

Nativity of the Virgin Mary Kozelshchynskiy Monastery in the Poltava Region: an assessment of architectural heritage and contemporary challenges

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Abstract: The challenge of preserving the architectural heritage of small towns in Ukraine is compounded by the lack of sufficient historical and architectural research, as well as numerous alterations to buildings during their use. This article presents the results of historical and architectural research on the architectural heritage of the Nativity of the Virgin Mary Kozelshchyna Monastery in the Poltava Region. It explores the historical stages of the monastery's formation and development and evaluates its historical and cultural significance. A virtual reconstruction of the monastery's original appearance was undertaken, and the historical boundaries of the monastery were established. The analysis of the current state enabled the identification of issues related to the monastery's functioning and the preservation of its cultural heritage. This research provides a scientific foundation for developing protection zones for the monastery and for restoration and adaptation projects of its buildings. It also establishes an information base for future project work and the monitoring of architectural heritage.

Keywords: historical and cultural heritage preservation and protection, small towns, historical and architectural research, virtual reconstruction, monastery

1. Introduction

Today, the tragic events and the war taking place in Ukraine compel us to reassess the role of historical and architectural heritage in preserving national identity. Historical heritage reflects the cultural code and identity of a nation and its specific regions. The challenge of preserving and presenting architectural monuments and valuable historical buildings, which are under threat of destruction, is compounded by insufficient historical and architectural

research, as well as numerous alterations made to their structures over time. The historical heritage of small towns and villages in Ukraine, which has not yet been the subject of comprehensive historical and architectural studies, deserves special attention.

Small cities make up 84% of the total number of historical cities in Ukraine, with 43% of Ukrainians, as well as 40% of European Union citizens, living in small and medium-sized cities [1]. Small towns preserve traditions, customs, and cultural uniqueness, and are characterised by closer social ties. However, they are the most vulnerable in the context of economic globalization due to the decline of the social sphere, population outflow, and demographic aging [2–4]. The existing historical and cultural heritage in these cities can significantly enhance their tourist potential and, consequently, stimulate economic growth. As highlighted in Target 11.4 of the UN Sustainable Development Goals, heritage protection is essential to making our cities "inclusive, safe, resilient, and sustainable" [5].

A significant part of the historical heritage of small towns consists of religious architectural structures, particularly monasteries. These structures once played a crucial socio-cultural and city-forming role. To preserve the identity of small towns, it is important to protect and restore their religious buildings and their historical environment as a whole. The primary task is to identify and research historical objects in small towns to ensure their preservation, restoration, and adaptive reuse.

The study aligns with the "National Program for the Development of Small Towns" in Ukraine [6] and is grounded in modern principles of the pan-European theory of cultural heritage protection [7–10]. The methodological foundations of historical and cultural heritage preservation, as highlighted in the works of M. Bevz [11], V. Vecherskyi [12], L. Prybieha [13], L. Lozny [14], D. Krajnik [15], A. Tomaszewski [16,17], M. Petzet [18], B. Szmygin [19,20], P. Spiridon and I. Sandu [21], L. Pujia [22], and others, served as the scientific basis for this work.

The purpose of the research is a comprehensive assessment of the architectural heritage and the current state of the Nativity of the Virgin Mary Kozelshchyna Monastery, which includes the following tasks:

- study of the construction history of the monastery, analysis, and assessment of the identified cultural heritage objects;
- determination of the degree of preservation of the monastery complex, establishment of its historical boundaries, and reconstruction of the original appearance of the monastery;
- analysis of the current state and issues related to the functioning of the monastery.

The object of the study is the Nativity of the Virgin Mary Kozelshchyna Monastery, located in the Poltava Region of Ukraine. The monastery was founded at the turn of the 19th and 20th centuries for the storage and veneration of the miraculous icon of the Kozelshchyna Mother of God in the landlord village of Kozelshchyna in the Poltava region, Left Bank Ukraine (Fig. 1).

The monastery complex was constructed in a short period and equipped with advanced engineering of that time. In 1929, the monastery was closed by the Soviet authorities, and the property, land, and buildings were expropriated, with the buildings gradually being destroyed. In the 1980s, as Ukrainian society became more aware of the magnitude and irreparability of the national cultural heritage losses that had occurred during the communist regime, public attention was drawn to the main cathedral of the Kozelshchyna Monastery. By the decision of the Poltava Regional Executive Committee No. 165 dated 23 April 1984, the building of the Cathedral of the Nativity of the Virgin Mary was placed under protection as an architectural monument of local importance. However, the complex as a whole, including its other buildings, was neglected and remained in an unsatisfactory condition.



Fig. 1. The location of the monastery on the map of Ukraine and on the Google map of the city. *Source:* own study

In global practice, the identification of cultural heritage objects in inhabited places and their research is a pre-project stage that scientifically substantiates and determines further strategies for the development of cities, as well as methods and design solutions for restoration and reconstruction of the urban environment and individual objects. According to Ukrainian protection legislation, this stage also includes the development of scientific documentation on urban planning protection of identified historical objects and is mandatory for the development of a settlement's general plan [23]. This article is the first in a series of scientific papers from the pre-project stage and presents only the results of research into the monastery complex.

1.1. Theoretical basis of historical heritage research

The theoretical basis of the research encompassed a wide range of scientific works, including those by Konołowicz W., Leshchenko N., Kuśnierz-Krupa D., Klusáková L., and Bianca del Espino Hidalgo [24–27], which address the challenges of preserving the historical heritage of small towns in the context of their sustainable development.

