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Preservation and Restoration of Sacred Monuments in Ukraine: A Scientific Approach to the Restoration of the Transfiguration Church

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Abstract. Cultural heritage is a crucial factor in shaping national identity and historical memory. During wartime, as Ukraine fights for its freedom and independence, its preservation becomes particularly relevant. Among numerous historical landmarks, ancient churches hold a special place, serving not only a sacred function but also symbolizing the cultural continuity and spirituality of the Ukrainian people. The war has caused extensive losses, including the deliberate destruction of religious buildings, posing a threat to national security and cultural identity. The Transfiguration Church in the village of Zaluzhzhia, built in 1600, is an architectural monument of national significance, distinguished by its unique artistic expressiveness. However, its current state raises concerns and requires professional analysis for proper restoration. Research Objective and Tasks. The objective of this study is to analyze the historical stages of development, architectural features, and authentic structure of the Transfiguration Church in Zaluzhzhia, as well as to justify scientific approaches to restoration work. The research tasks included: a. Analyzing the current state of preservation and identifying key issues requiring restoration intervention, b. Studying the historical stages of construction, reconstruction, and development of the Transfiguration Church, c. Examining the architectural features of the church, including structural elements, stylistic characteristics, and decorative details, d. Determining the authentic structure of the church based on iconographic data and comparative analysis, e. Developing recommendations for restoration measures aimed at preserving the monument's authenticity and ensuring its harmonious restoration. To be the research methods, the study uses comprehensive research methods that allowed for an in-depth analysis of the architectural monument: a. Historical and archival method – studying documentary sources, ancient descriptions, and archival materials, b. Comparative analysis – examining similar architectural objects from the same period to identify common trends in sacred architecture, c. Field studies – site inspection, assessment of structural features, identification of damage, and evaluation of the building's preservation state, d. Iconographic analysis – researching images of the church from different historical periods to identify its authentic appearance, d. Architectural and restoration analysis – developing scientifically based recommendations for the preservation and restoration of the monument according to modern principles of historical building restoration. Key findings of the study yielded the following key results: a. The main historical stages of the Transfiguration Church's development in Zaluzhzhia were identified, revealing significant transformations over time, b. Architectural analysis confirmed the presence of authentic structural elements characteristic of Ukrainian sacred architecture from that period, c. The current state of the monument was analyzed, highlighting existing damages, loss of decorative elements, and structural changes due to previous restoration efforts, d. Based on historical documents, photographic materials, and analogous architectural objects, a reconstruction hypothesis of the church's original appearance was developed, e. A set of comprehensive restoration measures was proposed to preserve the building's authenticity. To be a conclusion; this study confirms that the Transfiguration Church in Zaluzhzhia is an important monument of sacred architecture that embodies key features of Ukrainian church construction. The research identified major threats to the preservation of the church and proposed restoration measures aimed at maintaining its authenticity and ensuring its harmonious renewal.

Keywords: Cultural heritage; national identity; architectural monument; restoration.

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INTRODUCTION

The preservation of architectural monuments of national importance, particularly the ancient church in the village of Zaluzhzhia in the Ternopil region, is a crucial factor in maintaining the historical memory and cultural identity of the Ukrainian people. In times of war, such symbols become a spiritual support, reminding us of our deep roots, resilience, and national unity [1].

The objective of this study is to analyze the historical stages of development, architectural features, and to determine the authentic structure of the architectural monument – the Transfiguration Church in Zaluzhzhia – as well as to justify scientific approaches to its restoration.

As a result of a detailed visual inspection of the Transfiguration Church, along with the study of bibliographic [2], archival, and iconographic sources [3, 4], and the analysis of scientific concepts proposed by previous researchers [5, 6], it was established that the monument has a multifaceted and insufficiently studied construction history, as well as a number of unique architectural features that require deeper investigation.

The main tasks of the research include identifying issues affecting the preservation of the object that require immediate restoration intervention; determining the historical stages of construction and development of the church in order to establish its original structure; and analyzing stylistic features, structural characteristics, and decorative elements that make the church unique.

The collected data make it possible to formulate scientifically grounded recommendations for restoration aimed at preserving the monument's authenticity and ensuring its harmonious renewal.

