

## FORMATION AND FUNCTIONING REGULARITIES OF TEMPLE AND MONASTERY LANDSCAPES

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### Formation and functioning regularities of temple and monastery landscapes

Temple and monastery landscapes are natural and anthropogenic systems markers of which are religious buildings such as churches, monasteries, cathedrals, chapels, etc. The present research uses a transdisciplinary approach, which provides a scientific method within the sacred geography using the methodological approaches of other sciences, including philosophy, culturology, science of architecture and others. Regional physical and geographical, ideological, confessional factors determine the place of formation and functioning of temple and monastery landscapes in the structure of settlements. Among the leading geographical patterns of formation of temple and monastery landscapes are: orographic, the presence of contrasting environments and natural water bodies. According to the city zoning and planning in Ukraine, temple and monastery landscapes are located in the area of religious and ceremonial buildings. However, often such territorial systems occur in the recreational area of active recreation, the area of public green areas (parks, squares and memorial parks) and even the area of apartment buildings, which is somewhat inconsistent with traditional canons of formation of sacred buildings. The analysis of Lutsk city monasteries (Volyn region, Ukraine) shows the formation of modern “accidental” buildings near them, which distorts the historical, cultural and sacred significance of the cult building.

**Key words:** sacred landscape, temple and monastery landscape, regularities of formation, Lutsk city, Ukraine

### INTRODUCTION

The spread of atheism in Soviet Ukraine led to the loss of many valuable architectural monuments and a nearly 80-year hiatus in the construction of temples and monasteries. In the period of inter-confessional contradictions and aggravation of ideological and political discussions, which take place not only within the Orthodox community, but also the whole Ukrainian society. As a result, it is expedient to study social, geographical, physical, geographical, as well as structural and organizational aspects of creation, functioning of temple and monastery landscapes, which in modern realities have significantly influenced the formation of the Ukrainian's nation worldwide.

By performing important religious, social and cultural functions, serving as markers of temple and monastery landscapes, religious buildings are components of the spiritual and cultural heritage of the mankind. The laws of creation and functioning of temple and monastery landscapes are well studied in the field of architecture and construction. However, from the standpoint of geography, such developments in the scientific literature are underrepresented.

The goal of the article is to study the theoretical and methodological aspects of the functioning of temple and monastery landscapes. To achieve this goal the following goals were set: to study the meaning and spatial organization of temple and

monastery landscapes, to generalize the classification of the studied territorial systems by features of religious buildings, to substantiate the geographical patterns of temple and monastery landscapes, and to characterize their structure.

The topicality of this study is due to the need for geographical justification of the laws of temple and monastery systems creation and operation, as well as the close relationship between their components.

## LITERATURE REVIEW

Temple and monastery territorial systems should be studied in the context of the sacred landscape. The concept of the sacred landscape is studied not only by geographers but also by philosophers, anthropologists, culturologists and architects. This indicates the need to use a transdisciplinary approach in this study that will provide a scientific grounding within the sacred geography using the methodological approaches of other sciences. The study of patterns, the formulation of concepts allows to go beyond geography, and using the scientific achievements of philosophy, sociology, culturology, science of architecture and other sciences, allows to theoretically explain the conditions of transdisciplinarity.

In general, geographers use the term landscape to denote individual areas that are characterized by integrity and homogeneity (Anenska et al. 1962 and Passarge 1913). Volovyk (2013), Mishchenko (2018a and 2018b) investigated the meaning of the concept of sacred landscape and its classification. The sacred landscape is interpreted as a natural, natural-anthropogenic, anthropogenic system formed by the interaction of nature and man, associated with certain life symbols, myths, important events, religious feelings and is extremely valuable for a person or group of people and requires special honoring and protection (Mishchenko 2018 a).

The term “temple” was borrowed from the Church Slavonic language, where it meant “house, building, dwelling” and corresponds to the ancient Rus concept of “mansion”. This is a place that evokes a sense of reverence. A temple is more than a building; it is the main expression of sacred space (Palmer 2015). A monastery is a church, building and territory belonging to the community of monks or nuns (Bilodid, ed. 1970 – 1980). Monastic landscapes are a multilevel natural and anthropogenic systems, which consist of geographical, landscape, architectural and social subsystems.

When studying sacred places, it is advised to use a geographical approach (Tanaka 1975). The geographical location of temples and monasteries of various denominations in the past and at the present stage of development of society was studied by Park (1994). His substantiation of the geographical regularities of the formation of Buddhist temples is scientifically capacious, in particular: Mikkyo temples (dating from 794 – 1192), Jodokyo temples (founded between 1133 – 1212), Zen temples (dating from 1141 – 1253). Chin (2012) explored 257 representative Buddhist and Christian monasteries of India and China, founded from about 500 BC to 574 AD. Tanaka (1984) studied the evolution of temple landscapes in the Kyoto-Nara region (Japan), describing the ideological, structural and spatial changes in the studied systems. Volovyk (2013) in the context of classification of sacred landscapes analyzed the features of the geographical location of Christian churches and monasteries of Ternopil and Vinnytsia regions (Ukraine). One of the few empirical studies on site selection for a cult building is the work of Homan and Rowley (1979). Much attention in geographical science is paid to the

study of the use of religious buildings for the development of religious tourism, the influence of holy places on the formation of spiritual experience and emotional state (Irimiás and Michalkó 2013 and Ambrósio 2015).

Eliade (1959) argued that the choice of the location of the holy space in most religions is not random, but is found and identified by the help of mysterious signs. Religious objects influence the formation of the cultural landscape, and are also an important factor in the development of individual settlements (Nemčíková et al. 2020). According to the theoretical and ideological teachings of Schwebs (2000), in ancient times, religious buildings were placed in special places around which dwellings were built along circular lines. The sacred role of a temple / monastery is enhanced when it is located on top of a hill (Jordan 1973), near a river (Chettiar 1941), a spring (Mishchenko 2018c). Liutikas (2016) explored objects and places associated with the worship of saints.