The scientific foundation of this study also includes works by P. Rychkov [28], M. Sobczyńska-Szczepańska [29], M. Prarat [30], J. Gil-Mastalerczyk [31], M. Orlenko [32], and N. Miroshnyk [33], whose research focuses on religious buildings, monasteries, and other historical objects [34].

The role of photographic recording and documentation in heritage research is examined in the work of O. Kozakova, I. Kravchenko, and others [35]. Additionally, the works of A. Borkowski and P. Nowakowski [36], O. Kysil, R. Kosarevska, and O. Levchenko [37], as well as Koszewski K., Franczuk J., and Argasiński K. [38], which are dedicated to improving research methods, management, and planning of historical heritage using modern information technologies, were significant for the study. The potential for using various GIS tools to model the distribution of historical objects in specific territories is discussed in the works of M. Ciski, K. Rzasa, and M. Ogryzek [39].

The starting foundation for the study of the Nativity of the Virgin Mary Kozelshchyna Monastery is:

- archival, iconographic, written, and bibliographic materials on the history of the village of Kozelshchyna and the monastery [40–47];
- local history works by modern researchers V. Zhuk and H. Serdyuk [48], V. Mokliak and V. Pavlenko [49], H. Osychenko and O. Suprunenko [50].

Despite the availability of local history studies, the architectural and planning aspects of the development of the Nativity of the Virgin Mary Monastery have not been explored, and there are no studies on the degree of preservation of its original structure and value. Currently, the lack of a comprehensive assessment of the monastery's cultural heritage is hindering the development of a general concept for the protection and preservation of the monuments of Kozelshchyna.

1.2. Materials and methods

The research is based on a comparative analysis of three types of materials: archival, bibliographical, literary, and iconographic materials related to the history of the monastery; restoration materials of the Cathedral of the Nativity of the Virgin, including photographic documentation and drawings of the cathedral's plans and facades [42]; and photographic records and field research materials gathered by architects, surveyors, and archaeologists in 2018-2019 and 2022.

General scientific research methods (analytical methods, systematization, synthesis, and abstraction) and specific methods were employed: grapho-analytical method, compositional analysis, method of analogies, architectural measurements, photographic documentation, public discussion, interviews, etc.

A complex research method, which integrated the work of archaeologists, surveyors, architects, and local historians, was utilized. The methodology included five stages:

- The 1st stage involves bibliographic, archival, and iconographic research. During the processing of bibliographic and archival sources, the method of separating materials for research purposes was employed; when searching digitized sources, keyword search queries were used. The historical-genetic method, historical-comparative analysis, and the method of comparative analysis of iconographic materials and data obtained from various sources were also applied.
- The 2nd stage involves field studies of the city, discovery of historical objects, their identification, measurements, and documentation. Methods used:
 - field geodetic measurements using tachometers and GNSS receivers, which formed the basis for creating a digital map of the town in the digitals program;
 - field architectural and archaeological research, which led to the discovery of historical objects. The identification of these objects was based on the analysis of archival, literary, and iconographic data, as well as the examination of the material of the walls, since the monastery was constructed from bricks produced on-site with specific dimensions and a unique stamp;
 - photographic documentation of objects, architectural measurements, phototheodolite surveying of facades, processing of data using stereo devices (Delta photogrammetric station), and determination of building sizes to create their information model.
- The 3rd stage involves the analysis of the state of preservation and evaluation of the identified cultural heritage objects. A flexible system of criteria for determining the value of the discovered objects was applied to the research. The assessment was conducted at two scales: the local level of individual buildings and the level of the monastery complex as a whole. At the local level, the general criteria for building assessment were historical and architectural value and degree of preservation. The historical and architectural value is comprehensive and includes the architectural and artistic significance of the building; its historical, engineering, technical, and archaeological value; its historical and modern urban planning and landscape-

compositional role within the urban environment; and its socio-cultural value, including the symbolic meaning of the object. The potential for possible reproduction of the original appearance of the object was also considered. During the analysis, discussions were held with the town's community, local authorities, and the monastery's management to consider intentions regarding the city's development and the use of the identified historical objects. As a result of the assessment, the identified objects were classified according to their degree of value.

- The 4th stage involves determining the degree of preservation of the monastery complex as a whole. To achieve this, the establishment of historical boundaries and a virtual reconstruction of the monastery's original appearance were undertaken. GIS technologies and Building Information Modeling for historical buildings (HBIM) were utilized. Information models of preserved and lost buildings were created in the Archicad program, with a development level of LoD 200. The historical boundaries of the closed part of the monastery were established based on the analysis of iconographic, literary, and archival materials, along with field surveys and archaeological excavations at the site of discovered foundations. The use of the Ukrainian software complex Delta/Digitals, produced by Analityka LLC and related to GIS technologies, enabled the delimitation of the historical borders of the monastery on the digital map of the city, coordination of the borders, reproduction of the historical planning of the monastery complex, and creation of an information base for further project work. In the Archicad program, a 3D model of the entire monastery complex was created, presenting its original appearance. The sequence for performing a virtual reconstruction of the monastery's original appearance included: 1) visualization of the relief and subbase of the site; 2) visualization of buildings and structures from the overall mass to details and decor; and 3) clarification of the planning of the complex.
- The 5th stage includes identifying the problems related to the preservation of the monastery's cultural heritage.

2. Research results

Comprehensive studies of the historical heritage of the monastery complex in the village of Kozelshchyna in the Poltava region were conducted for the first time:

- the historical boundaries of the monastery complex were established, and its historical functional and planning structure was revealed;
- an additional 18 cultural heritage objects within the monastery complex were identified, classified, and proposed for inclusion in the town's list of cultural heritage monuments;
- graphic and virtual reconstructions of the original appearance of the monastery and its individual components were completed.

