DIGITAL RECONSTRUCTION OF ICONS ON THE FAÇADE OF VENTSPILS' ST. NICHOLAS ORTHODOX CHURCH

ILZE MATĪSA Mg Art

ZANE STIKĀNE Mg Art
Restorer
zane_rest@inbox.lv

INTRODUCTION

The Ventspils Orthodox Church was consecrated in honour of St. Nicholas the Miracle Worker in 1901. It was designed by Vladimirs Lunskis in the Russian-Byzantine church architectural style, with improvements to the façade's style by the academic Kočetovs. The façade is decorated with many icons, which is rarely seen in Latvia. The 18 icons are placed in specifically constructed niches. The icon of St. Nicholas, which is located above the main entrance, was made with a mosaic technique by the architect Frolovs, who also authored the iconostasis project. [Рижские епархиальные ведомости, № 7 (1 апреля 1902 г.)]. This icon is in good condition.

Fig. 2. Preparation of an example – the pattern was developed using Adobe Illustrator, and engraved in the organic glass sheet with a laser, then gilded and painted

Fig. 3. The icon of St. Peter the Apostle, prior to restoration

Fig.4. The icon of St. Peter the Apostle, in process of restoration

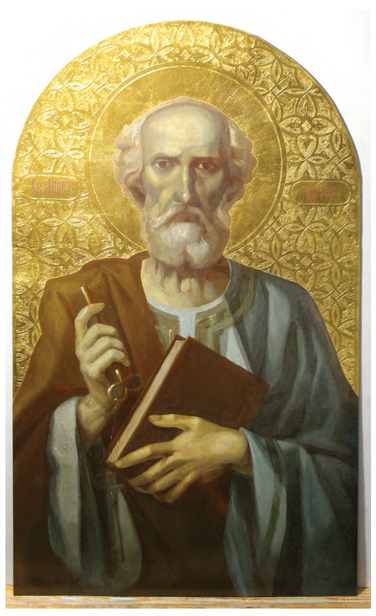

Fig.5. The icon of St. Peter the Apostle, after restoration

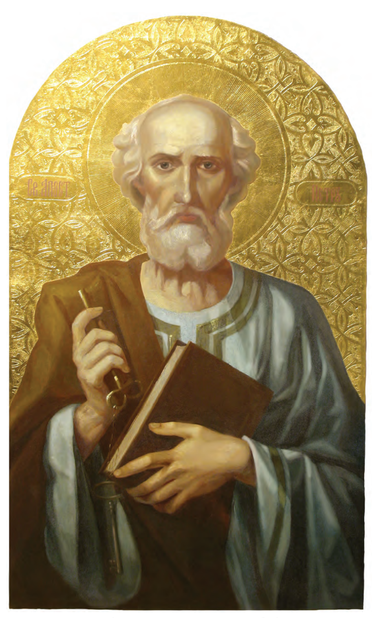

Fig. 6. Digital reconstruction of the painting part of the icon of St. Peter the Apostle

Fig 7. All icons on the façade of Ventspils' St. Nicholas orthodox church prior to restoration

Fig 8. All icons on the façade of Ventspils' St. Nicholas orthodox church after restoration

The remaining 17 icons, which were made in Saint Petersburg at the Petrov workshop in the late 19th century, were painted with an oil technique on zinc plates and then gilded. This once modern material – nearly pure zinc – has proven to be not that reliable. During experimentation it was established that zinc plates should not be placed behind glass, as the moisture from condensation corrodes the base much more quickly than rainwater. Three icons with glass frames were kept on the façade for two years after restoration – condensation had dripped on the surface, not evaporated for an extensive period and created a significant layer of a white-coloured corrosion product. After restoration all the icons have been on the façade for at least four years – minimal surface corrosion and drying in the paint layer can be observed.

The original paint layer had been irreversibly damaged by sunlight, chloride ions (seaside climate and a nearby chemical fertiliser handling terminal) and microscopic coal dust (coal handling terminal). The relevant port infrastructure has been improved in recent years though, which includes improvements to cargo loading. Experimentation has revealed that the microscopic coal dust act as a potent catalyst in some corrosive chemical reactions.

Restoration not only improved the visual appearance of all the icons, but also gave an opportunity to investigate the technologies used in creating the icons. This helped to better evaluate the problems caused by aggressive environmental damage and the different impact across the façades. For example: on the northern façade, the pigment paint was least damaged, but the base had significantly corroded.

In order to preserve the heritage of Ventspils' St. Nicholas Orthodox Church, copies of the façade icons will be made. The originals will then be placed in a climate controlled storage (in the church warehouse), where the temperature and relative humidity can be regulated to best protect the icons.

Due to the overall damage to the icons, any recreation attempts run the risk of not conforming to the originally intended style. Thus, to ensure that the copies of the old icons and any new paintings have the same style, the original iconography will be examined, and then fifteen digital reconstructions will be created, as well as digital paintings (via *Corel Painter 2019)* of icons of St. Mark the Evangelist and St. Lucas the Evangelist, since the original paint layer of these icons is entirely lost. The information gathered and documented during restoration will be used throughout the digital reconstruction process.

Currently, the only material which supports laser engraving well enough to create the background ornamental engraving corresponding to the original is organic glass (modern material research and work with lasers – Andris Skudra). The pattern required for the laser engraving was made in Adobe Illustrator. Eight different samples were prepared by processing the organic glass base prior to gilding and applying paint. The methods used to improve adhesion were: surface machining, surface dissolution and application of a PVB adhesive layer. The examples will be placed on the façade behind glass and kept there for several years, to empirically determine the best technique for recreating icons.

Changes. Challenges. Achievements.
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