International Journal of Environmental Sciences
ISSN: 2229-7359
Vol. 11 No. 23s, 2025
https://theaspd.com/index.php

Wooden Historic Churches of Ukrainian Descent in Poland – Current Condition and Challenges in Preserving It

Tomasz Tomaszek[1]
[1]Department of Architecture and Cultural Heritage, Faculty of Civil and Environmental Engineering and Architecture, Rzeszow University of Technology; Poland. Email: ttomasz@prz.edu.pl

Abstract: *This article begins with a brief overview of the types and architectural solutions found in historic wooden vernacular buildings in Poland. It then examines the pressing challenges of protecting and conserving historic Greek Catholic churches located on the Polish side of the border with Ukraine. Many of these churches, once a significant for the Ukrainian national minority in Poland before World War II, are now abandoned and in poor condition. By examining the techniques used to assess the condition of these buildings, the article presents an adequate conservation strategy tailored to these specific sites.*

*This discussion highlights the importance of authenticity in relation to historic wooden structures, especially in light of the current conservation problems observed in eastern Poland. This analysis focuses on the study of an abandoned wooden Greek Catholic church in Mi*ę*kisz Stary. This 17th-century church is an example of Ukrainian architectural heritage that has survived in the border areas of Poland and Ukraine, despite its alarming state of disrepair. The presented conservation model aims to ensure both the structural integrity of the buildings and the protection of the polychrome decorating the interiors of these sacred sites. Additionally, the paper includes an analysis of the reinstatement of iconostases to wooden Greek Catholic churches in Poland. This issue highlights the broader implications of cultural heritage conservation and the need for a holistic approach that appreciates the historical value of these religious buildings. The article underlines balancing conservation efforts, taking into account authenticity and cultural context, to promote the long-term protection of these valuable objects of architectural heritage.*

Keywords: *Authenticity in preservation of heritage, conservation of wooden heritage, Greek Catholic churches, wooden building, vernacular architecture.*

1. INTRODUCTION

1.1Wooden Architecture in Poland

Wooden architecture is a key component of Polish cultural heritage. As a significant element of the country's cultural landscape, the wooden structures continue to attract the attention of successive generations with their charm and diverse, intricate designs and construction techniques. It is justified to say that Poland's wooden architectural heritage is significant not only at the European level but also globally. It can undoubtedly be considered Poland's most important contribution to the history of architecture worldwide [1]. The tradition of wooden construction in this region, as well as the predominance of such structures, stems from natural conditions—particularly the widespread availability of this renewable building material, its relatively easy acquisition, and the craftsmanship developed over generations, in the context of a shortage of stone in many parts of the Polish lowlands. This state of affairs has had a significant impact on the shaping and development of both regional and supraregional architectural features, which are significant in the broader context of European material culture. For centuries, wooden houses have been the most popular form of construction in Poland, particularly in the eastern and southern regions. At the same time, various construction techniques were employed, primarily borrowed from Western Europe. These include, in particular, palisading, frame, and semi-timbering methods, which historically developed in western and northern Poland [1]. This resulted in the development of a rich material culture associated with wooden architectural heritage and the creation of unique construction solutions, which are appreciated worldwide. By introducing a new quality to architecture, wooden buildings in Poland became a distinctive aspect that inspired the development of building traditions in Europe.

1.2Historical Types of Polish Wooden Structures

Churches play an important role in the Polish tradition of wooden architecture, serving not only as distinctive landscape elements but also as ideological symbols that reflect the diversity of religions that once flourished in these regions. Historically, Poland was a place of shared life for representatives of various faiths, including Catholics, Orthodox Christians, Evangelicals, and Muslims, as well as smaller religious groups such as Mariavists and Mennonites. The oldest preserved wooden churches, dating from the 14th and 15th centuries, are primarily Catholic structures, representing rare and valuable examples

of Gothic architecture, earning them UNESCO World Heritage status. Additionally, a unique aspect of Polish religious architecture are Baroque churches, which are wooden versions of grand masonry buildings, a phenomenon not found in other European countries. Moreover, Greek-Catholic churches, which are primarily located in the east of the country, represent an interesting diversity of types and styles, with the oldest of them, such as the Church of the Nativity of the Blessed Virgin Mary in Gorajec and the Church of St. Paraskevi in Radruż, dating back to the 16th century. Additionally, a significant group of wooden churches consists of Evangelical churches, typically built in the half-sheaf style and characterized by a simple appearance, with the exception of the exceptional "Churches of Peace" in Świdnica and Jawor, the latter of which is the largest wooden religious building in the world and was added to the UNESCO World Heritage List in 2001, Fig. 1.

Fig. 1. St. Paraskevi Greek-Catholic Church in Radruż; photo: T. Tomaszek.

