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DOI 10.70286/ISU-19.11.2025.001

RECONSTRUCTION OF THE LABORATORY EDUCATIONAL BUILDING

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In the development of the project for the reconstruction of the laboratory educational building, we took into account the significant physical wear and tear of the building, its functional and technical non-compliance with modern requirements, as well as the university's need to create a high-tech scientific environment. Long-term operation, outdated engineering networks and inconsistency of internal spaces with modern educational formats made it impossible to carry out standard repair work. Therefore, a comprehensive modernization concept was developed, aimed not only at the restoration of structures, but also at the comprehensive renewal of the building in accordance with current architectural, energy-saving and functional standards. Our goal was the formation of a safe, adaptive and technologically equipped space capable of ensuring a high-quality educational and scientific process.

The project is aimed at creating a flexible laboratory and educational environment, suitable both for conducting classes and for experimental, research and project activities. The architectural concept is based on the principle of «transparency and openness», which embodies the idea of the development of science, free exchange of information and current trends in the formation of educational spaces.

In the reconstruction process, we were guided by the principles of sustainable development, energy efficiency and ergonomics, combining functionality with comfort. In addition to the modernization of the internal environment, the project provides a modern anti-radiation shelter, which can be used at a safe time as a student cinema or a multifunctional space. (Figure 1) An elevator for the building is designed

to ensure complete inclusiveness. Our goal — is to create an updated and responsive space that meets the needs of modern laboratories and safety requirements.

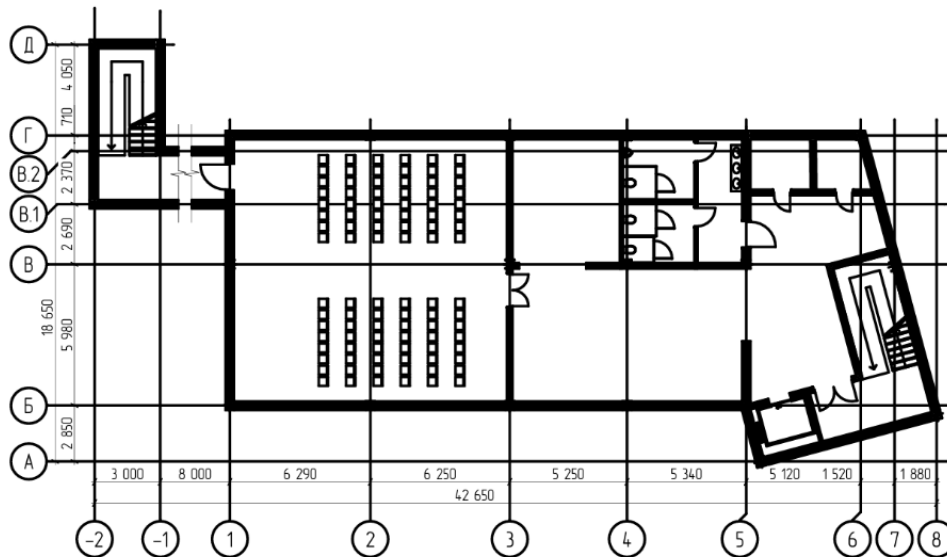


Figure 1. Shelter plan

The image of the building is formed by clear geometric lines and modern materials. Panoramic glass elements provide high-quality natural lighting and form a visual connection between internal laboratories and the external environment. A separate architectural emphasis is the copper cladding of the facades, which adds warmth, visual expressiveness and durability to the building. The use of copper creates a characteristic modern image of the case and emphasizes its manufacturability and status. (Figure 2)



Figure 2. Visualization of the project

In the constructive scheme (Figure 3), a steel frame consisting of columns and beams is used. Such a system allows the formation of large free spans necessary for the installation of laboratory equipment, experimental installations and specialized technical systems. The steel frame provides high load-bearing capacity, ease of installation, durability and flexibility in the transformation of interior spaces. The design model is distinguished by an increased level of safety and reliability, which is especially important in the context of the intensive functioning of a modern laboratory building.

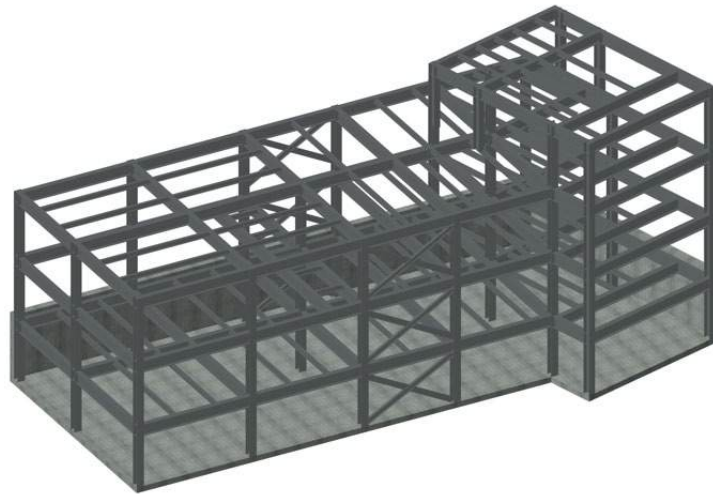


Figure 3. Constructive scheme

The project of reconstruction of the laboratory educational building will be an important step in the development of the university scientific infrastructure. The use of modern materials, well-thought-out constructive solutions and flexible planning schemes will create a functional, safe and comfortable space that meets the requirements of modern education and research activities. The renovated building forms a holistic environment for learning, research and communication, providing conditions for productive interaction between students and teachers. The modernized building will not only improve the quality of the educational process, but also contribute to the development of innovations, creating a motivational and technologically equipped space ready for today's challenges.

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