The application of historical-archival, comparative, iconographic, architectural-restoration methods, and the results of field studies, including the use of technical tools, ensured an in-depth study of the object and the successful fulfillment of the research tasks [7–9].

HISTORICAL BACKGROUND

The Church of the Transfiguration, also known as the Spaso-Preobrazhenska Church, is located in the village of Zaluzhzhia, Ternopil region. It is an outstanding monument of Ukrainian architecture and spirituality, holding the status of a monument of national architectural significance (Protection No. 664).

The church is an example of defensive sacred architecture, which emerged in response to frequent military threats that occurred in Podillia over an extended historical period. Its fortified nature is evidenced by massive walls, narrow semicircular windows, and the presence of loopholes.

The church was built in 1600 on the site of the ancient Monastery of St. Onuphrius, which was founded in the 13th century. In 1474, the monastery was destroyed during a raid, after which a new church was constructed in its place. According to an inscription on a white stone plaque embedded above the southern entrance, the founder of the new church was Ivan Zbarazkyi, the Voivode of Bratslav, who in 1600 ordered it to be erected "on the site of the ancient monastery." Historical sources also mention Prince Yanush Zbarazkyi as one of the church's patrons [10].

Architecturally, the church belongs to the group of three-part churches without domes, which were widespread in Podillia from the 14th century. Its layout has archaic features: in particular, in the Zaluzhzhia church, the narthex and apse are narrower than the nave. This structural type is typical of religious buildings in the region beginning from the first quarter of the 16th century.

The history of the church is closely intertwined with significant historical events. According to legend, in the summer of 1649, during the siege of Zbarazh, the church was visited by Hetman Bohdan Khmelnytsky, who presented it with several icons. There is also evidence of visits by other prominent figures — Ivan Mazepa and Pylyp Orlyk. At the beginning of the 18th century, the monastery was transferred to the Uniate Church. In the 1760s, a philosophical school operated there, which was relocated to another monastery after a fire in 1771. As a result of reforms by Austrian Emperor Joseph II, the monastery was dissolved in 1786, and its buildings were dismantled following a public auction. The church, however, became a parish church.

During the Soviet era, the church was closed in 1961, and in the 1980s, its interior suffered significant losses: the iconostasis, altar, and flooring were destroyed, and icons and church vessels were looted. Only in February 1989 was the sanctuary returned to the religious community, after which restoration work was carried out, and in September of the same year, the church was solemnly re-consecrated.

Today, the Church of the Transfiguration functions as an active church of the Orthodox Church of Ukraine. In 2003, during utility installations, numerous 16th-century burials were discovered, presumably belonging to defenders of the monastery and Zbarazh. Additionally, foundations of what might have been a previous religious structure were uncovered on the northern side of the church. Remnants of defensive walls also remain, further confirming the depth and richness of the site's historical heritage.

ARCHITECTURAL RESEARCH

The Spaso-Preobrazhenska Church is an example of defensive sacred architecture characteristic of the Podillia region. The architectural design of the church is of significant interest due to its structural and defensive features.

The building has a three-part structure, typical of religious buildings in Podillia since the 14th century. A pentagonal apse and a narthex, both with vaulted ceilings, are attached to the rectangular, nearly square nave (8.1 × 7.4 m), which is covered by a barrel vault with lunettes. The apse is separated from the nave by an arcade of the stone altar barrier, while the connection to the narthex is through an arched opening.

The nave's windows are elongated, with arched lintels and wide jambs on both the exterior and interior. Due to their small surface area, the interior remains dimly lit, enhancing an atmosphere of inward focus. The walls of the nave are approximately 1.3 meters thick, while those of the bell tower reach up to 1.5 meters.

The narthex serves as the base for the bell tower, which combines the functions of a bell tower, a defensive structure, and a choir area (on the second level). In terms of defense, the tower originally had three combat tiers with loopholes (partially sealed by the mid-19th century). Today, following repairs, these elements are concealed under plaster. A round opening on the eastern side of the apse also exhibits the features of a loophole. An interesting surviving detail is a sundial located on the church's southern façade.

