



## Campus Management Office

### Annual Report 2024

#### **I. ARCHITECTURE AND ENGINEERING UNIT**

##### **Advancing Sustainable Growth, Resilience, and Institutional Development 2024**

The Campus Management Office (CMO) continues to lead the University's efforts to develop and maintain facilities that uphold the institution's commitment to sustainability, operational efficiency, and long-term resilience. For 2024, the University completed a series of infrastructure projects aligned with global sustainability standards and the institution's strategic direction of fostering an environmentally responsible and future-ready academic environment.

These projects emphasize preventive maintenance, resource-efficient upgrades, and durable infrastructure—ensuring that campus facilities remain functional, safe, and aligned with evolving environmental and operational requirements. Each completed work advances the University's goal of reducing environmental impact while enhancing the overall campus experience.

##### **Completed Infrastructure Projects Supporting Sustainable Growth**

###### **1. Waterproofing and Structural Protection Works**

Waterproofing of view decks and exterior walls was completed to mitigate water intrusion and prevent structural degradation. These efforts extend the life of building components, minimize material waste, and reduce long-term repair needs—strengthening overall structural sustainability.

###### **2. Renovation of the Main Canteen**

Renovations introduced improved space layout, energy-efficient lighting, and upgraded fixtures. These enhancements promote better energy use, healthier food service operations, and improved ventilation, creating a more sustainable and comfortable communal facility.

###### **3. Preventive Maintenance of Electrical and Mechanical Systems**

Planned preventive maintenance (PM) was carried out for key electrical and mechanical equipment, ensuring optimal functionality and minimizing energy waste. This proactive approach prevents major equipment failures and reduces resource-intensive emergency repairs.

###### **4. Cleaning and Preservation of Building Façade Cladding and Interiors**

Regular façade cleaning preserves material integrity and delays deterioration. This sustainable maintenance strategy reduces the need for premature restoration or replacement, conserving resources and prolonging infrastructure lifespan.

### **5. Water System Efficiency Improvements**

The replacement of an old G.I. water tank with a stainless-steel unit improves water storage efficiency and reduces leak-related losses. This upgrade supports responsible water resource management and strengthens campus water resiliency.

### **6. Ventilation System Upgrades**

Upgraded blower motors and fresh-air/exhaust systems significantly improve indoor air quality while reducing power consumption. These ventilation improvements align with the University's long-term shift toward energy-efficient building systems.

### **7. Installation of Energy-Efficient Glass Partitions and Doors**

The addition of glass partitions and swing doors maximizes natural lighting and reduces dependency on artificial illumination. This contributes to lower energy consumption and enhances indoor accessibility and brightness across office and learning spaces.

### **8. Rehabilitation of Storm Drain Canal**

Drainage works were completed to strengthen the campus's climate resilience. By improving stormwater flow and mitigating flood risks, the University proactively responds to climate-related challenges and ensures safer campus grounds.

## **In-House Maintenance and Preventive Maintenance Works**

In addition to capital projects, the University continues to prioritize the upkeep and optimization of its facilities through in-house maintenance services. These efforts include:

- **Janitorial Services:** Ensuring cleanliness and hygiene in all campus buildings and facilities, contributing to a safe and pleasant environment for students, staff, and visitors.
- **Carpentry Works:** Addressing routine repairs and maintenance of wooden structures and furniture across the campus.
- **Painting Services:** Maintaining aesthetic appeal and protective finishes on surfaces to prevent deterioration.
- **Electrical Works:** Ensuring that electrical systems remain fully operational, with routine inspections, troubleshooting, and upgrades as necessary.

Furthermore, preventive maintenance programs for mechanical and electrical systems are consistently implemented to ensure that equipment remains in optimal condition. This proactive approach not only improves the lifespan of campus facilities but also reduces operational disruptions and ensures energy-efficient performance across the University.

## Building a Greener Future Through Responsible Development

The University's completed infrastructure projects reflect a continued shift toward sustainable development. By using long-lasting materials, efficient systems, and preventive maintenance strategies, these initiatives collectively support:

- Lower energy consumption
- Reduced water waste
- Extended building lifespan
- Improved health and safety
- Greater climate resilience and resource efficiency

These sustainability-focused improvements reinforce the University's leadership in responsible campus development and ensure that future generations benefit from a green, resilient, and environmentally conscious learning environment.

