

Sustainability



Since its establishment, PHBS has been committed to creating a learning environment that supports current students while contributing to a more sustainable future for generations to come. Beyond investments in sustainable infrastructure and climate solutions, the institution continues to improve operational performance across water, energy, waste, and emissions management.

PHBS net zero target year is 2048.

Sustainability Brief of the PHBS Building

(2023–2025 REPORT)



Water Conservation

Water conservation has been a key focus of PHBS' sustainability efforts. In 2024, water-efficient irrigation systems were installed across campus landscaping, reducing water consumption by 1,906 m³ in 2024 and a further 1,717 m³ in 2025.

In parallel, technical upgrades enabled the expanded collection and reuse of non-conventional water sources, including rainwater and air-conditioning condensate. This system generated 1,720 m³ of reclaimed water in 2024, increasing to 2,177 m³ in 2025.

As a result of these combined measures, tap water consumption continued to decline steadily, with reductions of 2% in 2024 and 16% in 2025 compared with the baseline year.

Energy Efficiency

Energy efficiency improvements have been driven by both infrastructure upgrades and system optimization. In 2023, 1,975 high-efficiency LED lighting fixtures were installed across the teaching building, increasing luminous efficiency by approximately 70% while reducing energy consumption by 15%.

Building on this foundation, the automated air-conditioning control system was re-commissioned in 2024. Operational logic and system parameters were optimized to enhance thermal comfort while improving energy performance. As a result, electricity consumption in 2025 decreased by 9% compared with 2024 under stable operating conditions.

Solid Waste Recycling

Solid waste recycling is implemented as part of PHBS' waste management system. From 2023 to 2025, a total of 23,814 kg of solid waste was recycled, including paper (21,875 kg), metal (270 kg), and plastic (1,368 kg).

Based on industry-standard emission factors for material recovery, these activities resulted in an estimated reduction of approximately 24.33 tons of carbon dioxide emissions.

Climate Governance and Infrastructure

In 2024, 36 additional electric vehicle (EV) charging stations were installed in the building parking area, bringing the total to 48 units. This expansion supports the growing adoption of new energy vehicles and promotes low-carbon mobility infrastructure on campus.

In the same year, a greenhouse gas (GHG) inventory and disclosure mechanism was established, enabling systematic tracking and reporting of emissions. Total emissions amounted to 2,412.8736 tons CO₂e in 2023 and decreased to 2,234.1952 tons CO₂e in 2024, reflecting a downward trend.