



ACADEMIC YEAR 2015 – 2016

TITLE OF DIPLOMA THESIS:

BIM implementation in Construction Management: Design, Programming and Simulation of Construction Project

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ABSTRACT

The development of technology and information technology in recent decades has brought radical changes in the design, management and construction of projects. For this reason, it is important to use all modern methods and tools that are available, for the comprehensive and proper construction process. Proper design of a project is the most essential part for its success and as more extensive and detailed the design process is, the easier and cheaper the construction of the project will be. A rising and promising method for design and construction management is BIM, with which it is possible to design, supervise and control of the project. The 5D simulation offers everything that an engineer needs: the control of correctness of design, tracking the progress of the project regarding time schedule and the deviation from the budgeted construction cost. In the near future BIM will be used during operation of a project too, as a tool for preventive maintenance and facilities management. Companies responding to market needs, offering plethora of sophisticated software, with which BIM can be applied throughout the project's life cycle. In this paper, BIM method for the construction of a building project, namely a school, was studied and implemented in order to identify opportunities and problems of BIM implementation. For this reason, Autodesk Revit 2016, Microsoft Project 2013 and Autodesk Navisworks 2016 were used for 3D design, time and cost planning and simulation of the building.

KEYWORDS

BIM, project management, project scheduling, cost management, simulation