Historical records can be used to reconstruct patterns of church growth through time. An example is Proudfoot's (1983) study of the influence of population pressure on church size in Warwickshire (England) between around the year 1200 and 1535. Periods of local population growth necessitate the construction of temples. Berdichevsky (1980), for example, examined the changing distribution and character of churches in New Orleans between 1957 and 1977.

Temple and monastery landscapes are considered as cultural and historical heritage. Their preservation should be part of public policy that will ensure the sustainable development of the given region (Trono and Oliva 2017). In scientific publications, temples and monasteries are considered as objects of worship that can be used for religious, cognitive and recreational purposes. In the context of our research, these objects are important components and markers of the sacred landscape and are in close contact with the environment. The study of this issue at the theoretical, methodological and applied level led to the choice of the researched topic.

## RESEARCH METHODS

In order to study the geographical patterns of creation of the studied territorial systems, Volyn region (Ukraine) was selected as a studied area, where there are 13 existing Orthodox monasteries. To determine the patterns of formation and functioning of temples and monastic landscapes in the structure of the city we have analyzed 25 churches and monasteries of Lutsk (the administrative centre of Volyn region).

The article uses a transdisciplinary approach, which allows to systematize and differentiate scientific research of the sacred landscape. As far as the concept of "landscape" in classical geographical science is studied as a set of interrelated components, so in the context of our research "temple / monastery landscapes" are not only religious buildings (church, monastery, cathedral and chapel), but also their natural and social environment.

The methodological basis provides for the allocation of five stages of geographical research of temple and monastery landscapes: preparatory, informational, modeling, analytical and implementing (Fig. 1).

During the preparatory stage, the object and subject of scientific research were selected, its topic was formulated, and the goal and objectives were set. The main

methods at this stage are the method of processing literary sources. At the end of this stage the information basis for scientific research was determined, the approach for the interpretation of the concept of “temple / monastery landscapes” was determined, the general geographical laws of formation and functioning of the studied territorial systems were defined.

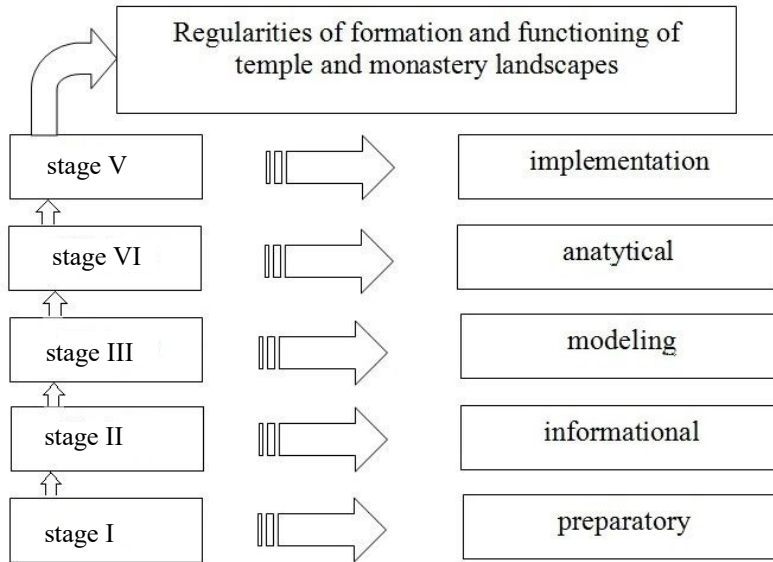


Fig. 1. Stages of research of regularities of formation and functioning of temple and monastery landscapes

Source: Author's own elaboration.

The information stage of scientific research is one of the main and responsible stages, during which the information and source base was collected. Materials from the State Archives of the Volyn Region (State Archives of Volyn Region) were used to study the monasteries of the Volyn Voivodeship of the 16th – 20th centuries. A survey among local residents on the healing properties of water sources located near the temple / monastery was conducted. Topographic maps of the Volyn region at a scale of 1:10 000 were used to determine the relative excess within the studied monasteries. To determine the compliance of the location of temples and monasteries in the city structure with Ukrainian regulations we have used the General Plan of Lutsk, as well as State building codes “Planning and development of territories” (City master plan: Lutsk and State building codes “Planning and development of territories 2018”). For a retrospective analysis, maps of Lutsk (1937) with cult buildings were used. In order to identify the needs of the residents of Lutsk (Ukraine) regarding the location of the church they would like to visit, a telephone survey of 500 respondents was conducted.

During the third stage that is, modelling, a cartographic model was created, which determined the features of the geospatial location of the monasteries of the Volyn region, as well as the structure of the confessional space of the Volyn region (Ukraine).

Of course, the most important and the longest stage of the scientific research was the fourth, analytical stage. The applied methods were as follows: system analysis, with which the sequence of structural relationships identification between the elements of the studied territorial system was determined; structural and logical generalization for the study of the temple concepts, temple landscape, monastery landscape, substantiation of geographical patterns of temple and monastery landscapes formation, classification scheme of temple and monastery landscapes according to the peculiarities of religious buildings, determining the compliance of the location of temple and monastery landscapes in the city structure with the regulations of the country, region and the wishes of citizens; retrospective analysis to compare the current spatial location of churches and monasteries in Lutsk with the past (as of 1937).

The introductory stage involves presenting the results of the scientific research and their further use in the practice of public authorities and local self-government, as well as communicating the results to scientists interested in the study of the sacred landscape.

## RESULTS

### Contents and spatial organization of temple and monastery landscapes

The basis of the formation of sacred landscapes were religious traditions, which were based on the cult of nature, personification and spiritualization of geological, geomorphological, hydrological, floral objects (mountains, rocks, stones, rivers, springs, groves and certain species of trees). The theistic worldview of society determined the need to create sanctuaries, religious buildings. After the emergence of world religions in the territories of pagan shrines began to form temples and monasteries.

