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## Modern Trends in the Design and Construction of Hotels in Morocco

**Abstract.** The study examines the state of the hotels in Morocco and covers the problem of preserving the national traditional style in the interior and exterior decoration of hotel buildings. The relevance of developing the basic principles of architectural and planning organisation and the three-dimensional composition of hotel and tourist complexes in the hot climate of Morocco was substantiated. The purpose of the study is to determine the main trends in the development of national traditions in the construction of hotels in Morocco over the next 20-30 years. During the research, general scientific and special methods were used: analysis, comparison, comparison, and generalisation. It was determined that in the current conditions of rapid development of tourism in Morocco, new hotel complexes are designed and built mainly spontaneously. In order for such buildings to be created as systems of spatially connected architectural ensembles, it is necessary to develop and comply with the basic principles of functionality, sustainability, and aesthetics – this will preserve the originality of Moroccan architecture in the new complexes and establish the national flair as the main architectural feature of hotels in the Arab world. The use of traditional materials such as natural stone and clay for the exterior structures of buildings will not only protect against the hot climate of Africa but also preserve the authentic architectural form. The study complements the general state of hotel development and clarifies the current state of modern multifunctional hotels in Morocco. The practical value of this study lies in the fact that recommendations for preserving the materials, national traditions, and architectural techniques typical for this area will allow new buildings to fit harmoniously into the environment and optimally adapt them to natural and climatic conditions

**Keywords:** hotel complex, development trends, National flair, authenticity of Morocco

### INTRODUCTION

The Kingdom of Morocco is a country in North-West Africa, washed by the Atlantic Ocean and the Mediterranean Sea.

L.N. Kalinichenko [1] characterises North Africa as the most suitable and developed region of the continent, attracting tourists with a favourable climate, beautiful beaches, and ancient architectural monuments. When travelling to Africa, tourists mostly choose Egypt, Tunisia, and Morocco. This region offers all types of tourist services: from swimming in the Mediterranean Sea and the Atlantic Ocean to skiing or extreme trips to the Sahara.

All types of tourism are developed in the region: recreational, health-improving, educational, ski, business, sports,

and educational. V. Sokolovsky & H. Eddin El-Ouali [2] in their paper “features of the recreational potential and zoning of Morocco” note that despite the rapid, spontaneous development of hotel complexes, the country’s recreational potential is not entirely used (there is still a substantial undeveloped territory of the coast).

*The purpose of the study* is to analyse the state of hotel complexes in Morocco, determine the recreational potential of the region and its features, and identify the main trends in the development of national traditions in the construction of hotels in Morocco over the next 20-30 years. Research objectives: to analyse studies on this subject; to characterise the existing state of the hotel fund

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and determine the main trends in the development of hotel complexes in Morocco.

The study covers the current state of modern multifunctional hotels in Morocco – versatile complexes with developed infrastructure and functional zoning. Multifunctionality means that each hotel complex combines different types of functional zones, namely: residential, economic, recreational, pedestrian and transport network zones, landscaping zones, etc. [3]. All these functional units are represented by various types of buildings and structures filled with the most modern services of the hotel and restaurant sector (from personal trainers, massage therapists to yachting, diving, and golf).

Architectural and planning solutions of hotels are determined by various factors, namely: natural and climatic, cultural, historical, and architectural [4]. Therefore, the architecture of hotels in Morocco should use historically based planning techniques. These include: hotel complexes with a centralised layout – common in urban areas when the territory is limited and there is no possibility of spatial expansion; complexes with a block layout (such hotels consist of several structures that are spatially distant from each other); complexes with an atrium type layout (it is characterised by an internal glassed gallery).

In addition to historically established planning techniques, natural materials (natural stone, clay, and wood) inherent in this area are also preserved as traditional. Historically determined planning techniques and building materials combined with innovative solutions will ensure that hotels retain their national flair.

The study by P. Gutsol [5] describes the features of the functioning of resort hotels in the world, it is determined that the main problems of the resort hotels are considered to be the following: seasonality of demand, which largely affects their load; hiring and maintaining a permanent staff of qualified personnel; ensuring the safety and maintenance of buildings and equipment in proper condition in the off-season period.

In the paper of A. Kagermeier [6], tourism in Africa is considered as an important branch of modern African economies, which strongly reacts to the development of individual countries. State of the hotel fund in Morocco and its capital, Rabat was analysed in the paper by K. Barkam, & O.E. Rogozhnikova [7]. The study covers the problem of spontaneous construction of hotel complexes in Morocco. It is determined that in order for hotels to be created as systems of spatially connected architectural ensembles, it is necessary to develop the basic principles of forming hotel complexes in the hot climate of Morocco. These principles should consider and be based on the values of the historically established environment, preserving the originality of Moroccan architecture in new complexes.

## MATERIALS AND METHODS

General scientific techniques were chosen to conduct this research:

- analytical (for analysing and comparing previous studies on this subject, and generating data on the existing hotel fund in Morocco);
- tabular (to summarise the collected material about the surveyed hotels);
- synthesis and comparison method (for concluding the current state and architectural features of hotels).

The study also uses special methods of scientific analysis:

- graphic (when drawing typological schemes of the layout structure, spatial planning, and interior design of hotels in Morocco);
- abstract-logical (assuming about the further development of hotel complexes in Morocco).

A research methodology, necessary to formulate the main trends in the development of hotels in Morocco was developed. Five stages of the study were identified:

**Stage 1** – review and research of the latest studies, namely the papers of L. Kalinichenko [1], P. Gutsol [5], A. Kagermeier [6], K. Barkam, & O. Rogozhnikova [7]. Upon using the methods of analysis, synthesis, systematisation, and generalisation of bibliographic materials, it was determined that the main attention of existing studies was the state of the hotel fund in Morocco and the development of the tourist destination of this region, but the architectural, planning, and design features of hotels were not investigated.

**Stage 2** – determination of the forming hotel complexes methods. Based on the general analysis, synthesis, systematisation, generalisation, and special architectural methods (visual survey and system analysis), the following principles were established: reconstruction and expansion of existing hotels, spontaneous creation of new hotels, and effective design of new complexes considering climate, traditional materials, and approaches.

**Stage 3** – analysis of architecture, planning, and composition to establish the features of hotels in Morocco. Based on the systematic architectural analysis, the main groups of premises were identified: residential, administrative, public, engineering and utility rooms, which, when combined in different ways, form different types of planning structures.

**Stage 4** – identification of the features of hotels in Morocco based on the third stage. Based on the analysis, synthesis, systematisation, generalisation, comparison, and visual survey of hotels, it was established that hotel complexes are divided into the following types:

- hotel complexes with a centralised layout (Figs. 1, 4);
- hotel complexes with a block layout (Figs. 2, 3);
- hotel complexes with a podium layout;
- hotel complexes with atrium layout (Figs. 3);
- hotel complexes with a simplified layout;
- hotel complexes with a compact layout;
- hotel complexes with complicated layouts (Figs. 5, 6).

**Stage 5** – investigation of the influence of the European School of architecture on the design of new hotels. Based on the generalisation, comparison, and graphical



comparison of various examples of hotel complexes, it was determined that many new properties lose national flair.

## RESULTS AND DISCUSSION

According to the ancient Roman architect Vitruvius, there is a so-called formula of architectural beauty, namely: a combination of three components – utility, durability, and beauty [8]. It remains relevant. It is necessary to combine the architectural and planning structure, functional content, and aesthetic and decorative finishing to create outstanding architectural work. The architect is a kind of synthesis of art and technology. The emergence of various architectural styles and structures was always dictated by society, its traditions, religions, natural and climatic conditions.

The architecture of a hotel or hotel complex is formed by combining the planning structure, functional content, facade decoration, interior and landscape decoration. Each element that forms the architecture is an integral part, combining into one harmonious whole, they become a complete artistic image that corresponds to the overall architectural and spatial idea of the hotel. The general appearance of a hotel or hotel complex is extremely important in shaping the architectural style of this institution. These areas include:

– scandinavian style – concise and restrained, but functional. Natural finishing materials and light colours

predominate, especially white. Due to the Scandinavian style cosy interiors are formed;

– marine style – common for hotels on the beach (Figs. 3, 4) its main features include the “water” palette, which is dominated by white and blue tones, simple shapes, themed decorations (steering wheel, starfish, etc.);

– country style – design of hotel complexes that reflect the interiors of country houses. It is characterised by natural colours, matte surfaces, parquet or laminate, imitation of animal skins on the floor;

– oriental style – formed by the national traditions of Eastern countries (India, Egypt, China, Morocco). Stone or wooden floors, low furniture, and a variety of different textiles are typical. (Figs. 5-8)

– Baroque – a style of pomp and luxury, the main task is to emphasise the status of guests. It is characterised by the use of precious materials, works of art, gilding, hand carving, etc.;

– classic style – creating a hotel complex based on the classicism palace style. Typical materials for this style are silk and velvet, furniture made of noble wood, marble, columns, and stucco.

After analysing the architectural styles, hotels in Morocco can be characterised by Scandinavian, Marine, and Oriental styles, however, all architectural trends are reflected (Figs. 1-8).



**Figure 1.** Royal Mirage Boulevard Mohammed V, Agadir, Morocco

Source: [9]



**Figure 2.** Ibis budget Tanger Free Zone, N1, Tangier, Morocco

Source: [10]





Figure 3. Four Seasons Hotel Casablanca Bd de la Corniche, Casablanca, Morocco

Source: [11]

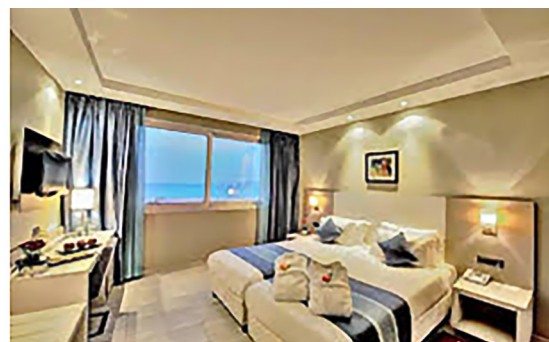


Figure 4. Ibis budget Tanger Free Zone, N1, Tangier, Morocco

Source: [12]

In general, a hotel complex is a very challenging object and solving or subordinating a function to an architectural style is a problematic and interesting task for an architect. The organisation of completely different functional processes is difficult (for visitors – comfortable housing, timely cleaning and meals, etc., and for employees – the need to perform their work in full, while not interfering with visitors). Architectural planning directly affects all these processes.

The architectural and planning design of hotel buildings is often dictated by the location, natural and climatic features of the site. However, in addition to climatic features, cultural, religious and other social factors have a substantial impact. The use of authentic architectural approaches in design (for example, the construction of wide walls, the design of courtyards, etc.), traditional materials (natural stone, clay, wood), ancient energy-saving technologies (lime whitewash both outside and inside buildings, wooden carved shutters on windows, etc.) creates a unique architecture, which will not only be a place of attraction for tourists, but also a national expression of society.

Today, there is a diverse classification of hotels, namely: according to the planning scheme (detached, attached, etc.), capacity (for 50, 100 people or more), purpose, comfort level, type of structures, etc. [13]. All these criteria affect the overall image of the hotel complex and its price category. However, performing the function of temporary housing alone is not enough for modern hotels. Today, such a complex should also be a comfortable place for recreation, food, and high-quality leisure activities, and also have

its own features. Therefore, the architectural structures that form the hotel complex must meet all these requirements. The hotel should use the preservation of traditional materials and the latest innovative architectural techniques (dynamism of the structural system) and use innovative technologies to enhance the national flair.

For the successful functioning of the hotel, it is necessary to provide comfortable living conditions and high-quality services to visitors. In general, the following principles of hotel design can be distinguished [14]:

1. *Organicity* A hotel or hotel complex should fit seamlessly into the existing environment; such a complex should not overpower the historically formed special terrain, but rather emphasise and complement it.

2. *Planning efficiency*. The planning structure must be rational, meet functional requirements, and provide an appropriate ambience;

3. *Identity*. The hotel should be planned in accordance with aesthetic, national, and technical standards and recommendations, providing for the possibility of its reconstruction is also important.

4. *Cost-effectiveness*. The layout of hotels should be appropriate for a particular site, and the decoration should correspond to the price category of the hotel.

5. *Energy efficiency*. During the design, it is necessary to consider natural and climatic factors, air temperature and humidity, precipitation, wind speed and direction, and the possibility of using these natural conditions for heating, ventilation, paving the territory, etc.



Modern multifunctional hotel and entertainment complexes are objects with a very high level of comfort (Figs. 5-8). These facilities offer a wide range of services and have a well-developed infrastructure. Often such hotels are included in the world-famous international chains – “Sheraton”, “Hilton”, etc.



**Figure 5.** Jardin Majorelle-Yves Saint Laurent Mansion, Marrakech, Marokko

Source: [15]



**Figure 7.** Odyssee Park Hotel, Agadir, Marokko

Source: [17]

Being an autonomous “city within a city”, such complexes enable the client to realise their needs for entertainment and recreation, without going beyond its borders. In addition, all conditions are created there for the successful holding of various business events – meetings, conferences, etc. However, when designing such architectural giants, it is necessary to ensure national identity. Despite the typical frame construction system with hinged facades and a huge amount of glass and lighting, it is necessary to use traditional characteristic elements of the layout, exterior decoration, decor, etc.

Since the 50s, the development of tourism in the world has acquired the character of an “explosion” and has become one of the phenomena of the twentieth century [19]. Every year, hundreds of millions of people around the world travel for recreation. Tourism is increasingly affecting the social life and culture of many countries, including Morocco. The experience of global economic development shows that the construction and operation of hotels occupy a substantial place in the economy of developed countries.

The tourist destination of Morocco is now developing rapidly. Tourists choose Morocco due to its traditional national flair, incredible hospitality, and beautiful five-star hotels.

A variety of restaurants and bars, conference rooms, shops, underground parking, outdoor and indoor swimming pools, and fitness and business centres equipped with all modern means of communication make them attractive for both tourists and people travelling purely for business purposes.



**Figure 6.** Taj Atlas Wellness Boutique Hotel & Spa, Marrakesh, Marokko

Source: [16]



**Figure 8.** Kasbah Lamrani, Tinghir, Marokko

Source: [18]

The main trends in the design and construction of modern hotel complexes in Morocco are:

1. Preservation of history and national traditions. In countries with a deep history and established cultural and historical traditions, a special architecture is always formed. In the architecture of hotels in Morocco, there is also a tendency to use traditional historical planning design. In addition, abandoned buildings are being reconstructed into new hotel complexes. This trend is present in historical cities, where hotel complexes are located directly near architectural monuments of local or national importance. Top-class hotels are located directly in architectural monuments, which gives the highest level of identity to these buildings. Such hotels have existed for a long time, established their history and traditions, and have famous visitors and residents.

The use of a characteristic planning structure and historically established building materials provides for the development of the architectural tradition. However, this architectural design is also determined by natural features – the hot climate of Morocco (the average temperature in summer is about +29-35°C). The use of traditional architectural techniques for this area, for example,



the design of an atrium or pavilion-type hotel with massive exterior walls; the use of natural materials such as: clay for stucco exterior walls (absorbs the temperature of the outside air), the use of natural stone as a finishing material for walls and floors (a characteristic building material for African countries), etc.



National flair is a characteristic feature of the interior design of hotels in Morocco (Fig. 9). It is traditional to use bright colours and luxurious fabrics with unusually shaped furniture made of natural materials. Nevertheless, despite the exoticism, such interiors successfully fit into the modern European traditions of hotel complexes.



Figure 9. Interior in Moroccan style

Source: [20]

2. Increasing the level of comfort. During the reconstruction, repair or construction of new hotel complexes, hotels are equipped with all means of modern engineering equipment. However, the exterior of the building and the interiors of the hotel must remain corresponding to the authentic appearance and style of the historical era. Modern interiors in the Moroccan style are not much different from their historical counterparts, hotels are decorated in the style and traditions of a certain period. The Moroccan style is characterised by: the use of expensive materials in decoration, namely oak panels for wall and ceiling cladding, wallpapers and tapestries, parquet, marble, bronze and gilding are widely used; furniture of unusual shapes (low but wide sofas); charming decor (mosaics, Moroccan tiles, forged elements, handmade carpets with various ornaments, etc.).

The interiors are decorated with restored details and antique furniture to fully emulate the historical era. Vintage fireplaces, rough ethnic details, mosaics, paintings, candlesticks, and chandeliers add authenticity. The architectural solution of the bathrooms also corresponds to the overall style – modern plumbing is stylised in accordance with the flair of the past. The functional purpose of hotels is highly important in relation to the location of the complex in the overall planning structure of the city. After analysing the location of hotels in the structure of large cities and megalopolises, several characteristic methods of their location were distinguished:

– location of public and residential functions in separate but mutually connected buildings that stand on the contrast of forms: housing is smaller in terms of built-up area, but higher in number of floors, and public spaces are smaller in number of floors and are more stretched along a horizontal compositional line;

– housing and public parts of the hotel are located in independent (separate) structures that are not connected to each other. Sometimes this technique is called

a “pavilion” [13] type of hotel complex. It helps to provide a free architectural and planning solution for groups of premises and make a clear structural and planning, and functional division of the hotel, but it requires a larger building area compared to other methods of planning the territory and therefore is used less often. Usually, this type of planning of the complex is typical for the construction of hotels located in poorly developed areas.

## CONCLUSIONS

The study analysed the state of the Moroccan hotel fund, identified the main problems of building modern hotel complexes, and substantiated the relevance of developing the basic principles of architectural and planning organisation and spatial composition of hotel and tourist complexes in the hot climate of Morocco. The study also emphasised the importance of developing national standards for the design of hotel complexes for the climate and traditions of Morocco.

Thus, after analysing the development of the recreational and tourist destination of Morocco, tourism occupies a leading branch of international business with many areas of further development: improving the level of the economy, increasing employment, etc. However, as a result of the study, it was determined that the rapid development of the hotel business in Morocco leads to the spontaneous construction of typical hotel complexes with modern architecture, but without national flair.

It was investigated that in the 20<sup>th</sup> century, the construction of hotel complexes in Morocco took place in three main areas of search for architectural expressiveness:

– following the “international style”, which led to a loss of national expressiveness;

– the stylisation of European-type objects based on the motifs of traditional Arabic architecture to highlight the nationality of a building or complex;



– identification and creative use of traditional types of hotels in Morocco in new construction, considering the achievements of modern culture and technology.

The importance of this study is confirmed by the fact that Morocco is close to Europe and the sharp spread of the international European style will lead to the loss of traditional Moroccan forms, ornaments, colouristics, etc.

Considering the above factors, it can be concluded that the main trends in the design and construction of new hotel complexes in Morocco should be the use of traditional planning techniques and building materials inherent in the area, which, combined with unexpected modern architectural ideas, will ensure that hotels preserve their national authenticity.

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## **Сучасні тенденції проєктування і будівництва готелів Марокко**

**Анотація.** У статті розглядається стан готельного фонду у Марокко, розкривається суть проблеми щодо збереження національно-традиційного стилю в оздобленні інтер'єру та зовнішнього оздоблення будівель готельного комплексу. Обґрунтовано актуальність розробки основних принципів архітектурно-планувальної організації та об'ємно-просторової композиції готельно-туристичних комплексів в умовах жаркого клімату Марокко. Метою статті є: визначити основні тенденції розвитку національних традицій у будівництві готелів Марокко упродовж наступних 20-30 років. Під час дослідження було використано загальнонаукові та спеціальні методи наукового дослідження: аналіз, порівняння, зіставлення, узагальнення. Було визначено, що в сучасних умовах стрімкого розвитку туризму в Марокко нові готельні комплекси проєктуються і будуються переважно стихійно. Для того, щоб такі будівлі створювалися як системи просторово пов'язаних архітектурних ансамблів, потрібна розробка і дотримання основних принципів функціональності, екологічності та естетичності – це дозволить зберегти в нових комплексах своєрідність марокканської архітектури та затвердити національний колорит, як головну архітектурну особливість готелів Арабського світу. Використання таких традиційних матеріалів, як природній камінь та глина для зовнішніх конструкцій будівель, не лише захистить від жаркого клімату Африки, але й збереже автентичну архітектурну форму. У дослідженні доповнено загальний стан розвитку готелів, уточнено актуальний стан сучасних багатофункціональних готелів Марокко. Практична цінність даного дослідження полягає в тому, що рекомендації щодо збереження узвичаєних для цієї місцевості матеріалів, національних традицій та архітектурних прийомів дозволить гармонійно вписати нові будівлі в навколишнє середовище і оптимально пристосувати їх до природно-кліматичних умов

**Ключові слова:** готельний комплекс, тенденції розвитку, національний колорит, автентичність Марокко



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## Use of Symbolic Reconstructions in Open-Air Museums

**Abstract.** The Russian-Ukrainian war, which took on a full-scale form in February 2022, became a tragedy and set the question of restoring lost monuments with new vigour. Therefore, the publication which aims to identify the specific features of symbolic reconstructions' use for the representation of lost architectural monuments becomes especially relevant. Based on a comprehensive architectural-typological and comparative analysis of the renovation of architectural structures and non-existent objects, open-air exhibiting methods in Ukraine and the world (fixation, interpretation, revitalisation, reconstruction, and modelling), the study reflects on the possibilities to preserve the history of destroyed monuments. Open-air museums offer a wide range of activities allowing to include monuments that are not subject to further functional adaptation into the expositions. The study proposes to use symbolic reconstructions to reproduce and exhibit lost monuments. Graphic (the simplest and most universal, consist of the two-dimensional image demonstration), physical (larger-scale, permanent, three-dimensional stylised installations that carry information about the lost monument's nature), virtual (the most flexible and the most promising, do not require the direct impact on the exhibit, include the use of augmented reality technologies), and performative (one-time or temporary activities, most often are used in the associative landscapes' territories) symbolic reconstructions on the example of their use in museums and open-air exhibitions were examined in detail. The effectiveness of these measures in open-air museums was considered and recommendations for their use, which can become the basis for further implementation in practice in Ukrainian exhibition institutions, were formulated

**Keywords:** lost monument, exhibition, symbol, installation, virtual technologies

### INTRODUCTION

Ukraine has been rich in cultural, architectural, archaeological, and historical monuments for centuries. The difficult economic situation, incompetent political decisions, and the influence of time in recent decades have led to numerous destructions of such facilities. An even greater tragedy was the war in Ukraine, during which Russian troops destroyed and ruined not only individual monuments but entire cities. At the end of May/start of June 2022, UNESCO recorded the destruction or damage of 146 Ukrainian monuments [1], and the Ministry of Culture and Information Policy of Ukraine – over 360 [2].