According to O. Czolowski, the foundations of the monastery mentioned in the inscription on the white stone plaque were preserved near the church. At the beginning of the 20th century, remains of a building believed by the researcher to be a Catholic church (kostel) were visible on a nearby hill. These remains have since been lost. Next to the church, a funerary cross and an old generational sculptural depiction of Saint Onuphrius, installed on a pedestal in the 19th century, have been preserved.

The church's loopholes can be categorized into two types:

– With arched stone lintels (up to 1.1 m wide and 0.9 m high);

– With horizontal stone lintels (approximately 1 m wide and 0.5 m high).

There are four arched loopholes in the nave, and two in the apse: one arched and one narrow horizontal. In the depicted plan fragment of the apse, a niche is circled in the upper part of the plan, which likely served as a symmetrical counterpart to the loophole shown in the lower part of the plan (Figure 1).

The bell tower retains five loopholes located across three tiers:

– On the first tier – one horizontal loophole on the north and one on the west side;

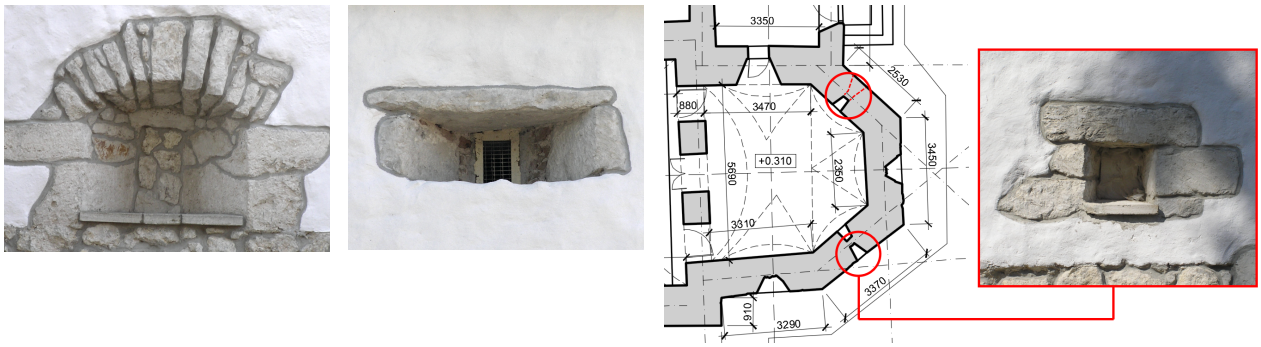
– On the second tier – one arched loophole on the south and one horizontal on the west;

– On the third tier – one horizontal loophole on the north.

According to historical depictions from the 19th and early 20th centuries, two additional arched loopholes existed on the third tier: the western one was sealed, and the southern one was converted into a window (Figure 2). There is also a hypothesis regarding another loophole on the second tier, on the northern side. Thus, it can be asserted that the tower originally had at least eight loopholes, making it the strongest and most fortified part of the entire structure.

In addition, in the lower part of the northeastern face of the apse, a shallow niche has been preserved within the altar interior, which likely represents the remnants of yet another ancient loophole.

Some researchers have suggested that there may have been another row of loopholes in the upper parts of the nave and apse of the church. During restoration works in 2007, plaster was completely removed from the façade walls, making it possible to examine thoroughly the stone masonry for any sealed openings. Inspections were conducted both from the exterior and within the roof space. Sealed flaring loopholes were found below the window level of the nave; however, no loopholes were detected at or above the level of the vaults.



Arched lintel Horizontal lintel Fragment of the apse

FIGURE 1. Loopholes of the Transfiguration Church.