Regional physical and geographical, ideological, confessional factors determine the place of formation and functioning of temple and monastery landscapes in the structure of settlements. Parishes provide the basic territorial church units, but their significance is not confined to spatial patterns. Their churches have often provided core nuclei around which settlements evolve, and this has made them important catalysts of broader cultural and socio-economic change (Park 1994). The natural components of the landscape are an active component of the studied territorial systems, denomination determines their spatial organization, town or village area. Number of locals, as well as ideological beliefs, the degree of spirituality of parishioners determine the capacity of temples and monasteries.

Temple and monastery landscapes are natural and anthropogenic systems, the markers of which are religious buildings (church, monastery, cathedral, chapel, etc.) and functionally related areas, which were formed in the structure of abiotic and biotic natural components, influenced by anthropogenic and technogenic components associated with religious, cognitive activities of man.

The greatest role in the formation of sacred space belongs to religious buildings. So, temples and monasteries are religious buildings that mark the sacred landscape and serve as the dominants (both spiritual, spatial and topographical) around which different types of settlements are formed.

The location of the studied territorial systems is determined by the peculiarity of the terrain, as well as the specifics of the background environment. The sacred significance of temples and monasteries requires the creation of conditions for their

dominance in the environment, as well as a key role in the organizational structure of the landscape. It is expedient to study the landscapes of temples and monasteries by systematizing them according to their confessional affiliation.

The position of Christian churches (Orthodox and Catholic) is determined by the church requirements for the orientation of the altar in the eastern direction with a possible displacement of 30° due to the urban features of the site. Orthodox churches are usually located in the central part of a settlement on an elevated terrain. Monasteries can be located within the settlement, or outside it.

It is not advisable to place houses and buildings on the site of the temple landscape that are not functionally connected with it. Within the temple territorial systems, the following functional zones are distinguished: entrance, temple, auxiliary purpose and economic. In the entrance area there is an entrance and an entrance for vehicles. There are small shops selling church supplies. It is worth noting that the entrance area is functionally connected to the temple. The temple area is used for religious ceremonies. Here are religious buildings, in particular: temples, bell towers and chapels. The temples are located no closer than 3 m from the red building line in order to be able to go around the temple. In the temple area there is a burial area, which in turn enhances the sacredness of the entire temple landscape. The auxiliary zone is intended for the organization of parish, educational, charitable activities. This area has a clear connection with the entrance or temple areas. The economic zone of the temple landscape serves to accommodate commercial buildings. Approximately the area of this zone is 15% of the total area. In the planning structure, temple systems are fenced, but there are no fences in memorial complexes and chapels.

Landscape systems based on Muslim mosques are oriented by the mihrab in the area towards the Kaaba is the main shrine of the Muslim religion in Mecca. The building of the mosque is located at a certain distance from other buildings. Mandatory elements of such systems are asphalted areas intended for vehicles, as well as places with greenery. In the square in front of the cathedral mosque there is a fountain, or a small pool, which have ritual significance for the faithful.

Synagogues also have their own features of spatial organization, in particular: the main entrance to the synagogue is arranged from the west; in front of the entrance of the synagogue there should be a yard for festive rituals.

#### Classification of religious buildings within the temple and monastery landscapes

The priority characteristic of temple and monastic landscapes of the urban environment is their own religious typology (distribution by religions, denominations and beliefs), which determines and defines the formation of different types of religious buildings. According to the hierarchy, temple objects are divided into: main (cathedrals) and ordinary (parish churches, houses of worship and chapels).

The classification of religious buildings within the temple and monastery landscapes is determined by regional features, location conditions, the mode of the liturgical process, functional purpose and capacity.

In the Orthodox group of temple and monastery landscapes, the following variants of buildings can be distinguished: cathedral, catholic, monastery, parish, chapel, cemetery and memorial (Tab. 1).

**Tab. 1. Variants of religious buildings within the temple and monastery landscapes**

Variant	Capacity, persons			Spatial location
	Citywide	District	Rural	
Cathedral	500 – 1500	–	–	city center or monastery complex
Catholic	300 – 500	300	–	city center or residential area
Parish	300	100 – 500	50 – 200	residential area of the city, quarter, residential district; center of settlements, villages
Monastery	200 – 300	–	100	monastery
Chapel	30 – 50	30	30	park area, as part of a cult or public complex
Cemetery	200	50 – 200	30 – 50	cemetery
Memorial	100	50	30	park area of the memorial complex

Source: Kutsevych, ed. (2002).

The most common type of temple buildings is parish. Here the number of buildings of various functional purpose is fixed, in particular: liturgical, office and household, educational, charitable and economic. The parish church includes the following components in its spatial structure: sacred core, ceremonial space, narthex, porch and bell tower. The parish version of the Orthodox church buildings is located in the residential area of the settlement and has a capacity corresponding to the size of the religious community living in the given area. The cathedral version of Orthodox church buildings is functionally identical to the parish version. However, it differs in the capacity of buildings, as well as the spatial location. Cathedral functionally repeats the Catholic version of the temple system, but is usually located in the central part of the city and has the highest capacity.

The monastery version of sacred buildings is usually located outside the city. This system may include several churches, a gatehouse and a church house, a chapel, a bell tower, a cell building, a hospital, a shop, utility rooms, a Sunday school and agricultural land.

The chapel version of the Orthodox church landscape has a limited functional structure and covers the cult building itself and the surrounding natural and infrastructural environment. Chapels are divided into holy water, funeral, memorial and liturgical (Kutsevich 2009). The cemetery temple complex is close in functional structure to the chapel and it is located on the territory of the cemetery. In some places, the cemetery church corresponds in organizational structure to the structure of the parish church.

The memorial version of the landscape complex is located on the territory of historical significance. An important functional feature of memorial systems is the figurative and artistic expression, which corresponds to their thematic focus.

