
3D models and GIS on Salvage Excavations in Serbia: Implementation and Benefits

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Abstract

During excavations archaeologist collect large amounts of data. Neatly classified and organized archaeological documentation enables more efficient and elaborate publications of the data. This process has proven to be time-consuming if done in a classical manner. However, there is a growing need to cut excavations shorter, due either to the pressure imposed by the building contractors during salvage excavations, or to the lack of funding provided by the government for systematic excavations. Thus, a need is created for new methods of documenting archaeological excavations, which will be both time efficient and provide all the necessary information about the excavated material. This challenge can be solved only by using the new tools and technologies. The Provincial Institute for Protection of Cultural Monuments (Serbia) conducts a series of salvage excavations every year due to the installation of a gas pipeline, construction of railways, construction of highways, and other construction projects. Faced by the problems outlined above, we developed a new system for documenting of excavated archaeological materials and architecture, based on GIS, 3D scanning and 3D modeling technology. 3D scanning and photogrammetry, represent at this moment the most progressive techniques in archaeological documentation. Combining the results of 3D models obtained with 3D scanning, and photogrammetry with the results of GIS analyzes in the process of archaeological documentation is not a new idea. However, it is rarely done on a larger scale Serbia, especially in salvage excavations and is generally reserved for presenting the finds, not for documentation. Even though the complete potential of its application in the documentation has yet to be understood.

Keywords: 3D scanning, photogrammetry, 3D modeling, GIS, salvage excavations, archaeological documentation

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