The question of how to restore the lost becomes more acute. Housing or infrastructure can be rebuilt, but the

authentic value of architectural monuments cannot be replicated. Despite the available examples of valuable structures reproduction (for example, St. Michael's Golden-Domed Cathedral in Kyiv, the historic centre of Warsaw, etc.), international documents (Riga Charter on Authenticity and Historical Reconstruction in Relationship to Cultural Legacy, The Nara Document on Authenticity) do not recommend doing so and consider reconstruction with great caution, as authenticity cannot be reproduced.

This paper aims to identify effective approaches to the establishment of the open-air exhibition, in particular, to highlight the possibilities of using symbolic reconstructions to represent lost architectural monuments on the example of open-air museums.

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It is well known that modern society is focused on entertainment and scenography in any socio-cultural process. Therefore, to create open-air exhibitions, method of reproducing and exhibiting lost monuments to future generations through symbolic reconstructions is proposed; different types of such constructions on the example of their possible use in open-air museums are considered. A comparative analysis of examples of lost monuments' reproduction and exhibition in the world was used to illustrate the statements.

During the last 15 years, the amount of theoretical and methodological works on the establishment of museums, which have monuments of architecture and archaeology as key elements, increased. Among the researchers who investigated the methodology of creating open-air museums based on architectural legacy, the summarising works by V. Ievleva [3] & O. Popelnytskyi [4] did not lose their relevance. A. Danyliuk [5] & L. Prybieha [6] offer older and more recent views on the creation and maintenance of ethnographic skansens. D. Kepin & O. Tytova [7] devote their attention to archaeological open-air museums and O. Zhukova [8] focuses on palace ensembles and castle complexes as museums.

The use of cultural landscapes is properly discussed in the papers of foreign researchers (T. Grader, L. Garkovych, Yu. Buchas, D. Gardisti, M. Evans, A. Roberts & P. Nelson [9]), but many of them are culturological and focus on social rather than conservation issues.

Referring to more recent works, paper on modern exhibiting methods by V. Severyn [10] is notable. I. Posokhov examines historical reenactments and living history [11; 12]. The works of H. Novikova [13], who researches various aspects of environmental open-air museums, are of great importance as well.

In foreign literature for the last 3-5 years, the tendency to analyse modern technologies and their use in museums is evident, but most researchers like I. Giangreco or F. Sousa [14; 15] concentrate their attention on indoor exhibitions and technologies themselves, which are not the subject of this study. There are no papers that scientifically describe the use of exhibition multimedia technology outdoors. This study expands the analysis of outdoor exhibiting methods and searches for effective measures for representing lost monuments, which would be more relevant than common outdated approaches, poorly adapted to function in the open air. The originality consists in starting a scientifically grounded discussion about using multimedia technology for outdoor exhibitions.

## MATERIALS AND METHODS

The investigation of symbolic reconstruction implementation in open-air museums involves the use of a set of scientific approaches. Given the specific features of a research field, the study is based on finding ways to exhibit lost architectural monuments, enhancing their semantic and emotional perception. The basis of this study is the analysis of the prerequisites and patterns of modern open-air museums' exhibitions.

The research methodology consists of a comprehensive architectural, typological, and comparative analysis of

exhibiting methods of architectural structures and non-existent objects in the open air in Ukraine and the world. Given the large number and variety of architectural monuments, the research methodology is based on comparative analysis, which includes analytical, systematic, architectural, and stylistic studies. Open-air museums are viewed from two perspectives: the establishment of a historically credible architectural environment and the creation of an attractive tourist facility.

The study can be divided into the following stages:

1. Generalisation of the results of previous studies in the field of architecture, museums, protection, and restoration; consideration and comparison of the main legislative provisions that could influence architectural legacy in museums.

2. Establishment of the features of museums that influence the choice of exhibition design; analysing methods of cultural legacy actualisation as an exhibit (fixation, interpretation, revitalisation, reconstruction, and modelling).

3. Highlighting world trends in the creation of open-air exhibitions; identification of techniques, methods, and means of exhibiting lost objects, which could be used in Ukraine to create an informative, convenient and attractive museum environment.

4. Development of recommendations for methods of exhibiting lost architectural monuments open-air.

The material foundation of the study consists of official UNESCO charts, ICOMOS documents, and papers of Ukrainian and foreign researchers, listed in references. It includes information from the official websites of the Ministry of Culture and Information Policy of Ukraine and UNESCO.

## RESULTS AND DISCUSSION

Despite the problem of exhibiting lost objects of ensembles and complexes representing is poorly covered in the scientific literature, in the last 5-7 years many Ukrainian researchers tried to examine particular monuments to implement their ideas about the museumification of big complexes (for example, O. Zhukova [8] who investigated historical residences – in Baturyn, Sharhorod, Novomalyna, and others) but due to economic problems and war in the country, none of these attempts was fully committed. More mentions can be found in some foreign popular non-scientific journalistic texts, which describe some successfully implemented projects of certain measures applied to represent destroyed or damaged monuments – mostly via virtual technologies and virtual reality, or via creating modern constructions (for example, in Carnuntum Archaeological Museum in Austria [16] and Kilkenny Medieval Mile Museum in Ireland [17] respectfully).

The question of monuments' reproduction arises in the case of the loss of individual, especially valuable objects or elements of ensembles. If the monument is woven into the fabric of the city, the choice of the way of transmitting the architectural legacy would be greatly influenced by the surroundings, the environment, the needs of the city, and many other factors that are difficult to reduce to one denominator. On the other hand, in open-air museums created to demonstrate architecture, the situation is

somewhat simpler, as such institutions are designed to preserve the legacy and demonstrate it as effectively as possible. Approaches to the monuments' historical information transmission here can be systematised and generalised, so the possibilities in such museums were considered as an example.

It is important to choose the right way of actualisation of the cultural legacy object as an exhibit. Among many methods highlighted by researchers, fixation, interpretation, revitalisation, reconstruction, and modelling are the most relevant [18, p. 25].

Fixation is about turning a monument into an object of a display without substantial changes. The method is effective if the monument is well preserved (preferably together with the historic environment) and does not require special adjustments to function as an exhibit. The method is most common in eco-museums.

Interpretation includes partial modification of the monument for preservation, museification, and functional adaptation. It is found in various open-air museums, as most of the monuments are damaged, incomplete, and in need of restoration and adaptation for sightseeing.

In the field of monument protection, revitalisation can be understood as restoring the viability of the monument and its ability to function independently. However, in open-air museums, the term is more widely used referring not only to architectural and urban monuments but also to intangible cultural sites.

Reconstruction is conducted in specific cases if a sufficient amount of comprehensive scientific data is available. If it is possible and expedient to restore or reproduce lost objects, that is great. Unfortunately, there are many reasons and situations, in which the reproduction of lost objects is not the best solution (for example, there are not enough credible documents to know what the lost structure looked like exactly; the cost of its reproduction is too high compared to its value; impossibility to recreate valuable characteristics of this monument; possibility of damaging other objects, etc.). In such cases, museologists are faced with the question of how best to preserve and pass on to the viewer the basic historical information monuments have kept.

The Nara Document on Authenticity states that sources of information about a monument depend on the nature of the cultural legacy, its cultural context, and its

evolution through time and includes form and design, materials and substance, use and function, traditions and techniques, location and setting, spirit and feeling, the original state and historical development, and other internal and external factors [19, p. 2].

Thus, if a monument or its element is destroyed, some of its characteristics can be used to transmit historical information. In such cases, modeling is performed – using simulations, stylised installations, or multimedia presentations. Modeling is most common in open-air archaeological museums, where cultural monuments are most often in the form of ruins or foundations.

The main approaches to creating exhibitions should be considered to use described above modeling method effectively. Visitors of the museum are involved in three main activities – contemplating the display, exploring the information contained in it, and interacting with the exhibits. Creating symbolic reconstructions can meet all these needs.

Symbolic reconstructions can be divided into the following main types – graphic, physical, virtual, and performative; they were considered in detail.

Graphic symbolic reconstructions differ from graphic reconstructions in the fact of their installation at the site of the lost monument. The author considers this is the easiest way to show the museum visitor what the building looked like and provide information about it. Such graphic reconstructions can be simple, in the form of an image printed on a transparent board, which from a certain angle is perceived as a real object (Fig. 1), or multimedia, which shows the image through a monitor (Fig. 2). The first option is simpler and cheaper, so it can be an initial step and can be followed by more serious and large-scale measures to improve the display of lost monuments. The second combines a set of visual and auditory information, animations, text, and graphics, which in the absence of sufficient information about the appearance of the monument may change and represent different theoretical reconstructions. By installing a small monitor on the site, visitors can be provided with the opportunity to take a virtual tour around and inside the building and complement the activity with informative or entertaining materials. Despite being such a simple method, in Ukraine, it is mostly represented by images on conventional information boards outdoors or on interactive multimedia displays indoors.

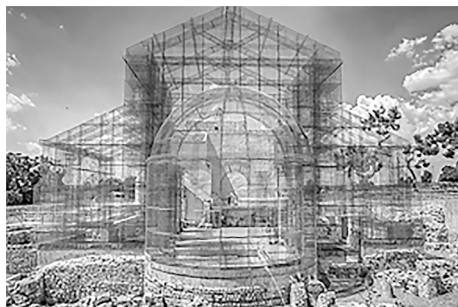


**Figure 1.** Graphical representation of Heathens' Gate in Archaeological open-air museum Carnuntum, Austria  
**Source:** [20]



**Figure 2.** Graphical multimedia representation on the Archaeological site of Ennme, Belgium  
**Source:** [21]

Unlike a flat representation of a graphic symbolic reconstruction, a physical one is three-dimensional. Physical reconstructions consist of the placing of a stylised art installation that imitates certain historical architectural characteristics. Such a “model” should give the viewer an understanding of what the monument looked like, while being reversible, not destroying authentic remains (if any are preserved), and providing an opportunity to view them (Fig. 3).



**Figure 3.** Physical reconstruction of Basilica in Siponto, Italy, using wire mesh by E. Tresoldi

Source: [22]

Creating a credible physical installation, demands a great amount of work, cooperation, and funds. In Ukraine few similar projects were proposed, but, unfortunately, up to now, they remain on the stage of being ambiguous ideas (for example, a project of symbolic reconstruction of St. Michael’s church near Pidhirtsi castle [23, pp. 93-94]).

If such installations would harm the authentic remains, but it is desired to demonstrate the three-dimensional monument in the historical environment, at the place of its existence, virtual technologies can assist. Specifically, augmented reality (AR) and location-based service (LBS) systems are the basis for creating virtual symbolic reconstructions. Most people nowadays have smartphones or tablets and the appropriate software (Flexreality, Auggd, Skywell Software, Wikitude, etc.) that can be installed on them and allow visitors to see not only the landscape or the remains of lost buildings but also virtual objects that do not exist in reality. The solution of some archaeological open-air museums (Archaeological Site of Olympia in Greece [24]; Bostel di Rotzo in Vicenza, Italy [25]), where tourists are given virtual glasses, which show the reconstruction of the lost objects and information about them directly at the place of their original location, is gaining popularity (Fig. 4).



**Figure 3.** Walking tour with virtual glasses in Olympia, Greece

Source: [26]

In Ukraine, such examples are only appearing – mostly in popular destinations and as touristic attractions. Well-known is a company “Chameleon Age” which aims to virtually recreate lost monuments of Lviv (Vysoky Zamok, Golden Rose Synagogue, and others) through the mobile app [27].

A serious problem is displaying memorial places (e.g., battlefields), which according to the UNESCO classification are considered associative landscapes [28, pp. 9-10]. Such areas often include objects that are not suitable for any modern functional adaptation or are simply a characteristic element of the historical landscape. In Ukraine, there are many such sites like Poltava Battlefield [29] or Berestechko Battlefield [30] Historical and Cultural reserves that are culturally important but include close to none material monuments compared to their vast territories or Historical and Cultural Reserve “Ancient Plisnesk” in Lviv region [31], which is rich on archaeological artifacts but possesses scant visible remains. The connection with historical events or personalities is of primary importance, and the memorial component is presented in intangible form. Thus, in museums based on such sites, it is necessary to create a material basis for the information environment, where even in the absence of tangible evidence, historical information can be transmitted.

The priority for the establishment of memorial place museums is the discovery, restoration, and reproduction of monuments. Along with the preserved authentic elements to fill the museum environment, memorials are installed. These can include not only monuments, architectural objects, tombstones, exhibitions, and information signs, but also the above-mentioned symbolic reconstructions. Even if they themselves are not of historical value (sometimes they may be of artistic value), their main purpose is to capture information about objects, events, and their participants.

In open-air museums, and especially in museums based on associative landscapes, using performative symbolic reconstructions is advisable. They include a variety of one-time or recurring activities. Two types of such active reconstructions are historical reenactments, which consist of the theatrical reflection of a certain historical event, and artistic performances or shows.

Historical reenactments can be very different both in purpose and in the nature of the reproduced material, as it is possible to highlight the ideological, behavioral, technical, and material reconstructions [11, p. 107]. It is possible to allocate reconstructions of events, reconstructions of objects, and reconstructions of symbolic actions and rituals [12, p. 178].

“Living history” has long outgrown the usual theatrical action and has become a method of transmitting information typical for modern museums, including open-air ones. Historical reenactments (Fig. 5) as one of the manifestations of “living history” is an active symbolic reconstruction, which is best used in places where few preserved physical monuments remained, and it is impractical to restore them. Although reenactments are non-material reconstructions, they also carry information and historical data – not only about events and people but also about monuments that may appear in performance as stylised scenery or authentic ruins.

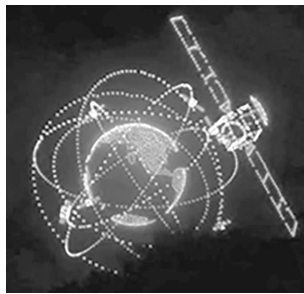


**Figure 5.** Battle of Waterloo reenactment near Hougoumont museum, Belgium

**Source:** [32]

In Ukraine, the historical reenactment community is still small, but it rapidly developed before the full-scale Russian-Ukrainian war. One of the most famous clubs, represented in Western Ukraine that takes part in many cultural festivals is “Chorna Halych”. Their most popular activities are reenactments at the annual festival “Tu!Stan” near Urych, where the lost fortress was once flourishing. They aim to popularize and promote Ukrainian Medieval history and legacy, including architecture [33].

Artistic reproduction of lost objects can also be an attraction of the museum. Modern multimedia technologies are becoming more flexible and provide more opportunities. They are increasingly used outdoors for various shows and cultural events, such as 3D mapping or the creation of three-dimensional images with a swarm of drones with flashlights (Fig. 6).



**Figure 6.** Fragment of the light show using a swarm of drones by Unmanned Aerial Vehicles, China

**Source:** [34]

Although in open-air museums monuments and their characteristics are the main elements of the exhibition, authentic exhibits should be supplemented with artistic and technical additions that can enhance the emotional impact and interactive component of exhibitions. The museum exhibitions are based on original objects but should be diversified by including symbolic reconstructions.

Ultimately, this study focuses not only on the entertaining approach to the establishment of popular exhibitions in large open-air museums, as this theme prevails in the works of H. Novikova [13], but also on the importance of a scientific and educational basis for the interpretation of architectural exhibits. The importance of forming an exhibition space with the involvement of images and remnants

of authentic buildings, instead of simple modeling of a popular space, is emphasised. In contrast to I. Posokhov’s studies [11; 12], which describe the variety of tourist attraction types, in this work they are considered within the bounds of the historical environment and architectural context, even a lost one. Numerous studies of the use of modern technologies in museums focused on their use indoors [10]. On the contrary, the possibilities of their use outside were considered in this study. Foreign studies by scholars such as F. Sousa & M. Vairinhos [15], I. Giangreco & L. Sauter [14] often focus on the entertainment and educational component, neglecting historical context and references. They analyse different types of virtual and augmented reality systems as they can be used inside museums and on their websites. Thus, this study is at the junction of various spheres and explores the possibilities of forming a modern, interesting, tourist-attractive open-air exposition, which simultaneously would be based on scientific and educational data and allow preserving the remains of destroyed monuments or their image within historical sites, which is especially relevant in the conditions of large-scale destruction as a result of the Russian-Ukrainian war.

## CONCLUSIONS

Open-air museums include a variety of objects, from well-preserved to those that are not suited to further functional adaptation. However, they remain a full-fledged element of the exhibition. Lost and destroyed objects are not always expedient and feasible to be reproduced; if they are an important part of the whole museum complex, it is necessary to look for other ways to use them.

It would be effective to create symbolic reconstructions to develop informative and enjoyable open-air exhibitions based on lost monuments, – graphic, physical, virtual, and performative. If such reconstructions are scientifically substantiated and thought out in detail, meet the requirements of credibility and have an attractive element, they have the potential to become not only an important educational element but a touristic attraction as well.

The exhibition space of museums increasingly combines material and virtual environments. The use of modern multimedia exhibition technologies allows expanding the information component of the exhibition, showing even the lost monuments in the context of the historical landscape, in the atmosphere of the relevant time. Multimedia technologies attract the visitor to actively take part in the display and demonstrate phenomena and processes that are impossible or difficult to observe in real life.

This study discusses the use of symbolic reconstructions within open-air museums, but they can also be used outside museums. Depending on the situation, certain types of reconstructions – permanent, temporary, or one-time – can be used for individual monuments. In particular, on the background of the Ukrainian cities’ destruction as a result of the Russian invasion, symbolic reconstructions can become a powerful means of displaying and transmitting information about the price Ukraine has paid for peace to descendants.



For future studies, an interesting area would be the determination of ways of involving the destroyed monuments in cultural life, considering the possibility of not just rebuilding the structure, but interpreting it while preserving the main features. Although there are discussions on this subject worldwide, in Ukraine the matter of

using modern installations in the context of legacy preservation is still too limited by outdated approaches. In addition, with the rapid development of technologies, including ones for exhibitions, the investigation of virtual and augmented reality use in architecture will become more and more relevant.