Catholic church and monastery buildings within the sacred landscapes have a hierarchical structure. Accordingly, they can be divided into cathedral, episcopal, parish, branch or collegial. Functionally, such systems can have the following options: monastery, hospital, cemetery and memorial. The capacity of Catholic religious buildings roughly corresponds to the capacity of the Orthodox.

The main variants of buildings of Muslim temple landscapes are cathedral, quarter, dubre and madrasa. The cathedral version of the Muslim cult system has a large capacity of 200 to 1,000 people and it is located in the centre of the city, town or village. Dubre has a capacity of 10 to 250 people, intended for believers of a residential area or a significant residential area, settlement or village. Dubre can accommodate 25 – 50 people. This territorial system is located in the cemetery and connects it to the temple, which is connected to the tomb. The madrasa has an educational and functional purpose and covers a temple with a capacity of 50 – 100 people, combined with the Islamic educational institution of the madrasa and located in the rural area, where housing, community centres, cultural facilities, greenery and streets are located.

The leading cult building of the Jewish religion is the synagogue. Variants of temple buildings of this religious group depend on the type of the cult house itself: choral, memorial, synagogue and prayer house. The Choral Synagogue is located in the central part of the city and has a capacity of 150 – 500 people. The memorial has a capacity of 100 – 300 people and it is located in memorial centres and areas. The synagogue is usually located in a residential area, neighbourhood, and has a capacity of an average of 75 – 200 people. The prayer house is located in a residential area, neighbourhood, with a capacity of 50 – 75 people.

#### Geographical patterns of creation of temple and monastery landscapes

The process of temple and monastery landscapes formation is characterized by certain geographical patterns. These territorial systems are confined to slope, terrace, watershed types of landscape areas (Mishchenko 2019). Among the leading geographical patterns of formation of temple and monastery landscapes are: orographic, the presence of contrasting environments and natural water bodies. These regularities apply to the choice of location of religious buildings of different religions and denominations.

The religious space of Volyn region, as well as each of Ukraine's regions, is the result of those historical events that took place in this area for a long time. There are 1,683 registered religious organizations in the Volyn region, which use 1,464 religious buildings for their activities (State Service of Ukraine for Ethnopolitics and Freedom of Conscience 2021). An analysis of registered religious organizations shows that the region is dominated by people who profess the Orthodox faith. These laws apply to the choice of location of religious buildings of different religions and denominations. The territory of Volyn region (Ukraine) was chosen as a studied site, within which Christian churches and monasteries predominate (Fig. 2).

The largest share of the religious space of the Volyn region is occupied by Orthodox religious buildings – 953 (65%). The Protestant religious space of the region in the context of religious buildings is represented by various religious movements and includes 452 objects (31%). There are 48 (3.3%) Catholic churches within the study area. Non-Christian confessional space is represented by a small number of Jewish, Buddhist buildings and others.



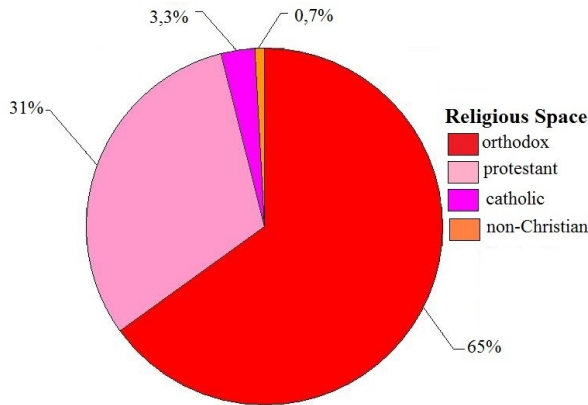


Fig. 2. The structure of the confessional space of the Volyn region (Ukraine) by the share of religious buildings (2021)

Source: State Service of Ukraine for Ethnopolitics and Freedom of Conscience (2021).

Temples and monasteries are not only objects of worship of the faithful, but also in ancient times served as a shelter for them. The choice of such areas was made on elevated place (hill, plateau), the bend of the river and at the intersection of the axes of connections, taking into account the background environment, the dominant function of the temple. This achieved the effect of their connection with the surrounding area and neighboring settlements. The functionality of landforms that can serve as objects of sensory perception has long been recognized by man, when the species points (peaks, ledges and rocks) were chosen for cult sites. In 1935, the English archaeologist Boothby in his article “Religion of the Stone Age” points out that underground springs were found under each sanctuary he studied (Gardiner 2007). Ancient religious buildings were usually built in areas where groundwater accumulates. Naturally, within the temple and monastery landscapes there are water springs, which are often healing, which enhances the sacredness of these territorial systems – for example, in the village. Białystok (Volyn region, Ukraine) in 1636 St. Michael’s Church was built. This temple is located within a forest plateau, the relief of which is intensively articulated (up to 70 m) and complicated by a ravine network. This division contributes to the intensive drainage of groundwater and as a consequence of the formation of the first from the terrestrial surface of the Upper Cretaceous aquifer. The spring, which is located under the hill on which this temple is located, has formed a small reservoir, flows through the cretaceous deposits and, according to the clergy, has healing properties (Fig. 3).

Temple and monastery landscapes were created within contrasting natural environments. An example of such territorial systems is the monastic landscape of the Peter and Paul Monastery, Svityaz village (Volyn region, Ukraine – Fig. 4). This monastery was built within the lake embankment of Lake Svityaz. The average distance from the lake to the monastery reaches 200 m. The relative excess of the height of the shaft, compared to the water’s edge is 10 m.



Fig. 3. St. Michael's Church on the background of the spring (Bilostok village, Volyn region, Ukraine)

Source: author (2021).