Historical data on the construction of buildings and the history of the monastery were clarified.

2.1. History of the construction of the monastery

The settlement of Kozelshchyna has been known since the early 18th century as the estate village of Paul Kozelskyi, a centurion of the Kobeliatska Hundred of the Poltava Regiment. Paul inherited an icon of the Divine Mother, a work of the Italian school, from his

maternal relatives [51]. According to family legend, the icon belonged to the wife of a Zaporizhian Cossack named Siromakha, who was Italian. In 1863, following a gift will, the estate, along with the icon and the village, was transferred to Sofia Kapnist, the wife of Volodymyr Kapnist and the daughter of the renowned mathematician Mykhailo Ostrogradskyi [49]. The estate's owner, Volodymyr Kapnist, was a count, lieutenant of the Life Guards of the Preobrazhenskyi Regiment, a grandson of the writer Vasyl Kapnist, and the son of Moscow Governor-General Ivan Kapnist [52]. The couple had three children. Their fourteen-year-old daughter, Maria, suffered a severe spinal injury, rendering her immobile. After several years of unsuccessful treatment, the family pinned their hopes on a Parisian doctor who was expected in Moscow. For Maria, this was the last hope for recovery. Before departing for Moscow, Maria prayed fervently before the ancient family icon overnight, and by morning, she was miraculously healed and could walk on her own [52].

The miraculous healing of Maria Kapnist in 1881, attributed to the ancient icon, marks the beginning of the monastery's history. News of the miraculous icon of the Kozelshchyna Divine Mother spread across the Russian Empire through publications in prominent newspapers of the time, leading to pilgrimages to the count's estate [52]. The count turned to Archbishop John of Poltava and Pereiaslav, requesting permission to establish a temporary chapel in his garden to display the icon for public veneration and prayers for healing. On April 23, 1881, a wooden chapel was opened in the park of the Kapnist estate, and the holy image of the Kozelshchyna Divine Mother was placed there [52] (Fig. 2a). Exactly one year later, in 1882, the wooden five-domed Church of the Nativity of the Virgin was constructed (Fig. 2b). In 1885, a women's Orthodox religious community was founded at the church, which was transformed into a monastery in 1891.



Fig. 2. Monastery buildings: a - chapel housing the icon of the Kozelshchyna Divine Mother, opened in the park of the Kapnist estate in 1881.. *Source:* [52]; b – summer Church of the Nativity of the Virgin Mary, 1882. Photograph from the late 19th century, from the monastery's archive.; c – the New Cathedral built in 1906. Series of postcards "Views of Little Russia", 1906; d – cathedral iconostasis. Photo of the 1910s. *Source:* [41]

The chronology of building construction in the monastery has been established [40,41,45,46,52] and is as follows: a "hospice house" with a school for boys (1887); a house for wealthy residents (1887); an abbot's house with a brick Transfiguration Church attached to the abbess's cell (1891); a windmill, a barn for the mill, and a locomotive shed (1898); the new brick Cathedral of the Nativity of the Virgin (Fig. 2c,d) (1900-1906), replacing the dismantled wooden church; a carpentry workshop (1904); a house for nuns working in the livestock yard (1905); a thrashing barn (1906); a house for female gatekeepers (1907); cells for sisters, an icon shop, and a candle shop (1908); a wooden hospital (1909); a large laundry (1911); and a new parish school for boys (1912).

A chromolithograph from 1892 represents one of the stages in the formation of the monastery ensemble, while a chromolithograph from 1910 documents the completed composition of the monastery complex, as viewed from the river and the railway station [41] (Fig. 3).



Fig. 3. View of the Nativity of the Virgin Mary Kozelshchyna nunnery, Poltava province. Chromolithography of E.I. Fesenko, Odessa. 1892 (a) and 1910 (b). Source: [41]

As of 1908, the monastery owned 30 acres of land. In addition to the abbess, there were 14 nuns and 63 novices [53]. Approximately 130 students were consistently enrolled in two parish schools at the Kozelshchyna Monastery. To facilitate pilgrim access to the monastery, the Kozelshchyna station was opened on the Southern Railway. By 1905, the monastery had a centralized water pipeline of a unique engineering design, which was later extended to the village, designed and implemented with the help of the renowned engineer Mykola Pogorelko [50].

With the advent of Soviet power in Ukraine, the monastery was closed in 1929. The cathedral was looted, the iconostasis was destroyed, and the surviving monastery buildings were allocated to various institutions. The former Transfiguration Church housed a pioneer club, and later, a gymnasium. The former candle factory became the office of the district newspaper, where future Ukrainian writers Oles Honchar and Oles Yurenko worked in 1933-1934. With the onset of the Second World War, after the Red Army entered Poland, more than 450,000 Polish soldiers and officers were captured by the Soviets. From 1939 to 1941, a concentration camp operated on the monastery grounds, where Polish officers, police, and Catholic priests were held. The camp housed a total of 4,727 people, including 1 rear admiral, 4 generals, and 24 colonels. By early June 1941, new prisoners had arrived at the camp – Romanian officials and members of the wealthy population from Bessarabia, which had been annexed by the USSR. The subsequent fate of the prisoners remains unknown [49].

During the temporary Nazi occupation of Ukraine in 1941–1943, the monastery briefly resumed its activities, but it was closed again by the Soviet authorities in 1949. Overall, during the Soviet occupation, the monastery's fence and 12 buildings were destroyed, the

dome and light drum of the Transfiguration Church were dismantled, the graves of churchmen in the cemetery near the main cathedral were violently desecrated, and part of the monastery territory was built over.

