Modern Methods of Reconstruction of the Sacral Objects - Example of the Jasna Gora Monastery in Czestochowa, Poland

Nina Kazhar 1

1 Ul. Dąbkowskiego 20/22- 21, 42-200 Czestochowa, Poland

nkazhar@bud.pcz.czest.pl

Abstract. This publication is devoted to the problem of preservation and restoration of the architectural monument as an element of the historical environment. The notion of "immoveable monument of history and culture" is specified. Modern methods of restoration and repair-conservatory works are analyzed. The main principles of complex studies of monument buildings are considered taking into account their interactions with the environment. The necessity of assessing the physical state of structures and materials of the architectural monument for selecting the optimal technology for repair work, preserving the historical and cultural landscape is shown. A brief history of the construction and repair of the monastery at Jasna Gora in Czestochowa (Poland) is presented. The restoration of the Jasna Gora ensemble was a complex kind of construction work: repair, conservation, consolidation and renovation of architectural monuments. The ground and underground structures of the main buildings and structures have been restored and strengthened. The program of restoration work on the task "Complex restoration of the building of the monastery of the Paulin Fathers on Jasna Gora" (2004-2013) included three stages: 1. "Reconstruction and restoration of the buildings of the monastery of the Paulin Fathers on Jasna Gora" (2007-2010), 2. "Conservation and renovation of the building of the Basilica of the Holy Cross and the Nativity of the Virgin" (2007-2012), 3. "Renovation of the North curtain - the entrance to the territory of the monastery of the Paulin Fathers on Jasna Gora"(2013). Restoration was based on a thorough examination of the monument and aimed to maximally preserve the historical, constructive and artistic features of the monastery complex, ensure its long existence. In addition to preserving the historical, technical and artistic qualities of the ensemble of the monastery, the tasks of organizing the environmental monument were resolved. Completed comprehensive repair and restoration works contribute to strengthening the structures of the restored buildings, provide harmonization of the historic and new landscapes of Jasna Gora.

Introduction
Preservation of historical and cultural monuments is one of the most important interdisciplinary scientific problems. In its decision an important role is played by the assessment of the degree of preservation of constructions, the physical state of structures and materials of buildings, analysis of their environment. On their basis, the choice of the optimal methodology for restoration work is carried out. Determining the causes of the changes in the historical object and the accuracy of forecasting the remaining resource guarantee the creation of the most suitable conditions for maintenance, repair and restoration work. The main condition for their scientific restoration is the choice of an integrated methodology that will ensure the preservation and restoration of the properties of original materials, the strengthening of structures, the harmonization of historical and new landscapes.

The concept of "Real Architecture Monument" and methods of its preservation
The term "cultural heritage", developed by a group of Italian specialists, was adopted on the recommendation of UNESCO in 1972. Within the "Architectural Heritage", part of the "cultural heritage" of mankind, the term "Real Architecture Monument" appeared to describe current trends in restoration
theory and practice. In the broad sense of the word, it includes three categories of objects: monuments, ensembles and places of interest. In determining the cultural value of "Real Architecture Monument", its historical significance, artistic, applied and social value, aesthetic qualities, and the level of technical achievements of its era are established. The life of "Real Architecture Monument" is supported through restoration works. The choice of the type of work depends on a number of factors: the architecture of the monument itself, the degree of its distortion, style, era, engineering and technical security, climatic conditions, the location of construction in urban buildings or in the natural environment. Among these works:

**Repair** of the monument of architecture. During the repair the main structure of the monument is not subject to changes. Mainly painting facades, changing the roof, etc.

**Conservation** is the first stage of monuments restoration. This is "a set of measures aimed at protecting or strengthening the structure in its present form" [1]. Conservation is the main type of work, performed on an architectural monument.

**Restoration** ("reconstruction") is the work to restore the disturbed original appearance of the object. It includes elements of repair and conservation. This process has a number of limitations, since it inevitably causes changes in the existing structure of the historical object.

Distinguish the restoration of fragmentary and holistic (restoration "for an optimal date"). In the course of all types of restoration two operations are carried out: the disclosure of structure of the monument and the creation of lost elements.

**Formation of the basis of modern methods of restoration.**
The foundations of modern methods of restoration were developed by the Italian historian of architecture G. Giovannoni. His new classification was based not on the features of the monument, but on the type of work carried out. He identified 5 types of restoration: strengthening, anastilysis, disclosure, addition, renewal. Their content corresponds to similar modern concepts. Giovannoni's theory formed the basis for the resolution adopted at the International Conference of Restorers in Athens (1931), in which the theoretical foundations of modern principles for the restoration and use of monuments were prepared. Strengthening or conservation was unanimously recognized as the main goal of the works on the monument.