Fig. 4. a) Fragment of the map of Shatsk National Nature Park (Volyn region, Ukraine);  
b) a photo of the Peter and Paul Monastery, Svitiaz village

Source: Own study

The vegetation that surrounds the cult building is a component of the temple/monastery territorial systems, complements them, emphasizing the peculiarity of this place and enhancing the feeling of sacredness. There are no clear canons that define the types of plants that should be planted near religious buildings. The landscaping of temples/monasteries is always closely linked and determined by the architectural solution. Landscaping of such territorial systems depends not only on

the confessional affiliation of the cult building and national traditions, but also on the features of the relief, natural and climate conditions. Traditionally, landscaping of Orthodox churches involves the use of the types of plants as follows: Nedzvetsky apple tree, house apple tree and pear. In such areas are often planted the are western white cedar and its forms, prickly spruce, spruce. Among the flowers used are lilac, roses and garden jasmine. Verbena, mayors, marigolds and asters are planted in flower beds. Near Catholic churches, landscaping is made of evergreen boxwood, and white cedar and cypress trees are planted along the church fence and alleys. Naturally, near Catholic churches more often than near Orthodox, you can see junipers, Cossack, Chinese, scaly, decorative forms of spruce and prickly spruce.

In the context of the presented research, the physical, geographical and historical regularities of monastic landscapes creation of Volyn region (Ukraine) were analyzed. The proximity of Volyn to Christian countries, in particular Pannonia, Moravia, and Poland, led to the formation of monastic communities in the pre-Christian period. After the destruction of Kyiv by the Mongol Tatars in 1240, many monks found salvation in modern Volyn, where the scale of devastation was smaller, and natural conditions contributed to the development of monastic life. Within the Volyn Voivodeship in different years of the 16th and 17th centuries there were from 18 to 35 Orthodox monasteries. Most of them have ceased to function today, and some operate as parish churches. Currently, there are 13 Orthodox monasteries in the Volyn region, which are located in the basins of 5 rivers (Luha, Studianka, Styr, Turiya and Vyzhivka) and in the Shatsk Lake District (Fig. 5).

Studies of the monastic landscapes of the Volyn region show that their greatest concentration is within the Volyn Upland, which is due to the historically higher population density of this area compared to Volyn Polissya. In addition, these areas differ in terms of soil fertility and wetlands, which affected their anthropogenic development. Most monasteries in the Volyn region are located within natural elevated areas (hill and shaft), where a relative excess of 10 m to 20 m is recorded. They are located on the border of contrasting natural environments, mainly on floodplain terraces with a close location of natural water bodies (rivers and lakes). For example, the Orthodox monasteries are Zymne, Nizkynychi Holy Dormition, Zhydychyn St. Nicholas, Lutsk St. Archangel, located within the floodplain terraces, where they are far from religious buildings to the river, not exceeding 300 m (Tab. 2). Their waters and working water sources serve to support the livelihoods of monastic intermediaries

Within the Volyn Upland, water sources were most likely associated with the contact zone between the forest formations and the first aquifer of the Upper cretaceous rocks. Then in Volyn Polissya, the water supply of monasteries was carried out from aquifer sandy quaternary deposits, in particular, the first floodplain terraces, as well as the end-moraine formations from shallow wells. Water could be supplied from natural springs and wells, as the groundwater level is shallow.