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## Використання символічних реконструкцій у музеях під відкритим небом

**Анотація.** Російсько-Українська війна, яка у лютому 2022 року набула повномасштабного характеру, стала трагедією та поставила перед нами питання відновлення втрачених пам'яткових об'єктів з новою силою. Саме тому публікація, метою якої є виявлення особливостей використання символічних реконструкцій для репрезентації втрачених архітектурних пам'яток, набуває особливої актуальності. На основі здійсненого комплексного архітектурно-типологічного та порівняльного аналізу, методів актуалізації та експонування архітектурних споруд і неіснуючих об'єктів просто неба в Україні та світі (фіксація, інтерпретація, ревіталізація, реконструкція та моделювання), автор роздумує над можливостями зберегти історію знищених пам'яток. Музеї під відкритим небом пропонують широкий спектр заходів, які дозволяють залучити до експозицій пам'ятки, які не підлягають подальшому функціональному пристосуванню. У статті запропоновано використання символічних реконструкцій для відтворення та експонування втрачених пам'яток. Детально розглянуто графічні (найбільш прості та універсальні, полягають у демонстрації двовимірного зображення), фізичні (більш масштабні, перманентні, тривимірні стилізовані інсталяції, що несуть інформацію про характер втраченої пам'ятки), віртуальні (найгнучкіші та найперспективніші, не вимагають впливу безпосередньо на експонат, включають використання технологій доповненої реальності) та перформативні (одноразові або тимчасові активні заходи, найчастіше використовуються на територіях асоціативних ландшафтів) символічні реконструкції на прикладі використання їх в музеях та експозиціях під відкритим небом. Розглянуто ефективність використання зазначених заходів у музеях просто неба та сформульовано рекомендації щодо їх застосування, що може стати підґрунтям для подальшого впровадження на практиці в українських виставкових закладах

**Ключові слова:** втрачена пам'ятка, експозиція, символ, інсталяція, віртуальні технології



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## Changing the Qualities of Urban Space by Means of Landscape Architecture

**Abstract.** The relevance of the subject is dictated by the growing need to satisfy the physical and mental demands of city residents and create locations with high aesthetic and functional qualities. The purpose of the study is to examine the main modern trends in the design of urban landscape objects, formed since the 1990s in terms of their compliance with modern concepts of sustainable development, landscape urbanism, and urban ecology. The study analyses a number of experimental, explorative, and implemented projects of landscape objects, created to determine, emphasise, or create a new identity of local places in the historically formed structure of cities (on the example of the cities of Lviv, Lutsk, Kamianets-Podilskyi). The monographic and analytical methods were used in the study. A graphic method was used to determine the attractiveness of objects. The study establishes the following characteristic feature of historical cities: in old parts of cities, the effective concepts of landscape proposals are based on the expression of local identity. For example, it was found that the square near St. Andrew's Church in Lviv features garden and park art of the Baroque epoch, the public space project at the intersection of St. Prince Roman and I. Franka streets in Lviv conveys a compilation of historical features of different epochs. The second characteristic feature established in this study: in the degraded environment of peripheral neighbourhoods (investigated examples in Lviv and Lutsk), the proposed modern forms and geoplastics work well. It was also confirmed in various examples, such as the reconstruction of Mytna Square in Lviv, and the volunteer movement in Kamianets-Podilskyi, that successful intervention in the transformation of urban public spaces contributes to the growth of the quality of these spaces and the improvement of the city's image. The design concepts of the urban environment with a multi-layered complex structure of both natural and cultural elements are valuable and recommended for implementation. The history of city development during the Soviet period eliminated their specific features. Today, the restoration and creation of landscape objects allows for preserving and emphasising the uniqueness of cities

**Keywords:** sustainable development projects in cities, landscape design, identity of local places, renovation of the urban environment elements, reconstruction of landscape architecture objects

### INTRODUCTION

In modern world practice, landscape design is increasingly interlaced with city planning. The sphere of activity of a landscape designer is wide: from landscaping to the planning of new residential areas with all infrastructure, and

projects of recreation zones with street furniture. The landscape architecture of the specialised public places should fulfil a multitude of functions in harmony with the surrounding nature, have a well-designed infrastructure, and stay aesthetic. Landscaping can solve many city problems

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by improving the functional organisation of the space and its ecological parameters.

After the 1990s, the urban landscape of post-socialist Central European cities has been radically transformed by new forces and trends, infused by the free market, democracy, and liberalisation. This has led to landscape cleansing and recycling, as these former communist nations used new architectural, functional, and social forms to transform their urbanscapes, their meanings and uses [1]. In addition, since the mid-1990s, two ideas emerged with implications for how the cities in the twenty-first century are planned and designed: landscape urbanism and urban ecology. Landscape urbanism evolved from design theory within architecture and landscape design. Landscape ecological urbanism offers a potential strategy to bring ideas from landscape urbanism and urban ecology together to create new territories that reflect cultural and natural processes [2].

*The purpose of the study* is to examine the projects of public spaces and modern trends in the design of urban landscape objects, created after the 1990s, in terms of their compliance with the concepts of sustainable development, landscape urbanism, and urban ecology. The main goal of the study is to establish whether there is a relationship between the modification of the qualities of the urban public space and its physical transformations with the tools of landscape architecture.

However, the study highlighted the preferences of residents as well. The optimal combination of landscape elements is the open landscape with flowing water, a shaded square, rich vegetation, a road, and seats [3]. The evidence of a specific connection to tree canopy inherited from the environment of human evolutionary adaptation was also revealed. That connection forms attitudes to the landscape today [4]. In recent times, city residents have been seeking comfort both inside and outside their homes. The search for comfort outside of homes, in particular, has increasingly focused on satisfying both the physical and psychological needs of city population. Efforts should be made to create locations with aesthetic and functional qualities to satisfy such demands [5].

The creation of new elements of a system of green spaces (parks and squares) that require substantial territorial resources is too problematic given the dense urban development and high cost of land in big cities (in the example of Kyiv). Therefore, increasing the level of improvement, and attractiveness of the existing elements of the city's green space system should be a priority to ensure a sense of urban comfort and meet the need for green areas [6]. The streets, squares, and buildings create the image of towns and cities. Cliff Moughtin explores the street and square in terms of function, structure, and symbolism and examines fine examples in their historical context. These are set against the background of the laws of urban design composition, borrowed from Renaissance and modern writers [7].

The term sustainable development, under which the system of exploitation of natural resources was considered, by which they are not wasted and have the possibility of natural renovation, has become a successful theoretical approach for the creation of a life-giving environment for

a human being. Green areas are not just about aesthetics. First, they are about the city's energy balance and residents' health [8].

The concept of sustainable development is new and important for rethinking the existing urban environment. However, like every accepted general theoretical area for the development of the profession, it relies on many issue-related approaches in the area of the development of society and its needs and branch concepts, theories, means, etc.

The introduction of landscaping into city structures to create a comfortable environment in planning-composition aspects relies on modern global tendencies of landscaping, which have an author's vision but rely on sustainable development. For example, D. Holmes emphasises the following trends: Mitigating Climate Change, Evidence-based design, Greater emphasis on the value of outdoor space, Focus on Landscape Maintenance, Temporary spaces will transition (Temporary spaces will continue to be used by cities to (re)activate spaces, with some transitioning to be permanent spaces including outdoor dining, bike lanes, street plazas, art installations), Landscape Conservation & Restoration, Increasing Biodiversity and Reducing Weed Invasions, Regional Growth and development [9].

The newest trends point to the necessity of building identity (new one or reproduction of historical) of the designed spaces [10]. Considering the particular characteristic of the city location, and its cultural legacy, it highlights the importance of selected items in the design of the landscape [11]. The authors' techniques in the sphere of didactic work [12], and project realisations, demonstrate the understanding of the modern tendencies in the creation of the public spaces that are most in-demand.

## MATERIALS AND METHODS

In the research process, the monographic (to review current processes in the establishment of landscape objects in the urban environment), analytical (focused on the decomposition of projects into parts and elements to determine their essence and consequences of the impact on the environment), and graphic methods were used to determine the number of mentions of attractive elements of landscape design. In addition to conventional, the main methodologies used for the classification and identification of green areas, transects, urban landscape, and multitemporal analysis without forgetting the population's perception and their relationship with socio-cultural aspects.

The first stage of the research: the establishment of a list of selected objects in three cities that contain a substantial historically formed part of the cities: Lviv, Lutsk, Kamianets Podilskyi. In the study, 5 criteria for the selection of objects were applied: 1 – the time of the creation of the object (1990-2020); 2 – the object is located in a historically formed environment or in a degraded urban environment of the Soviet period; 3 – the object is a project with landscape techniques of environment transformation; 4 – the object has already been implemented and it has a certain impact on the environment; 5 – the investigated object has an important meaning for the city.





The second stage of research: analysis of selected objects according to research priorities (analytical method): 1 – qualitative impact on the urban environment in which the object is located; 2 – tools with which the object affects the environment; 3 – user interaction with public space.

In the third stage of the research, an analysis of the author's vision for each project and its level of implementation of it was conducted.

The fourth stage of the study: a comparative analysis of the objective factors of the change of the urban public space (the results of the second stage) with the subjective author's intentions and expectations of the designers regarding the change of the public space as a result of the implementation of the objects (the results of the third stage) was conducted. In the final stage of the study, conclusions were made regarding the real impact on the quality of the urban environment and their comparison with the perception of visitors using the analysis of local press reviews.

The study uses comparative analysis – identification of properties and characteristics based on data and research of individual projects. The presented projects are analysed for compliance with the location (comparison of the use of plots before and after the implementation of the project based on the resources <https://earth.google.com/web/>, <https://www.openstreetmap.org/#map>, photos on the Internet, information on the websites of authorities), functional feasibility (discussions in local media, for example, popular in Lviv – *Tvoje misto* [13], *Zahidnet* [14], citizens' complaints to local self-government), compliance with the conditions of sustainable development (connection with bicycle paths, availability of space for all age categories, the ratio of open ground to paved, quality of landscaping, presence of water), public benefit and attractiveness (for example, for functioning objects, a modern dynamic indicator is the number of thematic hashtags on Instagram).

## RESULTS AND DISCUSSION

Landscape elements of today's urban environment are not always acceptable, they often require reassessment and reconstruction. Post-industrial activity and ecological aesthetics are relevant in the context of sustainable development. At various professional web resources [15–17], there is an active discussion of the implemented top parks, squares, public spaces, and architectural objects related to post-industrial aesthetics [18]. For example – the parks of the Madrid Río project (Madrid, Spain, from 2005), Prsełomy Centre for Dialogue in Solidarność Square by KWK PROMES (Szczecin, Poland), Nørreport Station by Gottlieb Paludan Architects (Copenhagen, Denmark), New Lift to the Old City Centre by Carles Enrich (Gironella, Spain, 2015), “R-Urban”: Network of Urban Commons by Atelier Architecture Autogérée (Colombes, France), Garden of the Heavenly Hundred by the volunteers (Kyiv, Ukraine), ODA Transforms an Old New York Brewery into Denisen Bushwick (New York, USA), RCH Studios Revamp of L.A.'s Music centre Plaza (Los Angeles, USA), Urban Redevelopment of Marechal Deodoro Square by Sotero Arquitetos (Brazil) [19]. Degraded spaces that need to be rethought are especially common in

post-socialist cities. Post-totalitarian spaces with time-destroyed modernist arrangements are more frightening than attractive, as shown by the experience of working on the project of the main square in the city of Khmelnytskyi [20].

Conceptual designing of the landscape environment – public space using elements of landscape architecture in the former city environment, most often on the level of a public garden, yard, square, boulevard, or a park zone, is a widespread phenomenon in the didactic process, and city initiatives (initiated by the city administration or active residents).

Greenery always influenced the image and character of the city. Its presence essentially increased the value of the environment. Parks and urban green areas can be considered as a kind of indicators of civilisation development and living standards [21]. The number of interpretations of sustainable development in various fields is increasing, and in the field of landscape architecture, a definition has been taken that develops the basic concept. Sustainable development is based on equality between generations, species, and groups. It envisages economic growth and development that complement each other and are not antagonistic towards the environment and society. This is the kind of economic development that does not undermine the natural basis for future generations and ensures environmental sustainability. Sustainable development is a process of harmonising humanity and the environment, it is also a co-evolution of man and the biosphere. Ultimately, the main purpose of landscape architecture is to care for the environment and ensure its development [22].

The concept of sustainable development [23] is essential for rethinking the existing urban environment and creating a new one. However, like every accepted theoretical area for the development of the profession, it relies on many issue-related approaches, which lie both in the area of the development of society and its needs and branch concepts, theories, means, etc. Many open spaces proved to be particularly flexible in serving the general population. These findings they help contextualise current debates concerning the socioeconomic, political, and urban ecological functions of open and public spaces [24]. Historical transitions and contemporary development of the structure of areas of greenery within are notable, e.g., Cracow's city blocks [25].

The master plans of the cities envisage the construction of green corridors for cities and regions. It is being developed for the whole city, such as in Detroit the Green Infrastructure Spatial Planning (GISP) model. The GISP model provides an inclusive, replicable approach for planning future green infrastructure so that it maximises social and ecological resilience [26]. Equally important in global practice are projects that develop the optimal ideology that meets the challenges of the 21st century in the centres of historic cities and contributes to the preservation of the historic urban landscape. Researchers offer real approaches to the establishment of environmental projects, including the modern arrangement of urban squares, waterfront areas, etc. [27]. Non-conventional means are involved in the



preservation of the urban landscape, furthermore, storytelling and mapping can be used to actively involve people in urban conservation, providing insight into the attachments that citizens have to their urban environment. Moreover, the very accessible forms of social media enhance public knowledge of historic urban landscapes [28]. Particularly active humanisation and creativity of the environment through the implementation of landscaping projects has intensified in post-socialist cities as Bucharest (Romania) [29], Liepaja (Latvia) [30], the iconic Maidan Nezalezhnosti in Kyiv for Ukraine [31], Prsełomy Centre for Dialogue in Solidarność Square (Szczecin, Poland) [32], etc.

The same approaches are relevant for the cities of Ukraine. The master plans of the cities direct the project activity for decades, and the strategies of urban development and the distribution of the city budget among the priority areas in the field of landscaping and improvement allow quickly achieving the effects of improving the environment. Several substantial projects have been analysed in this study in the context of world experience in the cities of Lviv, Kamianets-Podilskyyi, Lutsk, which are distinguished by a valuable historically formed environment.

*Project proposals of the square Reconstruction near St. Andrew Church in Lviv.* For historical landscape objects, a number of classical analyses are used, however, introductory studies of the location in the context of the city should preferably be performed using multidisciplinary techniques that determine approaches to design. Multicriteria SWOT-analysis identified positive and negative qualities of the space of square near St. Andrew Church [33].

*Positive qualities* of the public space:

- the square is located on transit routes between several busy streets, so there is always a large flow of users; in this place, pedestrians have the opportunity to slow down, relax, and enjoy the environment;
- due to old large trees, the square is partially shaded during the day, which creates coolness and comfort for visitors;
- the place is located near the old defensive walls of the city, so an attractive excursion route of Lviv passes here, this place was the garden of the Bernardine monastery, so a special atmosphere prevails;

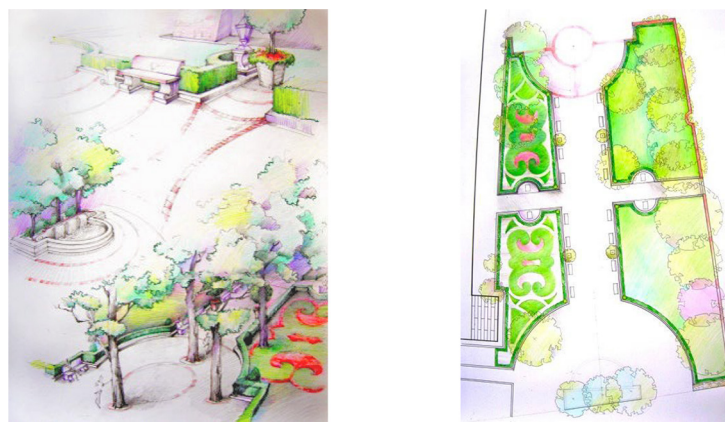
- the square is a good place for holding small fairs, festivals and other cultural events.

*Negative qualities:*

- the composition and landscaping of the square need to be arranged;
- the configuration of the paths does not correspond to the way the territory was occupied, the old lanterns, benches, and other equipment are very worn and do not correspond to the general style of the square;
- neglecting the care of trees and their chaotic planting create a negative impression;
- poor lighting in the evening and at night forces pedestrians to bypass it.

The project concept considers the style of the ensemble of the square and other landscape objects of the UNESCO protection zone in Lviv [34]. Analysing the historical environment of the square near St. Andrew's Church, the current state, and the style of the surrounding buildings identified the dominance of the Baroque style, to which St. Andrew's Church and the monastery belong. When reconstructing this area, it is desirable to use stylistic motifs inherent in the main elements of the architectural ensemble. Characteristic features of garden and park art of the Baroque era are the regularity and symmetry of planning; diagonal alleys; more complex than before, sculptural compositions of fountains and cascades; parterres and their ornaments of elegant, dynamic form; planting trees in bosquets and developing topiary art [35].

The main concept of designing the square is based on laying the main longitudinal axis – the alley. The perpendicular path is placed against the monastery wall and divides the square into four parterres. At the end of the central alley (on the side of Halytska Square), a square in the shape of a semicircle is designed, and on the opposite side of the alley – a fountain of the same shape. The main attractive elements of the square during the day will be a fountain, paving, flower beds, and topiaries, and in the evening all the paths of the square will be illuminated by decorative warm lighting. It is suggested to use outdoor furniture made of natural stone with wooden elements for seating. High green areas should be formed with fruit trees, mainly pears, which would emphasise the tradition of the place as a city garden (Fig. 1).



**Figure 1.** Sketches for the reconstruction of the square near St. Andrew Church in Lviv

**Source:** [33]

The project of reconstruction of the square on the outskirts of the historical area in Lviv. For this project, the abandoned territory of the triangle form between the streets of the existing block of buildings of the 19<sup>th</sup> century was used. The dominant tree appeared as a result of the “explosion” of nature to the outside. This action also left a mark on the undulating

surface of the square covered with the lawn. The waves are emphasised by benches, and drops are spreading from the “explosion”, symbolised by the pool filled with water (round-shaped lamps are arranged in a chaotic order on the grass beds). The shape of the circle is frequently repeated on the lawn due to the sowing of different grass mixtures (Fig. 2).



Figure 2. Project of the square renovation on the outskirts of the historic area in Lviv

Source: [36]

Project of public space in an intensively used urban environment of Lviv (historical part of the Halyskyi suburb, the intersection of Kniazia Romana and Ivana Franka Streets). The territory of the intersection of streets Knyazya Romana and Ivana Franka is unattractive, overloaded with people and functions – public transport stops food courts. In addition, part of the square is not used much – there are non-working stalls and public toilets in the square abandoned due to lack of funding, but not dismantled. The positive qualities of the location are its transit location between several streets, a substantial number of trees, the great potential of historical and tourist sites near the area, and the proximity of the location to the main tourist locations of the city. The negative qualities of the territory include the planning structure, which is inconvenient for pedestrians; poor

lighting in the evening and a lack of care for green spaces. This leads to residents trying to bypass the place.

The project proposal considers the historical and cultural layers of this place (Fig. 3). As a sign of remembrance, it is recommended to place an installation that resembles the Church of the Epiphany in silhouette. In the southern part of the square, it is proposed to create a water surface symbolising the underground river Poltva. Such measures will increase the attractiveness of the territory for city residents and tourists and improve the microclimate of the park. This idea also considers the plan of sustainable mobility in Lviv – the square will become one of the main bicycle mobility sub-centres of the city, which will connect bicycle routes from the sleeping areas of the city to the centre [37].

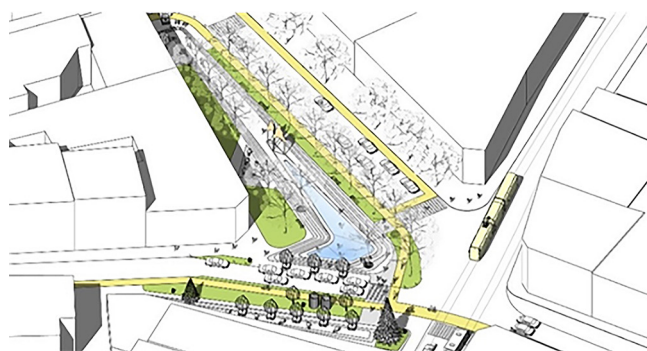


Figure 3. Perspective image of public space on the intersection of Kniazia Romana and Ivana Franka Streets in Lviv  
Source: [38]

Implementation of landscape projects in the living environment in Lviv. Here, the design process is based on involvement and together with a process of consultation with local residents. Children and adults express possible wishes on behalf of the residents, which determines the goals of the design project. The work of designers consists in interpreting the public’s expectations and providing

an original spatial response to expressed wishes. In addition, the designer monitors compliance with norms and rules and equality between the various interests of different groups of users. The most popular are the proposals for the design of a children’s playground in an urban environment (Fig. 4).

The usual image of poor modernist landscaping is changing. For example, decorative herbs – lavender, sage,

and rosemary – are often planted. They are less decorative but have a smell. With this, in particular, they interest children, encouraging them to learn. This is how educational gardening works: the child learns what the spices added to food look like in nature. In addition, planting

herbs is more profitable from the financial side, since they are all perennial or self-sowing [39]. The creation of a new landscape environment is particularly relevant in connection with the permanent process of densification of urban development [40].



**Figure 4.** Sketches for the reconstruction of the square near St. Andrew Church in Lviv

**Source:** [41]

The revitalisation of the degraded historical environment in Pidzamche, Lviv. Pidzamche district, as its etymology prompts, was formed in princely times (13<sup>th</sup> century). It was a workers’ suburb with intensive industry from the 19<sup>th</sup> to the mid-20<sup>th</sup> century. During World War II there was a ghetto for Jews, which became devastated, like the impoverished population [42]. The ideas concerning the positive solution to depressive city territories of different character lately have been solved through the so-called workshops (events called “City Workshop”, which began in Lviv

in 2015) [43], which can be initiated by various governmental and non-governmental organisations for the benefit of creating new communities around the place of residence, work or recreation (Fig. 5).