In addition to the aforementioned churches, wooden manor houses play a significant role in Polish culture. They are typically single-story buildings, characterized by both practicality and aesthetics, reminiscent of Baroque and Classicist palaces [2]. Unfortunately, most of these manor houses have not survived. In the past, they were common in almost every village, where they accompanied wooden farm buildings, varying in number and size depending on the type of farm, often reflecting the simplified patterns and forms of brick architecture [1]. Wood was also very popular as a building material for public buildings, especially taverns and inns, which were often designed in various regional styles. Furthermore, villages featured a variety of architectural forms representing rural crafts and industries. These included watermills with top and bottom wheels, as well as watermills with stream wheels, located near large rivers. Various types of windmills, such as the "koźlak," "paltrak," and "Dutch" type, also existed simultaneously. These structures were typically located within complexes with livestock facilities and other wooden structures, forming industrial complexes. The overall picture of wooden architecture is complemented by the building complexes of small towns, which adhered to historical plot size restrictions [2]. Houses with gables facing the street were most common, often featuring arcades and inhabited by Jewish communities. A significant feature of agricultural settlements was the segregation of stable or granary areas from the central areas, spatially combining "urban" and "rural" elements [1].

2. MATERIALS AND METHODS

2.1The Current Situation of Wooden Heritage Buildings on the Polish-Ukrainian Border – A Brief Introduction

For centuries, the southeaster part of Poland, especially the Podkarpackie Voivodeship, has been a place where two nations—Poles and Ukrainians—coexisted in harmony. Poles primarily professed the Catholic faith, while Ukrainians practiced the Greek Catholic rite, closely linked to the traditions of Orthodox Christianity. This long-standing coexistence contributed to the creation of a unique cultural landscape, where contemporary influences of Eastern and Western Christianity intertwine, as can be observed in the region's rich wooden architecture. Key elements of this architectural heritage are Polish Catholic churches and Ukrainian Greek Catholic churches, known as "tserkvas." It is sad to note that the forced deportation of Ukrainians in 1947 led to the abandonment of many Greek Catholic churches in Subcarpathia, resulting in a loss of worshippers. Over the years, many of these once-magnificent structures fell into disrepair, slowly disappearing from the surrounding landscape. Some Greek Catholic churches were adapted to the needs of the Roman Catholic Church, allowing them to survive, while others found new caretakers within the remaining Greek Catholic communities in Poland. Unfortunately, many of these

churches were not so fortunate; a significant number were completely destroyed, and those that remained are often in a dire state. Preserving the remaining Ukrainian wooden architectural heritage in southeaster Poland is crucial, as these structures not only illustrate the region's cultural richness but also demonstrate unique construction and carpentry methods that are of global significance. The need to protect this heritage has become more urgent in the face of the ongoing conflict in the east, which is leading to the daily loss of monuments of great importance to the Ukrainian nation.

2.2The Wooden Greek Catholic church in Miękisz Stary

Among the fascinating, abandoned, and heavily damaged Greek Catholic churches that lie on the border of the Subcarpathian region in southeaster Poland, the church in Miękisz Stary deserves special attention. This structure was the subject of research aimed at identifying methods for the preservation of the church's architectural elements, its painted decorations (polychrome), and its iconostasis. The analyses conducted served as the basis for formulating recommendations for methods of architectural conservation, as well as for the preservation of painted decorations, and reconstruction of the iconographic layouts of iconostases, which can be replicated in surviving border churches in Poland and Ukraine.

The Church of the Protection of the Most Pure Mother of God in Miękisz Stary (Fig. 2) is one of the oldest and architecturally distinctive Greek Catholic churches in the Przemyśl region of the Subcarpathian Voivodeship. Although it retains the typical features of rural wooden Greek Catholic churches in Subcarpathia, its architecture clearly reflects the traditions of monumental Catholic churches in the Baroque style. This is particularly noticeable in the central part of the church, known as the nave, which is topped by a dome-like structure with a lantern, and in the partially preserved decorative interior paintings [3], [4].

The church's interior originally contained a richly decorated iconostasis, which is now housed at the Łańcut Castle Museum in Poland [5]. The value of this church extends beyond its unique architecture, serving as a key element of the region's cultural heritage and reflecting the historical and artistic significance of the Greek Catholic tradition.

Research on the church in Miękisz Stary not only highlighted its architectural and artistic significance but also contributed to a better understanding of conservation practices used in similar structures. The results of this research have opened up new possibilities for developing methods that focus on preserving the integrity of both the architecture and artistic elements, ensuring the continued appreciation of these historical treasures for future generations.

In summary, the church in Miękisz Stary is a testament to the rich culture of the Subcarpathian region, showcasing a synergistic blend of diverse architectural styles and artistic forms. Efforts to preserve it reflect a commitment to preserving the historical narrative embodied within its walls, while also addressing the challenges posed by the passage of time and neglect.