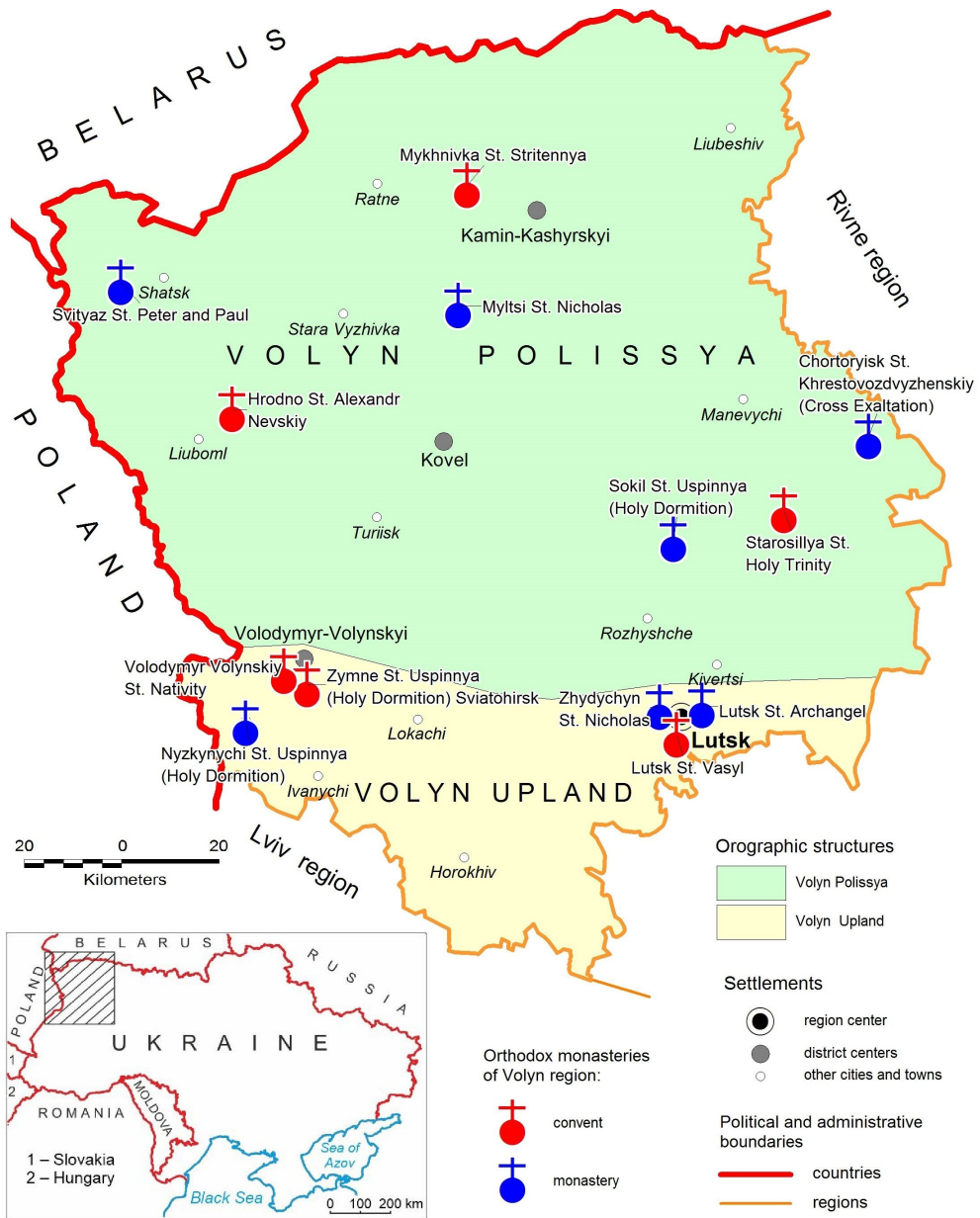


Fig. 5. Orthodox monasteries of Volyn region, Ukraine

Source: Own study.

**Tab. 2. Physical geographical features of the location of Orthodox monasteries in the Volyn region (Ukraine)**

Orthodox monasteries of Volyn region, Ukraine	Absolute height (m)	Geomorphic conditions	Proximity to rivers, lakes, forests	The presence of a natural source
Zymne St. Uspinnya Sviatohirsk	195	The first floodplain terrace of the Upper Quaternary age	≈ 140 m Luga river; ≈ 600 m of forest	The source of St. Barlaam
Volodymyr Volynskiy St. Nativity	194	The second floodplain terrace of the upper Quaternary age	≈ 1000 m Luga river	Not preserved
Nyzkynychi St. Uspinnya	217	The second floodplain terrace of the upper Quaternary age	≈ 130 m Studianka river	Not fixed
Zhydychyn St. Nicholas	190	The second floodplain terrace of the upper Quaternary age	≈ 300 m Styr river	Near the monastery hermitage icons of the Mother of God, there is the “Life-giving source”
Lutsk St. Archangel	186	The second floodplain terrace of the upper Quaternary age	≈ 72 m Styr river	Not fixed
Lutsk St. Vasyl	196	Aeolian-deluvial surfaces of the Upper Quaternary age	≈ 820 m Styr river	Not fixed
Hrodno St. Alexandr Nevskiy	192	Final-moraine hilly-ridge surfaces of the Dnieper glaciation	≈ 200 m Vyzhivka river	Not fixed
Svityaz St. Peter and Paul	167	Fluvioglacial gently sloping wavy surfaces of the Dnieper glaciation	≈ 200 m Svitiaz lake	Not fixed
Mykhnivka St. Stritennya	154	Holocene floodplain	≈ 430 m Turia river; ≈ 120 m forests	Not fixed
Myltsi St. Nicholas	162	Holocene floodplain	≈ 50 m Turia river; ≈ 260 m forests	Not fixed
Sokilets St. Uspinnya	175	Holocene floodplain	≈ 340 m Styr river	Not fixed
Starosillya St. Holy Trinity	182	The floodplain terrace of the upper Quaternary age	≈ 900 m Rudka river	Not fixed
Chortoryisk St. Khrestovozdvyzhenskiy	182	Fluvioglacial gently sloping wavy surfaces of the Dnieper glaciation	≈ 170 m Styr river	Not fixed

Source: Own study.

## Regularities of temple and monastery landscapes formation in the structure of the city

Monasteries, and especially temples, are mostly confined to settlements and were among the first buildings in the urban context. Temple and monastery landscapes have undergone a difficult path of development and confessional changes, which has affected their spatial organization and planning structure. Spatial patterns of formation of temple and monastery landscapes in the structure of the city are clearly related to:

- features of the landscape structure of the city,
- functional structure of the city,
- urban planning of the framework (axes, nodes, connections and centers).

When building a religious building, it is advisable to take into account:

- composition, capacity, as well as shear capacity of rocks and soils, the presence and activity of geological processes and disturbances of the earth's surface;
- type, capacity, properties, depth, groundwater supply conditions in order to prevent flooding and flooding of premises below ground level;
- micro and mesorelief, as it affects the planning and development of the city, the organization of surface water runoff;
- the presence of water bodies, which often cause flooding during floods, washing away, erosion of shores. In this context, it is important to take into account power sources, features of the hydrological regime, chemical and bacteriological composition of water, orographic and geological features of the shoreline and bottom.

In the context of the submitted research, Lutsk, which is the administrative center of Volyn region (Ukraine), was chosen as the studied territory. The city is located in the southeast of the Volyn region (Fig. 5). Its area reaches 42 km<sup>2</sup> and the population as of 1st January, 2021 was 217 197 citizens.

A retrospective analysis of the study area shows that of the 11 places of worship that functioned in 1937 and belonged to Lutsk, 3 have disappeared, including the Church of the Iberian Mother of God and the Armenian Chapel of the Holy Martyr Paraskeva. The synagogue (1620) has long been used as a sports club. In 2021, this religious building was transferred to the permanent use of a Jewish religious organization.

The analysis of the formation and peculiarities of the functioning of the temple and monastery systems of Lutsk allowed us to identify the patterns as follows:

- most of the temples and monasteries are located in the center and the historical part of a city, have a dominant position in the relief, built on plots of plakorny type, as well as within the floodplain terrace or the upper part of the slope;
- the period from 1991 until present is characterized by the process of restoration of destroyed temples and monasteries;
- a large proportion of temples built after 2000 are located within residential buildings, park areas and are not characterized by a dominant (predominant) location.

In total, there are 25 churches and monasteries in Lutsk, 14 of which are monuments of urban planning and architecture, which are under state protection.

