APPLICATION BIM-TECHNOLOGIES AND LASER SCANNING FOR RECONSTRUCTION AND MODERNIZATION OF OBJECTS

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The paper discusses the use of terrestrial laser scanning in order to obtain initial data in the design of complex objects using BIM technologies. BIM software products and ways of their use in a specific project for the reconstruction of Kostanay airport are indicated. The authors described the technology for obtaining source data using a Leica RTC360 laser scanner equipped with an advanced visual inertial system based on the SLAM algorithm. This allows automatically combining scans from different standing stations during the production process, and significantly saves time. The advantages of using such equipment in comparison with traditional measuring works are described. The root mean square errors of combining scans are presented. As a result a three-dimensional model of the building was obtained, which made it possible to restore the design documentation and the design of the new terminal building. At the same time, the design process was reduced by about 20%.

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