 48 hours, provided that if for any reason it becomes necessary to store waste beyond such period, the authorized person shall take permission of the Prescribed Authority and take measures to ensure that the waste does not adversely affect human health and environment.

24. The occupier /generator shall take services of Common Transport Facility from duly authorized transporter of Bio-Medical Waste, to transport its bio-medical waste to common treatment facility.

25. The Prescribed Authority reserves the right to review, impose additional condition or conditions, revoke, change or alter the terms and conditions of the authorization.

26. The occupier/ operator of the facility shall comply with the standards and specification as per rules and shall furnish compliance within 30 days from the date of receipt of this authorization.

27. Waste collecting bags require incineration shall be made of non/ chlorinated plastic with label and seal as per the specifications indicated under Bio-medical Waste Management Rules, 2016.

28. Any authorized change in personnel/ equipment or working conditions as mentioned in the application by the person authorized shall constitute a breach of this authorization.

29. The occupier/ operator of the facility shall not rent and sell, transfer or otherwise transport the Bio-medical waste without prior permission from the Prescribed Authority.

30. The hospital/UNIT shall submit the Analysis Report of liquid waste being discharged by the hospital within 3 months from date of the issue of authorization to ascertain the adequacy and efficiency of treatment systems.

By Order

Member Secretary
(H. P. State Pollution Control Board)

ISHAN INDUSTRIES
APPROVED E-WASTE RECYCLE CO.

Works: Plot No. 494/1, Vill. Fatunda, Oppsite Mayur Industries, Hapur Road, Meerut - 250002 (U.P.)
Head Office : Shop No. 1, H.No. 3208, Near Tirango Gas Godowon, Zakir Hussain Coloney, Meerut - 250002 (U.P.)
Mob.: 9815406517, 9879484880
E-mail : Ishanindustries78645@gmail.com

Ref. No. ..3208.....

Date 09-06-2023

CERTIFICATE OF SAFE DISPOSAL

This is to certify that the Material picked from

JP UNIVERSITY OF INFORMATION TECHNOLOGY

As per detail given below have been
Disposed off in an environmentally safe and secure manner by Ishan Industries.

ITEM	GATE PASS NO	ITEM	Collection Date	Quantity	Final Disposal Date	Quantity
E WASTE	JUTT/Letter/annexure-a/15/05/2023	E WASTE	15/05/2023	924 KG	05/06/2023	924 KG

The items mentioned above have been disposed off in an environmentally safe manner as per the prescribed norms of the company and the rules laid down by the Pollution control authorities.

This safe Disposal certificate includes the activities of collection, transportation, storage, dismantling and disposal Using mechanical manual process.

The items mentioned above are no longer fit for their original purpose and have been disposed off.

Our Pollution Control Board: Passbook Authorization No. 33959423EW19947936 Dated: 06-04-2023 valid till : 05-04-2028.

For ISHAN INDUSTRIES

Proprietor

restoring eco balance...

Eco Paryavaran Laboratories & Consultants Pvt. Ltd.

(Formerly known as Eco Laboratories & Consultants Pvt. Ltd.)

TC-7477

TEST REPORT

ULR No. : TC747723000002695F		**Test Report No. :**	EL070423NW008
Type of Sample : Water (Drinking Water)		**Date of Reporting :**	15/04/2023
Customer	Jaypee University of Information & Technology Waknaghat, PO. Waknaghat, Teh. Kandaghat, Distt. Solan, Himachal Pradesh-173234	**Work Order No. & Date**	EPL/T/5601 DT:06.04.2023
		Customer reference No. (If any)	NA
Sampling Protocol	NA	**Mode of Collection of Sample**	Sample Provided by Customer
Date of Sampling	-	**Date of Receipt of Sample**	07/04/2023
Sampling Location	NA	**Testing Location**	Permanent Facility
Testing Protocol	IS 10500:2012 (IInd Revision)	**Period of Analysis**	07/04/2023 To 15/04/2023
Sample Description	Clear, colourless liquid.		
Packing, Markings, Seal & Qty.	1 litre Plastic Bottle Marked 'Annapurna'		