### Campo Libertad Development Project (Ongoing)

Construction of the 10-storey Campo Libertad campus remains one of the University's flagship sustainability projects. The development incorporates key resource-efficient systems, including:

- Rooftop solar panels for renewable energy generation
- Rainwater harvesting systems for non-potable water applications
- A sewage treatment plant (STP) for responsible wastewater management

These features support operational sustainability, reduce energy consumption, and minimize environmental impact.

**Project Status:** Ongoing

**Latest Milestone:** Completion of concrete pouring for beams and the 4th-floor slab.

### Main Campus Solar Panel Installation (Future Plan)

As part of the University's continued commitment to sustainability, plans are underway to install **solar panels across the Main Campus**. This initiative will contribute to the University's long-term energy independence by harnessing renewable energy from the sun to power campus facilities. By reducing reliance on conventional electricity sources, the solar panel installation will further reduce the University's carbon footprint and help meet sustainability goals.

**Expected Benefits:**

- Reduced energy costs
- Increased use of clean, renewable energy

- Lower carbon emissions
- Contribution to the University's green campus certification efforts

### **Pedestrian Prioritization and Campus Safety**

The University continues to advocate for safe, accessible, and pedestrian-friendly mobility within campus grounds. In alignment with Baguio City's "King of the Road" Ordinance No. 7, s. 2010, the following measures are implemented:

- A **full five-second stop** at pedestrian lanes when pedestrians are present or approaching
- **Clear pedestrian lanes**, free from vehicular obstruction
- Exceptions only for **police-directed crossings** and **emergency vehicles** responding to actual emergencies

To further prioritize pedestrian well-being:

- **Designated loading and unloading zones** have been established around the University to ensure safe pedestrian movement and reduce traffic congestion near entrances.
- **Hallways are regularly cleared** and monitored to maintain unobstructed passage, facilitating smoother daily flow and enabling **quick evacuation** during emergencies.

These initiatives reinforce a culture of safety, accountability, and respect for pedestrian rights across the University community.

## **II. CAMPUS COMPLIANCE UNIT**

### **1. SEWAGE AND WASTEWATER MANAGEMENT**

#### **a. Sewage Treatment Plant**

The university's Sewage Treatment Plant (STP) with a capacity of 1200m<sup>3</sup> per day plays a vital role in ensuring that wastewater from toilets, urinals, sinks, and lavatories is properly treated. This system contributes to maintaining environmental sustainability and compliance with wastewater management standards.

#### **b. Implementation of Advanced Treatment Processes**

##### **i. Reverse Osmosis System**

Installation and operation of the reverse osmosis (RO) filtration system as the final treatment stage. This RO system efficiently removes residual impurities, allowing the treated wastewater to be reused safely in non-potable applications.

ii. Wastewater Reuse and Recycling

Treated wastewater is reused for toilet flushing and watering campus plants and landscaping, contributing to significant reductions in the university's potable water demand.

iii. Rainwater Harvesting Integration

The rainwater harvester tank was activated to collect rainwater from building rooftops and is filtered before storage in non-potable tanks. Integrated treated rainwater with recycled wastewater for various non-potable uses, reducing reliance on the city's main water supply.

c. Compliance and Safety Measures

i. Regular Inspections and Maintenance

Routine inspections and preventive maintenance of STP equipment, including pumps, filtration units, and the RO system, is conducted by JPBanosan Construction and Buildings Maintenance Office Technician to ensure safe and efficient operation.

ii. Documentation and Regulatory Compliance

Effluent sampling is conducted at the sewage treatment plant quarterly to ensure that the facility's treated wastewater complies with the Department of Natural Resources (DENR) Administrative Order No. 2016-06 otherwise known as Water Quality Guidelines and General Effluent Standards of 2016. The Environmental Management Bureau issued Discharge Permit in compliance with RA 9275 or Philippine Clean Water Act.

<b>Source</b>	<b>Baguio Water District (cubic meter)</b>
January	2950
February	2671
March	2802
April	2387
May	2548
June	2290
July	2178
August	2629
September	3555
October	3595
November	3637
December	2618
<b>Total</b>	<b>33,410</b>

## 2. WATER QUALITY AND USAGE MONITORING

a. Drinking Water Safety

A total of nine (9) drinking fountains are installed in the campus, two units are located at the Legarda Campus and seven units at the Main Campus. Microbiological water analysis is conducted quarterly to ensure the water is safe for consumption by students and employees. In addition to the water quality checks, regular preventive maintenance of the drinking fountains is also implemented to further ensure the safety and quality of the drinking water.

b. Water Consumption Tracking

Monitored and recorded the university's total water usage, sourced entirely from the main supply (BAWADI), to identify conservation opportunities.