Fig. 2. Greek-Catholic church in Miękisz Stary; photo T. Tomaszek

The Greek Catholic Church in Miękisz Stary was built of wooden beams and consists of three main sections: the presbytery, the nave, and the women's gallery (vestibule). To the north of the three walls enclosing the altar is the sacristy, which is made of wood and adjoins the frame building. Additionally, on the western and northern sides, there are frame porches near the women's gallery. In February 2010,

the western porch collapsed due to the weight of snow, and in the summer of 2012, local residents stored some of its damaged elements inside of the church. The church is revealing various historical and stylistic layers. The oldest part, most likely dating from the early 17th century, comprises the wall structure of presbytery. The current nave and women's vestibule were added in the late 18th century or, according to other sources, in the early 19th century, with dates given by T. Spiss as 1801 and 1811 in the publication "Szematyzmy" [6]. It is likely that the elliptical, neo-Baroque vault in the nave was added at this time, as well as the new roof with a lantern. The interior walls are decorated with illusionistic paintings, including images of the Evangelists on a tambour under the dome and angels playing instruments on the choir balustrade. In 1883, the original shingles on the roofs were replaced with metal sheet, as confirmed by the date on the lantern above the nave. During this period, the main structure of the church was enlarged to include a sacristy and two vestibules [6]. The building underwent further renovations in 1916 after damage during World War I. During this renovation, the roof was repaired, the choir was enlarged, and the boards on the exterior walls were replaced with new materials. Local accounts suggest that the renovation work was carried out by a Jew from Radymno.

In 1989, a temporary protective structure was built, and the polychrome was partially consolidated [6]. Originally the church's interior included a multi-zone, framed iconostasis, two side altars with paintings, feretory tables, a processional cross, candlesticks, liturgical vestments, and numerous smaller objects that enhanced the interior. Most of these items were transferred in 1964 and 1965 to the Voivodeship Depository of Movable Heritage in Łańcut [6], where they are currently stored in the Orthodox Art Section of the Łańcut Castle Museum [5]. Assessments conducted in 2019 revealed that the condition of the church and its wall paintings had deteriorated since the last inventory in 2006 [3]. In addition to natural causes such as moisture, fungi, and insects attacking the wood, vandalism has become a serious problem. This is clearly evident in the deterioration of the lower sections of the building, especially due to the numerous inscriptions and illustrations placed on the original colorful decorations inside the church. These inscriptions, often vulgar, are created using spray paint and various markers. Furthermore, it is assumed that the porch adjacent to the women's porch on the west side collapsed due to structural instability and the weight of accumulated snow on the roof.

Fig. 3. Greek-Catholic church in Miękisz Stary – collapsed porch adjacent to the women`s porch from the west; photo T. Tomaszek.

2.3Vulnerability Assessment Methods for Timber Structures Currently used in Poland

In Poland typically two main methods to check the condition and find out how vulnerable wooden buildings are has been used. These are called in situ and ex situ methods [7]. The in situ methods are used to look at the building as it is [8]. Experts check for any damage or weak spots in the wooden parts and also test how strong each part is. These methods are usually the first step in checking how vulnerable a building is. They often involve checking the building carefully and writing down what was found. Sometimes also are used the non-destructive tests (NDT) or semi-destructive tests (SDT) [9].

On the other hand, ex situ methods are used for a more detailed check. These tests help understand how the whole building behaves and how each part works separately [9]. They can show how the building reacts to different forces like wind and snow. These methods are important for making computer models that show how the building might handle different risks. For example, in Poland, checking how wooden

buildings handle heavy snowfall is especially important because it snows a lot during winter. This kind of testing helps make sure the buildings are safe and prepared for different conditions [7].

2.4Typical Field Vulnerability Assessment Methods used in Poland

In many cases, field studies assessing the vulnerability of historic wooden structures are sufficient to gather the necessary data to determine conservation methods. Therefore, these analyses are often conducted without the inclusion of more advanced ex-situ assessments. Typically, field methods effectively assess the mechanical properties and overall condition of individual structural elements. These analyses can be divided into two distinct groups based on their characteristics: preliminary surveys and detailed surveys [7], [9]. This classification is widely used in this field, highlighting the importance of both types of surveys in the comprehensive assessment of historic wooden structures.