RESULTS

I -Chemical Testing

1. Water (Drinking Water)

S.No.	Test Parameter	Unit	Result	Acceptable limit	Permissible limit in absence of alternate source	Test Method
1	Colour.	Colour Units	BDL(DL5)	5	15	IS:3025 (Part-4) Cl 2.0
2	Odour	-	Agreeable	Agreeable	Agreeable	IS: 3025 (Part-5)
3	pH @ 25°C	-	8.05	6.5-8.5	No relaxation	IS:3025 (Part-11)
4	Taste	-	Agreeable	Agreeable	Agreeable	IS: 3025 (Part-8)
5	Turbidity	NTU	BDL(DL0.1)	1	5	IS: 3025 (Part-10)
6	Total Dissolved Solids	mg/l	210	500	2000	IS: 3025 (Part-16)
7	Calcium as Ca	mg/l	42	75	200	IS :3025 (Part-40)
8	Chloride as Cl	mg/l	13	250	1000	IS:3025 (Part-32)
9	Fluoride as F	mg/l	0.32	1.0	1.5	IS:3025 (Part-60)
10	Free residual Chlorine	mg/l	BDL(DL0.1)	0.2	1.0	APHA-23rd Ed- 4500G DPD Colorimetric Method
11	Iron as Fe.	mg/l	BDL(DL0.1)	1.0	No relaxation	APHA-23rd Ed -3500Fe-B Phenanthroline Method
12	Magnesium as Mg	mg/l	16	30	100	IS: 3025 (Part-46)
13	Nitrate as NO3	mg/l	5.7	45	No relaxation	APHA-23rd Ed-4500 B UV Screening Method
14	Sulphate as SO4.	mg/l	59	200	400	IS:3025 (Part-24) Cl 4.0- Turbidity Method
15	Total alkalinity as CaCO3.	mg/l	86	200	600	IS: 3025 (Part-23)
16	Total hardness as CaCO3	mg/l	172	200	600	IS:3025(P-21)

Dr. Ajay Kumar
Authorized Signatory-Chemical & Biological

ECO BHAWAN E-207, Industrial Area, Phase VIII-B (Sector-74), Mohali (Punjab) 160071

0172-4616225 9781303109 contact@ecoparyavaran.org | md@ecoparyavaran.org www.ecoparyavaran.org

TC-7477

ULR No. :	TC747723000002695F	**Test Report No. :**	EL070423NW008
Type of Sample :	Water (Drinking Water)	**Date of Reporting :**	15/04/2023

II -Biological Testing

1. Water (Drinking Water)

S.No.	Test Parameter	Unit	Result	Acceptable limit	Permissible limit in absence of alternate source	Test Method
1	Total coliform	CFU/100ml	Absent*	Absent	-	IS:15185
2	E.coli.	CFU/100ml	Absent*	Absent	-	IS:15185

Remarks : *The result might be affected due to collection of sample in plastic bottle

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

Dr. Ajay Kumar
Authorized Signatory-Chemical & Biological

restoring eco balance...

Eco Paryavaran Laboratories & Consultants Pvt. Ltd.

(Formerly known as Eco Laboratories & Consultants Pvt. Ltd.)

TC-7477

TEST REPORT

ULR No. :	TC747723000002694F	**Test Report No. :**	EL070423NW007
Type of Sample :	Water (Drinking Water)	**Date of Reporting :**	15/04/2023
Customer	Jaypee University of Information & Technology Waknaghat, PO. Waknaghat, Teh. Kandaghat, Distt. Solan, Himachal Pradesh-173234	**Work Order No. & Date**	EPL/T/5601 DT:06.04.2023
		Customer reference No. (If any)	NA
Sampling Protocol	NA	**Mode of Collection of Sample**	Sample Provided by Customer
Date of Sampling	-	**Date of Receipt of Sample**	07/04/2023
Sampling Location	NA	**Testing Location**	Permanent Facility
Testing Protocol	IS 10500:2012 (IInd Revision)	**Period of Analysis**	07/04/2023 To 15/04/2023
Sample Description	Clear, colourless liquid.		
Packing, Markings, Seal & Qty.	1 litre Plastic Bottle Marked 'Academic Block'		