Water Consumption per person for the year 2024

= water consumption/campus population

=33,410/18,853

=1.77 cubic meter/person/year

### 3. WASTE MANAGEMENT AND DISPOSAL

a. Solid Waste Management

i. Organic Waste Produced

At the university, organic waste is collected from the trash bins along the hallways by housekeeping staff and transported to the vermicomposting area. This process helps in reducing waste and producing nutrient-rich compost for use in gardening and landscaping. Leftovers from the canteen are sold to employees for their pets, such as dogs and cats. Other biodegradable waste such as crumpled paper and tissues is not placed in the vermicomposting area but are placed at the garbage collection area to be collected by the city for proper disposal.

Type of organic waste	Total Produced (ton/yr)
- food waste / vegetable peelings	12

- leaf, and vegetations	0.4869
- others (tissues, crumpled papers)	1.9511
<b>Total</b>	<b>14.438</b>

## ii. Inorganic Waste Produced

### 1. Collection of Non-Biodegradable Residuals:

Non-biodegradable waste, which includes materials that do not decompose naturally, is collected from designated trash bins along the university hallways. This helps ensure that waste is sorted at the point of disposal, streamlining the collection and management process.

### 2. Sorting of Recyclable Materials:

Recyclable materials are separated from other non-biodegradable waste. These include:

- Metals: Items made of metal that are no longer in use or damaged.
- Paper: Paper waste such as used office paper, old newspapers, or any other paper that can be repurposed or recycled.
- Flat Sheets: Likely sheets of plastic or other materials that can be recycled.
- Monoblocks: Commonly refers to plastic furniture (e.g., chairs) which can be recycled if damaged or no longer needed.
- Plastic Bottles: Empty bottles, often from beverages, collected for recycling.
- Empty Boxes: Cardboard or other box materials that can be recycled or reused.
- Aluminum: Aluminum cans and other scrap aluminum materials.

### 3. Turnover to Logistics Management Office:

Once sorted, these recyclable materials are gathered and handed over to the Logistics Management Office. This office oversees the final steps in the recycling process and coordinates with other units for the proper disposal or repurposing of materials.

#### 4. Recycling Process – Sale at Junk Shops:

The Logistics Management Office sells these recyclable materials to local junk shops. This not only diverts waste from landfills but also contributes to a circular economy, allowing the materials to be reused in new products or processes.

This structured process reflects the university's commitment to sustainability by ensuring that recyclable materials are responsibly managed, supporting both environmental conservation and waste reduction efforts on campus.

<b>Type of inorganic waste</b>	<b>Total Produced (ton/year)</b>
Residuals	15.438
Metals	1.733
Paper	5.609
Flat Sheets	0.665
Monoblock	0.757
Plastic bottle	0.114
Empty Boxes	0.471
Aluminum	0.004
<b>Total</b>	<b>24.791</b>

#### b. Hazardous Waste Management

Toxic wastes such as WEE, chemicals used by students during experiments, pathological wastes from medical clinic and nursing laboratory and paint cans are turned over to the Logistic Management Office for their inventory to be handed over to the Pollution Control Officer for proper labeling. The university ensures that its generated toxic wastes are properly disposed of through an accredited hazardous waste treater by the Environmental Management Bureau, complying with regulatory standards for hazardous waste management.

<b>Type of waste</b>	<b>amuount (ton)</b>	
	<b>collected</b>	<b>treated</b>
- Waste from Electrical and Electronic Equipment (WEEE)	1.2885	1.2885
- Laboratory Chemicals	0.2919	0.2919
-Pathological Wastes	0.1235	0.1235
-Containers previously containing toxic chemical substances	0.4364	0.4364
<b>Total</b>	<b>2.3062</b>	<b>2.3062</b>

