

The specifics of lighting of restoration objects (on the example of stave and stone church structures)

Abstract

The article deals with the specifics of lighting of stave churches of Ukraine and stone temples, erected or rebuilt during the 19th century. It explains how the approach to the lighting of Orthodox churches changed during the Synodical period. The Ukrainian experience of solving the issue of lighting of restoration and reconstruction objects was described. The specifics of lighting the interiors of church structures is illustrated by the examples of the Dormition Cathedral of the Kyiv Pechersk Lavra and the Saint Vladimir Cathedral in Chersonese. The specifics of lighting of restoration objects is based on the need to combine the conformity to the authentic view of light fittings (according the photos from the archive) and modern lighting technologies, so in many cases light fittings are manufactured in the limited quantity under the author’s drawings.

Keywords: lighting issues, restoration objects, stave and stone churches and cathedrals, authentic

Introduction

The issue of historical and cultural objects restoration and reconstruction of destroyed objects is urgent for the developed countries of the world and, at the same time this issue has many aspects. Restoration is always based on the study of historical and archival records. The basic requirement of conservation on the scientific basis, approved by international conservation and heritage protection documents, is the maximal preservation of the monument fundamental principle, and in case of losing elements, their possible reconstruction according to the archival sources. In Ukraine, the issue of study and reconstruction of completely or partially destroyed buildings (mainly churches) is very urgent, taking into account the huge amount of lost objects. At the same time, the attitude to the practice of restitution – reconstruction in society – still remains ambiguous, although the world has already recognized restitution as an independent phenomenon long time ago.

The principal issues related to the restoration of the monuments, in the first turn, are connected with the misuse of historical buildings, as the destruction of objects is caused not only by low quality construction materials, errors in construction, aggressive impact of atmospheric factors, or the building old age, but also by negligent attitude to the monument and its maintenance in the improper technical condition. Often, in the process of the reconstruction of objects, little attention is paid to the style aspect of the interior equipment, including lighting devices, which should comply with the general concept.

Having reviewed the numerous studies and scientific publications dedicated to the subject of restoration it is necessary to

emphasize that much attention was paid to the description of restoration methods and technologies, and less – to the detailed description of restoration of specific monuments. Restoration methods and technologies were described in the works of A.S. Altukhov, B.L. Altshuller, A.E. Antoniuk, V.I. Baldin, G.M. Badalian, A.A. Bartholomei, G.B. Bessonov, O. Biletska, V.A. Borisov, J.V. Vihrov, B.F. Vologodsky, G.M. Wolfenson, E.M. Hendel, M.M. Govdenko, I.E. Grabar, O.O. Grauzhis, P.G. Grishin, L.A. David, I.P. Dorofienko, M.M. Diomin, M.P. Zvorykin, P. Zuev, N.R. Levinson, L.K. Lyubimov, Sh. Kanta-kiuzino, I.A. Kiselev, P.A. Konovalov, “Conservation and restoration of architectural monuments: methodological guideline, restoration technologies on specific types of works”, J. Koreniuk, Ya.O. Kravchenko, E.I. Lopushinskaya, M.P. Maksimov, E.J. Mednikova, E.V. Mikhailovsky, I.D. Nogid, Ye.M. Pashkin, G.J. Plenderlis, S.S. Podiapolsky, V.I. Pozdniak, I.I. Pokryshkin, P.A. Rappoport, Sh.E. Ratia, N.B. Selivanova, O. Semenov, M.I. Smorodinov, J. Strilenko, V. Trepke, F.I. Feklin, A.V. Flerov, V.P. Shvets, V.P. Shevchenko, G.M. Shtender. Restoration of separate monuments and their elements was described in the articles and books by A.E. Antoniuk, J.S. Aseiev, L.K. Ginzburg, P.A. Grabovsky, G.M. Wolfensohn, M.I. Degtiarev, M.M. Diomin, M. Zolotarev, J.V. Ivashko, S.K. Kilessso, L. Kroschenko,

R.I. Kukhareno, V.N. Lazarev, V.I. Levitskaia, I.R. Mogitich, R.I. Moghitich, V.N. Nikolaiev, V.E. Novgorodtsev, J.A. Nelgovsky, Ye. Osadchy, I. Parkhomenko, O.A. Plamenitska, V.P. Podgora, A.V. Reutov, O.I. Savenko, O.V. Sitkareva, V.V. Khapaiev. The separate group of papers concerns the reconstruction of the destroyed objects, covering the issues of reconstruction justification, reconstruction projects and their harmonization, reconstruction methods, etc. They were written by by A.E. Antoniuk, L. Ganzenko, O.O. Grauzhis, I.P. Dorofienko, MM Dyomin, J.V. Ivashko, V.V. Kostochkin, L.M. Kroschenko, J.M. Lositsky, L. Oshurkevich, N.V. Perunov, N. Selivachova, N. Slipchenko, T. Timchenko, L.G. Totsky, I. Totska, V. Tsitovich, G. Chernenko, I. Cherniakov, N.P. Shepitko.