The preliminary survey is the basic approach to assessment. It typically includes visual inspections, and the recorded results are later documented in appropriate reports. This survey also includes geometric assessments and any necessary analyses [9]. The primary goal of the preliminary survey is to gather comprehensive information about the building's history, including previous conservation works and modifications. Additionally, it helps identify different types of damage, such as biological deterioration, and their causes, which may include identifying specific biological species. Furthermore, it assesses various risks and exposures to these risks [8]. Ultimately, these analyses aid in identifying wood species and other materials used in construction [9]. Detailed examination is crucial for pinpointing defects and assessing their progression across all examined elements. In light of contemporary standards that seek to limit the use of destructive testing in heritage conservation, non-destructive testing (NDT) or, if necessary, semi-destructive testing (SDT) is used [7]. These methods allow for the collection of data on mechanical properties, which aids in selecting appropriate conservation strategies. In some cases, different NDT or SDT tests can be performed simultaneously to obtain a more accurate diagnosis. The information collected provides insight into the integrity of individual wooden components [8]. One of the most commonly used non-destructive testing (NDT) methods in Poland is the resistance drilling method (RDM) [10]. This technique is useful for identifying and assessing decay and voids in wood [11]. The process relies on measuring the resistance that occurs during drilling, which reveals differences in density due to damage. The RDM device uses a drill bit approximately 1.5 mm in diameter to assess the resistance of wood [12]. This method effectively locates areas of low density, which may indicate decay or damage. The level of measured resistance is related to the degree of decay, allowing for classification of areas into low, moderate, and high levels of damage [13]. Data obtained from the drilling process is recorded electronically, creating a graph that illustrates the resistance levels along the drilling path, indicating whether the tested wood has increased, medium, or decreased strength parameters [10]. RDM is considered a very effective method for detecting damage in timber structures [14]. Information obtained from both preliminary and detailed surveys can be incorporated into the registration templates for heritage assessment of timber buildings, which were developed in 2020 by the 1-TG1 group, COST Action FP1101-WG [15].

2.5The Methods of Conservation of Wooden Structures Currently used in Poland

Current techniques used to preserve wooden architecture in Poland can be classified into two basic approaches [16]:

Restoration of a wooden structure, which involves dismantling it into its individual components.

a) This process involves replacing damaged wooden parts (or sections) with new elements that mimic the original construction methods, using:

- Conventional joining methods
- Secondary joining methods (such as steel sheets, tapes, or epoxy resins)

b) Consolidation involves repairing damaged parts of components (for example, by using synthetic resins to replenish them).

c) This process involves reinforcing damaged parts or the entire structure (for example, by using glass rods or metal plates).

Structural repairs performed on-site, without the need for dismantling.

This method can involve lifting the entire building or sections using pneumatic lifts. This lifting method allows access to the raised area, facilitating the replacement or removal of damaged elements or sections. The in-situ repair method, which does not require disassembly, uses the same processes as those previously mentioned (1a-c).

Given contemporary conservation principles that support minimal intervention, the most appropriate approach is to stabilize, replace, or reinforce damaged elements without the need for disassembly.

However, the choice of a particular method is based on a thorough analysis of the conservation challenges posed by a specific building.

It is important to emphasize that Poland has a rich history of timber construction, resulting in the widespread practice of dismantling structures for conservation purposes when necessary. This method aligns with broader European traditions, where dismantling and reassembling timber structures is a well-established practice, historically used for relocating agricultural structures [17]. However, analyses conducted by various authors suggest that the lower part of the structure, typically located at ground level, requires more frequent replacement. Therefore, such a change is often achieved by slightly raising the building structure.

3. RESULTS AND DISCUSSION

3.1Assessment of the Current State of Preservation of the Abandoned Greek Catholic Church in Miękisz Stary

The assessment of the state of preservation of the abandoned Greek Catholic church in Miękisz Stary was conducted through a combination of on-site inspections and laboratory analyses. A thorough visual assessment was conducted alongside basic conservation assessments and analyses. Historical assessments, comparative studies, and graphical and analytical methods were also incorporated into the study to provide a comprehensive understanding of the church's condition. In situ examinations were used to analyze the state of preservation of the interior polychrome, using diffuse, ultraviolet (UV), and infrared (IR) light for observation. Additionally, selective exposition of the paint layers and the substrate was conducted to obtain information on the materials and techniques used. This thorough approach allowed for a more thorough understanding of the current state of the polychrome and the factors influencing its preservation. A detailed conservation analysis focused on the remains of the iconostasis, requiring extensive archival work, particularly at the Department of Orthodox Art at the Łańcut Castle Museum and the Voivodeship Inspectorate for Monument Protection. Archival documents identified the locations of the remaining part of iconostases, which are currently kept in museum`s storages. Subsequently, a conservation inspection of individual elements, such as icons and sculptures, necessitated the exposing of the painting layers and the assessment of the icons' structural integrity. Simultaneously, analyses were conducted to reconstruct the supporting structures and the spatial and iconographic layout of the iconostasis based on archival information and existing elements.

