



**University :** UzSWLU  
**Country :** Uzbekistan  
**Web Address :** <https://www.uzswlu.uz/en>

UzSWLU has established an advanced Smart Building Management System (BMS) to improve operational efficiency, optimize energy consumption, and enhance environmental sustainability across all university facilities. Implemented under the Energy Management and Climate Action Plan (2022–2030), the system combines digital automation, real-time monitoring, and data-driven decision-making, contributing directly to SDG 7, SDG 9, SDG 11, and SDG 13.

### **1. Integrated Smart Campus Infrastructure**

UzSWLU has connected its principal academic and administrative facilities to a centralized digital management network powered by the Fusion Energy Platform and E-IJRO Smart Management System, enabling continuous monitoring of electricity consumption, indoor temperature and humidity, lighting performance, HVAC operations, building occupancy, and indoor air quality. More than 520 smart sensors have been installed across classrooms, offices, laboratories, dormitories, and public areas, automatically regulating building systems according to real-time occupancy. As a result, the university has reduced unnecessary energy consumption by approximately 26% compared to the 2021 baseline.

### **2. Intelligent Climate and Air Quality Management**

All major facilities are equipped with digitally controlled HVAC systems featuring automated temperature regulation based on occupancy, smart ventilation control, continuous CO<sub>2</sub> and humidity monitoring, and zonal climate management. During 2025–2026, smart climate-control technologies were expanded to dormitories, laboratories, and newly renovated facilities, resulting in an additional 16% reduction in peak electricity demand.

### **3. Smart Lighting and Renewable Energy Integration**

The Smart Building Management System is directly connected to the university's solar energy infrastructure. Current achievements include 98% LED coverage for indoor lighting and 100% LED coverage for outdoor lighting, motion-sensing controls, daylight-responsive sensors, and automated scheduling to eliminate unnecessary lighting during non-operational hours.

### **4. IoT Technologies and Predictive Analytics**



The digital platform supports real-time collection of building performance data, automated fault detection, predictive equipment analysis, energy demand forecasting, and optimization of resource allocation and maintenance schedules using AI-supported analytics.

### Calculation

|                                         |                           |
|-----------------------------------------|---------------------------|
| Total Smart Building Area (2.2)         | 104,248.96 m <sup>2</sup> |
| Total Buildings Area (1.7, SI category) | 104,248.96 m <sup>2</sup> |
| $EC2 (\%) = 2.2 \div 1.7 \times 100$    | 100%                      |

### Smart Building Coverage by Campus

| Campus                              | Smart Systems Installed                    |
|-------------------------------------|--------------------------------------------|
| Main Campus                         | Fusion Energy + E-IJRO BMS                 |
| Faculty of International Journalism | Smart lighting + HVAC sensors              |
| Faculty of Russian Philology        | Lighting automation + smart access control |
| Faculty of English Philology        | Full automation + smart security           |

**Additional evidence link (i.e., for videos, more images, or other files that are not included in this file):**

<https://t.me/UzSWLU/9329>

<https://uzswlu.uz/news/quyosh-panellarining-foydasini>

<https://t.me/UzSWLU/9392>

[https://www.instagram.com/uzswlu\\_official](https://www.instagram.com/uzswlu_official)

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