In 1982, restoration work on the main monastery church began, based on a project by the "Ukrproektrestavratsiya" institute (Chief architect of the restoration project: V. I. Kasianenko). At the same time, Poltava architects V. A. Pavlenko, S. P. Petrova, and O. I. Chornyi were able to photograph and measure the temple and its interior decoration [42]. In 1989, restoration work on the cathedral commenced. During the years of Ukrainian independence, the premises of the main cathedral and five other monastery buildings were returned to the religious community. Currently, a women's religious community is active on the monastery grounds. In the early 2000s, a new monastery wall was built, defining the modern boundaries of the monastery.

2.2. Historical and cultural value of the discovered objects of cultural heritage

During the study of the area, the authors additionally discovered and examined 18 structures and buildings. The newly built Kozelshchyna Monastery did not exhibit stylistic unity, a common characteristic of that period of architectural development. The discovered buildings of the monastery complex demonstrate a variety of architectural styles: the pseudo-Byzantine style of the cathedral, various forms of eclecticism and brick style in other buildings, and a rationalist approach without facade decoration in the economic and service buildings. The historical and architectural value of the objects, as well as their role in the composition of the monastery and the town, diminishes from the main buildings to the secondary ones. Household, production, and residential buildings for the convent were located outside the monastery and did not contribute to the formation of the ensemble. The central part of the monastery plays a significant compositional role in the town's environment, still forming expressive panoramas of the town and defining its identity in the surrounding area.

Despite its relatively recent construction, the monastery complex holds high historical, town-planning, and socio-cultural value. Its origin is tied to a Christian shrine – the miraculous icon of the Kozelshchyna Mother of God. The history of the monastery is linked to the Syromakha and Kozelskyi Cossack families, as well as to prominent Ukrainian engineers and church figures of the late 19th and early 20th centuries, and to tragic events in the histories of Ukraine, Poland, and Moldova. The founder of the monastery was the noble Kapnist family, which included notable writers, ministers, diplomats, soldiers, and educators. In 1887, the last owners of Kozelshchyna, Volodymyr and Sofia Kapnist, donated 50 hectares of their own land to the monastery community for its construction and operation [55]. The monastery was built with funds from the Kapnist family, parishioners, and local residents.

The Cathedral of the Nativity of the Virgin served as the prototype for the cathedral in Oles Honchar's novel "The Cathedral" (1968), which addresses the theme of preserving spiritual heritage and national culture. During the challenging times of Soviet occupation, the cathedral symbolized spirituality and the hope of returning to God for the local residents. In discussions, residents also highlighted the unifying and communicative role of the currently functioning monastery within the community.

The foundation of the monastery became a catalyst for the concentration of people in this area, driving the economic and cultural development of the village and transforming it into a town. The functional structure and planning of the monastery influenced the development of Kozelshchyna's planning structure throughout the 20th century.

The Cathedral of the Nativity of the Virgin is recognized as the most valuable structure within the monastery complex. This building holds historical, town-planning, and architectural

significance as an example of a temple constructed in the pseudo-Byzantine style. It is a five-domed masonry structure with a multi-tiered belfry. The cathedral was built using engineering calculations and technologies that were innovative at the time. With dimensions of 52 arshins in length, 43 arshins in width, and 27 arshins in height, the building was constructed without internal supports, allowing approximately 1,200 worshippers to attend services simultaneously. The interior featured an iconostasis made of white marble by the Italian company Menzioni. The iconostasis was adorned with embossing, gilding, mosaic work, and green onyx inserts, though it has not been preserved. It originally contained 89 icons painted by the artist Gurianov. The design and execution of the interior decoration and paintings were carried out by the Kyiv artist M. I. Murashko [49]. The ceramic floor tiles were produced at the Kharkiv plant of the Bergenheim Company, with a total of 10 types of tiles used in the flooring. Some of the original floor tiles have been preserved in the cathedral. The uniqueness of the material used in the cathedral's construction was also confirmed. The brick, made with expanded clay admixtures, was produced at the monastery's own factory [50] (Fig. 4).



Fig. 4. The current state of the Cathedral of the Nativity of the Virgin: a) view of the cathedral from the northwest; b) brick decoration of the facade; c) authentic floor tiles; d) the construction of the intersection of four arches that supports the drum of the main dome, freeing the interior space from columns. *Source:* own study

The identified cultural heritage objects are classified as follows: a) the most valuable objects (an existing architectural monument - the Cathedral of the Nativity of the Virgin), b) a valuable historical building recommended for inclusion in the State Register of Architectural Monuments of Ukraine, c) a significant historical building, and d) an ordinary historical building (Fig. 5).

The results of the systematization, along with the current state and proposals for the preservation of buildings, are provided in Table 1.



Fig. 5. Identified cultural heritage objects in the monastery complex: 1, 2 – the warm house church of the Transfiguration of the Lord at the abbess's cell and various workshops (2), eastern and southern facades; 3 – office with nuns' cells, treasury building (3); 4 – candle-making and icon-painting workshop (4); 5 – the Holy Gate with shops (5); 6 – nuns' cells on Monastyrskya Street (6); 7 – new parish school for boys (7); 8 – pilgrimage building (17), typical decoration of residential buildings; 9 – corner house (13), remnants of the monastery wall decoration. The numbers of objects correspond to those in Table 1 and Fig. 6, indicated in parentheses. *Source:* own study

Table 1. Classification of discovered cultural heritage objects. *Source:* own study

No. and on Fig.6	The name of the cultural heritage object	Dating	Notes
1	2	3	4
Existing architectural monuments			
1	Cathedral of the Nativity of the Virgin	1906	An architectural monument of local significance (Decision of the Executive Committee of the Poltava Regional Council of People's Deputies dated April 23, 1984, No. 165). It is currently used for its original purpose. It is proposed to elevate the status of the object to an architectural monument of national importance.
A valuable historical building proposed for inclusion in the State Register of Cultural Heritage of Ukraine as an architectural monument of local importance.			
2	The warm home church of the Transfiguration of the Lord at the abbess's cell	1891	Now the abbot's building and sister's cells. Its historical function has practically been returned. The technical condition is satisfactory, but the facades and interiors of the church need restoration.