Such workshops lead to the activation of the local community, involve children and teenagers and establish positive communication with random passers-by. An especially valuable consequence of such a workshop is the interaction with residents and their involvement in the transformation of their living environment.



**Figure 5.** Creating the local spaces in Pidzamche, Workshop of city 2015

**Source:** photographed by the author in Pidzamche, Lviv

Workshop as a way to work on the project has spread to all types of designing and solving any architectural, planning, and spatial tasks of varying complexity and different urban scale [44]. The workshop is not only a method of solving architectural and planning tasks, this design and conceptual approach can achieve good results in other areas, such as activation of the place, return to life of abandoned areas, revitalisation of public spaces, restoring a positive image of downcast areas, return of people to urban spaces. In the future, the problems of connecting “detached” public spaces with the structure of public spaces in the city, bringing them back into use, establishing a positive identification by residents and users, and the revival of abandoned

post-socialist spaces remain relevant. Such cooperation of inhabitants, initiative people, and designers is a manifestation of **tactical urbanism** [45] – if the location accented in a new way begins “working” and attracting visitors, it is a sign for conducting further similar events.

The Programme for the revitalisation of Pidzamche, suggested by the city, served as a guide for the project. The technique of “city acupuncture” was chosen for Pidzamche. Learning of local history [46], its modern problems, considering social character, forms proposals of landscape-designer elements on small scale, adjusted to the temporary activity of architectural, cultural, and artistic character, assigned for particular, selected space in the district.



In this case, there was a mental transformation of the place, because it changed in the perception of visitors. The workshop offered a new functional interpretation of the place: for example, lectures or photo sessions. Since the measures were short-term, there were no substantial changes in the quality of public space. Successful realisation – Mytna Square in Lviv. Elements of urban design are the most dynamic, and the tradition and value of each place along with the

introduction of new design trends need to be emphasised. Thorough urban planning analysis and the first ideas of the revitalisation of the square were tested during a workshop in 2014 [47; 48]. The concept of sustainable development of the city in the vision of the authors of the reconstruction of Mytna square in Lviv merged into several creative approaches, which were to turn a noisy transit place into a qualitatively different space with new properties (Fig. 6).



Figure 6. Today's life of Mytna square in Lviv

Source: [41]

Mytna square was chosen as an example for a practical architectural workshop to demonstrate how to create a comfortable environment for people staying in the city and how the square can be an integrating element for the community. Today the square is often visited by tourists, passers-by, and students, there are a coffee bar and one kiosk there. The actual analysis of the condition before the reconstruction shows that people do not stay for a long time, passing by the square in transit.

Although, there are big potentials in it: the Pinsel Museum with the unique collection of wooden barock sculptures, the Polygraphic college with thousands of students, and two transport stops provide a steady stream of people through which the square is alive. Today the old architecture has lost its attractiveness, it looks battered and in need of restoration, landscaping and the square of the Soviet type is worn out, and trees and bushes are unkempt and wild.

As a result, ordinary public spaces of post-soviet design coexist with historical monuments, not correlating with each other. The idea of the workshop is to bring life back to the neglected area and to make impetus to create a local community, integrating everything around it. The main problem is that the square does not longer perform its functions as a public space.

Tasks for the revitalisation of the Mytna square are to return the identity of the square; to create a cosy area; to receive the impregnated square; to highlight the importance of the square as a museum; to make it greener, shaded, and with comfortable street furniture design [49].

The project of revitalisation of Mytna square was awarded the prize: “Space” and diploma of laureates of the competition “Prize of National Society of Architects of Ukraine 2018” in the nomination “Landscape architecture” (realisation) [50].

The attractiveness of Mytna Square was investigated through the study of social network hashtags in a quantitative way, this technique is often used by researchers today [51]. A statistical analysis of the hashtags #Lviv, #lviv, #ploshcharynoklviv, #lvivrynoksquare, #ploshchamytna, #mytnasquare on the Instagram network, which were chosen by continuous sampling (Table 1), was used in a specific study. The results indicate that hashtags (#Lviv, #lviv) were used quite often. As for city objects (squares, streets, architecture), the frequency of their use is substantially lower.

Notably, its specificity is dependence on active events in the country and any other emergency situations, and hashtags change their positions in the ratings due to their relevance and user activity.

**Table 1.** Using hashtags on the Instagram network

Lviv	
Hashtag	Number of uses on the Instagram
#lviv	4400000
#lviv	6900000
#ploshcharinoklviv	100+
#lvivrynoksquare	100+
#ploshchamitna	100+
#mytnasquare	100+

Creating the image of the city by means of landscape architecture. City Kamyanets-Podilskyi has a long tradition of landscape art [52]. Active citizens of Kamyanets-Podilskyi share the opinion that city green space is an important image-creating factor for the city. In such a way, in 2019 an initiative group “urban picnic” was created, attempting to demonstrate to the city residents that the community has influence and can cooperate with city administration for

solving modern city problems [53]. The group of participants regularly take part in the organisation of public educational events or public actions with attention to the thesis: “Changes begin with small steps, that each of us is involved in”. One such action was the volunteer movement concerning the revitalisation of boxwood plantings on the green stripe in Kniaziv Koriatovykh Str., it was aimed at preserving plantings from cutting (Fig. 7).



**Figure 7.** View of the boxwood alley, insufficient condition of the greenery, the process of forming bushes and the result  
**Source:** photographed by Sergiy Kovalenko

There were problems with the quality of the greenery because it did not have proper care for years – linearity has been broken, some bushes had lost parts, and the area in between rows (once this space was planned as a boulevard) got littered, and lack of thorough viewing created inconvenience for traffic. It was not in vain that the city authorities decided to deal with a number of these problems, but the appropriateness of the chosen methods, according to activists, was questionable. One of the three parts of the boxwood strip was completely uprooted, and roses were planted instead.

It is known that trees and bushes keep the temperatures down much better than flower beds, and the streets of Kamianets-Podilskyi were already poor in bush plants. An initiative group “Urban Picnic” headed by Viktoriia Zhelikhovska organised volunteers and invited a master of topiary art Andriy Bout, under whose guidance the formative cutting of boxwood bushes was conducted to apply an alternative approach, making the plants become not a barrier, but rather a visiting card of the city.

Urban Picnic – an informal association of Kamianets-Podilskyi people from different professional fields, who preferred not to stand aside but to take part in the transformations of Kamianets-Podilskyi. The main goal of this group is to motivate city residents to take part in the establishment of open public spaces, defend their right to a quality arrangement, and initiate the introduction of modern environmental

approaches to landscaping. The main method of achieving the goal is setting the example, in particular through the organisation of thematic events and workshops, involvement in competitions for funding within the public budget, and coverage of it on social networks [54].

The programme included a master class in topiary cutting, professional coordination of volunteers’ work, a workshop in rooting boxwood plantings, a photo zone, live music, and professional photography and filming of the process. In such a way, they succeeded in attracting general attention to the subject of preserving and organising green plantings in the city and received a good reaction from professional landscapers and urban planners. The confirmation of the organisers conducting the given task on the proper level is the fact that they were invited to make a speech at the international “Landscape forum 2019” in Vinnytsia. The main positive result of the initiative “Let’s save boxwood!” – it was picked up by the local administration and the establishment of a topiary alley continued.

*The design concept of landscaping for a small square in Lutsk.* A typical situation, when the environment created in the 1970-80s is unattractive and dominated by the transit pedestrian movement (Fig. 8; 9). According to the concept of the project, the ascetic modernist planning of the district and the square required the creation of a local accent for the new spirit of the place.





Figure 8. Square in the Lutsk historical environment (above) and design-concept (below)

Source: [55]

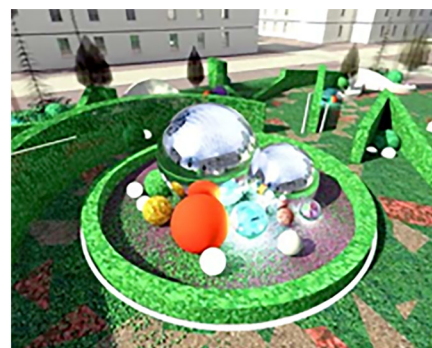


Figure 9. Details of landscaping for the square in the Lutsk

Source: [55]

The concept of landscaping a small area is to create a labyrinth in planning. The main purpose of this is to catch the pedestrian's attention and change their trajectory of movement and perception of the environment. Small architectural forms are placed in the middle of the labyrinth, created according to the principle of material and size contrast. Benches and cut bushes exchange figurative content – concrete benches take on plastic forms, and greenery turns into clear geometry. Benches are not only for relaxation; they are a way of combining trees – existing and planned.

### CONCLUSIONS

The result of the urban vision and intervention in the existing conditions of the city was a number of design and implementation proposals. Applied techniques and solutions are based on a number of features obtained from the analysis of the existing environment and its history; discussions with city residents and their involvement in supporting design objects in the future. Intervening in the design of the urban environment, in both large and small areas, is an opportunity not only for a new design of the area but also for changing the perception of the place and its meaning in the city space.

In the historic area of the city, the concept and methodology of project proposals for the redesign of the space, regardless of its condition, are based on the expression of identity through correspondence to the style of the environment and historical artefacts. Thus, the square near St. Andrew's Church in Lviv is dominated by the main longitudinal alley and characteristic features of the park art of the Baroque epoch, and the public space project at the intersection of Kniazia Romana and Ivana Franka streets conveys historical features of the long-gone building. In contrast to the monotonous environment of Soviet public spaces, bold modern forms and geoplastics are offered (examples in Lviv and Lutsk). The reconstruction of Mytna Square in Lviv is an example of the transformation of the transit zone into an atmospheric space with new properties, accents, local functions and traditions, supplemented by green spaces.

Involvement of city residents in urban development is crucial for maintaining a high quality of greenery (volunteer movement for the revitalisation of boxwood plantations on Knyaziv Koriatovychiv Street in Kamyanets-Podilskyy) or even creating a new local space in an abandoned area (Pidzamche, Lviv).



The design process is aimed at building a human-friendly environment in which a person will feel like an active participant in the urban landscape with its multi-layered complex structure of natural and cultural elements. The idea developed in the urban environment design concept should be clear to future visitors. Therewith, in addition to functional and formal, value aspects are growing.

For landscape objects in a historically formed environment, valuable qualities are the restoration of the tradition of the place, saturation with artefacts and new functions, the introduction of ideas of balanced development, and considering the psychological needs of society. This is important given the current trends of globalisation and the threat of losing the individual character of urban spaces.

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## Зміна якостей міського простору засобами ландшафтної архітектури

**Анотація.** Актуальність теми продиктована зростаючими потребами у задоволенні фізичних і ментальних запитів жителів міста та потребою у створенні локацій з високими естетичними та функціональними якостями. Метою статті є дослідження основних сучасних тенденцій проектування об'єктів міського ландшафту, що сформувалися з 1990-х років, на предмет їх відповідності сучасним концепціям сталого розвитку, ландшафтної урбаністики та міської екології. З цією метою в статті проаналізовано низку авторських експериментальних, дослідницьких реалізованих проектів ландшафтних об'єктів, метою яких є виявлення, підкреслення або створення нової ідентичності локальних місць в історично сформованій структурі міст (на прикладі міста Львів, Кам'янець-Подільський, Луцьк). У статті використано такі методи дослідження: монографічний метод, аналітичний метод. Для визначення привабливості об'єктів використовувався графічний метод. У статті встановлено наступну характерну закономірність, властиву історичним містам: у давно сформованих частинах міст ефективні концепції ландшафтних пропозицій базуються на вираженні місцевої ідентичності. Наприклад, встановлено, що на площі біля Андріївської церкви у Львові домінують характерні риси садово-паркового мистецтва епохи бароко, проект громадського простору на перехресті вулиць Св. Князя Романа та І. Франка в с. Львів передає компіляцію історичних особливостей різних епох. Друга характерна закономірність, встановлена в цій статті: у деградованому середовищі периферійних мікрорайонів (досліджені приклади у Львові та Луцьку) добре працюють запропоновані у проектах сучасні форми та геопластика. Дослідження різноманітних прикладів, таких як реконструкція площі Митної у Львові, волонтерський рух у Кам'янці-Подільську, також підтвердили, що успішні інтервенції у трансформацію міських громадських просторів сприяють зростанню якості цих просторів та покращенню іміджу міста. Цінними та рекомендованими до впровадження є концепції дизайну міського середовища з багатшаровою складною структурою як природних, так і культурних елементів. Особлива історія розвитку міст радянського періоду нівелювала їх особливості. Проте сьогодні процес реставрації та створення ландшафтних об'єктів дозволяє зберегти та підкреслити унікальність міст

**Ключові слова:** проекти сталого розвитку у містах, ландшафтний дизайн, ідентичність локальних місць, реновація елементів міського середовища, реконструкція об'єктів ландшафтної архітектури



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## The Specifics of Examination of Basilian Monastic Complexes as an Architectural and Spatial Phenomenon

**Abstract.** The replication of architectural and spatial design of the Order of Saint Basil the Great monasteries in Western Ukraine cannot be addressed within a single scientific hypothesis focused on the unity of imagery, planning, and function. The architectural and spatial arrangement of the Basilian monasteries in Western Ukraine emerges as a non-homogenous fragmented phenomenon, which should be investigated with regard to chronological distinctions. The purpose of the study is to develop a methodology for the examination of the OSBM monastic complexes considering a variety of factors that have influenced the appearance, dissemination, growth, and disappearance of the Basilian centres. The general methodological approaches of the study are historical, morphological, culturological, and systemic. In addition, the following general scientific methods of inquiry were used: an examination of literature and documents, corpus, description, statistical method, analysis and synthesis, comparison, abstractisation, concretization, generalisation, and systematisation (classification and typology). Thus, five territorial and chronological scenarios have been highlighted within the Basilian architectural legacy in Western Ukraine. A relatively small number of papers dedicated to the design and planning aspects of the development of the Order of Saint Basil the Great monasteries are retroactive. Upon analysing the Basilian legacy in Western Ukraine, the material has been divided into three historical waves related to the development of monastic complexes. The authors of the paper have outlined the commonality of morphological features, dominant stylistics, and layout plans to examine the Order of Saint Basil the Great monasteries as an architectural and historical phenomenon. One important aspect of the subject is an interpretation of monastic complexes that factors modern conditions like the comfort of living, economic activities, organisation of mass prayers, the development of tourist infrastructure, etc. Therefore, a study of similar theoretical approaches to the functioning and interpretation of monastic complexes helped to outline three types of their interpretation in the modern context

**Keywords:** The Basilian Order, Church Union, the Dobromyl reform, baroque

### INTRODUCTION

The Order of Saint Basil the Great (OSBM) monasteries in Western Ukraine are represented by a number of objects unevenly spread across the territory, with some now located in foreign countries. At present, the term “monastery” is defined differently in various sources – as a specially organised space, a centre without any specific architectural and spatial design. Moreover, since Western Ukraine encompasses the territory

of the historical Volhynia region, the Basilian affiliation, and identity of objects transferred to the Russian Orthodox Church in the early 19<sup>th</sup> century remain to be determined as such a transfer was often accompanied by gradual change in architectural and artistic essence.

Analysis of sources demonstrated two approaches toward the study of the Basilian legacy: historiographic,

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architectural, and art historical. Researchers try to address the issue of whether the notion of “Basilian architecture” can be formulated, requiring specific common traits and similarities. In a historiographic sense, such commonality is the belonging of a complex to OSBM, while in the architectural one – similarity of morphological traits of dominant stylists and planning structure is important. An attempt at a similar classification was made in the thesis by L. Chen “Architecture of the Monasteries of the Order of St. Basil the Great in Ukraine and Their Place in the Development of Ukrainian Architecture of the 17<sup>th</sup>-20<sup>th</sup> centuries” [1] proved the impossibility of building a system of clear generalises of the theoretical category “Basilian architecture”. That is why a need to identify the category of value of each monastic complex separately emerged. The study may be considered a basis for other studies which consider the architectural aspect of the OSBM legacy. It is important primarily due to the systematisation of material in the context of a combination of a purely architectural component with the set of data taken from historiographic literature and organised in chronological and evolutionary order.

A large part of knowledge which is directly linked to the architecture of Basilian monasteries is presented in different historical studies, describing OSBM complexes, their analysis and historiographic organisation. The most comprehensive work in this sphere is the collection of papers titled “Sketch of the history of Basilian order – of St. Jehoshaphat”, published in Rome in 1992 [2]. This collective paper presents a historical retrospective of the development of the Basilian order since its founding in Vilnius, up till the inter-war period when it developed in Ukrainian emigration.

I. Znak in the dissertation “Restoration of the Architectural and Spatial Structure of the Monasteries of the Order of St. Basil the Great in Western Ukraine” [3] developed scientifically justified provisions on the characteristic features of the architectural and spatial structure of OSBM monasteries based on historical stages and created a theoretical-practical model of the reproduction of architectural and spatial design of OSBM monasteries. The author has complemented to the methodology of studying OSBM monasteries and identified the main areas and parameters in the transformation of the architectural and spatial design of OSBM monasteries under modern conditions. In addition, an outline is provided for the characteristic elements of changes that the OSBM monasteries in Western Ukraine underwent in the late 20<sup>th</sup>-early 21<sup>st</sup> century.

O. Remeshylo-Rybczynska & I. Znak in the study “Style Peculiarities of the Ensembles and Complexes of the OSBM Monasteries in the XVIII century” [4] explored the social and political processes that happened in the modern Ternopil region and their impact on the development of the architecture of sacred complexes.

Qualifying study of O. Diachok “The Forming of the Architecture of Sacred Complexes Under the Influence of Social and Political Processes (on the example of Ternopil region)” [5] highlights the social and political processes that took place in the modern Ternopil region and their impact on the development of the architecture of sacred complexes.

M. Khokhon’s thesis “Formation of Defensive Structures in Western Ukrainian Monasteries of the XVII-XVIII centuries” [6] is dedicated to the research and preservation of the defence structures of Western Ukrainian monasteries. The paper conducts an analysis of the process of forming the defence structures of monasteries in this region.

Among modern studies on the history and theory of architecture, it is worth mentioning: L. Chen “Basil Monastery Complex in Uzhgorod” [7], O. Diachok “Architecture of Basilian Monasteries in the Process of Forming the Sacred Image of the Cities of Ternopil Region” [8], Z. Lukomska “Town-planning Legacy of Ivano-Frankivsk Region dated XVII – XVIII c.” [9], O. Lesyk-Bondaruk “Place and Role of Lutsk Monastic Ensembles in City Housing System” [10].

Such works as “Sketch of the history of Basilian order – of St. Jehoshaphat” [2] and M. Vavryk’s monograph “On the Basilian monasteries of Galicia and Carpathian Ukraine” [11] were analysed to conduct the research of the architectural legacy of OSBM. In addition, groups of studies considering OSBM complexes within the context of specific subjects were reviewed: defence architecture (O. Lesyk [12]), architectural historical direction (A. Vaskiv [13], O. Hodovaniuk [14], H. Lukomskyi [15], M. Kobryn [16], V. Rozhko [17], P. Rychkov, V. Luts [18] et al.), garden and park ensembles (V. Taras [19]).

## MATERIALS AND METHODS

The general methodological approaches of the study are historical, morphological, culturological, and systemic. The historical research method was applied to examine the emergence, establishment, and development of OSBM monasteries in the territory of Western Ukraine in chronological order. Using the morphological method, the main characteristics of the monasteries were determined, based on the analysis of their external form and the identification of similar configurations, parameters, parts, and details. The cultural approach allowed following the development of the architecture of monasteries according to the development of the culture in which they have arisen. The concept of this approach determines the cause-and-effect relationships between the development of culture and architecture, identifies the prerequisites, factors, and influences on the specific features of the stylistic development of monasteries. The use of a systemic approach enabled the consideration of the examination of Basilian monastic complexes as a complete system.

The sources used to analyse the problems of modern interpretation of OSBM monastic complexes currently consist of several, relatively isolated parts, which require mutual synthesis. Each part was investigated separately in the context of specific studies.

The research on the development of architectural and spatial properties of the OSBM monasteries consists of several key stages. During the first stage, an overview of the chronological and historical development of monasteries was conducted based on the work “Sketch of the history of Basilian order of St. Jehoshaphat”, and papers by A. Vaskiv, O. Hodovaniuk, H. Lukomskyi, M. Kobryn, V. Rozhko, P. Rychkov, V. Luts. The second stage encompasses the



analysis of the statistical data presented in the research by the historian M. Vavryk. During the third stage, based on the findings of L. Chen, M. Khokhon, V. Taras, O. Diachok, O. Lesyk, L. Hnatiuk, & I. Znak on the specific architectural and spatial solutions of the Basilian monasteries, five main territorial and chronological scenarios within the Basilian architectural legacy in the West of Ukraine were formulated.