A series of foreign publications should also be mentioned: the issues of restoration and conservation of monuments were the subject of studies by D.Ainaloff, M.Alpatov, N.Brunov, S.Bettini, S.Cross, O.Demu, F.Lissi, E.Malachowicz, R.Salvini, M.Pazdzior.

However, all these publications paid too little attention to the issues of lighting objects in restoration, although this question is of the highest importance from the point of view of such objects perception. Scientific sources give as little information about the lighting of ancient churches.

The principal part

1. Lighting in the old stave churches of Ukraine

The article deals with the different aspects of solving the lighting issues of church buildings, which have its own peculiarities, according to the canon. It should be noted that the approach to lighting in the ancient stave churches and in the churches of the synodic period of the 19th century had fundamental differences. The issues of lighting in the ancient stave churches of Ukraine are discussed in detail in the Candidate’s thesis by J.V. Ivashko; in particular, it is noted there that, according to the canon, the ancient churches had three light sources: windows, icon-lamps and candles. At this, the canon regulated the location of these light sources clearly: the icon-lamps or the candles are situated on the altar, candles in candlesticks and icon-lamps in front of icons have their place the middle part of the church, a large icon-lamp – a chandelier – descends from the top of the main dome, which, according to famous traveller of the 17th century. P. Alepsky, was made from deer horns with candles inserted into their ends [3, p.91,164].

The special feature of church lighting is the absence of need in excessive lighting, which is interpreted by the Orthodox canon in the following way: Light in the church is not a means of comfort, but a symbol of the Light of the World (Christ), Light from the Light (the Symbol of Faith) and the Light of Truth. Thus, the illumination of the ancient churches represents the same trinity principle which was stated in other church elements. Due to the compliance with these rules, the light became a mystery, and the chamber twilight atmosphere with candlelight “not from the earthly world” inspired people to reflect on the eternal divine. Lighting of the old stave churches – small, dark, with warm punky flame of candles and icon-lamps in usual twilight – had an extremely strong emotio-

nal influence. In fiction, one can find descriptions of the lighting of ancient churches, “The candlelight illuminated only the iconostasis and, slightly, the middle part of the church. The porch deep corners were embraced with darkness” [1, p.180].

In small stave churches, this sacramental power is expressed not in the strongest way. Cozy chamber, semi-dark interiors of rural churches created the atmosphere of spiritual unity with God much stronger than the interiors of the 19th century churches in pseudo-Byzantine style, illuminated through the high windows where the spiritual feelings were affected by external influences. Obviously, the old masters knew this, and later, in the Synodical period of the 19th century, these laws were neglected more and more: they started to make many windows not only in stone but in stave churches as well (the three-domed church in Kaniv city had 24 windows) [2].

The old tradition of three windows on the church facades dates back to the early Christian times and is reflected, in particular, in the life of St. Barbara. According to M. Shumitsky, the windows in old stave churches were narrow and long, one in each block from the north and the south [9].

The window area to floor area ratio was different in the ancient churches of different districts of the Kyiv region. This parameter was the smallest in the churches of Polissia (independently the on their construction date) and ranges from 1/10 to 1/23. In the northern part of the Middle Dnieper Lands, this parameter is also small (in the Khodoriv city church, it is 1/23). This value was the highest in the churches that were influenced by the tradition of East Podolia region.

The number of windows in the stave churches of the Kyiv Region was different as well. The most often, there were eight, ten or twelve windows in the first tier of a three-clock church. In the church upper tiers, most often, 2–3 windows were made in each upper tier. The first tier of a christened church has minimum four and maximum twelve windows. Total number of windows in the Savarka village church is one of the minimum ones – nine, the maximal known number of windows (fifty-six) was in the Medvedevsky Monastery church. The number of windows depended on the church architecture character, its height, and the height and the size of the windows.