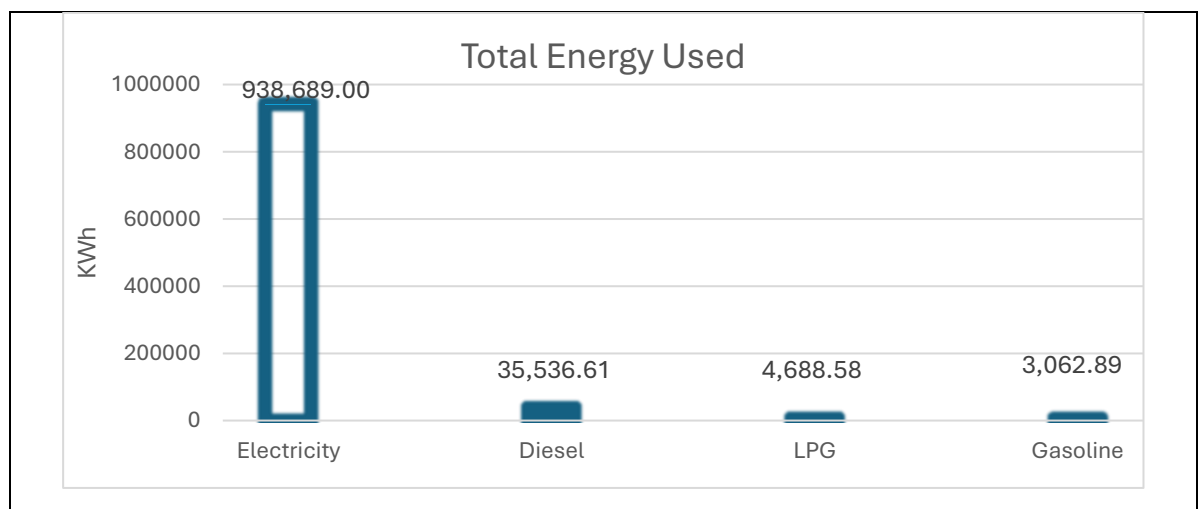


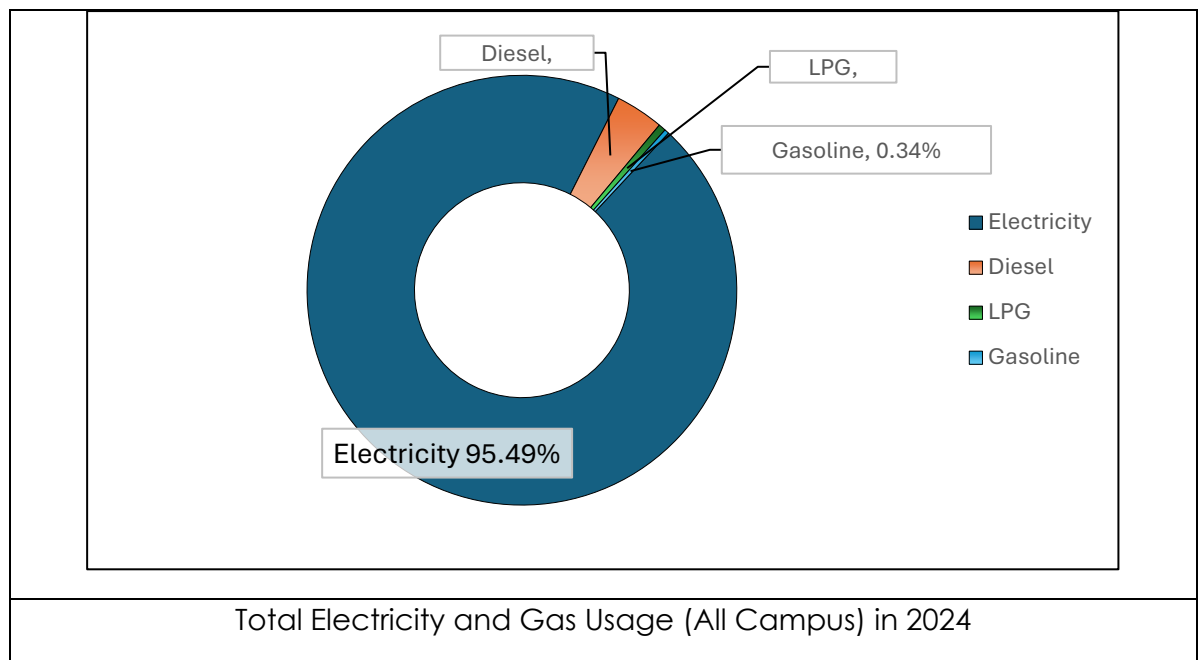
#### 4. ENERGY MANAGEMENT

In 2024, the total electricity usage of the University of the Cordilleras reached 938,689 kWh. This significant consumption reflects the university's commitment to providing a conducive learning environment across its campuses. Specifically, on the Main Campus and the Legarda Campus in Baguio City, electricity is utilized for a variety of essential functions.