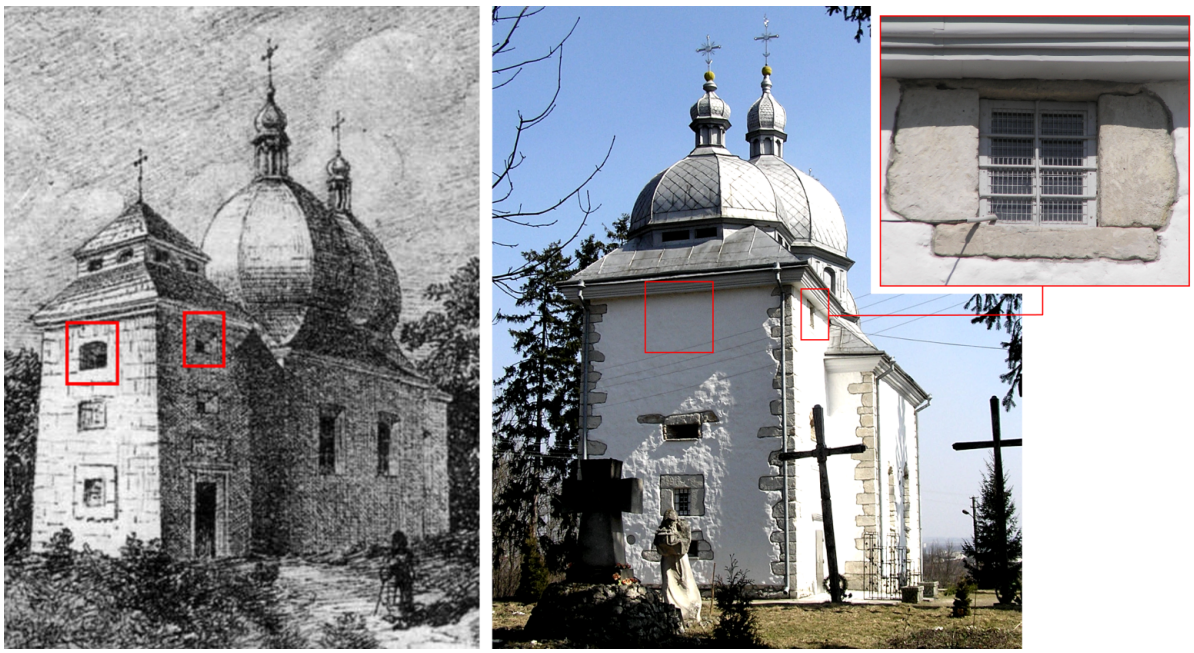


FIGURE 2. Left: loopholes on the third tier of the tower (19 th-century drawing). Right: contemporary photograph.

The oldest iconographic depictions of the church include a drawing by Anton Lange from the 1830s and a drawing by an unknown artist, also dated to the 19th century (Figure 3). These images show a three-part church, as it exists today, but without the sacristy. The sacristy was likely added to the northern wall of the apse at the end of the 19th or even the beginning of the 20th century.

A notable feature is the shape of the church's domes, which differ from their current form: above the nave and apse are tall, convex domes without drum bases, and above the bell tower is a four-pitched shingled hipped roof with a single break. Another characteristic feature, which is also evident today, is the noticeable tapering of the bell tower's volume toward the top. This narrowing was captured by the unknown 19th-century artist as well.

The distinction between the tower and the rest of the church is also shown through texture in the drawing: the tower walls are depicted with exposed stone masonry made of massive blocks, while the nave and apse walls are smooth and plastered. All this suggests that the bell tower volume exhibits more archaic features, indicating it may have been built much earlier than the nave and apse.

Was the current bell tower of the church actually built before the year 1600? What function did it serve earlier, and what was its original appearance? In seeking answers to these questions, it is essential to analyze the current

state of the monument and its stone structures. The monument acquired its present appearance as a result of restoration work carried out in 2007.