To thoroughly assess the condition of the Greek Catholic church in Miękisze Stary, an on-site analysis using the Resistance Drilling Method (RDM) was conducted. An IML-RESI F400-S drilling rig was used for this purpose. The tests involved drilling numerous holes in selected wooden elements, allowing for the assessment of the condition of the wood tissue at the cross-sections of these locations. This analytical approach can be considered quasi-nondestructive, as a thin and flexible drill bit was used, ensuring that the diameter of the resulting holes did not exceed the size of the holes created by the wood borers [18]. The collected data were compiled into graphs illustrating the amplitude of resistance versus the depth of the drilled holes. This analytical method relied on measuring the cutting resistance during drilling in wooden elements. This allowed for the assessment of the extent and degree of degradation, which allowed for a preliminary assessment of the wood's strength (the test indicates whether the analyzed wood exhibits increased, average, or decreased strength parameters) [19]. Below is a representative graph from the RDM analyses conducted at the temple in Miękisz Stary (Fig. 4).

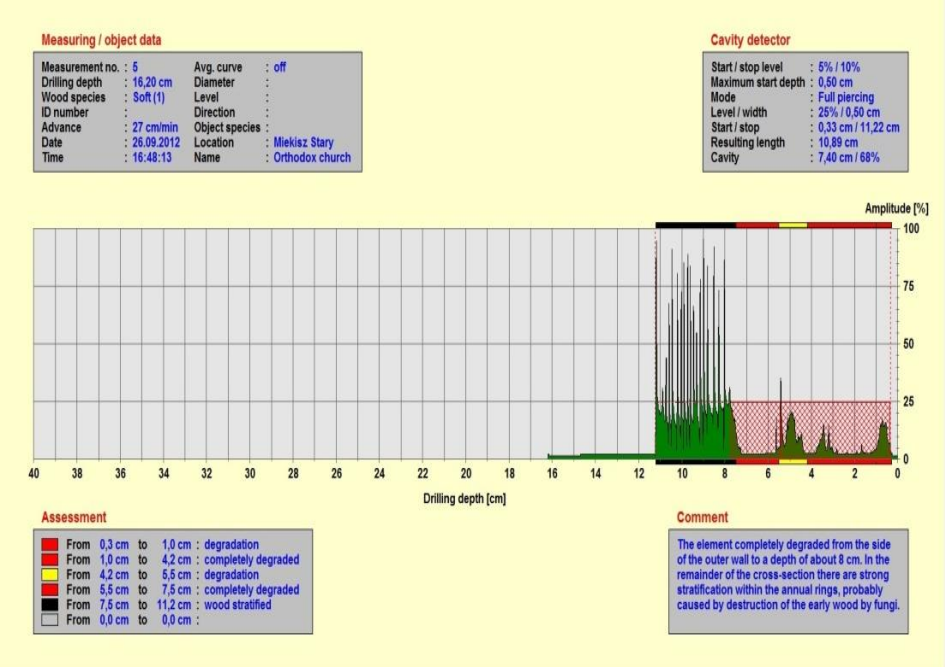

Fig. 4. The exemplary graph obtained during performed tests of drilling resistance of wooden elements of orthodox church in Miękisz Stary.

Tables RDM analyses reveal that conditions in the churches have significantly deteriorated, indicating that the greatest amount of damaged wooden elements is located in the lower sections of the churches. These areas are typically located approximately 1.5 meters above the ground, primarily due to the direct action of groundwater, leading to higher moisture levels. Furthermore, the research showed that the type of degradation is clearly differentiated and closely related to the location of the examined elements in relation to the cardinal directions and their specific locations within the building.

Due to its deteriorating condition and the extensive degradation of the wooden materials, the described church demonstrates typical patterns of degradation observed in wooden Greek Catholic churches in the Subcarpathian region [20], [21]. The church's interior, richly decorated with polychrome, requires a careful conservation plan that not only focuses on stabilizing the building's structure but also strives to preserve the original polychrome and decorative elements. Moreover, in order to restore the original character of the church in Miękisz Stary, it is necessary to re-instate the iconostases in its interior, which involves the need to use appropriate methods in conservation work to accomplish this task.