3	Office with sister's cells, treasury	1887	The building is currently not being used and is undergoing repairs. The planning has been partially changed. The technical condition is satisfactory. Historical facades and decor have been preserved, but some window openings of the facades are bricked up. It needs restoration and reproduction of the original appearance of the facades.
4	The building of the candle-making and icon-painting workshop	1908	The building has changed purpose and is now used as rooms for pilgrims. The planning has been altered, but the facades and decor have been preserved. The technical condition is good.
5	The holy gate with shops	1891	The building is now in an unsatisfactory condition, spoiled by additions. It is used as a bakery and a cowshed. The completion and domes are lost, the main passage is blocked, and the layout and historical function have changed. External facades with decor have been preserved. The building requires the demolition of the additions and a solution regarding its use, as the urban planning situation and boundaries of the monastery have changed. The building can no longer fulfill the historical function of the main entrance to the monastery.
6	Cells for nuns in Monastyrskya Street	the 1890s	The building was used as a therapeutic department of the district hospital. Currently, it is not in use. The technical condition is unsatisfactory. The facades with decor have been preserved, but some window openings are bricked up. The building is in need of restoration and adaptive reuse.
7	Church-parish school for boys (new)	1910-1912	In 1955-57, a cinema hall was added to the building. It is currently used as the central district library. The historical function and planning have been changed. The technical state is satisfactory. The facade along Ostrogradskiy Street is authentic. Part of the facades along Monastyrskya Street are desecrated, with broken decor. This facade is in need of restoration.
Considerable historical houses			
8	"House for the Reception of wanderers" (almshouse), parish school for boys (old) and monastery pharmacy	1887	Currently, it is the Centre for Social Services. An internal re-planning and addition were carried out through the transition on the second floor. The technical condition is unsatisfactory. The front and side facades have been preserved, but the decor is covered with ceramic tiles, which were used to cover the facades in the 1980s. Needs restoration of facades.
9	Nuns' cells (one-story building) in Monastyrskya Street	the 1890s	Now it is the polyclinic of the district hospital. The planning has been changed. The technical condition is satisfactory. The decor of the main facade of the building was ruined when facing with tiles, while the courtyard facade partially preserved the decor and authentic details. Needs restoration of facades.
Ordinary historical buildings			
10	Shed for the mill and the locomobile	1896	It is used as a garage and a warehouse. The technical condition is unsatisfactory. It has modern extensions, and the characteristic high chimney is lost. It is in need of restoration.

11	The house by the gate (a house for female gatekeepers)	1908	It is used as a residential building. The technical condition is satisfactory. The decor of the building has been lost due to insulation of the walls. Historical planning has been changed. The degree of preservation is low.
12	The priest's house	the 1890s	It is used as a residential building. It has modern additions. The technical state is unsatisfactory. It has lost its original appearance and layout, but the facade decoration has been preserved. The degree of preservation is medium.
13	"Corner house" (water supply house)	the 1900s	The former engineering construction is currently used as a residential building comprising several flats. The exterior facade was part of the monastery wall. The technical state is unsatisfactory. It was obliterated by additions; the decor of the monastery wall has been preserved in fragments. It is in need of restoration.
14	House of nuns' cells	the 1890s	It is used as a residential building with four flats. The technical state is unsatisfactory. It has modern additions, and the planning has been changed. The decoration of the facades has been preserved in some places, and there is a basement under the building. The degree of preservation is medium.
15	Clergymen's house	1908	In Soviet times, it was the therapeutic department of the hospital. Now it is a residential building. The technical state is unsatisfactory, and the degree of preservation is low.
16	The monastery store	the 1900s	It is currently used for commercial purposes, including a shop, bank, and insurance company. The technical state is unsatisfactory. Modern additions have been made in the interior courtyard, and the planning has been changed. The decor has been preserved in fragments. The degree of preservation is medium. The building is in need of façade restoration.
17	Clergymen's house	the 1900s	Now it is a residential building comprising two flats. The technical state is unsatisfactory. The object was damaged by additions, but the facade decor has been preserved. The degree of preservation is medium.
18	The priest's house in Monastyr'ska street	1886	The historical function has changed. Currently, it is used as a pilgrimage site of the monastery. The technical condition is unsatisfactory. The historical facade is covered with tiles, resulting in the loss of the original decor. There are modern additions that exceed the historical part. Interesting buildings of historical cellars and warehouses have been preserved on the territory. The degree of preservation is low, and the object of protection is largely lost.
19	Two-class women's Nativity of the Virgin parish school with the dormitory	the 1890s/ 1960s	The original building, which has 1.5 floors, is now used as office and warehouse space. It has been spoiled by additions, and the decor is destroyed. The degree of preservation is low, and the object of protection is lost.

2.3. Preservation of the monastery complex and the virtual reconstruction of its original appearance

The appearance of most Orthodox monasteries in Ukraine during the challenging years of the Middle Ages necessitated their protection from enemy raids through the use of monastery

walls. When these walls later lost their defensive significance, they provided the necessary isolation for monastic life. As monasteries expanded, they often featured multiple rows of walls. The rapid construction of the new monastery in Kozelshchyna at the beginning of the 20th century adhered to the established construction principles that had evolved over several centuries. Within a few years of its foundation, the monastery already exhibited the traditional functional and planning structure of an Orthodox monastery, which included a walled-in area for the monks, an open area for pilgrims, agricultural lands, and production areas.