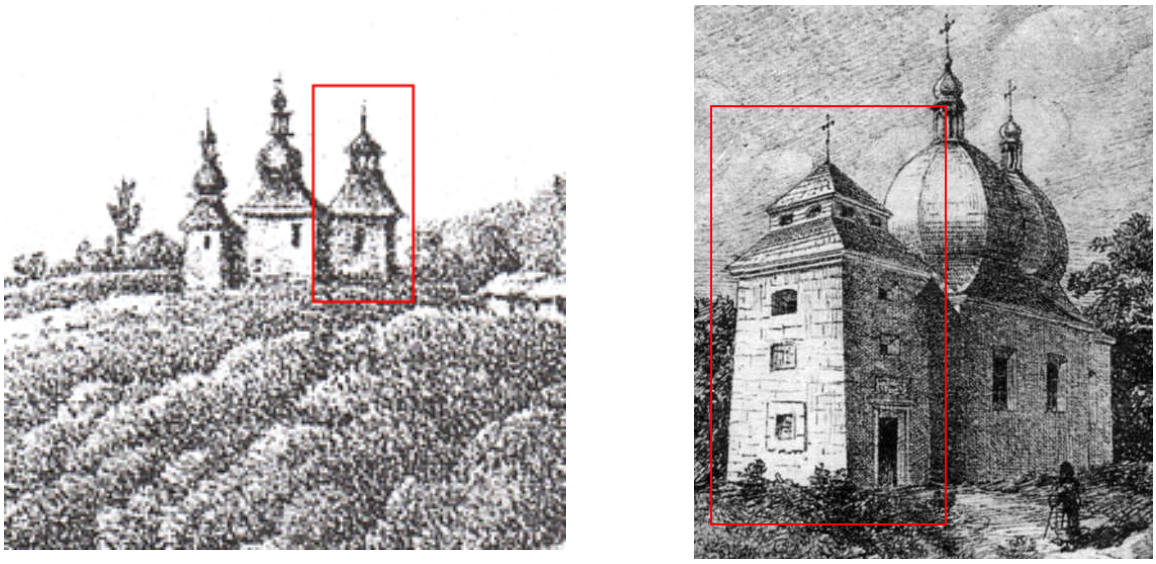


FIGURE 3. The Transfiguration Church in the drawing by A. Lange (1830s, left) and by an unknown artist (mid-19th century). The bell tower is highlighted with a red rectangle.

Analyzing the texture of the surface, the shape, and the dimensions of the stones, one may conclude that all volumes were constructed from the same material and likely at the same time. On the other hand, we observe that the loopholes beneath the nave windows and the round window of the apse share the same alignment relative to the windows—they are positioned below them and along the same vertical axis, have the same shape, the same stone arched lintels, and approximately the same dimensions.

However, on the first level of the narthex, the loopholes are distinctly different—they are much lower, and their lintels are formed from single stone blocks. If the narthex, nave, and apse were built simultaneously, what could explain this discrepancy in the loopholes of the narthex compared to those of the other parts of the church?

On the second tier of the bell tower, the building material used is not stone, as in the other parts of the church, but brick: it was used to construct the jambs of the low rectangular western loophole, the arched lintel of the southern loophole, and the arched lintel of a sealed window opening on the northern side (which likely once housed a loophole).

An indirect indication that the bell tower may have been built earlier is the previously different floor levels in the narthex and the nave. These were leveled only after renovation work at the turn of the 20th and 21st centuries.

Questions also arise regarding the stone structures in the upper part of the bell tower. The tower is almost square in plan, slightly trapezoidal, which again indicates its archaic character. The walls have approximately the same thickness, decreasing from 1.5 meters at ground level to 1.3 meters at a height of 7 meters. At a height of 7.2 meters on the interior, there is a ledge, which essentially marks the boundary between the second and third tiers of the tower. Above this ledge, the walls become thinner—1.1–1.2 meters.

On the eastern side, at the level of the third tier of the bell tower, the roof structures above the nave are located. A visual inspection revealed that the stone masonry of the eastern wall of the bell tower, on the side facing the nave, lacks an intact outer surface and is partially dismantled. As a result, the wall thickness in this area is not 1.1–1.2 meters, but approximately 0.7 meters. From the outside, it is evident that the corners of the third tier of the bell tower on the nave side are completely plastered, with the original corner stones absent. This indicates that the outer layer of the eastern wall of the bell tower at the level of the third tier, including the original corner stones, was dismantled during some form of reconstruction.

The most likely explanation is that this reconstruction involved altering the shape of the roof, although it remains unclear exactly when this occurred and what changes were made.

The presence of a cross vault in the narthex indicates that there was originally a wall between the narthex and the nave, in which an opening to access the nave was installed. Later, this wall was dismantled, visually merging the space of the narthex with that of the nave.

As we can see, there are numerous arguments supporting the idea that the existing bell tower may have been constructed long before the date inscribed on the foundation plaque indicating the church's construction, and that only in 1600 were the nave and apse added to its eastern side, thus converting the defensive tower into a church. Assuming that this tower did indeed exist prior to 1600, we still cannot answer several key questions: was it an independent defensive structure or part of the fortifications of an ancient monastery? What role did it play within the defense system? What was its original appearance?