3.2The Current State of Preservation of the Polychrome Interior of the Church in Miękisz Stary

The polychrome interior of the church in Miękisz Stary was created in 1885 using tempera on a chalk base. Its depicts an illusionistic view of the open sky, which extends above the architectural beam in the dome and along the architectural divisions of the nave walls. According to the monument's inventory card [6], the pendentives are decorated with images of the Evangelists. The ceiling in the women's vestibule depicts a cross surrounded by clouds, with angels playing trumpets nearby. Additionally, the choir balustrade, painted before its expansion, depicts angels playing various musical instruments. On the south wall of the women's vestibule is a painting of the Good Shepherd, inscribed with the inscription "Examination of Conscience," while on the north wall is "The Return of the Prodigal Son," accompanied by the text "Father, I have Sinned." Additionally, on the south wall of the women's vestibule there is a foundation inscription, but a significant portion of this inscription is damaged, and part is obscured by the choir support. Archival documents from fieldwork conducted by the Depository of Movable Heritage in Łańcut [22] indicate that the original, full text read: "This temple was built in 1880 under the patronage of Jan Czyrneński, thanks to the efforts of Jan Furczyn and Wasyl Halas. The polychrome was completed in 1885, and all inscriptions were written in Ukrainian (translated by T. Tomaszek).

Fig. 5. Wall polychrome of the church in Miękisz Stary, visible illusionistic representation of the open sky placed in the dome above the architectural entablature and the figures of the Evangelists in the pendentive; photo T. Tomaszek.

At the beginning of the 20th century, the original polychrome in the sanctuary was covered with new oil decorative painting [6]. The overall condition of the interior paintings in the wooden church in Miękisz Stary is very bad and there is a risk of further deterioration. The state of preservation of various parts of the polychrome varies, primarily due to their location on the building's walls and the level of damage to some parts of the structure. There are noticeable differences in the state of preservation of the lower parts of the painting, located approximately 1.5 meters above the ground, compared to the upper parts of the polychrome. This difference results from the condition of the lower part of the building, where the wood was subjected to intense capillary moisture and other environmental factors, resulting in serious structural damage. The significant loss of wood in these areas resulted in a weakening of the brightness of the painted composition, which is particularly noticeable on the walls of the women's veranda. The degradation, which occurs due to improper adhesion of the mortar to the paint layer and the substrate, can be a result of natural wood movement caused by changes in humidity within the building.

3.3The guidelines for the Conservation Methodology

1) Architectural structure

Due to the serious deterioration of significant amount of wooden elements of the church in Miękisz Stary, it is planned to replace damaged parts with new ones fabricated from the same wood species. The production of these exchanging parts should be closely linked to traditional processing methods. This approach stipulates that only those parts that are completely damaged and beyond repair will be replaced. In cases where the elements have minor damage but their mechanical strength and overall structural stability are maintained, it is suggested to remove only the damaged parts of these elements.

In cases of partial damage, the damaged elements should be replaced with new wooden "inserts," manufactured using traditional methods, ensuring the most accurate reproduction of the original shape. Whenever possible, these new parts should be integrated with the remaining original materials using traditional carpentry joints. If these joints prove insufficient, additional reinforcement of the joints between the original elements and the new inserts with a suitable adhesive is suggested.

It is also recommended to replace damaged masonry foundations with stone "pedestals," returning to traditional technological methods likely used during the original construction. In this case, the term "pedestals" refers to stones laid loosely, without mortar, rather than to a firmly embedded masonry base. Another option is to create a foundation of stone bonded with mortar; in such cases, however, an additional layer of insulation should be added where the foundation meets the lintel to reduce the risk of moisture ingress through the mortar.

The most important challenge in conservation work is to identify appropriate technical solutions that will allow for the implementation of the previously mentioned measures. Given the impact of the damage and the weakened structural integrity of the church, it is important to consider in-situ conservation by gently elevating the building. This approach will allow for access to damaged areas located in the lower sections, addressing key issues related to stability and preservation. The proposed method should ensure stability of the building during the conservation process. This can be achieved by using a carefully designed frame system that will serve as a supporting and stabilizing structure. This system should be permanently attached to the walls. For elevating the building the pneumatic jacks should be used by placing them at key corners of the structure.

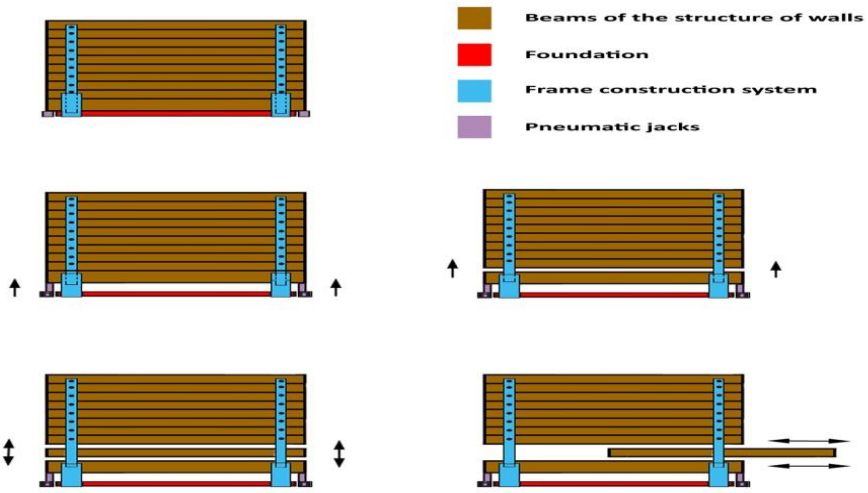

Fig. 6. The overall design of the frame construction system, which is affixed to the wall framework, has been proposed to elevate the building while maintaining its stability, thereby ensuring the overall stability of the structure throughout the conservation process; author: T. Tomaszek