## RESULTS AND DISCUSSION

The Basilian complexes of Western Ukraine are represented by a vast array of objects that are unevenly distributed throughout its territory. Today, a small part of them is located in Romania, Hungary, Slovakia, and Poland. According to Basilian researcher Roman Lukan, before World War II, there were 374 OSBM monasteries in the three Halychyna eparchies of Peremyshl, Lviv, and Stanislaviv [11]. Namely, before the Second World War, the Halychyna province had 18 OSBM monasteries [11], and the Transcarpathian province had 9 monasteries (including 2 in Slovakia, 1 in Hungary, and 1 in Romania) [2]. In addition, 34 monasteries of Basilian origin operated in Volhynia (Volyn and Rivne regions), yet since 1832 these monasteries have been subordinated to the Russian Orthodox Church. Another 4 of the 16 ancient

OSBM monasteries existed in the Kholm area until 1864. Thus, there were over 440 Basilian monasteries in Western Ukraine [3].

The highest concentration of landmarks is in Halychyna (the monastery of St. Basil in Pidgora (Fig. 1), Krekhiv monastery of St. Nicholas Basilian Fathers (Fig. 2), etc.), primarily in the territory of the present-day Lviv region (especially in the northern part). The uneven geographical distribution is combined with chronological and stylistic heterogeneity and is related to the specificity of the development and disappearance of Basilian centres. The oldest of them are located in Halychyna, Volhynia, and Transcarpathia. Their active development started in the 17<sup>th</sup> century, reflecting the specific features of the early stages of the Union Church's history. They are known for laconicism and a degree of reinterpretation of the compositional organisation of buildings following the examples of the Latin Church [20]. The monasteries of Volhynia, like the Basilian monasteries, ceased to exist in the first half of the 19<sup>th</sup> century and were part of the so-called Lithuanian province of the Order, which was marked by substantial centralisation of the structure and similarity with Roman Catholic orders (Carmelite and Jesuit).



**Figure 1.** The monastery of St. Basil in Pidgora (Ternopil region)

**Source:** photographed by the author



**Figure 2.** Krekhiv monastery of St. Nicholas Basilian Fathers (Lviv region)

**Source:** photographed by the author



In Transcarpathia, the architecture of the OSBM monasteries was strongly influenced by the Pannonian identity of sacred objects, typical for territories associated with the Hungarian cultural presence. Such objects are characterised by single high-rise dominant bell towers, designed mainly in the Baroque style with laconic sectioning, a lack of domes and the use of clocks or round windows (roundels) to complete the tower. The “Transcarpathian” and the “Volyn” style tended to repeat and imitate the Roman Catholic counterparts, but in a different morphological manner. This discrepancy is also related to the chronological shift of these two layers of legacy, where ontologically, the older “Volyn” style is still marked by the Renaissance influences, and the later “Transcarpathian” one primarily reflects the mature Baroque era with elements of classicist lactonise and order discipline.

The part of monuments located in Halychyna is the most fragmented and cannot be described within a particular stylistic and ideological trend. The origin of Halychyna objects is connected with several fundamentally different waves of transformative and construction activity with unique ecclesiastical, socio-political and economic foundations. Halychyna, which was the last of the Union of Brest (1596), when faced with the long-standing and well-established structure of the Basilian Order of the “Lithuanian province” (Lithuania, Belarus, Volhynia, the Right Bank), proved to be too different and heteronomous [1]. The preserved authentic traditions of Eastern monasticism, although suppressed by discrimination and “patronage” of the secular people, primarily Roman Catholic feudal lords (nobles), focused on the internal spiritual “programme”, while the Basilian (and other Catholic) orders, often had an extensive external social “mission”.

Paradoxically, this difference, including the dominance of Halychyna in terms of population, thwarted the initial plans to simply co-opt the newly-added monasteries into the “Lithuanian province”. A traditionally large number of small monasteries in Eastern Christianity, along with bigger ones, posed a challenge for the leadership of the Union Church. The consolidation and disciplinary reorganisation of the former Orthodox monasteries on the territory of the “Lithuanian province” took about a hundred years, during which the “Lithuanian” Basilian centres functioned primarily as large complexes designed to perform many “internal” (church services, prayers, economic activities) and “external” tasks (publishing, pilgrimage infrastructure, missions and preaching among the laity). These transformations coincided with a relatively favourable for the Union Church period of military and political prosperity of Rzeczpospolita, its ally and patron. The same was not true for the 18th century when the Lithuanian-Polish state was in decline and was largely influenced by external factors [21].

The impossibility of reorganising the Halychyna post-Orthodox monasteries into the “Lithuanian” model resulted in the preservation of diversity and multiplicity, which only intensified under the influence of class stratification and general economic decline.

When the Halychyna eparchies accessed the Union, the Lithuanian-Polish state was experiencing a period of recession, which escalated over the following decades. Limited economic resources and a general exclusive national policy

favouring the Roman Catholic denomination in Rzeczpospolita in the 18<sup>th</sup> century led to a decline in the development and reorganisation of the newly created Basilian monasteries. The situation did not improve after 1772 when Halychyna became part of Austria. The so-called Joseph’s Reforms of 1800 in Austria limited monastic life to a large degree, exacerbating the OSBM stagnation. At the end of the 19<sup>th</sup> century, Halychyna and Transcarpathia remained the only regions in the world (with a few exceptions) that still had functioning Basilian monasteries. However, they were in deep devaluation and close to disappearing altogether.

Only decisive reforms and effective external intervention (the so-called Dobromyl reform of early 1882) led to the rapid revival of the Order, which lasted until the 1930s [22]. Yet, due to the fundamental geopolitical changes that occurred in Eastern Europe and its transition to Soviet control, the OSBM monasteries in both the Ukrainian SSR and Poland were closed. The process of liquidation of Basilian monasteries was largely completed by 1947, although the finalisation of the process is attributed to the 1940s-1950s. The OSBM monasteries were repurposed for the medical, educational, museum, and other functions [2].

The sudden collapse of the Soviet system and the breakdown of the USSR, accompanied by an active revival of religious life, led to the resumption of Basilian life in Western Ukraine. Public enthusiasm and idealistic expectations surrounding religious institutions in the 1990s led to the addition of new monastic candidates to monasteries. The preservation of monastic centres in Western Europe and the Americas contributed to the influx of well-trained personnel into the restored structures [1]. Under these highly favourable conditions, many historical centres of the Basilians were restored and rebuilt.

Thus, Halychyna was characterised by three waves of the development of Basilian monastic complexes: the period after the transition to the Union – the 18<sup>th</sup> century, the period after the “Dobromyl reform” – the 1890s-1930s and the period after the resumption of the UGCC activities – to the 1990s-2000s. Each of these periods had a unique historical character, associated with a different stylistic worldview and, accordingly, cannot be considered as a uniform architectural phenomenon.

In this context, the architectural and spatial design of the Basilian monasteries of Western Ukraine appears as a heterogeneous and fragmented phenomenon, the research of which should be based on chronological periodisation and territorial stratification. Given the above, five territorial and chronological scenarios may be highlighted within the Basilian architectural legacy in Western Ukraine.

The first is the legacy of the “Lithuanian province” of OSBM in the Volhynia and Rivne regions, including the monastery in Buchach (Ternopil region) (Fig. 3). It reflects one of the earliest stages in the development of the Basilian Order, marked by a desire to imitate Roman Catholic orders in both organisation and, partially, in visual identification. Although documents and accounts of the Union Church leadership and the OSBM at the time emphasise a specific connection with the traditions of the Eastern Church and the legacy of St. At the time, the Basilian Order was seen as

a universal organisation of Union monasticism, an origin of bishops [4]. The architecture is dominated by elements of

basilica planning types, often with the introduction of bell towers previously not inherent in Eastern Christianity.



**Figure 3.** The monastery in Buchach (Ternopil region)

**Source:** photographed by the author

The second scenario is the first wave of the transformation of Halychyna monasteries after the accession of the Peremyshl and Lviv eparchies to the Union. It is marked by the struggle to preserve Orthodox inertia in the structure and ecclesiology of monastic life. Influenced by the decisions of the Synod of Zamość, ideological Latinisation continues on a more developed dogmatic foundation. However, substantial psychological attachment to the Eastern and folk traditions in the detailisation of sacred spaces pushed the Halychyna Basilian architecture toward a more synthetic search for a visual language where Eastern spatial identifiers (predominantly the domes of the main temples) remain relevant. In addition, the spatial structure of the Halychyna monasteries, which were characterised by a large number of subtle social micro-formations, was still connected to the Eastern Christian ontology, with a small number of adaptations to new organisational and disciplinary needs [1].

The third scenario is the enhancement of the Basilian presence in Transcarpathia, influenced by the tradition of the “Danube-Pannonian” stereotype of a sacred building, characterised by the unification of the image and the recurrence of semantic elements. The OSBM monasteries do not have special oriental features, as was the case in Halychyna. The architectural design of the spaces does not have an explicit Eastern-rite identity [7]. This feature of the Transcarpathian Basilian monasteries was quite irrelevant to the fragmented religious life of the region, distinguished by the presence of all three major branches of Christianity and substantial national and cultural diversity.

The fourth scenario of the architectural and spatial ontology of Basilian monasteries in Western Ukraine is the legacy of the rapid OSBM development after the so-called “Dobromyl reform” [16]. It is marked by the stabilisation of oriental symbolism and its interpretation as a valuable part of the general Catholic Universe. In the ecclesiological sense, the OSBM of those times was no longer considered a counterpart of Eastern monasticism in general due to the emergence of new Greek Catholic congregations, such as

the Redemptorists, the Studites, etc. Therewith, the spirit of Ukrainian patriotism emerges within the Order along with the specific Halychyna – associated orientalism as an antithesis to Polish Roman Catholicism.

The fifth scenario is the development of the architecture of the Basilian monasteries in the period after the revival of the Greek Catholic Church in the 1990s and 2000s. It is distinguished by further convergence of national and religious identity and high appreciation of specific eastern spatial identifiers with a mandatory pseudo-baroque component, evoking associations with the architecture typical of the Ukrainian nation-building narrative. Transformations are also taking place in the historic buildings returned to the OSBM. These changes are especially noticeable in those complexes that used the models or were substantially influenced by Latin Christian architecture, for example, some monasteries in Transcarpathia (Boronyavo Monastery of the Annunciation of the Blessed Virgin Mary of the OSBM, St. Nicholas Monastery of the OSBM in Mukachevo, St. Nicholas Monastery of the OSBM in the village of Maly Berezny, Basilian monastic complex in Uzhgorod [7]).

Thus, the set of data constituting the material under study has three dimensions of fragmentation: a) territorial (different variations of architectural and spatial solutions depending on a subregion of Western Ukraine), b) temporal (different architectural and spatial solutions depending on the time of construction) and c) inertial (different variants of architectural and spatial solutions depending on the degree of inertial force of the Eastern Christian tradition – stronger in Halychyna, weaker in Transcarpathia and Volhynia).

A separate important part of the research subject is the very interpretation of monastic complexes in modern conditions. Within the prevailing local discourse on this subject, both at the scientific and popular-journalistic levels, the dominant opinion presupposes complete reproduction of the authentic functions of the complexes. In post-Soviet conditions, this was often seen as a restoration of historical justice and correction of the distortions caused by the communist



regime. However, from the standpoint of the OSBM, monastic complexes as sacred objects and microsocioal structures, at the turn of the 21<sup>st</sup> century, the reproduction of authentic functions could not become a mechanical process of returning to the pre-World War II situation. New requirements for living comfort, economic processes, the practice of mass “prayers”, parking spaces, and tourist infrastructure have shown that the historical OSBM complexes have entered a new phase of the transformation of their spatial structure, which will occur as a spontaneous and objective process.

In this sense, an essential part of the data involved in the objectives of this study of a wide range of analogues and theoretical reflections on the interpretation of monastic complexes in the modern context. Here, three types of interpretation are evident: the existence of the monastic function as a single or dominant one; in the second case, a combination of sacred and secular functionality; and in the third case – the repurposing of monastic buildings for non-religious functions.

## CONCLUSIONS

It has been established that the source base for the study of Basilian legacy in Western Ukraine, especially in Halychyna, is in general specified by three waves in the development of Basilian monastic complexes: a) the period after the transition to the Union – the 18<sup>th</sup> century, b) the period after the so-called “Dobromyl reform” – the 1890s-1930s, and c) the period after the resumption of the activities of UGCC

in Ukraine – the 1990s-2000s. All periods were characterised by different historical-cultural layers with particular spatial and stylistic solutions, therefore the architectural legacy of the OSBM monasteries cannot be treated as a single architectural phenomenon.

Based on the study of the morphological features of the OSBM monasteries of Western Ukraine, five territorial and chronological scenarios were identified. It was determined that the set of data constituting the material under study has three dimensions of fragmentation: a) territorial (different variations of architectural and spatial solutions depending on a subregion of Western Ukraine), b) temporal (different architectural and spatial solutions depending on the time of construction) and c) inertial (different variants of architectural and spatial solutions depending on the degree of inertial force of the Eastern Christian tradition – stronger in Halychyna, weaker in Transcarpathia and Volhynia).

There are three types of interpretation of monastic complexes in modern architectural discourse: a) maintaining the existence of the monastic function as a single or primary, b) a combination of sacred and secular functions, and c) repurposing the monastic complex for non-religious functions.

The modern state of the resource and publicist base dealing with the subject of architectural and spatial design of Basilian monasteries allows highlighting promising areas of research, on top of outlining the subjects already covered. Namely, the subject of interpreting of the architecture of closed monastic ensembles under modern conditions.

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## **Особливості вивчення Василіанських монастирських комплексів як архітектурно-просторового явища**

**Анотація.** Проблеми відтворення архітектурно-просторового вирішення монастирів Чину Святого Василя Великого на території Західної України не можуть розглядатись в рамках однієї наукової гіпотези, сконцентрованої на образній, планувальній, функціональній єдності. Архітектурно-просторовий уклад василіанських монастирів Західної України постає як неоднорідне і фрагментоване явище, дослідження якого повинно ґрунтуватися на хронологічному розмежуванні. Мета статті – розробити методику вивчення Василіанських монастирських комплексів, враховуючи різноманітні фактори та чинники, що вплинули на виникнення, поширення, розбудову та зникнення василіанських осередків. Загальними методологічними підходами дослідження стали історичний, морфологічний, культурологічний та системний. Окрім того, використано такі загальнонаукові методи дослідження: вивчення літератури та документів, вибірка, опис, статистичний метод, аналіз та синтез, порівняння, абстрагування, конкретизація та узагальнення, систематизація (класифікація та типологія). Було виділено п'ять територіально-хронологічних сюжетів у рамках Василіанської архітектурної спадщини на Західній Україні. Відносно невелика кількість робіт, в яких розглядаються проектно-планувальні аспекти розвитку монастирів Чину Святого Василя Великого, мають ретроактивний характер. На основі аналізу джерельної бази Василіанської спадщини у Західній Україні, матеріали було поділено на три історичні хвилі, що пов'язані з розбудовою монастирських комплексів. Для вивчення монастирів Чину Святого Василя Великого як архітектурно-історичного явища, авторами виділено спільність морфологічних рис, переважаючої стилістики, планувальної структури тощо. Окремим важливим аспектом досліджуваної теми є проблематика трактування монастирських комплексів у сучасних умовах, пов'язаних з комфортністю проживання, господарською діяльністю, проведенням масових відпустів, формуванням туристичної інфраструктури тощо. Тому, на підставі вивчення аналогів теоретичних підходів до функціонування і трактування монастирських комплексів, виділено три типи їх інтерпретації в сучасному контексті

**Ключові слова:** василіанський орден, церковна унія, Добромільська реформа, бароко



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## Integral Development of the Historical City Centres of Ukraine

**Abstract.** The subject of this study is the signs of integrated development and the reasons for the intermittent success of the historical cities of Ukraine. City centres from settlements different in size and function were included in this study: Chernihiv, Lyubech, Baturyn, Romny, Chyhyryn, Motovylivka, Nizhyn, which testify that the tradition of integral development of the centres of historical cities of Ukraine is ancient. City governments and magnates in different ways supervised safety, production, and trade infrastructure, and improved the public space of market squares. The inner parts of the historical cities of Ukraine developed individually, had different goals and opportunities, used separate resources, and tried to achieve similar results – a harmonious socio-economic environment. Unfortunately, a thorough destruction of the historical cities of Ukraine as a result of the aggression of Moscow-Russian troops occurred during the 17<sup>th</sup> and early 21<sup>st</sup> centuries. In conclusion, it was noted that the logical area of long-term development of Ukrainian historical cities is the analysis and reproduction of historical and urban traditions, active implementation of revitalisation projects, and restoration of tangible cultural legacy. The study uses methods of structural analysis of spatial characteristics of planning and functional-territorial features of the city centres, processing and sampling the information in literary and archival sources. The purpose of the study is to determine the signs of integrated development of the centres of historical cities of Ukraine. The results of the study can be used in monument protection activities and practical work on the regeneration of the central part of the historical cities of Ukraine

**Keywords:** consistent growth, the city centre, defensive factor, social and economic environment, urban complex

### INTRODUCTION

The centres of the historical cities of Ukraine were formed in close relationships, interdependence, and mutual influences of historical and socio-economic components. Proof of this is the development of Lviv, Zhovkva, Brody, and Ivano-Frankivsk in the Renaissance style. The city centres developed over several centuries, unevenly and periodically. Cyclical development was caused by wars, fires, diseases, and changes in the political and administrative system. However, researchers still do not pay attention to the features and integrity of the forms of development of the central part of the historical cities of Ukraine. This is caused by the current state of city centre preservation, the popularity of historical temple and palace buildings, and the lack of a paradigm for preserving the historical and cultural environment of the city. Ultimately, it is not clear whether

during the 16<sup>th</sup>-17<sup>th</sup> centuries the development of the historical cities of Ukraine had an integral manifestation.

It is vital to disclose the signs of integral development and the reasons for the intermittent success of centres in the historical cities of Ukraine. The scientific originality of the paper is its finding that the development of the centre of a historical city of Ukraine as a complete architectural and urban complex had different forms of manifestation, but the same goal – the creation of a harmonious socio-economic environment.

Urban complexes of historical cities of Ukraine are the subject of analysis by M. Bevz [1], V. Vecherskyi [2], M. Kapral [3], H. Petryshyn [4]. The priorities of M. Bevz's [1] research were the specific features of city fortifications and the compositional and city-building characteristics

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of Renaissance cities. V. Vecherskyi [2] focused on historical and city-planning monument protection studies of inhabited places. M. Kapral [3] analysed the problems of religious and national communities in the historical cities of Ukraine. Halyna Petryshyn researched the establishment of theory and research methodology of historical cities [4]. Polish scientist K. Brzeżany [5] identified the problems of the spatial development of cities in the 16<sup>th</sup> and 17<sup>th</sup> centuries. Czech researcher J. Klapste [6] investigated the archaeological legacy of medieval historical cities. The scope of surveys included analysis of topographic factors influencing the development of the city, historical foundations and stages of expansion of the settlement. The Ukrainian scientific field is dominated by publications dedicated to the historical cities of the Western part of the country. This is due to the state of preservation of the architectural environment of the city, the availability of sources and the ancient school of architecture and urban planning. Instead, the spatial and semantic forms of central areas development of the Ukrainian historical cities were left out of consideration.

### MATERIALS AND METHODS

Studies of the second half of the 19<sup>th</sup> century devoted to the history of the cities of the left bank of Ukraine, archival documents, google maps sites, studies in periodicals and monographs of the beginning of the 21<sup>st</sup> century devoted to the history of urbanism of Ukraine served as the information basis of the study. In the space of each city centre mentioned, the field studies were conducted.

The study uses analysis, synthesis, classification, statistical, historical-comparative, retrospective, and periodisation methods. The method of primary source analysis was used, enabling the determination of the compositional and planning characteristics – the line of defensive structures of the city, the location of the castle, temples, key secular buildings and the spatial properties of the districts. Through comparative analysis method, map materials and aerial photographs, archival documents, and field studies, the preserved monumental urban relics of the city centre, dominants and accents, preservation of the territories of ancient defensive structures, and urban transformations of the city centre in the 19<sup>th</sup>-20<sup>th</sup> centuries were determined. Since the centres of historical cities of Ukraine suffered

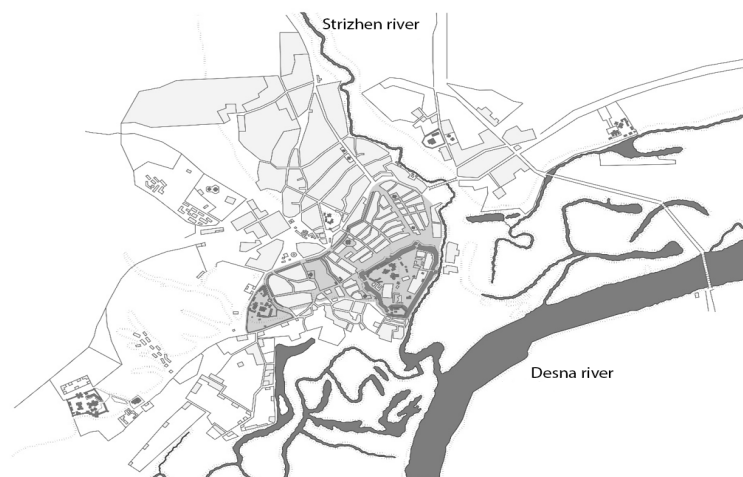
serious damage during the 19<sup>th</sup> and 20<sup>th</sup> centuries, precise attention was paid to the graphic reproduction of the line of fortifications and finding the locations of churches. This way of analysis allows identifying the spatial features of the city centre and lays the foundations for monument protection activities, contributing to the validity of the development of regeneration projects in the central part of the historical city of Ukraine.