To answer these questions, a comprehensive set of in-situ studies must be carried out—research that has not yet been conducted. These include masonry junction probes between the narthex and nave, as well as archaeological excavations around the narthex to uncover the foundations of walls that might have adjoined this hypothetical defensive tower. Such research may be conducted in the future, potentially shedding light on the ancient construction history of this unique structure. It is entirely possible that the artifacts discovered may spark great interest among restoration architects, historians of Ukrainian architecture, and local historians.

Evidence supporting the hypothesis that the bell tower may have existed before 1600 as a separate defensive structure includes:

- the previously different floor levels in the narthex and nave (only aligned in the 20th century);
- the use of brick in the second tier of the bell tower (unlike the stone used in the rest of the structure);
- differences in the loopholes of the nave and the bell tower (the tower has loopholes that are structurally distinct from the rest).

It is worth noting that the spread of stone defensive towers in Galicia and Volhynia during the 11th–16th centuries was observed by Ivan Mohytych [11]. Olha Plamenytska [12] also believed that the geographical distribution of this phenomenon could be expanded to include the territory of Podillia, where in the post-Mongol period, between the Dniester and Southern Bug rivers, a powerful system of fortifications emerged, which in the 14th–17th centuries became a reliable "Podillian shield of Europe" [13, 14].

As we can see, the transformation of defensive towers into religious buildings was a typical phenomenon, as confirmed by similar examples in Ukraine and Poland. The adaptation of defensive structures for religious purposes occurred in many regions of Ukraine. Notable cases include: the Church of the Intercession–donjon in Sutkivtsi (built on the basis of a fortification); the Ascension Church in Sharivka, which incorporates a 14th-century defensive tower; the churches in Pidgirya (Chełm, Poland) and Kryvchytsi (Lviv), which originated from 13th–15th-century defensive towers.

This transformation had a logical explanation: with the evolution of military tactics and the widespread use of artillery in the 15th–16th centuries, tall stone towers lost their defensive effectiveness. As a result, efforts were made to adapt them for other purposes, including their conversion into churches, while preserving some defensive features. Due to various circumstances, some of these towers were not repurposed and were simply abandoned and gradually fell into ruin [15].

Considering Zaluzhzhia's location along the Kuchman Route, its church may represent yet another example of the "sacralization" of a defensive structure.

The next stage of scientific research involved the study of the evolution of the church's roof. Since ancient times, three-part churches have been traditional in terms of spatial and volumetric design, both for wooden and stone churches of Galicia and Podillia. Three-domed churches with domes arranged in a single line were predominant in wooden ecclesiastical architecture.

In the historical iconography of the Transfiguration Church in Zaluzhzhia, changes are recorded not so much in the stone structures of the church, but rather in the shape of its roofs and the roofing materials used (Figure 4). Regarding the appearance of the church's roof during the initial phase of its construction history, only assumptions based on analogies can be made.

As noted by the renowned restoration architect Olha Plamenytska [12], and as suggested by the authors of this study, the church initially had no domes: the nave was likely covered by a gabled roof, possibly with a small turret (signature tower).

As for other defensive churches in Galicia and Podillia, despite their common three-part layout, they could feature a variety of roof shapes and different numbers of domes. Due to the great diversity of roof configurations among stone defensive churches and the absence of any clearly defined trend, it is more appropriate—when studying the roof evolution of the defensive church in Zaluzhzhia—to draw analogies with wooden churches of Galicia. The

architecture and formative principles of these wooden churches directly influenced the structural features and appearance of stone temples.