Windows in later the Synodical church extensions were not taken into account. In different

churches, the number of windows was as follows: Medvedevsky Monastery – 56, Velyka Berezianka village – 30, Trypillya city – 24, Doroginka village – 24, Nikolaiev church in Siniava village – 21, Tarashcha city – 23, Soloviivka village – 18, Konela city – 16, Khodoriv city – 16, Kornyn city – 16, Zarubintsy village – 16, Torhovitsa city – 14, Resurrection church in Siniava village – 12.

Stave churches of the Kyiv Region played an important role in the literary works of the outstanding Ukrainian writers, first of all, T. Shevchenko, M. Gogol and I. Nechui-Levytsky, who are called the singers of the Kyiv Region. Beside the literary image and emotional experience, their books are rich in descriptions, as can be considered purely architectural. For T. Shevchenko, the striking image of a stave church – an old, small, darkened from time, located in Gnyli Budyshcha in the north of Zvenigorod District, is to the great extent based its lighting specifics. No researcher of stave architecture could give this lyrical and brief description of “ordinary, with three octagonal conical domes, with blackened patterned iron crosses” rural churches [8]. T. Shevchenko chose only one main accent for this – the light, like one paint. The main character sees the lighted church windows for the first time in his life from some barns and service rooms. After sunset, “the fire light faded... in old shells of a dark old church” [8, p.457], and sunlight softly embraces the church and the poplar with its pink light.

If stave churches of southern counties of Kyiv province, described by I. Nechui-Levytsky, create the romantic and inspired mood, then the main feature of Polissia churches is their severity and archaic features in harmony with the surrounding nature.

2. Solution of lighting of restoration objects (by the example of stone cathedrals)

It should be mentioned that during the 19th century, the majority of stone churches were in the process of reorganization, which was reflected in the increased number of windows and, accordingly, the stronger temple illumination. Just as many windows and larger ones had temples that were erected during the 19th century, and this is their difference from the national-style churches of earlier periods.

Lighting issues of church architecture monuments, which are subject to restoration or reconstruction, are the components of the whole complex of restoration and reconstruction works. These issues should be considered on the example of two unique objects restored by the specialists of Ukrrestavratsiya corporation – the Dormition Cathedral of the Kyiv Pechersk Lavra and the Saint Vladimir Cathedral in Chersonese [5-7].

The Dormition Cathedral became the first stone building of the Kyiv-Pechersk Monastery. Founded in 1073, it was erected during three construction seasons in 1075-1077. On August 14, 1089, the cathedral was consecrated [6, p.30]. The Cathedral was a triangular six-point, one-domed cross-cathedral temple, brightly adorned inside [6, c.30]. The cathedral layout had the shape of a rectangle stretching from east to west, with the size of 32.4 x 21.6 meters, with three apices on the

eastern side. Three pairs of pillars divided the interior space into three longitudinal and four transverse parts, which corresponded to the partitioning of the building outer walls with pilasters [6, c.30]. The pillars were connected with each other and with the walls with the arch walls, on which the vaults and the dome drum leaned. The cathedral height in the central part reached 43 meters. After the reconstruction of 1720-1729, the cathedral became seven-domed. The document of 1810 states that after Baty's invasion, the fires of 1718 and the reconstruction; the cathedral changed its initial appearance fundamentally [7, p.17].

During the cathedral lifetime, the number and location of windows were often changed. For example, the inspection act of 1893 states the presence of windows closed with bricks in the western, southern and northern walls of the internal Church of St. John Prodromos. The historian K. Sherotskyi [7] also described the reconstruction of the window in the Church of St. John Prodromos and the additional entrances made.

The history of wall paintings of the Dormition Cathedral covers nine periods. Taking into account the existing historical iconographic and scientific and critical materials, the Dormition cathedral was reconstructed during the age of its greatest prosperity – at the time of the Baroque, the first half of the 18th century. Light fittings were also made in the corresponding stylistics (Fig.1).

Once the Dormition Cathedral was equipped with a large silver chandelier with 24 candles of the main dome, weighing over 100 kg, presented to Lavra by Kateryna II in 1784, which was not preserved, but later reproduced according to the archival photos (Fig. 2). Chandeliers in the church wardens' gallery were arranged in the same manner (Fig. 3). The total length of the Dormition Cathedral power supply network was 9,000 m.

The project of the Dormition Cathedral reconstruction provided for installation of lustres, lamp-brackets and other light fittings. The solution of the chandelier in the interior of the internal Church of St. John Prodromos was performed in Neo Russian style in accordance with the stylistics of church interior (Fig. 4).