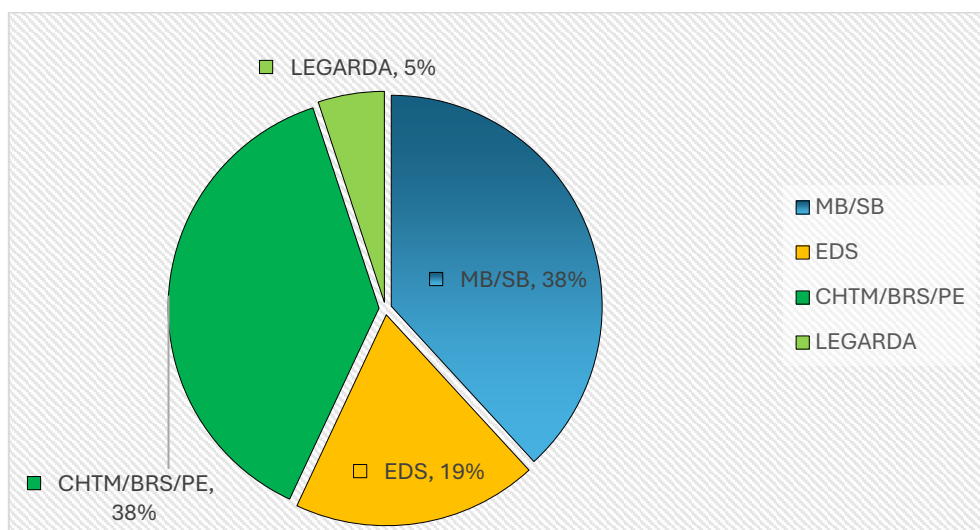
Lighting plays a crucial role in ensuring well-lit classrooms, hallways, and common areas, enhancing both safety and visibility for students and staff. Power outlets across the campuses enable students to charge devices and utilize electronic equipment for their studies. Additionally, electricity powers elevators and other mechanical equipment, which enables accessibility and improves operational efficiency throughout the campus.

Furthermore, laboratory appliances—integral to the university's science and engineering programs—rely on electricity to support experiments and research activities. This diverse range of electrical needs highlights the importance of efficient energy management strategies to support the university's academic goals while promoting sustainability and reducing overall energy consumption.





### Significant Energy Use



Energy Percentage (%) Share per Building

The University of the Cordilleras is committed to enhancing its energy efficiency through a strategic focus on energy management practices. This initiative empowers all departments within the institution to evaluate their individual energy consumption patterns and identify opportunities for savings. By implementing measures such as improved insulation, the installation of LED lighting, and the adoption of sustainable technologies, each unit can contribute to the university's overall energy conservation goals.

In the Philippines, the tropical climate presents significant challenges, with many regions facing high temperatures and oppressive humidity,

particularly during the dry season. However, Baguio City stands out for its unique climate, characterized by cooler temperatures and balanced humidity levels. This natural thermal comfort reduces the need for mechanical heating and cooling systems, allowing for more sustainable energy practices. By leveraging its advantageous climate, the University of the Cordilleras can further optimize its energy management strategies, minimizing reliance on energy-intensive systems and foster a more environmentally friendly campus.

To further strengthen energy efficiency programs, the University of the Cordilleras will conduct a comprehensive energy audit in 2026. This audit will assess the effectiveness of existing conservation measures, validate significant energy uses, and identify new opportunities for renewable integration and cost reduction. The results will guide future investment priorities and policy updates toward achieving a carbon-neutral campus.

Replacement of fluorescent lights and incandescent lights to LED lights					
INVENTORY OF LED LIGHTS as of January 28, 2025					
No.	BUILDING	LED LIGHTS	FLOURESCENT LIGHTS	TOTAL	PERCENTAGE %
1	EDS	840	0	840	100
2	CHTM	717	0	717	100
3	SB	1410	0	1410	100
4	MB	932	0	932	100
5	BRS	574	0	574	100
6	GYM	89	0	89	100
7	PE	213	0	213	100
8	Legarda	493	0	493	100
<b>TOTAL</b>		5,268	0	5,268	<b>100</b>

All buildings have been fully upgraded to LED lighting systems, achieving 100% replacement of fluorescent and incandescent lights.

The transition to LED technology enhances energy efficiency and reduces electricity consumption by up to 50–70%, leading to substantial cost savings on utility expenses. Moreover, LED lights have a longer lifespan and lower maintenance requirements, minimizing waste generation and replacement frequency.

This initiative contributes directly to the university's sustainability goals and supports the United Nations Sustainable Development Goals (SDGs) — particularly SDG 7 (Affordable and Clean Energy), SDG 12 (Responsible Consumption and Production), and SDG 13 (Climate Action) by promoting energy conservation, reducing greenhouse gas emissions, and fostering sustainable campus operations.

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