Modern principles of restoration work were developed at the II International Congress of Architects and Restorers, held in Venice in 1964. According to the Venice Charter, architectural monuments should first of all be preserved. Restoration as the strengthening of the monument of architecture and the reconstruction of its historical and artistic significance is limited and requires a rigorous scientific justification: "restoration must cease where the hypothesis begins". Today, the methods of archaeological restoration are combined with a flexible approach to each specific case, which is due to a broader interpretation of the concept of "architectural monument" [2].

**A Brief History of the Monastery Ensemble of Jasna Gora**
The name of Częstochowa city, located on the Warta River in Upper Silesia, comes from the Slavic name Częstoch - "the founder of the siege". For the first time the knight's settlement of Częstochowa is mentioned in 1220, the status of the city was received by him in 1377. The history of Częstochowa is connected with the names of the Enlighteners Cyril and Methodius, who in the 9th c. went with sermons to the North along the banks of the Warta [3].

Clarus Mons (Jasna Góra) is a Catholic monastery, named the Sanctuary of the Blessed Virgin Mary of Jasna Gora (Sanktuarium Najświętszej Maryi Panny Jasnągórskiej). It was founded in 1382 (Figure 1).

In the monastery is a Christian relic - Częstochowa Icon of the Mother of God. Related to the type Hodegetria, it is made on a wooden panel with dimensions of 122.2 x 82.2 x 3.5 cm. For the dark color of the face it is also called the "Black Madonna" (Figure 2).

Initially, for the icon was built a small chapel made of wood. It was rebuilt in the first quarter of the XVI century. In 1644 the existing three-nave chapel was erected [4].

The boundary location of the monastery required the erection at the beginning of the 17th century powerful walls, that turned it into a fortress, which was never captured by the Swedes during the War in 1655 (Figure 3). Several more attacks the monastery had to endure during the Northern War in 1702, 1704 and 1705, they were also successfully reflected.
Figure 1. Jasna Gora monastery in 1668 and 2016

Figure 2. The Icon of the Częstochowa Mother of God without setting and in setting

Figure 3. Jasna Gora monastery in XVII c.
Jasna Gora monastery is located on a hill about 300 m high and covers an area of 5 hectares. The buildings of the complex are surrounded on three sides by a park, on the fourth side there is a large square. The monastery has a quadrangular shape, in the corners are located powerful swept bastions (Figure 4).

![Plan and general view of the monastery](image)

Figure 4. Plan and general view of the monastery

The main building of the complex is the Cathedral of the Holy Cross and the Nativity of the Virgin with an ancient solar clock on the facade (Figure 5) - one of the best examples of Baroque architecture in Poland. The basilica was built in two stages: in 1430-1435 and in 1450-1463. It is 46 meters long, 21 meters wide and 29 meters high. The 106-meter long five-tiered bell tower was built in 1714 (rebuilt in 1906). The main altar of the cathedral was created in 1728 by the Italian master Giacomo Buccini [5].

To the cathedral there is a chapel of the icon of the Mother of God. In 1929 another part was added to the three-nave chapel of the 17th century. Now it contains 5 altars. Between the cathedral and the chapel of the Virgin Mary there is a sacristy (1651).

The monastery has an extensive library, which stores more than 70,000 books and manuscripts, and a number of other objects.

![Cathedral of the Holy Cross and the Nativity of the Virgin. Clock above the entrance.](image)

Figure 5. Cathedral of the Holy Cross and the Nativity of the Virgin. Clock above the entrance.

**Restoration work**

At the stage of preparing the documentation necessary studies were carried out to assess the state of the main materials and structures of the buildings. Based on their results, a number of technical solutions have been adopted, whose aim is to maximize the merits of the architectural
monument, emphasizing its historical and artistic value. A complex of works on conservation, renovation, modernization and adaptation was carried out in the objects.

The program of restoration work on the task "Complex restoration of the building of the monastery of the Paulin Fathers on Jasna Gora" (2004-2013) included three stages:
1. "Reconstruction and restoration of the buildings of the monastery of the Paulin Fathers on Jasna Gora" (2007-2010). The inventory carried out within the framework of this task showed the unsatisfactory condition of the buildings ("musician's house" and chapel-shrine) (Figure 6).

![Figure 6. "House of a Musician" before and after restoration](image1)

Some structural and finishing elements (rafters and coatings, window carpentry, external plaster, etc.) as well as elements of engineering equipment (central heating, water supply and sewerage networks, ventilation, electrical equipment) also required repair. For example, the wooden structures of the basilica roof had a wear out of 30-40%, a replacement of the copper roof was required (Figure 7.)