If the proposed method of elevating the building proves technically impossible, it has been suggested that dismantling the church into individual sections could be considered. While this approach is theoretically possible, it poses significant challenges. The main obstacle is the need to secure substantial funding for a detailed conservation inventory before any demolition can begin.

2) Interior polychrome decoration

The condition of the tempera on the polychrome decoration is very bad, requiring intensive technical and aesthetic conservation measures. The complex process of replacing damaged wooden elements or parts with new materials requires careful consideration. It is crucial to partially transfer the polychrome from elements that are to be completely removed, especially those decorated with painted figural decorations. Research indicates that the most effective conservation strategy involves transferring the paint layers to a new base that includes both the underlying primer and the outer surface of the wooden element. This approach suggests mechanically "separating" the outer surface of the painted wooden element, including the existing polychrome layer and the primer. This separation should be performed with the utmost care, ensuring that the cutting location is determined based on a thorough analysis of each element in question.

In summary, maintaining polychrome decoration requires careful planning and execution. The recommended method emphasizes the importance of maintaining the integrity of the paint layers while also allowing for the necessary replacement of damaged materials. By following these principles, a positive conservation effect can be achieved that respects both the aesthetics and the structural solidity of the architectural elements of the temple.

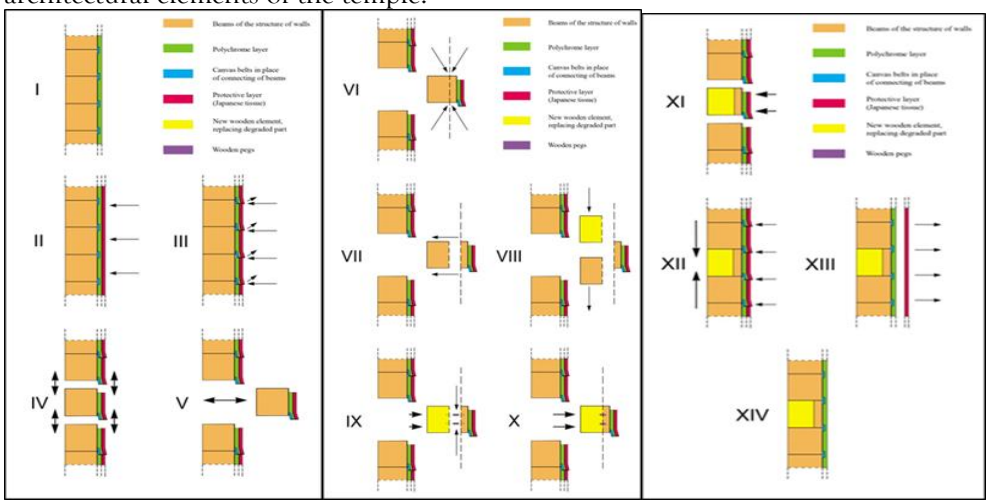

Fig. 7. The diagram of the execution of the transfer of polychrome to a new base (to the new elements, replacing degraded items); [I-XIV]; author T. Tomaszek.

The significant reduction in mechanical strength resulting from severe wood degradation necessitates structural reinforcement of the remaining surface layer of the original substrate, which is removed along with the paint and primer layers. It is recommended to achieve this reinforcement using a structural impregnation solution containing synthetic resin (Paraloid B72) [23]. After completing the treatment to strengthen the remaining surface layer of the wooden elements, which provides the direct support for the applied paint layer, it is necessary to reattach the transferred objects to their original locations within the building structure. This process should ensure the preservation of the original composition of the paintings, especially their colored elements. Given the possibility of unexpected deformations in wooden buildings, which can be caused by natural volumetric changes in the wood, it is important to anticipate the future separation of the transferred elements from their permanent parts. For this reason, the suggested method for attaching these transferred elements to the walls is based solely on the use of wooden pegs. This method allows for any changes that may be necessary in the future. Using wooden pegs for attachment reduces the risk of damage to both the transferred elements and the building's structure, ensuring the longevity and stability of conservation efforts.

