

Recovering Valuable Artifacts of the Cultural Heritage through Modern Technology and Equipment

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Abstract. This paper presents the digital reconstruction of the carving of the iconostasis of the Assumption church in the town of Bansko in its original form, a research project of the Department of Mathematical Linguistics of the Institute of Mathematics and Informatics, Bulgarian Academy of Sciences.

Keywords: Digital Reconstruction, Cultural Heritage, Bansko

1 Project presentation

The digital reconstruction of the carving of the iconostasis of the Assumption church in the town of Bansko in its original form and the digital reconstruction of the destroyed icons from the Royal and the Apostolic order are a research project of the Department of Mathematical Linguistics of the Institute of Mathematics and Informatics, Bulgarian Academy of Sciences (IMI—BAS). The Assumption church was built in the 16–17 centuries, but in 1958 a fire broke out, consuming the cross and a large part of the iconostasis. The icons were also damaged. This was the first church built in this region, and it is famous for its icons, which are the work of Toma Vishanov, founder of the Bansko School of Art, and the extraordinary carving of the iconostasis, by an unknown master. At the initiative of the municipality of Bansko, specialists from IMI—BAS undertook a digital reconstruction of the destroyed and damaged elements of the iconostasis in as authentic a form as possible, using only the remains of the fire and an old photograph of very poor quality.

The surviving elements are difficult to analyse because the carving is altered, and the other objects are charred and cannot be removed:

- The upper part of the iconostasis was burnt and many details are missing.
- The cross and a part of the ornamental plastic decoration around it and the icons of the apostolic and prophetic order are charred.
- Many essential elements of the carving of the iconostasis are missing.
- The charred details cannot be removed, which requires outdoor work, etc.

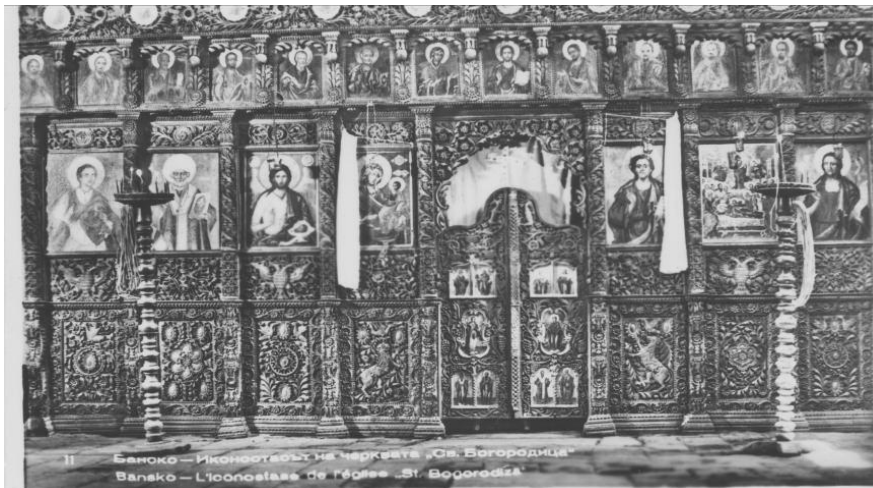


Fig. 1. Photographs of the iconostasis of the Assumption church in Bansko



Fig. 2. Part of the iconostasis after the fire

This project aims to use modern tools and technology for digitizing monumental artifacts to preserve and present a significant sample of the Eastern Orthodox cultural heritage—the iconostasis of the Assumption church in Bansko.

The digital reconstruction of the entire iconostasis, including carving and icons, requires deep professional knowledge of the principles of Orthodox art and the specific characteristics and traditions of the particular art school, combined with the necessary expertise in the field of modern multimedia technologies. The reconstructing process involves building a hypothesis about the fundamental generating idea of the anonymous master of wood-carving. This hypothesis is based on a thorough analysis of the main characteristics of the iconostasis (the epoch, the place, the artistic style) including study of specimens close enough according to the above characteristics [1].



Fig. 3. Details of the iconostasis after the fire and their digital restoration

In order to perform the task in the best way, the most modern technologies are used. A highly efficient mobile studio digitizes the objects on location. High-resolution digitization is ensured, along with exceptional colour quality, high sensitivity to the material, photographing without additional lighting for maximum preservation of the original objects, and video capture in HD format.

For the processing of digital images specialized graphic workstations are used, and for recreating the woodwork, Adobe software (Illustrator, Photoshop and Corel Draw). A computer analysis of the recorded and archive material is performed, and the possibilities for extending and generating the following images are studied. A complete digital graphic project was developed for the restoration of the carving of the iconostasis. The recovery process included manual work as well—pictures of some missing elements and details on the processed images. The digitally recon-

structured model of the carving and the cross of the iconostasis is used to make a real one, which is currently being installed in the Assumption church in Bansko. Icons will be made at a later stage, as they require more time and additional art and graphic analysis.

The created digital model will take its rightful place in the multimedia digital library *Virtual Encyclopedia of Bulgarian Iconography* [2] [3] [4] among the most valuable samples of the Eastern Orthodox cultural heritage, digitized and stored for free access by the present and future generations.

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