RESULTS

I -Chemical Testing

1. Water (Drinking Water)

S.No.	Test Parameter	Unit	Result	Acceptable limit	Permissible limit in absence of alternate source	Test Method
1	Colour.	Colour Units	BDL(DL5)	5	15	IS:3025 (Part-4) Cl 2.0
2	Odour	-	Agreeable	Agreeable	Agreeable	IS: 3025 (Part-5)
3	pH @ 25°C	-	8.12	6.5-8.5	No relaxation	IS:3025 (Part-11)
4	Taste	-	Agreeable	Agreeable	Agreeable	IS: 3025 (Part-8)
5	Turbidity	NTU	BDL(DL0.1)	1	5	IS: 3025 (Part-10)
6	Total Dissolved Solids	mg/l	228	500	2000	IS: 3025 (Part-16)
7	Calcium as Ca	mg/l	42	75	200	IS :3025 (Part-40)
8	Chloride as Cl	mg/l	16	250	1000	IS:3025 (Part-32)
9	Fluoride as F	mg/l	0.39	1.0	1.5	IS:3025 (Part-60)
10	Free residual Chlorine	mg/l	BDL(DL0.1)	0.2	1.0	APHA-23rd Ed- 4500G DPD Colorimetric Method
11	Iron as Fe.	mg/l	0.08	1.0	No relaxation	APHA-23rd Ed -3500Fe-B Phenanthroline Method
12	Magnesium as Mg	mg/l	16	30	100	IS: 3025 (Part-46)
13	Nitrate as NO3	mg/l	5.2	45	No relaxation	APHA-23rd Ed-4500 B UV Screening Method
14	Sulphate as SO4.	mg/l	53	200	400	IS:3025 (Part-24) Cl 4.0- Turbidity Method
15	Total alkalinity as CaCO3.	mg/l	82	200	600	IS: 3025 (Part-23)
16	Total hardness as CaCO3	mg/l	168	200	600	IS:3025(P-21)

Jaypee University of Information Technology JUIT

Dr. Ajay Kumar
Authorized Signatory-Chemical & Biological

ECO BHAWAN E-207, Industrial Area, Phase VIII-B (Sector-74), Mohali (Punjab) 160071

0172-4616225 9781303109 contact@ecoparyavaran.org | md@ecoparyavaran.org www.ecoparyavaran.org

TC-7477

ULR No. : TC747723000002694F	**Test Report No. :** EL070423NW007
Type of Sample : Water (Drinking Water)	**Date of Reporting :** 15/04/2023

II -Biological Testing

1. Water (Drinking Water)

S.No.	Test Parameter	Unit	Result	Acceptable limit	Permissible limit in absence of alternate source	Test Method
1	Total coliform	CFU/100ml	Absent*	Absent	-	IS:15185
2	E.coli.	CFU/100ml	Absent*	Absent	-	IS:15185

Remarks : *The result might be affected due to collection of sample in plastic bottle

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

Dr. Ajay Kumar
Authorized Signatory-Chemical & Biological

H.P.STATE POLLUTION CONTROL BOARD
FORM X
REPORT BY STATE BOARD ANALYST
(See Rule 26)

Report No: 95888/W-7785 **25/05/2023**

I hereby certify that I **Rama Kant Awasthi , SO**, State Board Analyst duly appointed under sub-section (3) of section 53 of the Water (Prevention and Control of Pollution) Act, 1974 (6 of 1974) received on **03/05/2023** from **Anurag Raina, JEE**, HP State Pollution Control Board **RO Parwanoo** a **Grab** sample of **Final Outlet of STP** of **Jaypee University Of Information Technology, Vaknaghat VPO Waknaghat, Tehsil Kandaghat, District Solan, H.P.Waknaghat, Arki** Distt. **Solan Parwanoo**, H.P. **173234** on dated **02/05/2023** for analysis. The sample was in a condition fit for analysis reported below:

I further certify that I have analyzed the aforementioned sample on **03/05/2023** to **25/05/2023** and declare the result of analysis is to be as follows :-

Method of analysis
IS- 2488(I-V), IS-3025(Part 44): 1933, 'Standard method for examination of water', 22th edition prepared and published jointly by:-
1. American Public Health Association 2. American Water Works Association 3. Water Pollution Control Federation

SAMPLING PARAMETERS

Sr. No.	Parameter Name	Results	Units	Permissible Limit	Remark/Result Analysis
1	pH	7.44		6.5-9.0	Within Permissible Limit
2	TSS	10.0	mg/L	99	Within Permissible Limit
3	BOD	6.0	mg/L	30	Within Permissible Limit
4	Oil and Grease	0.4	mg/L	10	Within Permissible Limit
5	COD	56.0	mg/L	250	Within Permissible Limit

The condition of the seals, fastening and container on receipt was as: sealed as **HPPCB262**

Signed this on **25/05/2023**

Remarks of Lab Head:

-

Jaypee University of Information Technology JUIT Waknaghat

Rama Kant Awasthi , SO
(State Board Analyst)
CL Parwanoo

From:
H.P. STATE POLLUTION CONTROL BOARD,
CL Parwanoo

To:
Jaypee University Of Information Technology
Vaknaghat VPO Waknaghat, Tehsil Kandaghat, District Solan, H.P.Waknaghat, Arki,
Distt.Solan Parwanoo, H.P.173234

P.O Waknaghat, Teh. Kandaghat, Distt. Solan - 173234 (H.P) INDIA
Tel : 01792-239254
Fax : 01792-245362

PURCHASE ORDER

On all invoices/correspondance please quote :	Indent No.	4,284
	Indent Date	10.02.2022
Order No. 6183 Dt. 15.02.2022	Department	Electrical
	Indentor : Mr. Jasveer Singh (Ec. 500)	
Vendor Name : M/S. SMS HYDROTECH	Delivery :	Within 20-30 days
Address : Plot - 325, Sector - 24, Faridabad, Haryana - 121005, India.	To be delivered at :	At JUIT Campus Waknaghat, Distt. Solan, Himachal Pradesh 173234, India.

GSTIN : 06AAKHS9860A1ZY
Contact Person : Mr. Surya V Singh
E.mail : smshydro@gmail.com, smshydro@yahoo.co.in, info@smshydro.com
Contact No. : +91-9811611599, 9811853399, 9871443868

Sr.No.	Item Description	Unit	Quantity	Unit Price (Rs.)	Amount in (Rs.)
1	Organic/Food Waste to Compost Machine FSK099 1000 Kg/Day with inbuilt shredder 100% SS 304 (Inner/Outer Fabrication OWC M/C) Make - SMS Hydrotech (Complete Set)	No	1	1150000.00	1150000.00
				Freight, Packing and Transit Insurance Charges	30000.00
				Total	1180000.00
				GST @ 12%	141600.00
				Grand Total	1321600.00
	(Rupees Thirteen Lac twentyone thousand six hundred only)				

Terms and Conditions : -

1) Payment : 40% Advance along with Purchase Order, 50% before delivery and 10% Immediate after commissioning, through RTGS.

2) GST : As shown above or as applicable at the time of billing.

3) Warranty : 24 Months from the date of installation/Commissioning.

4) Delivery : 20-30 days after received the Purchase Order and advance payment.

5) After warranty Period AMC will be extended for four years and total amount shall be paid Rs. 50,000/- (Rupees Fifty Thousand only) for four years. The cost of spares will be paid extra if required during the period of AMC.