4. CONCLUSIONS

Considering current perspectives on conservation, it can be said that the primary goal of monument protection is to preserve the cultural landscape in its entirety: material, spiritual, and social dimensions. Therefore, maintaining its identity and integrity is crucial. In the border region between Poland and Ukraine, wooden architecture constitutes a significant and inseparable aspect of the cultural landscape, playing a key role in shaping the historical narrative of these areas since ancient times. Safeguarding the cultural landscape, taking into account its diverse aspects, is essential in today's conservation debate. This is clearly visible in the border regions of Poland and Ukraine, where wooden architecture has been a crucial element of the cultural identity and continuity of the area. Its historical significance and aesthetic value contribute to the overall enrichment of the local heritage, underscoring the need to protect and preserve it for future generations [1].

The significant decline in wooden architecture observed in various regions of Poland in recent decades can be attributed to a number of factors. Natural disasters and the adverse effects of environmental and biological elements play a significant role among these factors, as wooden structures are particularly susceptible to these influences. Furthermore, insufficient and inadequate maintenance by current owners or users is a common problem, coupled with a lack of systematic oversight by conservation institutions regarding the state of preservation of these structures. This lack of proper oversight often results in improperly executed repairs.

It is crucial to maintain a close watch on historic wooden buildings, especially since many repair and renovation projects are undertaken by individuals lacking adequate knowledge of proper conservation methods. The risks associated with neglecting these structures can be significant, as improper care can deteriorate their condition. Therefore, it is important to implement a systematic approach to monitoring and protecting these architectural treasures to ensure their longevity.

One of the most serious threats to wooden buildings is the risk of fire. Statistics show that since the end of World War II, Poland has been losing three to five churches to fire every year, totaling a staggering 250. This disturbing trend highlights the urgent need to strengthen protection and raise awareness of the dangers associated with wooden architecture [1].

The earlier discussion led to the conclusion that preserving wooden structures, given their exceptional historical and architectural significance, requires coordinated efforts to raise public awareness of their value. After World War II, a marked reluctance, even hostility, toward older rural features, often associated with wooden buildings, was observed in Poland. This sentiment impacted various aspects of life, leading to a general disregard for the significance of these historic structures. Inappropriate "modernization" of remaining wooden structures, including churches, manor houses, forester's lodges, and simple cottages, became commonplace. Over the years, the increasingly deteriorating condition of many of these structures was further exacerbated by the complex legal and ownership situation surrounding heritage sites, which in some cases still poses a challenge. Despite the introduction of conservation guidelines, they are generally not followed, resulting in inadequate care for these important cultural treasures. According to current regulations, for a wooden monument to be legally protected, it must be entered in the appropriate register of monuments. It is alarming that wooden buildings and those partially made of wood constitute only about 11% of the entries in this register, according to a report by the National Institute of Cultural Heritage in Poland. This statistic highlights the urgent need for proper

recognition and protection of wooden structures, which constitute an integral part of the national architectural heritage [1]. While this may seem surprising, the need to recognize and classify wooden buildings remains a significant and pressing issue. Research conducted in the early 21st century revealed that over 70% of existing wooden architecture in Polish villages is in poor condition. This situation is particularly alarming in relation to religious buildings, over 40% of which were considered to be in very poor condition [24].

The importance of quickly addressing this problem cannot be overstated, as securing these historic wooden structures is essential for the preservation of cultural heritage. The research findings underscore the crucial need for comprehensive action to examine and restore these architectural treasures before they deteriorate further.

Key factors contributing to the deterioration of historic wooden structures have been identified, excluding biological and inanimate factors. These factors include fires and thefts, inadequate maintenance by building owners, and the high costs associated with necessary conservation work. These financial constraints often result in repairs using inappropriate materials and methods, further worsening the condition of the buildings.

To protect not only individual structures but also entire rural communities and broader areas of Poland's historic cultural landscape, it is crucial to raise awareness of conservation. A significant step in this regard is the practical application of the principles described in the Charter "Principles for the Protection of Historic Wooden Structures." This Charter was developed by the International Wooden Committee within ICOMOS and adopted in 1999 during a conference in Mexico [25].

It is important to emphasize that many wooden monuments in Poland constitute material evidence of the presence of national and ethnic minorities who inhabited this area before World War II. The resettlement of these groups after 1945 impacted their cultural heritage, causing a rapid deterioration of these sites, which were often neglected. As a result, what remains today is often in very poor condition, highlighting the need for their protection and maintenance.

The protection of these monuments should be viewed as a primary goal, encompassing not only individual buildings but also culturally shaped landscapes and intangible heritage that exists independently of specific architecture. The optimal solution, which would benefit both conservation and positive social outcomes, would be to preserve the authentic part of the former village associated with the resettled ethnic minority by designating it as a protected area.

However, implementing such conservation strategies is faced with many challenges, particularly related to budget constraints and property rights disputes. Addressing these issues is crucial to ensure that the cultural heritage of these social groups is not only appreciated but also protected for future generations.

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