![Figure 7. Repair of rafters and roofing of the basilica](image2)

2. "Conservation and renovation of the building of the Basilica of the Holy Cross and the Nativity of the Virgin" (2007-2012). The assignment provided for work in the basilica, the crypt and the chapel of St. Antonia. The vaults and the main altar, the eastern and southern walls of the Presbytery, balconies for musicians and the organ required special attention (Figure 8). The purpose of the events was prevention of further degradation of the interior elements of the basilica.
Performed at the highest level of restoration and conservation works allowed to release the original decor of the XVII-XVIII centuries from later layers (Figure 8).

Conservation of vaults is performed in the basilica (Figure 9).

Difficulties were the work to replace the severely damaged marble flooring with a stronger, granite floor. During the repair work restorers met several discoveries. Under the floor of the basilica were found two vaulted crypts of the XVII and XVIII centuries. In one of them four unique graves of the "boat" type were found. Until then there were only two copies of similar sarcophagus in Poland.

In addition to the burials under the floor of the basilica clay floors with traces of the fire of 1690 and fragments of the walls of the 15th century are discovered. Walls of width 90-150 cm are made of limestone and partially bricks (Figure 10).
3. "Renovation of the North curtain - the entrance to the territory of the monastery of the Paulin Fathers on Jasna Gora"(2013). When the task was completed, repairs were carried out on the territory of the monastery (a new road and an entrance gate were built) (Figure 11). The restoration of the fortress bastion of St. Roch (the lookout tower, casemates are restored, models of cannons are placed). Part of the exposition is the authentic elements of the walls.

In 2016-17 a new stage of restoration works began. It includes 5 tasks for performing repair and restoration works: the terrace "South Curtain", the assembly hall, the Royal chambers, the terrace of the bastion of St. Roch, the "atrium" and the inner gallery above the chapel of the Mother of God (Figure 12, a,b). The restoration of the bastions and the repair of the church tower are continued. On the first tier of the tower conservation or replacement of metal anchors, securing stone elements, is performed. Similar work is planned on the upper tiers.
Results and discussions
The problem of preserving and restoring monuments of architecture throughout the world is paid great attention, as evidenced by the creation of special UNESCO programs under the auspices of the United Nations. The development of the theory and practice of preserving the architectural heritage in Poland led to the emergence of a view on the monuments of history and culture as an integral part of the ecological complex. In this regard, the restoration work is carried out by a comprehensive methodology based on the
application of the term "natural and technical system". This concept includes a combination of traditional architectural - artistic and engineering methods of restoration with modern high technologies and consideration of environmental factors. This approach determines the use of scientifically based solutions in conjunction with the optimal costs of material resources.

When carrying out the restoration work, it was also taken into account that the cultural heritage performs an important function in public life, contributing to the formation of national and regional self-awareness. It is a universal instrument for the development of international cooperation and the formation of a Pan-European cultural and social identity. Preservation of the architectural heritage raises the attractiveness of the region from the point of view of residents, tourists and investors, i.e. it is an important factor influencing the economic development of the country, creating new jobs and raising the standard of living of citizens.

References
[1] Podyapolsky S.S. "Restoration of monuments of architecture." Moscow: Stroyizdat, p.52, 2000. Подъяпольский С.С. " Реставрация памятников архитектуры". Москва: Стройиздат, p.52, 2000.
[2] Podyapolsky S.S. "Restoration of monuments of architecture." Moscow: Stroyizdat, p.47, 2000. Подъяпольский С.С. " Реставрация памятников архитектуры". Москва: Стройиздат, p.47, 2000.
[3] Pakh Ya.E. "Jasna-Gura: the holy abode of the Mother of God." Moscow: The Order of the Monastic Order of St. Paul, p.6, 2004, Пах Я.Е. “Ясна-Гура: святая обитель Божией Матери”. Москва: Изд-во монашеского ордена святого Павла, p.6, 2004.
[4] Vlaschenko P. "Częstochowa Icon of the Mother of God" Moscow, p.12, 2000, Влащенко П. “Ченстоховская икона Божией Матери" Москва, p.12, 2000
[5] Kurpik, Wojciech "Częstochowa Hodegetria". -Publication of Art Conservators, Bernardinum Publishing House, p. 156, 2008
[6] Kurpik, Wojciech “ Częstochowska Hodegetria“. —Wydawnictwo Konserwatorów Dzieł Sztuki, Wydawnictwo Bernardinum, p. 156, 2008.