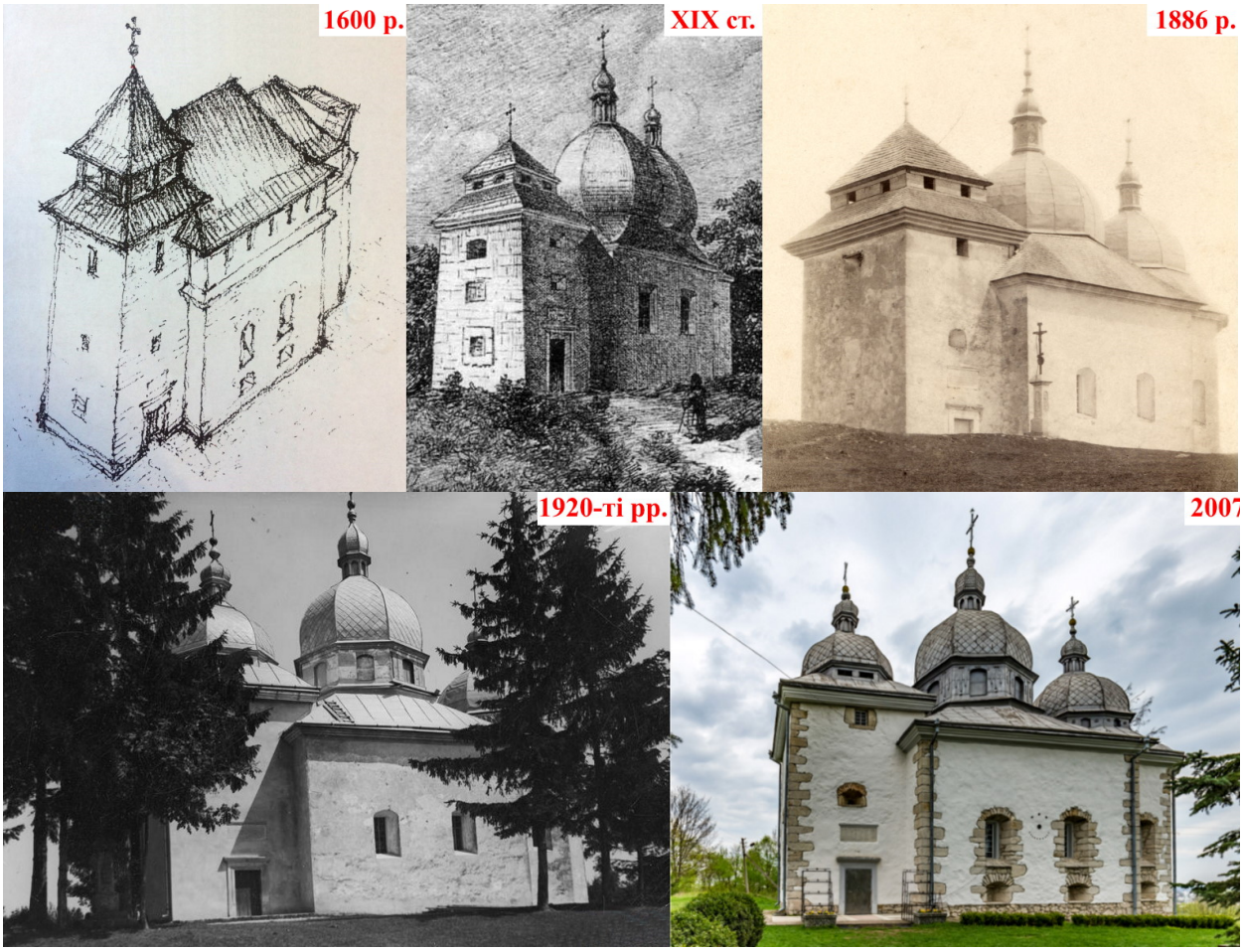


FIGURE 4. Exterior appearance of the Transfiguration Church during different construction periods.

Given the location of the monument, it is advisable to consider wooden churches of the so-called Galician school.

In Galicia, approximately 800 traditional wooden churches have been preserved. Despite the wide variety of architectural forms, experts identify three main groups within the Galician school: Archaic group, Drohobych group, Central group. Characteristic features of the archaic group of Galician churches include their squat proportions, four-pitched tent roofs with or without a break (zalom), and the presence of an emporium—a defensive gallery above the narthex. The archaic category also includes roofless Galician churches of the so-called "house type". Examples of the archaic school include the wooden Church of the Holy Spirit in Potelych (1502), the Church of the Holy Spirit in Rohatyn (1598), and the Church of St. Archangel Michael (1697) in the village of Kuty [16].