The research conducted enabled the reproduction of the original functional and planning structure of the monastery and the establishment of the boundaries of its enclosed section. Across the central street of the village from the Kapnists' manor was the zone for pilgrims and the main social welfare institutions of the monastery. The central enclosed part of the monastery was situated on a hill, the with zones for additional and economic buildings, as well as production areas, radiating outwards to the north and east. A transverse street connected the monastery to the railway station. The graphic reconstruction of the historical general plan of the monastery complex on the modern city map was created using the Digitals program and is presented in Fig. 6.

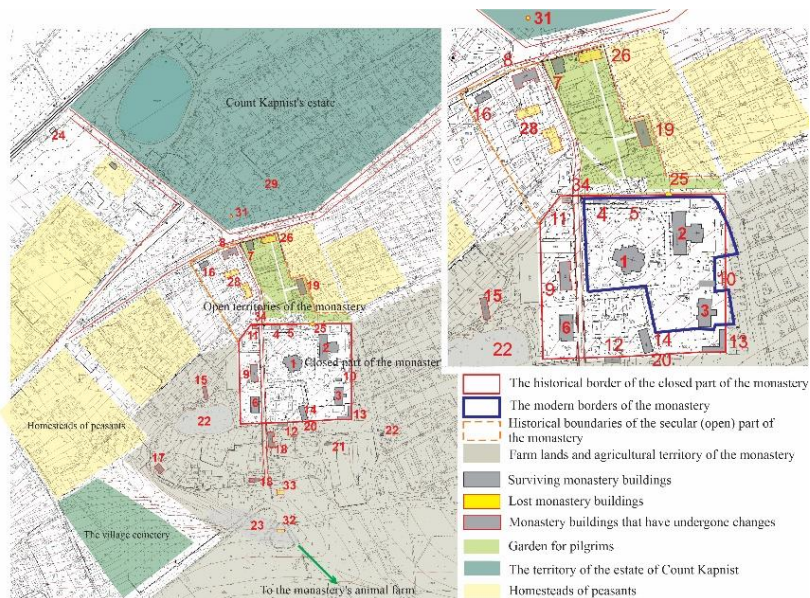


Fig. 6. Graphic reconstruction of the general plan of the monastery complex: 1 – Cathedral of the Nativity of the Virgin; 2 – the warm home church of the Transfiguration of the Lord at the abbess's cell and various workshops; 3 – an office with nuns' cells; 4 – a candle-making and icon-painting workshop; 5 – the Holy Gate with shops; 6 – cells for nuns; 7 – a new parish school for boys; 8 – an almshouse, parish school for boys (old), and a monastery pharmacy; 9 – nuns' cells; 10 – a shed for the mill and locomobile; 11 – a house for female gatekeepers; 12 – a priest's house; 13 – a corner house (water supply house); 14 – nuns' cells with the basement; 15 – a priest's house; 16 – a monastery store; 17 – a house for the convent; 18 – a house for the convent; 19 – women's parish school with a dormitory; 20 – remains of monastery walls; 21 – pool-reservoir for water supply; 22 – silage tower; 23 – the old quarry of the brick factory; 24 – Kozelshchyna railway station. The ruined objects: 25 – the chapel; 26 – a house for wealthy residents; 27 – a hospital building with a pharmacy; 28 – the estate of the Kapnist princes with a park and a pond; 29 – the first wooden chapel; 30 – premises of a brick factory; 31 – a laundry; 32 – the Red Gate. *Source:* own study

Using the Archicad program, information models of the identified heritage objects were created. Drawings of the most valuable objects of the monastery's cultural heritage, including the reconstruction of the original appearance of the lost objects and elements of preserved buildings, are presented in Fig. 7. The information models of the buildings allowed for the reproduction of the original appearance of the monastery in the Archicad program (Fig. 8).