The spatial structure of the temple landscape of which part is the Lutsk Holy Trinity Cathedral (an architectural monument of national importance in Volyn region, Ukraine), includes two churches: the upper which is dedicated to the Holy Trinity and the lower which was built in honor of the Transfiguration. In addition, there is a center for Christian education of children and youth. This area was formed within the city landscape, where it is fixed by the violation of the soil profile due to construction, as well as laying the foundations of buildings, laying communications, asphalt pavement and the presence of greenery. The cult buildings of the Lutsk Holy Trinity Cathedral are located within the slightly convex terraced interfluves with slightly angled slopes, which are complicated by certain erosive landforms.

In order to streamline and systematize the planning organization of the city, its functional zoning was carried out, i.e. the division of the city into separate parts for different purposes on the basis of their leading function.

According to the city zoning plan, temple and monastery landscapes are located in the area of religious and ceremonial buildings. However, often such territorial systems occur in the recreational area of active recreation, the area of promising public green areas (parks, squares and memorial parks) and even the area of apartment buildings, which is somewhat inconsistent with traditional canons of formation of sacred buildings in this case are not functionally dominant.

The analysis of Lutsk city monasteries (Volyn region, Ukraine) shows the formation of modern “accidental” buildings near them, which distorts the historical, cultural and sacred significance of the cult building. For example, a restaurant was built in the eastern part of the Sharitka Monastery<sup>1</sup>, which led to the destruction of an ancient cemetery. The use of the building of the Brihidka Monastery<sup>2</sup> for warehouses and living quarters, as well as repair shops led to the construction of ancillary buildings that do not functionally correspond to the sacred territorial system and historical and cultural monument of national importance.

Landscape and spatial axes are formed by natural forms that have dynamic spatial characteristics. Such dynamics are determined by one of the linear parameters, which is dominant to others. For example, valleys and riverbeds, watersheds. Their length significantly exceeds the width and therefore determines the longitudinal dynamics. In addition, the spatial axis is formed by a long strip of forest, the side of the lake, a chain of hills and other natural forms. Local axes are formed by a small beam, an elongated lawn, a park alley, etc. In addition, spatial axes are modeled and anthropogenic-technogenic forms, in particular transport routes, streets, alleys, roads with different surfaces, which significantly affect the formation of the temple landscape and the image of the city.

Most of the existing churches are concentrated in the historic, i.e. usually in the central part of the city, while the peripheral residential areas and neighborhoods, which are characterized by a high population level contain fewer churches of all denominations. That is why there is a modern pattern of building new churches, which is unfolding in mostly new areas of the city.

<sup>1</sup> 15th – 16th century – construction of a monastery; 1781 – destroyed; end of 18th – rebuilt; Since the beginning of 1990, the diocesan administration of the Roman Catholic Church in Lutsk has been operating in the building.

<sup>2</sup> 1624 – foundation of the monastery; in 1845 the cult building was set on fire; 1890 – the building is under police control and a prison; Currently, the premises of the cells and the church are empty, a certain part of the building is occupied by the Castle of the Holy Archangel Monastery, there are several private companies on the territory.

In 2020, a survey (representative sample of 500 respondents) of residents of Lutsk (Ukraine) was conducted, which generally determined the opinion of citizens about the location of the church. According to the results of the survey, it can be stated that the residents of Lutsk expressed the following wishes regarding the location of the temple:

- proximity to the place of residence (59.2%),
- proximity to the place of work (3.5%),
- city park zone (10.4 %),
- city center (14.8%),
- the outskirts of the city (12.1%).

Therefore, when designing new residential areas, it is advisable to build and provide religious buildings within their area of. Such planning will ensure compliance of the formation and functioning of temple territorial systems with religious canons.

## DISCUSSION

One of the main methodological problems of the study was to determine and generalize the geographical patterns of formation of temple and monastery landscapes.

Most of the scientific works that outline certain patterns of creation of temple and monastery complexes relate to the field of architecture and study the architectural and planning organization and aesthetics of the studied territorial systems. Our goal is to determine the geographical aspects of the formation of temple and monastery landscapes using a transdisciplinary approach, combining the scientific achievements of architectural science, history, philosophy, sociology.

Volovyk (2013) identifies the variants of sacred landscapes as follows: cathedral, monastery, temple, temple-monument, temple (at institutions), temple (tomb), defensive temple and cemetery temple. However, the sacred landscape includes not only temple and monastery systems, but also areas of consecrated water sources and burial landscapes (necrolandscapes) – Mishchenko (2018b).

When choosing the places where Orthodox churches were built, it was important to ensure that there was a visual connection between them: from one church you could see another; a panorama was open from a certain place in the landscape, which would show that the churches are the dominant places or places that are determinants of the landscape; that individual temples form the axis of perception of the landscape (Grodzinsky 2005). This spatial organization of temple and monastery landscapes was used to fill the space with visual symbols of Christianity (churches and monasteries). With the development of society, the expansion of urban areas, the old canons of choosing the place of worship are gradually disappearing and temples and monasteries appear among the residential buildings. In some places in the historical part of the cities of Ukraine new objects (e.g. restaurants, supermarkets) are created, the presence of which to some extent does not ensure compliance with the traditional canons of formation and functioning of sacred landscapes.

When it comes to the location of sacred objects, it is important to establish feedback from consumers of the environment to professionals and managers who create the structure and space of the city and operate it (Krivoruchko 2018).



In accordance with the general laws of society with the increase of the city's population its area increases. Therefore, when designing a zone of multi-apartment (residential) buildings, it is advisable to take into account the need to form a zone of religious and ceremonial buildings according to the relevant canons.

Temple and monastery landscapes are one of the most sacred components of the city, so the rationale for their location, patterns of formation, their spatial dominance are the basis for the formation of spiritual experience of the community, which allows for traditional and hereditary urban development.

## CONCLUSIONS

Temple and monastery landscapes are natural anthropogenic or anthropogenic systems, the markers of which are religious buildings (church, monastery, cathedral, chapel, etc.) and functionally related areas, which are formed in the structure of abiotic and biotic natural components, influenced by anthropogenic and technogenic components associated with religious, cognitive activities of man. The spatial organization of the studied systems is determined by a number of natural and social factors.