6) Bank Details : Kotak Mahindra Bank, SCO No. 2, Sector - 16, Faridabad, Haryana, A/C Name - SMS HYDROTECH, A/C No. 1911781088, IFSC - KKBK0000286, Swift Code - KKBKINBB.

7) Lodging & boarding will be provided FOC for technicians at JUIT Campus waknaghat during the time of commissioning the machine.

8) Billing in favour of Jaypee University of Information Technology Waknaghat Distt. Solan (H.P.)

Vinod Sharma

Authorised Signatory

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY
WAKNAGHAT

JUIT/WKG/REGR/2022-23/0280

October 13, 2022

OFFICE ORDER

The competent authority has nominated the following Committee Members for Sustainability Index and Green Audit of Higher Education Institutions requirements of JUIT Waknaghat as required by the Mahatma Gandhi National Council of Rural Education (MGNCRE), Department of Higher Education, Ministry of Education, Government of India:-

1.	Maj Gen Rakesh Bassi, SM (Retd) Registrar & Dean of Students	Convener
2.	Mr. Akhilesh Kumar Singh Admin. Coordinator	Nodal Officer
3.	Mr. Vijay Kumar Sharma Sr. Project Engineer (Civil)	Member
4.	Mr. Anand Prakash Khare Sr. Project Engineer (Electrical)	Member

Maj Gen Rakesh Bassi, SM (Retd)
Registrar & Dean of Students

c.c.: Vice Chancellor
Mr. Akhilesh Kumar Singh
Mr. Vijay Sharma
Mr. Anand Prakash Khare

09-06-2023

Transportation data: April 2022 to March 2023

Vehicle No:-	1 INNOVA HP13-4948	2 INNOVA HP13-4941	3 Maruti Dzire HP13-5076	4 SX4 HP13-1772	5 EECO HP13-6740	6 AMBULANCE HP13-3323	7 BOLERO PICKUP HP13-4932	8 BOLERO CAMPER HP13-6375	9 TATA-407 HP13B-4931	10 BUS HP13-4970	11 BUS HP13-4971	12 TANKER HP13B-0259	13 TANKER HP13B-0260
Total KM Run 2022-23	15,781	9,969	21,154	9,767	18,565	7,438	19,892	23,289	11,594	8,300	11,539	369	260
Fuel Consumption (Ltr)	1,357	864	1,016	1,057	1,781	642	2,006	2,578	2,371	2,702	3,740	450	330
Mileage logs KMPL	11.63	11.54	20.82	9.24	10.42	11.59	9.92	9.03	4.89	3.07	3.09	0.82	0.79

Mohinder Kapoor
Admn Coordinator (HR Div)

Maj Gen Rakesh Bassi, SM (Retd.)
Registrar & Dean of Students

REGISTRAR & DEAN STUDENS' WELFARE
Jaypee University Of Information Technology
Waknaghat, Distt. Solan (HP) 173234 India

Vice Chancellor

WASTE MANAGEMENT RECORD MONTH OF JUNE-2023

DATE	Dry Garbage collection per day	Wet garbage collection per day	After Segregation waste dry materials	Used Wet garbage for compost per day	Ready compost per day	Dry garbage taken by out source vendor. Mr. Rajesh & Bro comp. 4 day per week.	
6/1/2023	100 KG	400 KG	100 KG	300 KG	144 KG	THURSDAY	
6/2/2023	100 KG	300 KG	80 KG	220 KG	98 KG		
6/3/2023	120 KG	350 KG	90 KG	260 KG	108 KG	SATURDAY	
6/4/2023	100 KG	150 KG	40 KG	110 KG	70 KG		
6/5/2023	80 KG	200 KG	35 KG	165 KG	90 KG	MONDAY	
6/6/2023	100 KG	200 KG	30 KG	170 KG	100 KG		
6/7/2023	80 KG	300 KG	60 KG	240 KG	120 KG	WEDNESDAY	
6/8/2023	80 KG	200 KG	40 KG	160 KG	60 KG		
6/9/2023	70 KG	200 KG	50 KG	200 KG	80 KG	FRIDAY	
6/10/2023	80 KG	260 KG	40 KG	220 KG	100 KG		
6/11/2023	70 KG	210 KG	40 KG	170 KG	80 KG	SUNDAY	
6/12/2023	80 KG	240 KG	20 KG	220 KG	100 KG		
6/13/2023	60 KG	200 KG	30 KG	170 KG	70 KG	TUESDAY	
6/14/2023	120 KG	200 KG	20 KG	180 KG	70 KG		
6/15/2023	100 KG	220 KG	30 KG	190 KG			
6/16/2023							
6/17/2023							
6/18/2023							
6/19/2023							
6/20/2023							
6/21/2023							
6/22/2023							
6/23/2023							
6/24/2023							
6/25/2023							
6/26/2023							
6/27/2023							
6/28/2023							
6/29/2023							
6/30/2023							