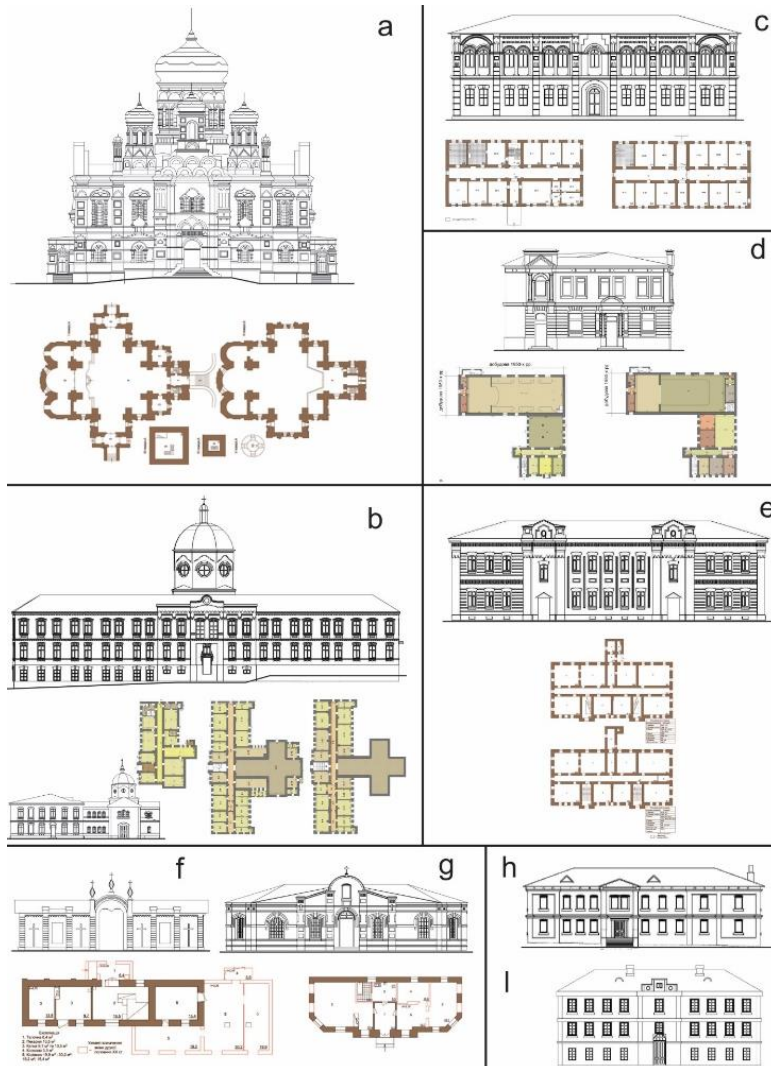


Fig. 7. Buildings of the monastery complex: a) Cathedral of the Nativity of the Virgin (1); b) the warm house church of the Transfiguration of the Lord at the abbess's cell and various workshops (2); c) nuns' cells (6); d) parish school for boys (7); e) an office with nuns' cells (3); f) the Holy Gate with shops (5) – graphic reconstruction of the original appearance; g) a candle-making and icon-painting workshop (4); h) an almshouse (8), an old parish school for boys, and a monastery pharmacy; i) a house for wealthy residents – graphic reconstruction, not preserved. Different scales are used for facade schemes and building plans. Disharmonious changes are marked in red on the plans. The numbers of objects according to the general plan in Fig. 4 are given in parentheses. *Source:* own study

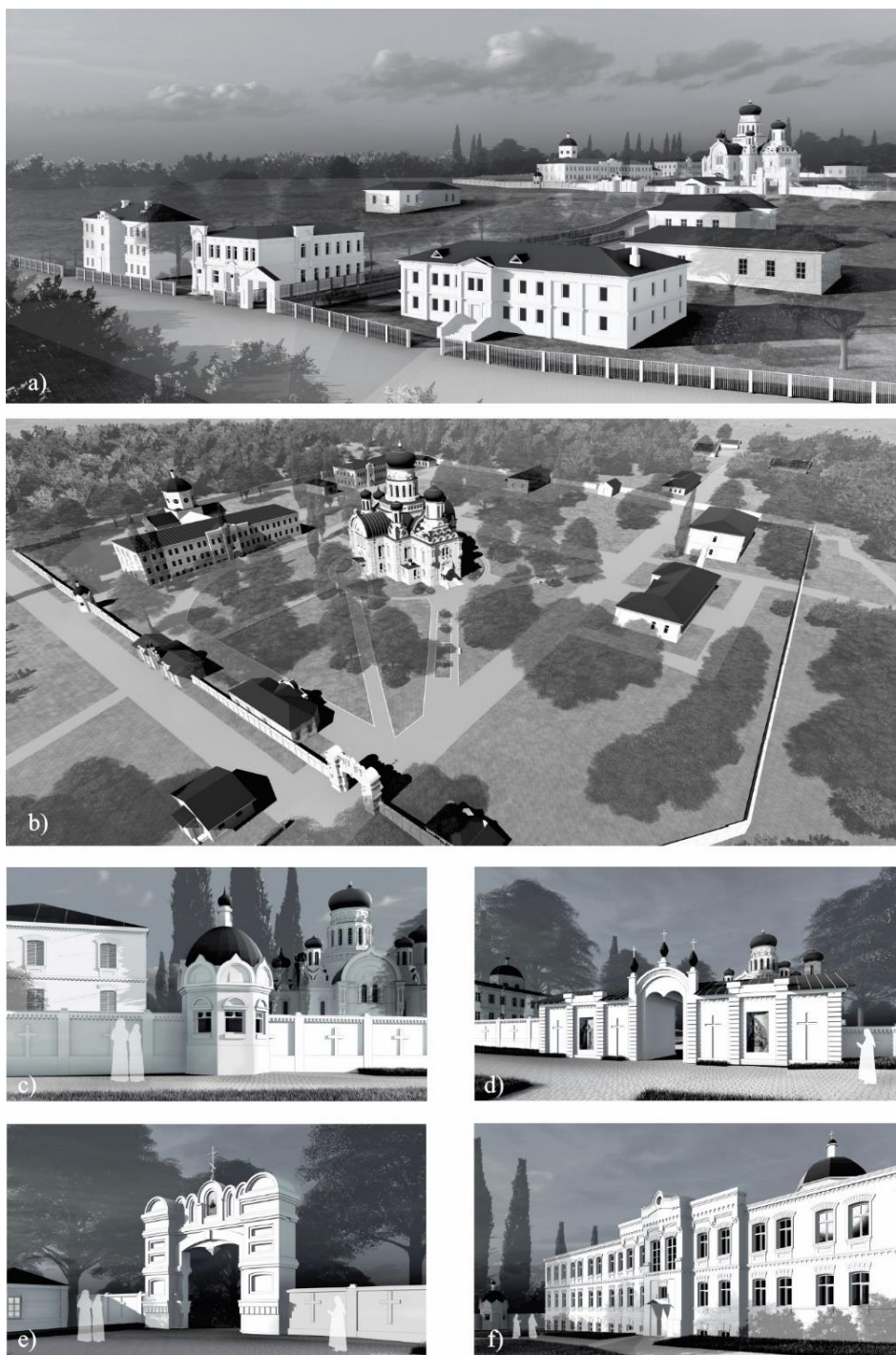


Fig. 8. 3D reconstruction of the original appearance of the monastery: a) general view; b) view from above of the central part; c) near the chapel of the monastery; d) the Holy Gate of the monastery; e) the Red Gate of the monastery; f) the abbot's building of the monastery. *Source:* own study