### RESULTS AND DISCUSSION

The city centre is a special space. It is the result of combinations of geographical, social, and economic factors. Due to this, it becomes a space for the development of trade, crafts, and culture.

After the Lublin Union in 1569, royal and private cities were actively founded in Ukraine. The status of a free royal city in Ukraine was held by: Boguslav, Busk, Vinnytsia, Volodymyr, Drohobych, Haysyn, Zhytomyr, Kamianets-Podilskyi, Kyiv, Kovel, Lutsk, Lyubech, Lviv, Myrhorod, Pereyaslav, Cherkasy. [7] These cities received the Magdeburg right. It supported the development of the urban environment. For example, Richard Schygel thinks that at the beginning of the seventeenth century in the Polish-Lithuanian Commonwealth there were 932 cities. [8] The emergence of the central areas in these cities was preceded by the erection of castles or courtyards, and their development was influenced by natural and human resources, economic prosperity, territorial integration, and well-thought-out defence function (reliable boundaries of the city centre).

In the cities that continued to develop on the site of ancient Rus' settlements, the citadel was the first to change, later – suburbs and neighbourhoods (Bila Tserkva, Busk, Volodymyr, Halych, Glukhiv, Dubno, Izyaslav, Korosten, Kremenets, Novgorod-Siverskyi, Pereyaslav, Pyryatyn, Stepan, Chornobyl). For example, in Chernihiv, improvements in the urban structure of the city centre continued during the 14<sup>th</sup> and 18<sup>th</sup> centuries. At the beginning of the 19<sup>th</sup> century, the historically formed picturesque city centre with crooked streets was changed according to a new, regular urban project. At the end of the 18<sup>th</sup> century, it consisted of five original and fortified parts: the citadel, the suburbs, the surrounding city, Tretyak, and the ensemble of the Yelets Monastery (Fig. 1).



**Figure 1.** Chernihiv city centre in the late 18<sup>th</sup> – early 19<sup>th</sup> centuries. (author's study)

**Source:** author's drawing of the map of Chernihiv using various maps of the late 18<sup>th</sup> and early 19<sup>th</sup> centuries [2]



The uniqueness of this city centre is in its ingrained, stable, centuries-old urban structure. In addition, its configuration was influenced by the landscape: numerous streams, rounding off the rivers Desna and Stryzhen. The complex of churches was formed by the symbolic spatial coordinates of the centre of Chernihiv: The Salvation, Borysoglibsk, Annunciation Cathedrals, St. Michael's and Friday Churches, the Assumption Cathedral of the Yelets Monastery [2].

One of the important functions of the central area was to create security for residents. It is known that Chernihiv Colonel Pavlo Polubotok owned not only an estate outside the city but also, in case of an enemy attack, a mansion in the fortress, which consisted of a brick house, a dusty house with the passage and three hiding places with rye [9]. Another Chernihiv colonel, Yakiv Lyzohub, also had a mansion on the territory of the castle. Sometime later, the Chernihiv magistrate was housed in the Polubotok building, and the regimental chancellery operated in the Lyzohubs' house [9]. Thus, in finding a solution for the functional adaptation of buildings took into account economic, political, social, and military aspects that influenced the ways of using the buildings in the central areas. Consequently, none of the aspects became dominant over the others.

The centre was a space of key areas of urban life: work, security, education, and housing. Thus, in the northern part of the Chernihiv child on the remains of the shaft during

1700-1776, there was a well-known college in Ukraine. It was founded by a church leader and writer Ioann Maksymovych, and the model of studying was based on the European academies [2].

The difficult fate of the border outpost and the centre of the County Office affected the frequent ruin and reconstruction, composition and density of buildings of the defence complex in the central part and the castle in Lyubech. In 1609-1618 a group of Polish-Lithuanian troops was stationed in this place [10]. In the middle of the 17<sup>th</sup> century, Lyubech was passed several times from the Cossacks to the Polish-Lithuanian possession. It was in the first half of the 17<sup>th</sup> century that the castle and the city centre were burned and rebuilt. Instead, the panoramic image of 1651 by Abraham van Westerfeld represents Lyubech as a large and well-built city [11]. The castle is located on a mountain that rises 40 meters above river level. The city buildings stretched for 110 meters and were dense and full of various purposes. Churches dominated the buildings of the districts, and military-administrative buildings and shops, residential and commercial buildings, craft workshops and warehouses were located near them. The city centre, which was planned below the castle, had two gates – Kyiv and Lviv, around the perimeter. In addition, it was surrounded by a picket fence with towers. The street network was irregular and stretched toward the two churches (Fig. 2).



**Figure 2.** Lyubech city centre in the 17<sup>th</sup> century (author's study)

**Source:** the author's drawing of the graphic reconstruction of the city centre of Lyubech, which is based on aerial photography [12], a panoramic image of 1651 by Abraham van Westerfeld [11] and preserved urban relics identified by the author

In the 18<sup>th</sup> century, the central area of Lyubech expanded to the south, retaining the location of the streets. In the first half of the 19<sup>th</sup> century, a new and regular street network was planned, and the palace, park complex of the Miloradoviches, and a number of churches were built (churches of the Transfiguration and Assumption) [10].

The historical centre of Lyubech is the result of layers of changes in the cultural landscape and architectural and urban planning properties of the late 16<sup>th</sup>-19<sup>th</sup> centuries and represents a growing model of the city centre, a combination of social and physical factors. (wars, fires, reconstruction,

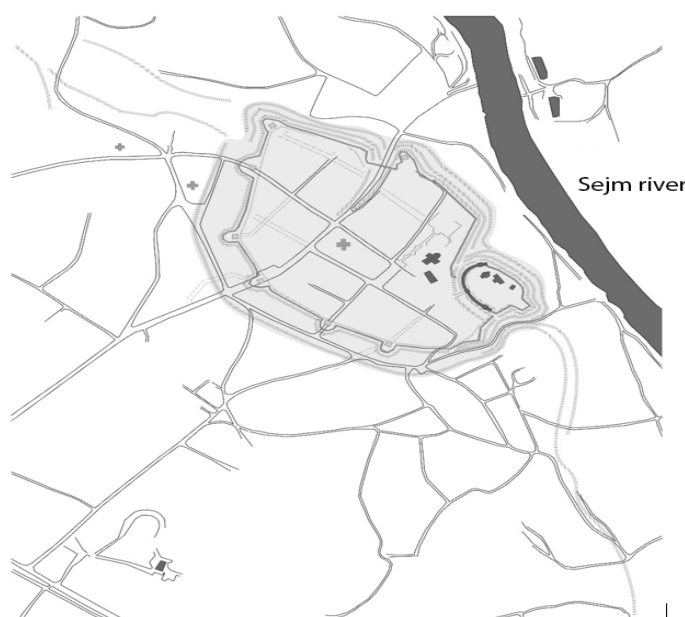
construction of buildings, churches and neighbourhoods, fortifications, and castles).

The terrible bloodshed of November 2, 1708, committed by order of Tsar Peter I of Moscow, affected the existence of the Baturyn centre. In the description of 1768, it is noted that the urban space of Baturyn consisted of three parts: the territory of the former fortress with Trinity Square and small districts of residential buildings, streets and alleys of the old planning structure (former open surroundings) and peripheral streets-forstads (urban hamlets) [13]. Preserved street network, archaeological legacy

and relics of fortifications show that the centre of Baturyn had regular planning. The city was founded in 1625, but after its capture in November 1632, it was looted and destroyed by the Moscow army [14]. In 1633-1643, under the supervision of Alexander Pyasochinski, the centre of Baturyn was comprehensively built up: it was fortified with a dry moat and a picket fence, towers and gates were built, a street network and a castle were formed over the steep bank of the Sejm River [14].

The description of 1654 states that “three gates were built in this earthen city; two gates had towers covered with the sawn board; the third gate had no tower; there were six impassable and topless corner towers. A moat was dug near this earthen city on three sides of the mountain, and the fourth, from this earthen city, up the lake, is fenced with a vertical sharp stake, there are no towers on that wall. In the middle of the guard wall, to the water, a dent was made in

the gate. In the city on the towers and on the wall, there are 9 cannons, cast iron, and iron. A wooden church of St. Nicholas the Wonderworker was built in the city. A manor house was built in the city above the lake and on the mountain; a moat and an earthen embankment were made near the mansion; the embankment is fenced with a vertical sharp stake of oak logs. In the centre of that fortification was a gate with a tower, and there are three impassable towers covered with graters; a moat was made on this side near this yard and near the guard walls; this fortification was divided into two parts by a vertical sharp stake and two ditches were made near these walls” [14]. During 1669-1708 Baturyn developed as a capital city, where councils of leaders met several times a year. In the second half of the 17<sup>th</sup> century, the defensive perimeter was strengthened around the centre, earthen mounds like bastions were formed around the towers, and churches, palaces, mansions, and houses were built [15] (Fig. 3).



**Figure 3.** Baturyn city centre in early 18<sup>th</sup> century

**Source:** the author’s drawing of the graphic reconstruction of the city centre of Baturyn, which is based on modern aerial photography [16], preserved urban relics identified by the author

After the devastation, the settlement did not recover. In 1726, “the city of Baturyn is completely empty, and all walls around it have collapsed, it is all in thickets. There are no new or old buildings in both castles” [17]. Instead, in the middle of the 18<sup>th</sup> century, shops and taverns began to operate “in an urban place”, and several residential mansions were built [18]. The materials of Rummyantsev’s description of 1765-1769 show that the city was mainly built up of wooden houses and outbuildings: barns, stables, cowsheds, and granaries [13]. Hetman Kyrylo Rozumovskyi in the second half of the 18<sup>th</sup> century tried to revive the city, but his plans were not fulfilled because he was pushed to the margins of political life by Russian empress Catherine II.

For a few decades, the centre of Baturyn in the South-Western part was fortified with a segment of wooden walls with towers and gates, near the castle was the Market Square with the architecturally dominant Holy Trinity Cathedral,

and the territory was divided into regular districts with tidy buildings.

Thus, the integrated development of Baturyn centre was interrupted by a punitive operation by the Russian army. Unfortunately, the technologies and talents later brought in by Kyrylo Rozumovskyi failed to restore Baturyn’s physical environment.

The centre of Romny was formed as a result of three stages of the spatial development of the city. Comparing historical cartids of the 17<sup>th</sup>-19<sup>th</sup> centuries with modern topographic sub-foundations, the following transformations of the urban space in the centre of the city are highlighted: – the structure of the city centre of the first stage: City (Castle) – Suburb – Outskirts. Such a structure is inherent in Ukrainian cities of the times of Kievan Rus in the 12<sup>th</sup>-13<sup>th</sup> centuries; – the structure of the city centre of the second stage: City – Suburb – Outskirts is preserved, but,



unlike the first stage, the construction of a wooden fortress with rectangular towers in the plan, inherent in the culture of the Cossack era of the 17<sup>th</sup> century, begins; – after the war, the structure of the third stage of the development of the city centre changes substantially. The city (Castle) is preserved, and new parts of the city are being formed: Zapadynets, Mohylyki, and Monastyryshche [19]. At the beginning of the 18<sup>th</sup> century, the transformation of the fortress from quadrangular to pentagonal form began. In the first half 19<sup>th</sup> century, all defensive lines of fortification were demolished and the main streets of the city were formed, preserved to this day. The rise of the central part dates back to the 18<sup>th</sup>- early 19<sup>th</sup> centuries. Therewith, the volume of the city centre

increased and its temples and fortifications were transformed. In the second half of the 18<sup>th</sup> century, Romnys defensive perimeter was in the shape of an irregular hexagon with five pentagonal bastions and one quadrangular one. People entered the central area through four gates with gate towers: Pryhorodska, Monastyrska, Mykilska, and Zhytyanska (Fig. 4). In 1786, surrounded by ramparts, the centre was decorated with a brick church of the Descent of the Holy Spirit and a bell tower, wooden churches of the Assumption of the Virgin and St. Nicholas, 133 burgher houses, two schools with wooden churches, a hospital with a cathedral, 146 shops, and 11 taverns. The area between the Cathedral and the Church of St. Nicholas was the venue for all fairs until 1804 [19].



Figure 4: Romny city centre at the end of the 18<sup>th</sup> century

Source: the author’s drawing of the city centre of Romny based on a map of the end of the 18<sup>th</sup> century [2]

In the first quarter of the 18<sup>th</sup> century, the majestic mansion of General Andriy Markevich, standing on a high hill behind the Cathedral of the Assumption, was iconic. The house had deep cellars with strong doors, and the windows on the first floor were protected by iron bars. Andriy Markevich became the founder of the Church of St. Nicholas [19]. General Obozny also became the founder of the brick cathedral church of the Descent of the Holy Spirit, in the crypts of which he was buried with his wife Anna Markevych [19]. During the end of the 18<sup>th</sup> and the first half of the 19<sup>th</sup> centuries, all the defensive lines of the city centre were completely levelled, and new streets were built, which still exist today (Lermontov and Pushkin streets). The idea of strategic planning, communication links between the city centre and the suburbs, and moderate building density were implemented in Romny.

The essence of the idea of the capital’s Hetman’s city influenced the centre of Chyhyryn. Its spatial design was determined by the castle hill and located in the valley. The castle had a triangular outline formed by wooden earthen and brick walls, bastions and ravelins were located in the corners and strategic places. The central area stretched to the east of the castle hill and to the bend of river Tyasmin surrounded by stone walls, wooden palisades, a rampart, a moat, and wooden towers [20] (Fig. 5). The urban framework of the city centre was based on the intersection of arched and curved radial streets. Important churches stood out among the one-story wooden buildings. Thus, during his visit to Chyhyryn, Paul of Aleppo, together with the Patriarch of Antioch Macarius III, mentions in his diary (August 12, 1656) that they defended the noon liturgy in the Church of St. John the Theologian, and records the existence of the Church of the Assumption [21].



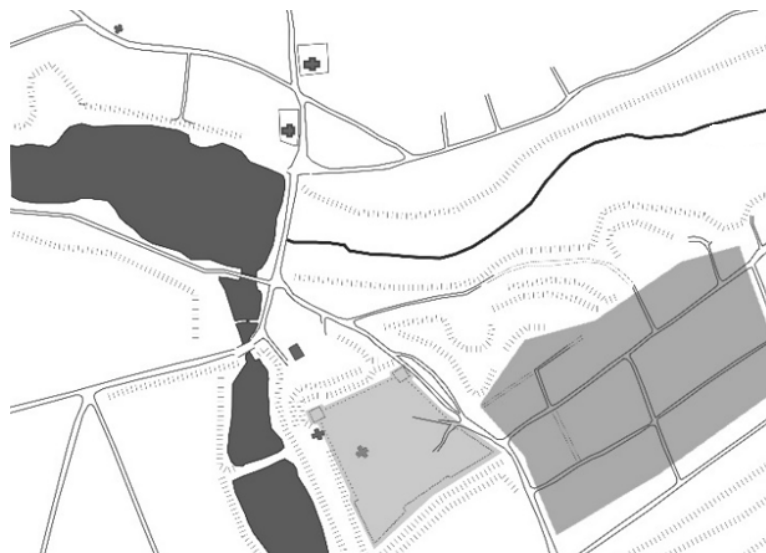
**Figure 5.** Chyhyryn city centre at the end of the 17<sup>th</sup> century

**Source:** the author's drawing of the graphic reconstruction of the city centre of Chyhyryn, which is based on P. Gordon's map of 1678 and the corrected north-south orientation [2]

The previously mentioned cities developed, functioned, and substantially influenced the cultural and political history of Ukraine. However, there were those that existed for a short period of time (Motovylyvka, Novy Konetspil, Zhyvotiv, Kalnyk, Stavyshcha, Kopyivka, et al.); on the other hand, they were important for Ukrainian urbanism because they represent valuable examples of spatial urban planning complexes in the centre of the city. A valuable example of such a complex is Motovylyvka.

The centre of Motovylyvka is characterised by antiquity and complexity of creation. Local historian Lavrentiy Pokhylevych, referring to folklore, writes that Motovylyvka was a city of Mina, where Greeks lived in over 600 houses. The castle and the church were fortified in the city, which was located where the house of the landowner Rulikowski stands. The ramparts and ditches that surrounded the ancient castle mostly existed in the middle of the 19<sup>th</sup> century. After the invasion of the Pechenegs, the settlement was completely destroyed and was called the Empty settlement. Later, after the new development, it was called Gulyanyky.

The settlement passes through different owners. In 1560, Prince Constantine of Ostrozhsky donated the estate to Ivan Motovylyvets, whose name became the name of the estate. In 1595 King Sigismund III presented Motovylyvka to Kyiv Zemstvo Judge Yan Aksak [22]. During 1608-1613 he worked on the selection of sites for the construction of fortresses in Ukraine to defend the borders. That is why he became the creator of the Motovylyvka citadel, which was already presented in the lustration of 1616: "The city is newly inhabited on empty soil and with new roots, together with the castle, on the Black Way itself, built largely with the funds of Yan Aksak. The castle has 4 well-fortified towers, each with two walls, deep and high shafts around, and buildings surrounding it. There is also a fence around the city with two walls, 8 larger towers and 15 smaller ones. The city has over 300 inhabited houses" [23]. In the 1630s, Stefan Aksak built a Catholic chapel in the castle [23]. In 1664, Stefan Charnetsky built bastions near the ramparts in Motovylyvka, one of which was still preserved in the second half of the 19<sup>th</sup> century and was called "Charnetsky's rondel" [23] (Fig. 6).



**Figure 6.** Motovylyvka city centre in the 17<sup>th</sup> century

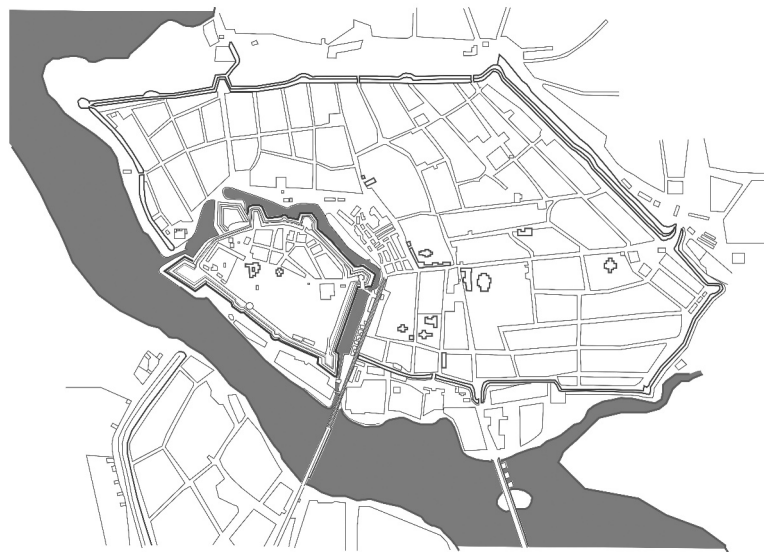
**Source:** the author's drawing of the graphic reconstruction of the city centre of Motovylyvka, based on modern aerial photography [24], recording preserved urban relics and fragments of fortifications

The description of Motovylyvka in 1725 indicates the decline of the city: “There are few houses in this castle, only a hut, an alcove, and a barn, a cellar, and a few cowsheds. There is a tavern in this city” [23]. In the second half of the 18<sup>th</sup> century, before the first partition of the Polish-Lithuanian Commonwealth, the castle hosted border courts of disputes between the inhabitants of Poland and Russia [22]. In Motovylyvka there were two churches – the Intercession and the Virgin Mary ones. The Church of the Virgin Mary was old, in the audit of the Fastiv deanery in 1746 it is stated that it was wooden with three domes, next to it there was a bell tower with 5 bells, and the courtyard was fenced with oak piles [22]. The culture of the city began to develop more actively during the time of Józef Rulikowski, who built a brick palace, laid out a park in the English style, and founded the roman catholic church in 1809 [23].

