Tashkent State Medical University

***Min. at least five requirements for each building**

No.	Name	Place	automation		safety				energy		water		Indoor environment				lighting				Building Area (m^2)
			B1	B2	S1	S2	S3	S4	E1	E2	A1	A2	I1	I2	I3	I4	L1	L2	L3	L4	
	Tashkent State Medical University Main Campus	Tashkent,Uzbekistan	x		x	x	x	x	x	x	x		x	x	x		x	x			109,691
	Total																				**109,691**

Please compile one row for each building (or homogeneous part of it) by ticking with a "X" for each requirement

Smart building implementation

$$\frac{\boldsymbol{total\ smart\ building\ area}}{\boldsymbol{total\ building\ area}} \times \mathbf{100\%}$$

Example:
***Total Building Area: 150,000 m^2**

$$\frac{\mathbf{109,691\ m^2}}{\mathbf{209.540\ m^2}} \times \mathbf{100\%} = \mathbf{52.35\%}$$

Description

Tashkent State Medical University (TSMU) has established a modern smart building ecosystem that integrates digital technologies, intelligent infrastructure management systems, renewable energy solutions, campus security technologies, and innovative educational platforms to enhance operational efficiency, sustainability, and academic excellence.

The university utilizes the **HEMIS digital management platform** and real-time analytical dashboards to support academic administration, institutional performance monitoring, resource management, and data-driven decision-making processes. These systems improve governance efficiency and facilitate the digital transformation of university operations.

Campus safety and security are strengthened through integrated electronic access control systems, turnstile-based entry management, CCTV surveillance networks, central security monitoring centers, and dedicated fire safety and emergency response control facilities. These technologies support campus protection, risk management, emergency preparedness, and continuous monitoring of university infrastructure.

TSMU has also implemented energy-efficient technologies, including a **2,215 kW solar photovoltaic power system**, energy-saving lighting systems, and smart infrastructure solutions that contribute to renewable energy generation, reduced environmental impact, and long-term sustainability objectives.

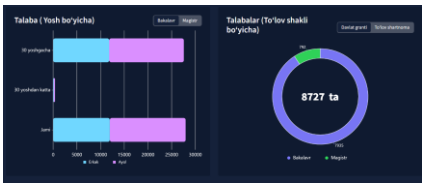
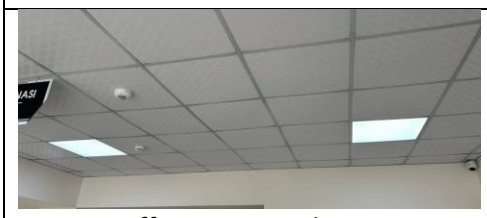
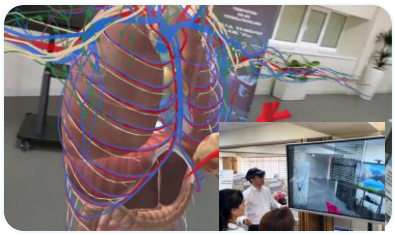
To support innovative teaching and learning, the university operates digital learning laboratories, smart classrooms, technology-enhanced educational facilities, and **Augmented Reality (AR)-based anatomy learning platforms**. These advanced learning environments provide students with interactive educational experiences and improve the quality of medical education.

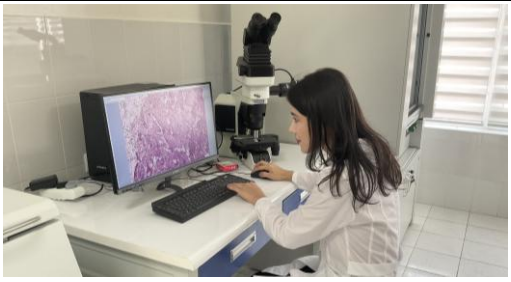
The university's smart building infrastructure further includes research laboratories, modern library facilities, digital microscopy laboratories, clinical training centers, and advanced medical simulation facilities. The simulation centers enable students and healthcare professionals to develop clinical competencies, practical skills, patient safety practices, and emergency response capabilities using modern simulation technologies.
Through the integration of renewable energy systems, digital governance platforms, intelligent security infrastructure, smart educational technologies, research facilities, and simulation-based learning environments, TSMU continuously advances its sustainable campus development strategy while supporting innovation, digitalization, environmental responsibility, and educational excellence.

Smart Building Summary

Indicator	Value
Smart Building Area	109,691 m²
Solar Power Capacity	2,215 kW
HEMIS Digital Management Platform	Available
Electronic Access Control System	Available
CCTV Surveillance Network	Available
Fire Safety Monitoring Center	Available
Energy-Efficient Lighting System	Available
Digital Learning Laboratories	Available
AR-Based Anatomy Learning System	Available
Smart Library Facilities	Available
Research Laboratories	Available
Clinical Training Facilities	Available
Medical Simulation Centers	Available
Smart Building Implementation Ratio	52.35%

This smart building infrastructure contributes directly to **SDG 4 (Quality Education), SDG 7 (Affordable and Clean Energy), SDG 9 (Industry, Innovation and Infrastructure), SDG 11 (Sustainable Cities and Communities), SDG 13 (Climate Action), and SDG 17 (Partnerships for the Goals)** by promoting digital transformation, energy efficiency, sustainable infrastructure, innovation, and institutional resilience.

 Solar Photovoltaic Power Plant Infrastructure	 HEMIS Academic Performance Dashboard	 HEMIS Data Analytics and Monitoring Dashboard
 Electronic Access Control Turnstile System	 Central Security Monitoring Center	 Fire Safety and Emergency Response Monitoring Center
 Energy-Efficient LED Lighting System	 CCTV Surveillance Camera Network	 Smart Access Control Entrance System
 Digital Anatomy Visualization and AR Learning Platform	 Research and Innovation Laboratory	 Digital Learning Laboratory
 Collaborative Learning Environment	 Smart Library and Learning Resource Center	 Clinical Simulation Training Center

 Advanced Medical Simulation and Skills Training Center	 Advanced Digital Microscopy Laboratory	 High-Technology Medical Research Equipment