A comparative analysis of the current state with the historical one determined that:

- the main planning connections of the monastery with the town have been preserved, though some secondary connections have lost their direction;
- the main buildings of the monastery, connected by functional, compositional planning, and large-scale features, have been preserved;
- the secondary objects of the monastery have been preserved, although the lost structures mostly include auxiliary and production buildings, with more than 50% of the structures having lost their original functions;
- the main functional and compositional core of the monastery has been preserved and its functioning restored; however, the historical zone for pilgrims has been built up and lost;
- the area of the closed part of the monastery and its overall territory have decreased;
- the locations of the entrances to the monastery have changed.

Thus, it was determined that the historical functional-planning structure of the monastery complex was destroyed, and the degree of preservation of buildings is 63% (21 preserved/12 lost). The surroundings of the complex have significantly lost their authenticity, but the type of environment has not changed.

2.4. Current state and problems of preservation of the monastery complex

Currently, the active monastery occupies a significantly smaller area than historically, as defined by its modern walls. The monastery owns six historical buildings, one of which lies outside its current boundaries. Four buildings are communally owned, while the rest are privately owned and are undergoing active reconstruction. Among all the buildings, only the cathedral is listed in the state register as a monument and is protected by the state. There is an urgent need to include valuable buildings in the state register and ensure their protection.

The monastic community is small, with only 16 novices, and its economic capabilities are limited. The historically established traditional economic model of monasteries as agricultural enterprises with subsistence farming is at odds with the current conditions of the modern monastic community, which lacks large agricultural lands and sufficient human resources. The current management of the monastery is attempting to apply the historical management model, resulting in the active reconstruction of historical buildings and new construction on the site. This approach threatens the preservation of the authenticity of heritage sites.

The main challenge in preserving the monastery's heritage is finding a balance between maintaining authenticity and adapting to modern societal needs. This is a complex issue involving opposing tasks that require the coordination of all parties' needs and dialogue between them:

- ensuring the need to "pass on the legacy to descendants," which involves preserving authenticity and protecting heritage, significantly limits changes in objects;
- ensuring the needs of the newly created religious community and the possibilities of the monastery's functioning monastery within its current limits, which necessitates changes to the buildings;
- meeting the needs of residents for urban development and comfortable living conditions, which requires modifications to the historical urban environment.

Several aspects of the challenges associated with the modern preservation of the discovered cultural heritage object are highlighted.

1. *The architectural and planning aspect* includes the protection of the monastery complex's buildings, ensuring the physical preservation of cultural heritage objects, and finding optimal functions for the adaptive reuse of the buildings and grounds of the monastery.
2. *The urban planning aspect* involves maintaining the city-forming and compositional role of the monastery within the settlement. The monastery has retained a dominant role in the town's composition. It is essential to preserve the monastery's compositional role and the valuable historical environment during new construction and town development. This requires compliance with Ukrainian legislation through scientific project documentation for the development of protection zones around cultural heritage monuments, which regulates new construction in these zones and aims to preserve the traditional historical environment.
3. *The socio-cultural aspect* highlights the need for educational initiatives, increasing residents' awareness of their heritage and protective legislation, enhancing the monastery's socio-cultural role, and transforming it into a centre for the spiritual life of the region.

4. Conclusions

In the course of the research, the stages of construction and operation of the Nativity of the Virgin Kozelshchyna monastery were identified as follows: the 1st stage – development of the monastery (1882-1917); the 2nd stage – stagnation, closure of the monastery, and destruction of its buildings; the 3rd stage – transfer of six monastery buildings to the Orthodox Church and the revival of the monastery community.

An analysis of the structure and architectural features of the monastery buildings was conducted, leading to the identification of an additional 18 cultural heritage objects within the monastery complex. Their classification was carried out according to their historical and cultural value. A 3D reconstruction of the original appearance of the monastery and its buildings was completed. The analysis of the current state allowed for the identification of problems related to the functioning of the monastery and the preservation of cultural heritage.

In the course of the study, BIM and GIS technologies proved to be valuable tools for researching the integrity and value of objects, virtual reconstruction of their original appearance, and documentation and monitoring of cultural heritage objects. These technologies greatly simplify the ongoing monitoring of conditions and changes. The information models created for cultural heritage objects play a crucial role in preserving documentation and, in the event of destruction, enabling accurate reproduction. They also ensure the quality of decisions regarding restoration and adaptive reuse.

The research enriches knowledge about the local history and architectural heritage of the town, contributing to its identity and uniqueness. The results provide a scientific foundation for developing a strategy to preserve the town's cultural heritage and guide its development. Additionally, they create an information base for further scientific research and architectural and urban planning work.

The study established prospects for further work and exploration in the town:

- Completion of accounting documentation for the most valuable objects of cultural heritage in accordance with Ukrainian legislation, followed by their entry into the State Register of Monuments of Ukraine;
- Development of a concept and project for the monastery, including adaptive reuse projects for the buildings;

- Implementation of reconstruction and restoration of the monastery's buildings and structures;
- Creation of scientific and project documentation for the development of protection zones for cultural heritage objects.

The perspective for further research for the authors is the development of a project for protection zones of cultural heritage objects, with the aim of preserving their urban planning and compositional role within the modern environment of the town.

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