HOUSE KEEPING.

Jaypee University of Information Technology
JUIT
Waknaghat

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY
(Established by H.P. State Legislature vide Act No. 14 of 2002)

Herbal Tree and Plants

S.No	Name of Tree	No of Tree
1	Arjuna	50 Nos
2	Tirmir (Hill Area)	15 No
3	Jatrofa	04 No
4	Kapoor	06 No
6	Tej Pata	05 No
7	Kari-Pata	10 No
8	Aleovera	100 Nos
9	Deodar	05 Nos
10	Gelogia	50 Nos
11	Hubiscuss Red	100 Nos
12	Hubiscuss White	100 Nos
13	Hubiscuss Blue	100 Nos
14	Tulsi Rama	10 Nos
15	Tulsi shama	10 Nos
16	Heera	50 Nos
17	Lawnlata	05 Nos

Season for Seeds and Seedling

Rain – Zinnia, Cosmos, F. marigold
Salvia, Porculaca

Winter – Primula – Petunia Hidenga dianth calundla
ice – Phalox

Summer – Pensy, Colious F. marigold, dizys, Antirinum

14/6/23
JITENDER KUMAR

JUIT
Jaypee University of Information Technology * Waknaghat *

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY

(Established by H.P. State Legislature vide Act No. 14 of 2002)

Tree and Plants Headge

Sr No	Name of Tree	No of Tree
1	Pine	500 / Nos
2	Silver oak	2000 Nos
3	Jacranda	100 Nos
4	Achiage	50 Nos
5	Termic	50 Nos
6	Ficus Rebens	100 Nos
7	Shateveri	20 Nos
8	Heidge Hilea climber	50 Nos
9	Jasmine (Headge)	1000 Nos
10	Golden Duranta Headge	1000 Nos
11	Rudrasha	05
12	Bail Petra	05

14/6/23

JITENDER KUMAR

Jaypee University of Information Technology JUIT Waknaghat

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY

(Established by H.P. State Legislature vide Act No. 14 of 2002)

Location	Weight of paper(w1) gm	Wt of paper after 24 hr (w2) gm	Wt. of Empty Beaker (W3) gm	Wt. of Beaker after 24 hr (W4) gm	Air Volume (m3/min)	W2-W1	W4-W3
STP	2.756	2.867	12.94	12.991	1.1	0.111	0.051
Main Gate	2.756	2.822	12.94	13.049	1.1	0.066	0.109
Composite (Near Football Ground)	2.756	2.822	12.94	13.012	1.1	0.066	0.072

STP

S. No.	Test Parameter	Unit	Result	Specification/Limit (as per CPCB) for 24 hrs.	Test Reference
1	Particulate Matter (PM10)	µg/m3	70.70 microgram/cubic meter	100	IS 5182(Part-23)
2	Particulate Matter (PM2.5)	µg/m3	32.16 microgram/cubic meter	60	EVTECH/APM/460-NL

Main Gate

S. No.	Test Parameter	Unit	Result	Specification/Limit (as per CPCB) for 24 hrs.	Test Reference
1	Particulate Matter (PM10)	µg/m3	42.29 microgram/cubic meter	100	IS 5182(Part-23)
2	Particulate Matter (PM2.5)	µg/m3	68.81microgram/cubic meter	60	EVTECH/APM/460-NL

ELECTRICAL ENGG.