In the central volume of the Assumption Cathedral there were several panikadils – the glan, which was crowned with the image of a dove – the Holy Spirit, two privates and two small ones. The weight of the main chandelier was 1000 kg, the rank and file – 600 kg, small – 200 and 100 kg. Based on the model of the



III. 3. Chandeliers in the church wardens' gallery. The photo from the funds of "Ukrrestavratsiya" corporation

III. 4. Chandelier in the Church of St. John Prodromos interior. The photo from the funds of "Ukrrestavratsiya" corporation

main chandelier, the author's drawings of all the others were developed. The structural details of the rods were made of steel, and to reduce the weight of the chandelier, the decorative details of the rods were made of copper in the electro-forming technique. Brackets and some details are made in the casting technique, crystal suspensions were used. The face pouches were covered with layers of silver and gold.

The specifics of solution of lighting issues were the features of the second restored and reconstructed object, the Saint Vladimir Cathedral in Chersonese [5]. For many believers, the Saint Vladimir Cathedral in Chersonese became a symbol and the basis of Orthodoxy in Ukraine-Rus, so its architecture was performed in pseudo-Byzantine style. The Vladimir Cathedral is of cruciform volume with three faceted apses in the east and the faceted porch in the west. In the north and south, two-tiered porches are adjacent to it, and two-tiered rectangular constructions are attached to the cross branches. Unlike ancient Byzantine designs, the positive side here is the unity of constructive and decorative elements. Once, the Cathedral had a rich interior, with Byzantine ornamental paintings naturally combining with marbled walls, mosaic floors and gold

III. 5. Chandelier of the Saint Vladimir Cathedral. From the funds of "Ukrrestavratsiya" corporation



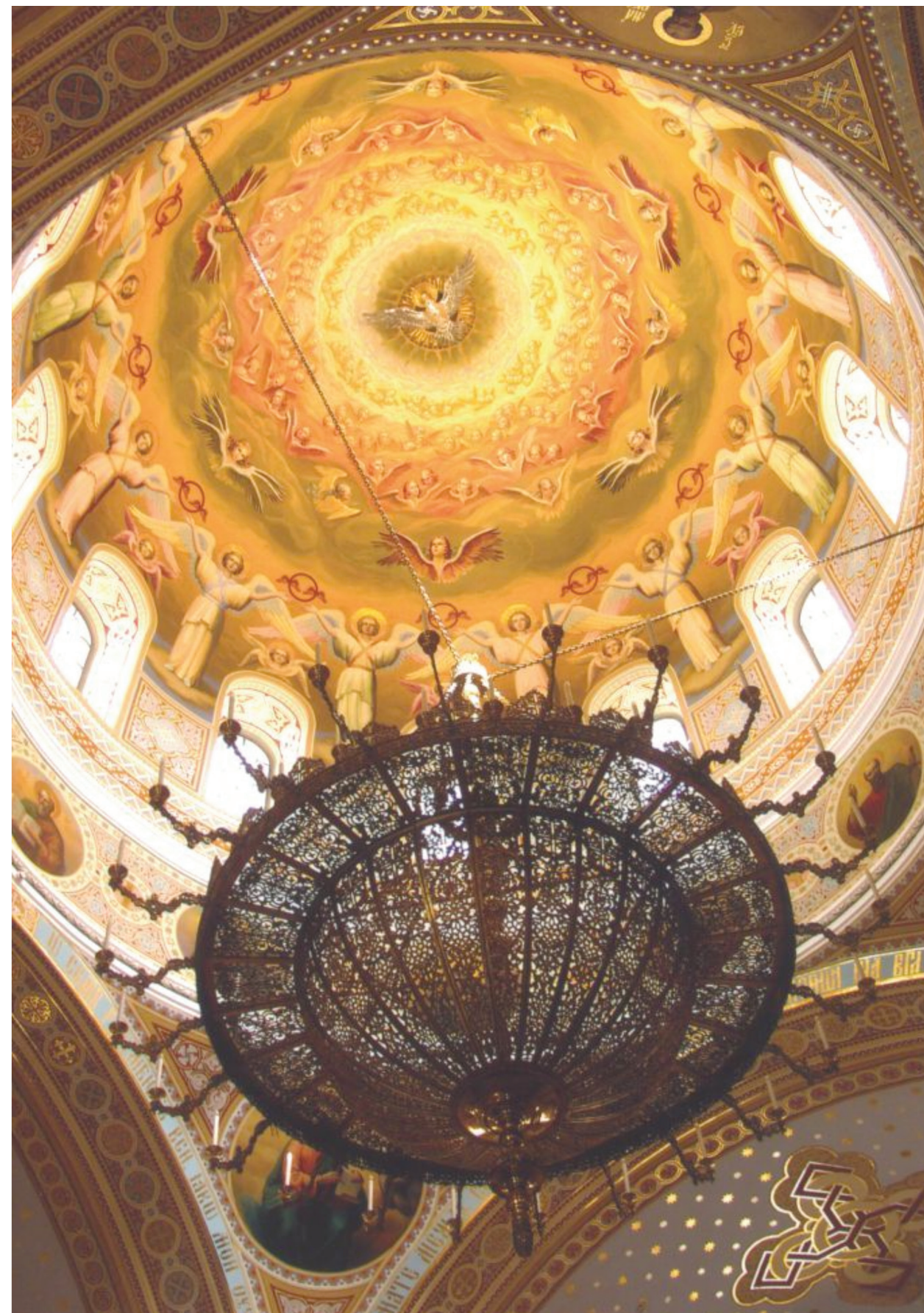
iconostases. As it can be seen from archival photographs, the adornment of the Saint Vladimir Cathedral was a large chandelier, which stylistically combined with pseudo-Byzantine interior and exterior stylistics (Fig. 5). Chandeliers similar in stylistics were located on the lower temple ceiling.