The spatial morphology of Motovylyvka is linear: the castle was located above the steep slope of the pond, and to the east of it stretched the cite centre. In the north,

the urban defence complex was protected by the Stugna River and its steep banks. Motovylyvka was an example of a military city. This is evidenced by the large area of the castle, which is only twice smaller as the centre. The street frame was marked by thoughtfulness and regularity. In the example of the urban complex of the castle and the central area in Motovylyvka noticeable defining ideas: joint solution to defence problems, the effectiveness of economic practices, and lack of socio-spatial polarisation.

From the end of the 20<sup>th</sup> century until today, the architectural and urban development of centre of Nizhyn has been unbalanced. The ancient Rus’ city was destroyed by the army of the Mongol Empire in 1239-1240. According to the Deulin Treaty of 1618, Nizhyn became part of the Kyiv Voivodeship. This affected the development of the city centre. The development of the architectural environment became consistent after 1625 when the city received the Magdeburg right. During the 17<sup>th</sup>-18<sup>th</sup> centuries, the castle complex and the environment of the Old and New cities were built (Fig. 7) [2].



**Figure 7.** Nizhyn city centre in the 18<sup>th</sup> century

**Source:** the author’s drawing of the city centre of Nizhyn, which is based on the map of 1773 [2]

The fortifications of the castle and the city centre require constant care. For example, the voivode Ivan Rzhevsky wrote in 1665 that the city wall of Nizhyn collapsed in many places, in the upper earthen city were eleven towers and in each of them – ten cannons [15]. In 1679, the legends also state that the city wall collapsed, and the towers and huts of the guards were old and decaying. It was mentioned that during the next 100 years the fortifications of the castle and the city centre did not improve, as the record of 1786 states: “The city wall almost completely collapsed, only holes remained in the places of the four gates” [25]. In 1655-1658 the Nizhyn colonels brothers Ivan and Vasyl Zolotarenko funded the construction of the Mykolayiv Cathedral on the market square [26]. During 1702-1716, the Annunciation Cathedral of the Convent was built according to the project of the architect Hryhoriy Ustinov, the efforts of Metropolitan Stefan Jaworski and the financing of Hetman Ivan Mazepa [27]. In the first quarter of the 18<sup>th</sup> century, the Old Castle was rebuilt: it was expanded, and an eastern bastion with a fort

was added, thus forming the New Castle. In this century the districtal system of streets of the city centre is developed. The role of the urban framework was performed by four streets: Moskovska, Chernihivska, Kyivska, and Romenska.

In 1721, a new one was built on the site of the old Epiphany wooden church located on the territory of the Old Castle. In the 18<sup>th</sup> century, Nizhyn construction of brick churches began instead of wooden ones: in 1733 the Trinity Church was built, and in 1757 the Church of St. Barbara was built on the site of the Savior Transfiguration, in 1762 the Assumption of the Blessed Virgin Church of the Nativity of the Virgin was built in Pokrovskaya, in 1775 built the Exaltation and Vvedenskaya convent of the same name, in the 1780s at the Church of the Intercession built a warm church of St. Mykolas, in 1788 on the site of Panteleimon was built by Panteleimon-Vasylevsky [28].

In the second half of the 18<sup>th</sup> century, a number of important buildings of the city centre were built along Moskovska Street: in the middle of the 18<sup>th</sup> century a powder cellar was



built on the territory of the castle; in 1771 the building of the city magistrate was built according to the project of architect Andriy Kvasov, in the 1770s involving Andriy Kvasov trade rows and several shops with barns were constructed, in 1777 Mykhailo Ligda's pharmacy was built, at the end of the 18<sup>th</sup> century the city council was established [2].

The Nizhyn magistrate was assembled in the form of a slender, majestic, and compositionally designed two-storey building, topped by a two-story clock tower. On the central axis of the first floor was a large through passage highlighted on the facade by an arched portal. Arcades of trade rows with cool cellars stretched on two sides of the magistrate's building. Architect Andriy Kvasov designed the complex of the magistrate "shops of different sizes covered with brick vaults, large and small living rooms covered with vaults, halls with two stairs, on the courtyard side the building had a porch with a gallery on supports, on the second floor a large oval hall, oval hall for petitioners, small and large rooms 12, near the hall 2 small passage rooms, on both sides of the house two entrance gates to the courtyard, large and small shops for rent, in front of the shops' passage galleries with attics and colonnades" [29].

After the fire of 1798, the renovation of the magistrate in Nizhyn continued under the supervision of the Chernihiv provincial architect Anton Kartashevsky, who made drawings of the facade and floor plans of the building [30]. Unfortunately, in 1849 the ostentatious building of the magistrate was completely dismantled, [31] since the self-governing city management system ceased to exist in the Russian Empire, and the side arcades and shopping malls were dismantled in the late 1950s. [32]. In the 1780s, the architectural complex of the Nizhyn Post Office was built. It consisted of a post office, the director's apartment, a hotel, two offices, a station supervisor's house, a pit room, stables, a carriage house, and a fodder warehouse. The architectural space of Nizhyn centre is filled with private wooden houses. Although a number of tenement houses appeared at the end of the 18<sup>th</sup> century (the house of Colonel Peloponov, General Capuani, Captain Shaula of Nosiv, and iconic comrade Velychkivsky), the city's residential buildings still remained mostly wooden [33].

During the 18<sup>th</sup> century, the Greek district in the old city was vigorously formed. A powerful religious, administrative, commercial, and educational centre of the Greek community was established in this place. In 1729 the parish church of Archangel Michael was erected and in 1760 the Church of All Saints was built. In 1817 a Greek school was built [2].

The first Greek magistrate appeared in the late 1720s near the churches of Archangel Michael and All Saints. It consisted of three administrative and two utility rooms [32]. In the 1790s it was rebuilt, probably according to the project of the provincial architect Anton Kartashevsky [32]. The administrative building was designed in a classicist style, two-story, the plan had a complex outline and consisted of the main building, east and west office, and two side buildings. In 1872, the Greek magistrate was liquidated [32]. The city and Greek magistrates created an unsurpassed ensemble in the centre of Nizhyn. In the 19<sup>th</sup> century, there was a

decline in the economic and architectural development of the settlement, it lost the status of a regimental city. In the first half of the nineteenth century, fair trade ceased, and in 1831 the Magdeburg Law was abolished [34].

The centre of Nizhyn is an example of such an integrated development, the signs of which are manifested in different parts – the old and new castle and central area, market square, densely and sparsely built-up neighbourhoods, temples, and suburbs. During the 17<sup>th</sup>-18<sup>th</sup> centuries, the city used critical management of economic growth and introduced the principle of a compact urban environment. Notably, in the construction of the temple emphasis was placed on quality and diversity. During this period, urban and greek self-government bodies had a high level of freedom in regulatory and financial matters, economic and trade contacts with many cities were actively expanded.

## CONCLUSIONS

The several examples considered in the study show that the tradition of integrated development of the centres in historical cities of Ukraine is ancient. City governments and magnates in different ways supervised safety, production, and trade infrastructure, and improved the public space of market squares. The centres of the historical cities of Ukraine developed individually, had different goals and opportunities, used separate resource engagements and tried to achieve similar results – a harmonious socio-economic environment. Unfortunately, there was a destruction of the central areas of the historical cities of Ukraine as a result of the aggression by Moscow-Russian troops during the 17<sup>th</sup> and early 21<sup>st</sup> centuries.

In the centre of Chernihiv, none of the aspects of the functional use of territories (economic, political, social, and military aspects) became dominant over the others. In Lyubech, city centre represents the idea of a cultural palimpsest and the expansion of architectural and urban planning spaces during the end of the 16<sup>th</sup> and 19<sup>th</sup> centuries. In Baturyn, an ambitious plan for the development of the capital city centre, which was destroyed by Russian troops, is presented. In Romny, the centre was developed involving the strategic planning of the settlement. In Chhyryn, the city centre represents the idea of a strong and developed capital of Hetman Ukraine in the second half of the 17<sup>th</sup> century. Motovylovka represents the principle of the military development of the settlement. Nizhyn city centre is an example of a compact urban environment focused on economic growth and the establishment of ideals of self-government.

The results of the study are important for the expansion of knowledge in the history of Ukrainian urban planning and the highlighting of city identity. In the future, it is worth continuing the investigation of the architecture of the lost churches, palaces, and administrative objects, and archaeological examination of the line of city centre fortifications.

Therefore, the logical area for the long-term continuation of the development of historical cities of Ukraine is the analysis and reproduction of historical and urban traditions, active implementation of projects of revitalisation and restoration of tangible cultural legacy.

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## **Інтегральний розвиток середмість історичних міст України**

**Анотація.** Предметом аналізу статті є ознаки інтегрального розвитку та причини перерв успіху історичних міст України. В сферу дослідження потрапили середмістя з різних за розміром та функціональним призначенням поселень: Чернігів, Любеч, Батурин, Ромни, Чигирин, Мотовилівка, Ніжин. Вони засвідчують, що традиція інтегрального розвитку середмістя історичних міст України є давньою. Міське самоврядування та магнати в різний спосіб дбали про безпеку, виробничу та торговельну інфраструктуру, якісно виправляли громадський простір ринкових площ. Середмістя історичних міст України розвивалися індивідуально, мали різну мету і можливості, застосовували окремі ресурсні залучення та намагалися здобувати схожі наслідки – гармонійне соціально-економічне середовище. Нажаль ґрунтовні руйнування простору середмість історичних міст України відбулися внаслідок агресії московсько-російських військ впродовж 17 - початку 21 століть. В підсумку зазначено, що логічним напрямком перспективного продовження розвитку історичних міст України є аналіз і відтворення історико-урбаністичних традицій, активне впровадження проектів ревіталізації та реставрації матеріальної культурної спадщини. В статті використано методи структурного аналізу просторових характеристик планування та функціонально-територіальних особливостей середмістя, опрацювання і вибірка інформації в літературних та архівних джерелах. Мета дослідження – визначити ознаки інтегрального розвитку середмістя історичних міст України. Результати дослідження можуть бути використані у пам'ятко-охоронній діяльності та практичних роботах з регенерації центральної частини історичних міст України

**Ключові слова:** послідовне зростання, центр міста, оборонний чинник, соціально-економічне середовище, містобудівний комплекс



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### **Cultural Diffusion in the Architecture of the Ancient World (on the Example of the Cult of Isis in the 3<sup>rd</sup> Century BC – 2<sup>nd</sup> Century AD)**

**Abstract.** The practice of borrowing and mixing architectural forms and meanings from different cultural environments dates back to the architecture of the ancient world and is still relevant today. Therefore, discovering its origins, mechanisms and causes of development is an important subject in the theory and history of architecture. The purpose of the study is to introduce the concept of cultural diffusion, as a methodological technique for mixing architectural forms from different artistic environments, which contributes to the development of qualitatively new solutions that form new architectural styles and synthesise new meanings. It is also vital to substantiate the phenomena of cultural diffusion as the first and necessary stage of subsequent processes of development of architectural meaning and shape – the stage of conscious and reasonable choice of an architectural prototype for a new design. The main material for the study is objects related to the cult of Isis – one of the most common religious cults in the architecture of the ancient world, which belonged to the Greco-Roman civilisation. In terms of methodology, the study is based on the analysis and systematisation of papers on architectural objects associated with the cult of Isis, and the results of visual observations (description and comparative analysis). Using the example of architectural objects associated with the cult of Isis, the study demonstrates that in the architecture of the ancient world, various methodological approaches were developed in architectural form-making: both autonomous processes in different cultures and mixed, which involved the capabilities and means of various cultural environments, opening unlimited prospects for the development of architectural form and meaning. Scientific originality is the interpretation of the process of cultural diffusion as an important methodological prerequisite for a new architectural form and meaning development. This determines the practical importance of the study, since the phenomenon of cultural diffusion, as a methodological technique for the architect's work, is still relevant today

**Keywords:** Ancient Egypt, Hellenistic Greece, imperial Rome, architectural form making, interaction of cultures, temples of Isis

#### **INTRODUCTION**

One of the most important problems in architectural theory is the emergence and development of an architectural form. How does a new form arise, and why are such forms of buildings appear during a certain period of development, which later will be called the embodiment of certain architectural styles? What is the driving force of form-making and what are its methods? This problem may remain rhetorical in the theory of architecture but attempts to answer these questions will always be relevant for researchers.

This study notes that in the architecture of the ancient world, mechanisms for generating a new architectural form were laid, one of the prerequisites for a new form establishment was the phenomenon of cultural diffusion – the blurring of clear boundaries between different cultural environments, their interpenetration, and enrichment. The combination of elements from the different environments in one artwork was an important methodological technique in design and opened new opportunities for form-making.

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The scientific originality in this study is not the object under consideration – the use of Greek motifs in Egyptian Architecture or Egyptian motifs in Greco-Roman art in the example of the cult of Isis, but the interpretation of this process as the first and necessary stage for the establishment of such a phenomenon as historicism in architecture, where borrowing and conscious mixing and combination of elements from previous cultures is the methodological basis for the architect's creativity. This determines the practical importance of this study, since the phenomenon of cultural diffusion, as a methodological technique for the architect's work, is still relevant today.

The study is based on papers covering the architecture of Hellenistic Egypt and imperial Rome, in which the leading subject is the idea of mutual influence and mixing of different cultural traditions. The general theoretical basis was the work of R. Hausser, G.F. Chiana & K. Lembke [1] "Interpretatio Romana/Graeca/indigena. Religiöse Kommunikation zwischen Globalisierung und Partikularisierung". The study substantiates the phenomenon of "interpretatio Graeca" – the process of finding analogues to other deities in one's own religious tradition. This interpretation is an essential theoretical prerequisite for the development of cultural diffusion. J. Candeias Sales [2] in the study "Political Ideas Expressed by Visual Narratives: The Case of the Ptolemaic Egyptian Temples" explores the iconography of Egyptian temples from the time of the Ptolemies, connecting its themes and plots with the political goals of the ruling dynasty, to legitimise non-Egyptian pharaohs as the legitimate rulers of Egypt. For this purpose, the entire dictionary of millennial Egyptian artistic tools of "symbolic codified meaning" was used in combination with new Hellenistic symbols of the new power. The studies of M. Minas-Nerpel [3] "Egyptian Temples" and "Pharaoh and Temple Building in the Fourth Century BCE" [4] are devoted to the architecture and decoration of temples in Ptolemaic Egypt.

A separate group consists of studies devoted to the cult of the Egyptian goddess Isis in the architecture of the Greco-Roman world since the process of cultural exchange is investigated on its example. The subject of Isis is not fundamentally new and is widely discussed in the scientific literature. Some aspects of the cult functioning in Ancient Rome and their importance in the political and social systems are analysed based on the papers of E. Huzar [5] "Roman-Egyptian relations in Delos", C. Teixeira [6] "The Cult of Isis in Rome: Some aspects of its Reception and the Testimony of Apuleius' *Asinus Aureus*", V. Broadbent [7] "Augustus, Egypt, and Propaganda", in generalised works [8; 9], P.J.E. Davies [10] "Aegyptiaca in Rome: *Adventus* and *Romanitas*. In *Cultural Identity in the Ancient Mediterranean*", O. Perechko [11] "Religious policy of the Roman government of the principate era (I-II Centuries AD): Traditional and foreign cults", L.H. Petersen [12; 13] "The Places of Roman Isis: Between Egyptomania, Politics, and Religion".

An important basis for the study was papers devoted to individual objects of the cult of Isis in Ancient Greece and Ancient Rome: E. Huzar [5] "Roman-Egyptian relations in Delos" (architectural features of the Temple of Isis

on the island of Delos), V. Kockel [14] "Towns and Tombs: Three-dimensional Documentation of Archaeological Sites in the Kingdom of Naples in the Late Eighteenth and Early Nineteenth Centuries", M.E. Moormann [15] "The temple of Isis at Pompeii", I.A. Bragantini [16] "Note on the Temple of Isis at Beneventum". They discover the history of the uprising of objects and analyse the features of their architectural design in the context of the influences of Egyptian culture.

The architectural features of Villa Adriana in Tivoli were analysed from the publications of Z. Mari & S. Sgalambro [17] "The Antinoeion of Hadrian's Villa: Interpretation and Architectural Reconstruction", Z. Mari [18] "Villa Adriana" & Ch. Jencks [19]. The first two publications were important not only from a historical standpoint but also because they present the reconstruction of the villa. Aspects of the use and mixing of forms of different cultures in the architecture of Villa Hadrian were also examined in the study of S. Linda [20] "The Phenomenon of the "Greek Renaissance" in the Architecture of Imperial Rome". Thus, the papers presented above formed a solid scientific foundation, since the importance and features of the cult of Isis in the ancient world were determined on their basis, its influence on the architecture of objects associated with the cult, and reconstructions of buildings that do not exist today were presented.

However, the issue of cultural diffusion as a methodological basis for the development of architecture was not considered. This determines the scientific originality of this study: the interpretation of the phenomenon of cultural diffusion has become a prerequisite for the search for new meanings in the architecture of the ancient world and remains an important methodological technique in modern design practice.

*The purpose of the study* is to demonstrate that cultural diffusion, or interaction, is an important mechanism of form-making in architecture, which contributes to the development of qualitatively new solutions that reflect the characteristic features of various cultural environments. This is demonstrated by the example of objects belonging to the cult of the Egyptian goddess Isis since this particular cult was one of the most widespread at the turn of the millennia before and after the common era in Greco-Roman civilisation. It is also important to show that the practice of cultural diffusion has become an essential prerequisite for subsequent processes of conscious interpenetration and mixing of architectural forms from different environments.

## MATERIALS AND METHODS

The general philosophical basis was the dialectical method, which consists of cognition of reality in its inconsistency, integrity, and development. The object of research appears as an important link in the solid, indissoluble process of architecture development, the appearance of which is due to certain reasons, and which itself becomes the foundation for subsequent architectural development.

The following empirical and theoretical research methods were used in the study. Empirical methods included: observation, description, and photo fixation of objects under study. Theoretical methods included working with literary sources (analysis, systematisation, and generalisation of

scientific monographs and papers); the analysing of objects according to the following criteria: planning structure, characteristic details and fragments; the semiotic analysis to identify symbolic meanings of objects; synthesis, comparison, and generalisation methods were used to form conclusions.

The first stage included the determination of the study subject, outlining the chronological boundaries of the study: this is the time approximately from the 3<sup>rd</sup> century BC – to the 2<sup>nd</sup> century AD – the time of the spread of the cult of Isis. The territorial boundaries of the study were also defined – countries that belonged to the Greco-Roman civilisation, where the cult of Isis was most widespread: Ptolemaic Egypt, Ancient Greece, and Rome.

In the second stage, based on papers, specific objects were identified for analysis: in Egypt, these are temples from the time of the Ptolemies (the temple of Khnum in Esna, the temple of Sebek, Hathor and Khonsu in Kom Ombo, the complex of the Temple of Isis on Philae island near Assuan), in Ancient Greece – the temple of Isis on the island of Delos, and in Ancient Rome – the temple of Isis and Serapis in Rome, the temples of Isis in Pompeii (frescoes are kept in the National Archaeological Museum in Naples) and Benvenuto. Separately, another object was used to complete the analysis – Villa Adriana in Tivoli near Rome. Although the architecture of the villa is not directly related to the cult of Isis, it is nevertheless a typical example of the final phase of cultural diffusion in architecture – the conscious involvement of another culture in one object to generate new forms and meanings.

In the third stage, all identified objects were examined, and their description and photo recordings were performed. Unfortunately, many of them have become ruins or minor remains (the temple of Isis and Serapis in Rome, the temple of Isis in Benvenuto, the objects of Villa Hadrian in Tivoli), so the text part of the study is based on the analysis of literary sources that are devoted to the history of their erection, development, and scientific reconstructions. The analysis of the papers was conducted in parallel since this is an important part of the methodology of this study. Works of general nature and those devoted to individual objects were analysed.

The fourth stage included the analysis from the aspect of planning design, borrowing elements from another cultural environment, their importance in the overall architectural image of the building and the meaning of the object. Also at this stage, the comparison of the objects was conducted.

During the last, fifth stage, methods of systematisation and generalisation were used to formulate the conclusions of the study.

## RESULTS AND DISCUSSION

***The Hellenisation of Egyptian architecture during the Ptolemaic period.*** The creation of the Empire of Alexander the Great in the 3<sup>rd</sup> century BC substantially influenced the worldview of the people of that time since the new society was a cultural synthesis of East and West. This was a time of widespread use of various mystical trends, characterised by religious and philosophical syncretism. A unique example is Ptolemaic Hellenistic Egypt, where the emergence of new cults was closely linked to the geopolitical situation, in the context of which religion was skillfully used for specific ideological purposes to strengthen power. Ptolemaic Egypt was home to representatives of various ethnic groups, dominated by the Egyptians and Greeks, who created new syncretic types of artworks that absorbed the features of both traditional Egyptian and Hellenistic culture. Such an example is the cult of the Egyptian goddess Isis, which changed substantially in Hellenistic times due to the interaction of cultural and religious traditions of different peoples. Nevertheless, the modernised Cult of Isis very quickly gained popularity among the local residents. Probably, one of the reasons was the phenomenon of “interpretatio Graeca”, that is, a process during which the Greeks found analogues to other deities among their own religious tradition since the elements of the cult of the Egyptian gods easily fit into the religious consciousness of the Greeks [1]. Thus, Isis was identified with Demeter, who was credited with the unique power of fertility and maintenance of life on Earth (Fig. 1). At that time, the cult of Isis was a serious rival to early Christianity and Mithraism. These processes were also reflected in the architecture.