Jaypee University of Information Technology JUIT Waknaghat

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY

(Established by H.P. State Legislature vide Act No. 14 of 2002)

Date:-14.06.2023

Sr. No.	Month	Unit (KVAH)	Total Amount (Rs.)
1	Apr-22	2,99,435	16,08,231
2	May-22	2,94,140	15,82,566
3	Jun-22	1,61,065	9,37,552
4	Jul-22	1,92,195	10,88,439
5	Aug-22	2,88,655	15,55,980
6	Sep-22	3,10,875	16,63,681
7	Oct-22	2,70,885	14,69,849
8	Nov-22	3,25,445	17,34,301
9	Dec-22	3,32,745	17,87,387
10	Jan-23	3,89,585	20,45,188
11	Feb-23	3,20,200	17,08,879
12	Mar-23	2,88,655	15,55,980
	Total	**34,73,880**	**1,87,38,033**

Month wise Electricity consumption.

Jaypee University of Information Technology JUIT Waknaghat

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY

(Established by H.P. State Legislature vide Act No. 14 of 2002)

DATE -13.06.2023

LPG CONSUMPTION OF ANNAPURNA & ALL SITE FROM APRIL 2022 TO MARCH 2023

SR. NO.	MONTH	NOS. OF CYLINDER	REMARK
1	Apr-22	194	
2	May-22	187	
3	Jun-22	84.5	
4	Jul-22	108.5	
5	Aug-22	179	
6	Sep-22	228	
7	Oct-22	198	
8	Nov-22	227	
9	Dec-22	198	
10	Jan-23	210	
11	Feb-23	183	
12	Mar-23	200	
TOTAL		2197	

Jaypee University of Information Technology
JUIT
Waknaghat

Swachh Bharat Mission: Vicinity of JUIT

Date:3rd April 2022

Place: JUIT Campus to Wakhnaghat

Swatchh Bharat Abhiyan was launched under the guidance of CTO Dr. Amit Jakhar and Lt. Pragya Gupta.

During this, 13 Cadets of the NCC unit involved in the campaign were guided towards the Swachh Bharat Abhiyan and all participated in the cleanliness program by taking the oath of cleanliness.

The cleanliness drive began at 7AM with the energetic group of these young cadets dividing into two parts to clean the maximum possible area and avoid congestion on the roads. The subgroups then took two different routes to Waknaghat, 3 km from the campus.

Swachh Bharat Mission: Vicinity of JUIT

Date: 14th May 2022

Place:JUIT Campus to Wakhnaghat

Swatchh Bharat Abhiyan was launched under the guidance of CTO Dr. Amit Jakhar and Lt. Pragya Gupta.

During this, 14 Cadets of the NCC unit involved in the campaign were guided towards the Swachh Bharat Abhiyan and all participated in the cleanliness program by taking the oath of cleanliness.

The cleanliness drive began at 7AM with the energetic group of these young cadets dividing into two parts to clean the maximum possible area and avoid congestion on the roads. The subgroups then took two different routes to Waknaghat, 3 km from the campus.

8th International Yoga Day

Date: 21st June 2022

Place: JUIT, Wakhnaghat

JUIT organized the 8th International Day of Yoga with the theme "Yoga for Humanity" in the auditorium.

Prof. Rajendra Kumar Sharma, vice-chancellor of JUIT motivated the participants by revealing the importance and benefits of yoga. He said, through regular yoga, one can boost their immunity and strengthen the development rate. You can get rid of your blood pressure problems, heart problems and many more with positive impacts on the mental health of individuals too. It also helps to alleviate the back pain, eases the arthritis symptoms, and releases the stress and anxiety.