Classification of temple and monastery landscapes religious buildings is characterized by the features as follows: regional features, location, mode of the liturgical process, functional purpose, capacity. Among the leading geographical patterns of formation of temple and monastery landscapes are: orographic, the presence of contrasting environments and natural water bodies. The studied territorial systems are confined to power, terrace, watershed types of landscape areas.

According to the city's zoning plan, temples and monasteries are located in the area of religious and ceremonial buildings, but in the recent years they have been created in the area of active recreation, as well as multi-apartment housing. Some of the temples and monasteries, which are monuments of architecture and urban planning, have a different functional purpose and are used as restaurants, warehouses and living quarters. Therefore, it is advisable for local authorities to pay attention to the problem of preserving the historical and cultural heritage. To ensure compliance of the location and functioning of sacred territorial systems with church canons and regulations of the country and region, we consider it appropriate when designing residential areas to provide an area of temple and monastery landscapes.

Temple and monastery landscapes perform not only a religious but also a recreational function. The study of the conceptual components, methodology and issues of comprehensive assessment of the sacral and recreational potential of the territory will be the goal of our further research.

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*Olena M i s h c h e n k o*

## KRAJINA CHRÁMOV A KLÁŠTOROV – ZÁKONITOSTI JEJ VZNIKU A VÝVOJA

V príspevku sú prezentované výsledky vedeckých prác o krajine chrámov a kláštorov, ktorá sa vo všeobecnosti považuje za podtriedu sakrálnych stavieb v krajine. Jeho cieľom je študovať teoretické a metodologické aspekty fungovania krajiny s chrámami a klášťormi. Metodologickým východiskom tejto štúdie sú princípy sakrálnej geografie, ako aj klasické štúdie antropogénnej krajiny.

Článok identifikuje päť fáz výskumu: prípravná, informačná, modelovacia, analytická a implementačná. Okrem metód systémovej analýzy, štruktúrálnej a logickej generalizácie a kartografických metód bol použitý aj sociologický prieskum a retrospektívna analýza. Po obsahovej stránke je chápanie pojmu krajina chrámov a kláštorov pomerne variabilné. Môžu byť vnímané buď ako kombinované prírodno-antropogénne alebo len čisto antropogénne systémy. Ich určujúcimi znakmi sú stavby religiózneho charakteru (kostol, kláštor, katedrála, kaplnka a pod.) a s nimi funkčne prepojené areály, sformované na báze abiotických a biotických prírodných prvkov krajiny, previazaných s antropogénnymi prvkami spojenými s náboženskou, kognitívnou činnosťou človeka. Ich priestorové usporiadanie je určené regionálnymi fyzickými a geografickými faktormi, náboženskou príslušnosťou, počtom, ako aj mierou spirituality veriacich či štruktúrou osídlenia.

Chrám a kláštor sú sakrálné stavby, ktoré definujú sakrálnu krajinu a slúžia ako duchovné, priestorové a topografické dominanty, okolo ktorých sa vytvárajú rôzne typy sídiel. Vytvorili sme všeobecnú typologickú klasifikáciu sakrálnych stavieb v krajine, ktorá vyplýva z ich regionálnych odlišností, lokalizácie, charakteru liturgického procesu, funkcie i kapacity kultových objektov. Ako modelové územie výskumu bola vybraná Volyňská oblasť (Ukrajina) a mesto Luck, kde prevládajú kresťanské kostoly a kláštory.

Geografické zákonitosti formovania krajiny s chrámami a kláštorami vyplývajú najmä z orografických podmienok, prítomnosti kontrastných prostredí a prírodných vodných plôch a tokov. Chrámy a kláštory sa tradične stavali na križovatkách komunikačných trás, na vyvýšených miestach (rozvodie, riečna terasa a kopec), v blízkosti prírodných vodných plôch a tokov.

Významnou súčasťou chrámovej a kláštornej krajiny bývajú aj pramene, ktoré sú často liečivé, čo zvyšuje posvätnosť týchto územných systémov. Výber rastlinných druhov pre krajinné úpravy skúmaných oblastí závisí nielen od konfesionalnej konformity kultovej stavby a národných tradícií, ale aj od reliéfu, prírodných a klimatických daností.

Vykonalí sme analýzu fyzických, geografických a historických predpokladov pre vznik kláštorov v regióne Volyň (Ukrajina) a identifikovali priestorové zákonitosti formovania krajiny chrámov a kláštorov v štruktúre mesta, ktoré závisia od osobitostí krajiny, jej funkčnej štruktúry a urbánneho plánovania. Podľa mestskej zonácie používanej na Ukrajine patrí krajina chrámov a kláštorov medzi areály cirkevnej a obradnej zástavby. Často sa však takéto územné systémy vyskytujú aj v areáloch určených na rekreáciu a aktívny oddych, v územiach s verejnou zeleňou (parky, námestia a pamätné parky) a dokonca aj v areáloch bytovej zástavby, čo je trochu v rozpore s tradičnými kánonmi budovania sakrálnych stavieb.

Retrospektívna analýza kláštorov vo Volyňskom regióne ukazuje, že veľká časť tamjších sakrálnych budov za posledných niekoľko storočí zmizla. V blízkosti kláštorov, ktoré sú historickým a kultúrnym dedičstvom Ukrajiny a prežili až do súčasnosti, sú zaznamenané už aj „náhodné“ budovy/štruktúry (reštaurácia a opravovňa), čo znehodnocuje historický, kultúrny i sakrálny význam týchto objektov.

Výsledky výskumu naznačujú, že prevažná väčšina občanov chce, aby bol kostol blízko ich bydliska. Preto sa pri navrhovaní nových obytných oblastí odporúča zakomponovať do územia aj chrámy a kláštory. Štúdium zákonitostí vzniku a fungovania krajiny chrámov a kláštorov umožní komplexne posúdiť sakrálny a rekreačný potenciál územia, čo bude cieľom nášho ďalšieho výskumu.



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