An analysis of preserved churches suggests that the bell tower of the Transfiguration Church in Zaluzhzhia was originally topped with a four-pitched tented roof. At the end of the 18th and the beginning of the 19th century, the roof structures were modified: above the nave and apse, the roofs took on the shape of domes without drums, featuring lanterns and finials at the top. A roof with a break (zalom), crowned with a low tent, appeared above the bell tower. The church is depicted in this very form in the previously mentioned 19th-century drawings.

The massive domes served only a decorative purpose, as the nave and apse had vaulted ceilings. The walls of the nave and apse were topped with decorative profiled cornices, while the top of the bell tower walls was adorned with a so-called Austrian metal cornice of a similar profile.

It remains unclear why, during the reconstruction at the turn of the 18th–19th centuries, it was decided to create only two decorative domes—one above the nave and one above the apse—while retaining a tented roof over the bell

tower, albeit in a modified form, now with a break. It is possible that there were plans to install a dome above the bell tower as well, but for unknown reasons, this idea was never realized.

Ultimately, this combination of roof shapes—two domes and one tent—remained in place until 1924, when all three roofs were unified into decorative pear-shaped domes topped with cupolas.

The next photograph dates to the mid-20th century. It shows that the roofs and domes had acquired their current form and appearance. This reconstruction evidently took place in 1924, when the original wooden shingle was completely replaced with sheet metal. Overall, the changes included the following: the roof structures above the tower were completely rebuilt—replacing the original four-pitched tented roof with a break (zalom), a dome was added on a low octagonal drum; the domes above the nave and apse were modified—made taller, with new metal-clad drums featuring blind windows; all three domes received lanterns with finials, the finials becoming more bulbous, typical of Orthodox sacred architecture, and the lanterns shorter; the cornice of the tower was updated to its current appearance (Austrian cornice).

All roofing materials were fully replaced: the domes were clad in decorative scale-like metal shingles, and the faceted roofs around the domes were covered with wide sheets of roofing metal instead of wooden shingles. The reasons and circumstances behind the architect's decision to give all the church's upper structures a domed form remain unknown. It can be assumed that the architect sought to create a more symmetrical and harmonious appearance, giving the church the form of a traditional three-domed Ukrainian church—an architectural type historically widespread in Galicia, particularly in wooden architecture.

In Ukrainian architectural tradition, three domes symbolize the Holy Trinity, and references to Baroque forms reflect the influence of historicism, which was still present among architects in the first half of the 20th century. It is also worth noting that the tented roof visually distinguished the bell tower from the rest of the church, emphasizing its older history, which aligns with our assumption that it was originally a defensive tower long before it was converted into a church in 1600. The new dome above the bell tower ultimately erased its archaic and defensive character.

By consolidating all available information on the construction history of the monument and taking into account historical iconography, we have, based on conducted architectural studies, determined its construction chronology. Over the century that has passed since the last reconstruction of the domes and roofs, the roofing and domical structures have suffered significant damage and deformation, and thus require immediate restoration.

One of the scientifically justified restoration options for the church may be the reinstatement of the bell tower's original four-pitched tented roof with a break, using wooden shingles as documented in historical iconography. Reconstructing such a roof would be a logical continuation of the successful restoration approaches implemented at the site in 2007. By restoring the tented roof over the bell tower, the Transfiguration Church could not only regain the general appearance it had in the 19th century but also stand out for its architectural uniqueness among other defensive churches in Ukraine—many of which have already lost their characteristic defensive features due to reconstructions.

CONCLUSION

The Transfiguration Church in Zaluzhzhia is a unique example of a defensive church and an important element of Ukraine's sacred heritage. During field research, 15 loopholes of two types were identified, some of which have been sealed. Architectural features and historical iconography indicate that the oldest element is the bell tower, likely built in the second half of the 13th or early 14th century, placing it within the category of Volhynian-type towers.

Iconographic evidence from the 19th–20th centuries shows that the church's roof underwent multiple alterations. In 1924, the structure acquired its current three-dome form, while the original tented roof with a break over the bell tower—which visually emphasized its defensive function—was lost.

A well-founded restoration approach involves reconstructing the tented roof with a break over the bell tower, using shingles in accordance with iconographic sources. This step would not only restore the church's historical authenticity but also distinguish it from other defensive churches.

Further reconstruction requires additional in-situ studies, including archaeological excavations and analysis of the stone masonry..

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