As of 1980, the cathedral had big losses. In particular, light drum and inter-floor partition were completely absent. One of the components of the Saint Vladimir Cathedral restoration project was the electric lighting project. The design task provided for general power supply from one line under a temporary circuit with the perspective to connect the second line required under the project. Moreover, the artistic electric lighting was expected for the cathedral. The separate drawings were developed for the light fittings.

In the period from June to November 1999, comprehensive research was carried out for the condition of oil mural paintings in the lower church interior, research and report documentation was prepared and approved, the list of general construction works included electrical lighting of the interior, which changed the impression of the mural paintings. According to archival sources, special chandeliers were made for this church (Fig. 6).

General conclusions

There is a difference in approaches to solving the issues of lighting of the old Ukrainian stave and stone churches erected or rebuilt during the Synodical period of the 19th century. In particular, the interior of stave churches excluded the excessive lighting, while in the 19th century, lighting of the stone churches richly adorned in marble, gilt and mural paintings was an unalienable requirement and the sign of their scenic view. Respectively, on this fact the restoration approaches at reconstructing the Orthodox churches of different periods are based. During the restoration and reconstruction work, the general concept of the temple reconstruction for the certain historical period is developed, and stylistic solution of interiors, including lighting, is developed in accordance with this concept. It was shown on the example of reconstruction of two unique objects – the Dormition Cathedral of the Kyiv Pechersk Lavra and the Saint Vladimir Cathedral in Chersonese showed that lighting was the component of the sketch and work project, and the light fittings were developed under author's drawings in accordance with the archival photos.



III. 6. Chandelier of the upper church. From the funds of "Ukrrestavratsiya" corporation

BIBLIOGRAPHY

- [1] Gogol N.V. Complete works in six volumes. V.2. Vyi. – M.: State Fiction Publishing House, 1952. – p.153-193.
- [2] Metropolotan Bulletin, 1903. – p.291.
- [3] Ivashko J.V. The experience of complex study of the architecture of stave churches of Kyiv Region during their formation (IX-XVII centuries.)/Inaugural dissertation for the Candidate of Architectural Sciences. – K.:KNUCA, 1997. –244 p.
- [4] Historical reference. The Dormition Cathedral in Kyiv city. Volume III book 11.
- [5] Orlenko M. The Saint Vladimir Cathedral in Chersonese: methodology basis and restoration chronology. – K.:Feniks.2015. –320 p.
- [6] Orlenko M. The Saint Vladimir Cathedral in Chersonese: methodology basis and restoration chronology. – K.:Feniks.2015. – 832 p.
- [7] Sitkariova O.V. The Dormition Cathedral of the Kyiv Pechersk Lavra. On the history of architectural and archaeological studies and the reconstruction project. – K.,2000. – 231 p.
- [8] Shevchenko T. Complete works in 5 volumes. Vol.4. Narratives. A walk with pleasure and not without morality. – K.:Radyanskyi Pysmennyk,1952.-527 p.
- [9] Shumitsky M. Ukrainian architectural style in the past and present //Illustrated Ukraine. 15.02.1913. – p.7-9.