**Figure 1.** Marble statue of Isis from the Temple of Isis in Pompeii. 1<sup>st</sup> century AD

**Notes:** In her hands, the goddess holds attributes that in ancient times were considered an integral part of her image: the sistrus in her right hand (a musical instrument), which is now lost, and the Ankh in her left hand – the key to the afterlife. Elements of the ancient archaic tradition (hairstyle, large rounded eyes) are combined with motifs of traditional Egyptian art (characteristic posture, body outlines visible under clothing)

**Source:** photographed by the author at the National Archaeological Museum in Naples (Italy) in 2021

As noted above, after the conquest of Egypt by Alexander the Great, and later, the establishment of the Ptolemaic Kingdom, there is an inevitable, but a productive synthesis of local artistic culture with the traditions of Ancient Greece. Mainly, this involved the construction of temples, which were an important political and diplomatic tool for strengthening power. The Ptolemies called themselves pharaohs and left many of their images in the traditional Egyptian manner in the decoration of temples. Kings from the Ptolemaic dynasty were represented in traditional clothing and symbols, with typical gestures, legitimising their presence as kings from the family of ancient Egyptian pharaohs [2].

The originality of the new synthesising style is demonstrated by the temples of Ptolemy III in Karnak, the

temple of Horus in Edfu, the temple of Khnum in Esne, the temple of Hathor in Dendera, the temple of Sebek, Hathor, and Khonsu in Kom Ombo. In total, over a hundred temples were built from the Mediterranean to the Nubian desert, from the oases of the Western Desert to the Red Sea [3]. A special place among them is occupied by the Isis complex on Philae Island, called by Herodotus “the Pearl of Egypt” (Fig. 2). The Isis complex was built by the order of Pharaoh Ptolemy II (reigned in 285-246 BC) and his successor Ptolemy III (reigned in 246-221 BC). Subsequently, the temple complex was decorated during the imperial period during the time of the emperors Augustus and Tiberius (27 BC – 37 AD). Even in the second century AD, Emperor Hadrian (reigned in 117-138) was still completing the gate [4].



**Figure 2.** Temple of Isis from Philae Island (Agilkia island), Assuan, Egypt. 3<sup>rd</sup> century BC – 2<sup>nd</sup> century AD

**Notes:** General view of the temple complex from the river Nile

**Source:** photographed by the author in the city of Assuan (Egypt) in 2019

Temple of Isis from Philae Island is a complex of buildings located on the island of Agilkia (the temple was moved from Philae Island in 1972-1980 due to its flooding during the construction of the Assuan dam). The complex is characterised by a picturesque and asymmetric urban planning structure. Two columnar porticos lead directly to the temple building, which is slightly shifted from the axis of the main entrance, two more temples devoted to Nubian deities and a chapel of Imhotep are located nearby. To the east of the Temple of Isis, under the rule of Ptolemy VI, a small temple of Hathor was built, and to the south of it – one of the most beautiful structures on the island – the famous Trajan’s Kiosk with fourteen capitals in the form of flowers, above which were to be

carved sculptural faces of Isis-Hathor. To the west of the temple of Isis was the “Hadrian’s gate”, decorated in the 2<sup>nd</sup> century in the Egyptian style. The island also has two nilometers – small pools that were used to measure the water level in the Nile. Nilometers were the property of Hellenistic times [4].

The temple of Isis, like other temples of the Ptolemaic era, was extremely richly and intricately decorated, full of peculiar visual narratives. For example, the pylons of the temple were like giant political posters that visualised certain references: the victory of Pharaoh Ptolemy XII (Cleopatra’s father), depicted in the traditional pose of the Pharaoh. He stands and holds his kneeling enemies by the hair, ready to sacrifice them to the temple deities Isis, Horus, and Hathor [2] (Fig. 3).



**Figure 3.** Decoration of the first pylon of the Temple of Isis from Philae Island (Agilkia island), Assuan, Egypt

**Notes:** The relief depicts the victory of the non-Egyptian pharaoh, Ptolemy XII, over his enemies by traditional iconographic means

**Source:** photographed by the author on the island of Agilkia near the city of Assuan (Egypt) in 2019

In fact, such a rich, complex decoration with polychromy, which is often repeated thematically and compositionally, can be found in other temples (for example, the Temple of Horus in Edfu), researchers associate precisely with Hellenistic influences that transformed the established

norms of depiction [2]. Thus, pharaohs from the Ptolemaic dynasty can also be seen with Greek attributes, as, for example, on the columns of the Temple in Esne, the Pharaoh is depicted with a laurel wreath in his hands, which was a symbol of victory in Ancient Greece (Fig. 4).



**Figure 4.** Decoration of the column of the hypostyle hall of the Khnum temple in Esne, Egypt

**Notes:** Hellenistic element in the traditional image of the pharaoh: in his hands he holds a laurel wreath – a symbol of victory in the Greek world

**Source:** photographed by the author in the city of Esne (Egypt) in 2019

A characteristic feature of the Egyptian temples of the Ptolemaic era was their picturesqueness, which was manifested in the asymmetric overall composition of the temple complex (the asymmetry was inherent in the Greek urban planning tradition, and not the Egyptian one, where strict symmetry

was always preserved), in the variety of forms of capitals, in the richness and complexity of decoration, in the combination of various plant themes in one element. All this can be attributed to the influence of the architecture of the Hellenistic era, which tended to be excessively decorative (Figs. 5, 6).



**Figure 5.** Capitals of the hypostyle hall of the Temple of Sebek, Hathor and Khonsu in the city of Com Ombo, Egypt

**Notes:** The columns of the hypostyle hall have various capitals of complex, combined shapes

**Source:** photographed by the author in the city of Com Ombo (Egypt) in 2019



**Figure 6.** Capitals of the portico of the Temple of Isis on the island of Philae (Aglikia island), Assuan, Egypt

**Notes:** The portico Capitals have different shapes, which gives the impression of picturesqueness and excessive decorativeness

**Source:** photographed by the author on the Agilkia island near the city of Assuan (Egypt) in 2019

However, long before the conquest of Egypt by Alexander the Great, Greece, at least from the archaic to classical periods, was already facing Isis through trade with Egypt, particularly in Delos, which was an important trading dock during the Hellenistic period. Migrations from Greece to Egypt and Egyptians to Greece also contributed to the introduction of Isis in the Greek world. Evidence of these long-term connections is the Temple of Isis on the island of Delos, near the Mykonos Island in Greece. A small Doric

temple in Anta was built in the 2<sup>nd</sup>-1<sup>st</sup> century BC [5]. The Sanctuary of Isis was not the only temple dedicated to the Egyptian deity. Nearby was the temple of Serapis (Osiris), the official patron saint of the Ptolemaic dynasty. Today, only a reconstructed fragment of the portico of the temple of Isis is on display, in front of which there is a small altar. Despite being devoted to the same goddess as in Egypt and at the same time of construction, the temple was completely Greek in its architecture (Fig. 7).



**Figure 7.** Temple of Isis on the island of Delos, Greece. 2<sup>nd</sup>-1<sup>st</sup> century BC

**Notes:** General view of the temple

**Source:** photographed by the author on the island of Delos (Greece) in 2019

The cult of Isis became international and was not associated with specific forms, adapting to the local architectural tradition, which perfectly illustrates the construction of temples of Isis in Ancient Rome. Moreover, in the 1<sup>st</sup> century AD, during the period of intense Greek influence, the Romans encountered the Egyptian cult of Isis precisely because of its Hellenistic Form [6].

**The cult of Isis in the architecture of Ancient Rome.** *The culture of Ancient Rome*, like the aforementioned Egyptian and Greek, did not develop in isolation and was not closed off from the outside world. A sign of its openness was the incorporation of achievements of other cultures, primarily conquered peoples, into the construction practice. Such an example was the intensive egyptisation of the architecture of Ancient Rome. From about the 3<sup>rd</sup> century BC (during the Ptolemaic dynasty in Egypt), close economic and cultural relations between ancient Rome and Egypt began to be established [6].

In 31 BC, the Roman general Octavian (later Emperor Augustus), after winning the naval battle of Mark Antony and Cleopatra VII, “introduced Egypt to the Roman people”, as officially stated in his “Res Gestae” [7]. Egypt became an official province of the Roman Empire and opened to the Romans, who became interested in exotic art, mystical cults and mysterious rituals, and a period of all-encompassing Egyptomania began, which was reflected in various practices. Thus, the transportation of architectural objects from Egypt to Rome has become popular. Immediately after the conquest of Egypt, Emperor Augustus moved several monumental obelisks from Heliopolis and placed them in The Circus Maximus and the Martius campus in Rome. At the end of the 15<sup>th</sup> century, Pope Sixtus V ordered it to be placed on Piazza del Popolo, where it is still located today (Fig. 8). A total of 10 obelisks were transported from Egypt to the Eternal City. They not only decorated the city but also served as propaganda tools, proof of the power of the emperors and strengthened their authority [7].



**Figure 8.** The first obelisk was brought to Rome from Egypt by Emperor Augustus in the 1st century BC

**Notes:** The obelisk is now located on Piazza del Popolo in Rome

**Source:** photographed by the author in the city of Rome (Italy) in 2016

Another example of the egyptisation of ancient Roman architecture was the use of the pyramid shape in the construction of tombs for Roman patricians. The pyramid of Gaius Cestius at the gate of Sao Paulo in Rome (Fig. 9), which was built in 18-12 BC, is still in good condition. It is a structure with a height of 36.4 m, with a base length of 30 m. Today, it is widely believed that the shape of the pyramid is a repetition of the forms of the Nubian pyramids that Gaius Cestius may have seen during the military campaign in Nubia in 23 BC. Although there are also opinions about the Egyptian inspirations of the pyramid of Gaius

Cestius (however, the Nubian origin also has its own grounds, because burial in the pyramids was not exclusively an Egyptian tradition). It is known that this pyramid was not the only one built in Rome at one time. Thus, an even larger pyramid was located on the site between the modern buildings of the Vatican and the mausoleum of Hadrian in Rome. In the 16<sup>th</sup> century, it was dismantled by the order of Pope Alexander IV, and marble cladding was used for the stairs of St. Peter's Cathedral [8]. Historical sources indicate that the Romans built pyramids in other parts of the Empire, an example of which is the Pyramid of Falcon, located near Nice [9].



**Figure 9.** Pyramid of Gaius Cestius, 1<sup>st</sup> century BC

**Notes:** The pyramid is located at the gate of Sao Paulo in the city of Rome

**Source:** photographed by the author in the city of Rome (Italy) in 2019

Egyptian motifs became very popular in wall paintings, images of sphinxes appeared on Roman coins, astrological practices spread, and Roman emperors and citizens began to practice Egyptian religious cults [10]. Egyptian deities, because of their versatility, were suitable materials for adaptation to a different cultural environment. Most of them were associated by the Romans with several gods of the ancient Pantheon at once. Thus, Serapis, for example, was associated with Zeus and Hades, and Isis was associated not only with Ceres (which was the most common), but also with Fortuna and Venus. Therefore, the gods of the Egyptian pantheon gradually took over the functions of their ancient analogues and became more universal and were actively included in the religious circulation of Ancient Rome [11].

The emperors were initially ambivalent about the entry of Eastern religious rites into Rome. Thus, for example, the emperor Augustus on the one hand honoured foreign ancient gods, and on the other – forbade the construction of their shrines in Rome and the holding of divine services. Researchers suggest that Augustus may even have restored old Roman temples to attract people to the traditional religion. However, Augustus and other emperors could no longer stop the powerful wave of egyptisation of Roman life. In the 1st century AD Rome was already a huge metropolis, with a population approaching almost a million. People from all over the Empire came to the city, worshipping their gods. The Romans also joined in honoring

foreign gods. Thus, the cult of the Egyptian goddess Isis, as a Mother Goddess with a large circle of responsibilities, became widespread in the ancient world. According to Ovid, sacred rites in honour of Isis became commonplace among Roman women. However, by order of the Senate, the altars of Isis, Serapis, and other gods were removed from the Capitol, they were restored again under pressure from the citizens. Some foreign cults had to be allowed at the request of the Oracle [11]. This cult was so important that temples dedicated to Isis were built throughout the Empire, decorated with both original fragments brought from Egypt, and sculptures and details made in the Egyptian style.

Sometimes the Roman emperors themselves (Caligula, Nero) professed the cult of Isis [12]. In 43 BC, the temple of Isis and Serapis (Osiris) was built on The Champ de Mars in Rome. It was a semicircular space bounded by a portico with a sanctuary-apse in the centre and exedras on the sides, the entrance to the temple was through a spacious rectangular courtyard. The total dimensions of the complex (according to the reconstruction) were 220×70 m. To date, only one image of the entrance to the temple of Isis and Serapis is known: these are reliefs on the mausoleum of Khateria – a three-span arch with the inscription “ARCVS AD ISIS” on the entablature. Little remains of the temple in Rome: several obelisks and a bust of a woman – “Madame Lucrezia”, which may have depicted Isis, and a giant foot – possibly also a fragment of a statue of Isis (Figs. 10, 11) [13].



**Figure 10.** “Madame Lucrezia” – a female bust, presumably a fragment of the statue of Isis from the temple of Isis and Serapis, 1<sup>st</sup> century AD

**Notes:** the bust is located in Piazza Venezia in Rome

**Source:** photographed by the author in Rome (Italy) in 2019



**Figure 11.** A giant foot, possibly a fragment of a figure from the Temple of Isis and Serapis, 1<sup>st</sup> century AD

**Notes:** the sculpture is located at Via di Santo Stefano del Cacco in Rome

**Source:** photographed by the author in Rome (Italy) in 2019

A temple dedicated to Isis was also built in Pompeii (Fig. 12). The excavations of Pompeii became an extremely important event in the archaeological world in the second half of the 18<sup>th</sup> century. Already in 1998 Pompeii, being well preserved, began to be perceived as a future tourist attraction: the surviving exhibits found were transferred

to the museum, and the ruins began to be conserved “in situ”. The Temple of Isis was one of the first sites discovered and explored. Already at the end of the 13<sup>th</sup> century, an inventory of the ruins and its model were made, and numerous frescoes were transferred to the National Archaeological Museum in Naples [14].



**Figure 12.** Temple of Isis in Pompeii, 1<sup>st</sup> century AD

**Source:** photographed by the author in the city of Pompeii (Italy) in 2016

The Temple of Isis was built in the 1<sup>st</sup> century AD. From an architectural standpoint, it was a prostylos raised on a high podium with two exedras flanking the cella. Behind the four columns were side niches, in which were located statues of Harpocrates (Horus) and Anubis – Egyptian deities associated with the cult of Isis. The temple was located

in the centre of the peristyle fence, to the back wall of which two halls adjoined – for the initiation ceremony and a refectory. The halls were decorated with numerous paintings on religious Egyptian themes. Nearby was a smaller building – the purgatory, with a reservoir with sacred water from the Nile (Nilometer), which symbolised Osiris (Fig. 13) [15].



**Figure 13.** Purgatory with a pool of water from the Nile in Pompeii, 1<sup>st</sup> century AD

**Source:** photographed by the author in the city of Pompeii (Italy) in 2016

The temple was built in accordance with Roman tradition, but the decoration and frescoes indicated a close connection with Egyptian culture. These are images of religious ceremonies, mysteries, and mythological subjects (Fig. 14). Iconography presents the Hellenisation of the image of

Isis: it is presented in the form of a Roman Matrona, and only the plots of images, and certain symbols, such as the musical instrument sistrus, the key Ankh or the image of snakes nearby, connect it with the theme of the Egyptian deity.



a



b

**Figure 14.** Frescoes from the Temple of Isis in Pompeii, 1<sup>st</sup> century AD

**Notes:** a – Mysteries of Isis – a religious rite of initiation, which was performed in the cult of Isis in the Greco-Roman world. The rituals were based on a Greco-Roman model, but on Egyptian material; b – a fresco depicting Isis finding a boat with the coffin of Osiris on the Nile. Cobras in Egyptian mythology represent the protection of Isis. The deities of the winds are depicted according to Greek models

**Source:** photographed by the author at the National Archaeological Museum in Naples (Italy) in 2019

It is known that temples of Isis were built throughout the Roman Empire. In 88-89, Emperor Domitian built a temple dedicated to Isis in Benevento, a small town north of Naples. The temple was decorated with original Egyptian sculptures and two granite obelisks. The temple was destroyed, apparently, during the time of Emperor Theodosius at the end of the 4<sup>th</sup> century, who banned all non-Christian cults. The remains of the shrine were later incorporated into the city's system of fortifications or used for the construction of other buildings. In 1903, during archaeological research, many fragments of sculptures and Temple decorations were found, which are on display in the collection of the Museo del Sannio, and one of the Egyptian obelisks adorns Piazza Papiniano in Benevento [16].

The peak of the cult of Isis in the ancient world occurred in the 2<sup>nd</sup> century AD. It even reached the UK and the countries of the Far East. However, with the spread of Christianity, the popularity of Isis fell, and in the 4<sup>th</sup> century, the

emperor Justinian stopped the activity of all temples, even the most important sanctuary of Isis on Philae Island in Egypt.

***The conscious choice of an architectural prototype from a different culture and eclecticism in Hadrian's time.***

The situation of the natural process of cultural borrowing and mutual enrichment, demonstrated by the example of the cult of Isis, has become an important prerequisite for the next stage of cultural diffusion – the conscious attraction of forms of another culture to create new ones. An example is the constructions during the time of Emperor Hadrian, when designs borrowed from the architecture of Egypt, Greece and Rome were programmatically mixed in one object, representing new meanings. This approach represents one of Hadrian's most famous and ambitious implementations – Hadrian's villa in Tivoli near Rome, built by the emperor in the 2<sup>nd</sup> century AD. Ch. Jencks described the residence as "an early eclectic complex from all parts of the Roman Empire" because, in a grandiose complex with an area of

120 hectares, buildings were erected, intertwining the motifs of Egyptian, Greek, and Roman architecture [19, p. 78-79].

A typical example of the use of Egyptian motifs in a new cultural context is the Antinoeion complex, a memorial dedicated to the Emperor Hadrian's favourite young man Antinous, who tragically died in the Nile (Fig. 15). According

to the reconstruction, the semicircular portico behind which the Tomb of Antinous was located decorated the solemn square. On the central axis was an obelisk flanked by two statues of Antinous in the form of the Egyptian god Osiris. Two Roman tetrastyle temples surrounded by canals (which symbolised the Nile) articulated the main entrance [17].



**Figure 15.** Remains of the Antinoeion complex in Villa Adriana

**Notes:** The complex is located in Tivoli near Rome

**Source:** photographed by the author in the city of Tivoli near Rome (Italy) in 2016

One of the most romantic objects of Villa Adriana (and the best preserved to date) was the Canopus (Fig. 16), also associated with honouring the memory of Antinous. Canopus was supposed to resemble the ancient Egyptian settlement of Canopus near Alexandria (hence its name, now the area is called Abukir), where Antinous drowned. The centre of the complex,

located on a narrow artificial site, was a reservoir measuring 119 m×18 m, surrounded by statues of Caryatids (copies of the statues of Jerchtheion) and Selene. The pool was completed with a richly decorated Pavilion in the shape of an exedra, which was called the Serapeum (after the name of the Temple of Serapis, which was located in ancient Canopus) [18].



**Figure 16.** Canopus is a memoir of the ancient Egyptian settlement of Canopus near Alexandria in Egypt at Hadrian's Villa

**Notes:** The complex is located in Tivoli near Rome

**Source:** photographed by the author in the city of Tivoli near Rome (Italy) in 2016

These examples demonstrate that the use of forms and meanings from another culture in modern design was a common practice in Roman architecture. In addition, the construction of Hadrian's time demonstrated another new aspect of form-making – the ability to choose a prototype for construction (since there were already several sources for borrowing: Ancient Egypt and Greece) and the justification of this prototype (the formation of semantic connections between the prototype and the newly designed object, which demonstrates the appeal to the Egyptian theme in the architecture of Antinoeion and Canopus). This has already created a new situation for architectural creativity – the conscious choice of an architectural prototype to replicate and mix different shapes in one object [20].

Mixing forms and meanings borrowed from different cultural environments can be interpreted as a natural development of architecture since this method offers new perspectives in creating an architectural image. A typical example is the architecture associated with the cult of the Egyptian deity Isis – one of the most common in the ancient world. The cult was spread across vast territories: from Egypt to Great Britain, from Italy to the Middle East, synthesising local traditions and borrowing elements from other cultures. That is why the analysis of monuments associated with the cult of Isis allows exploring the mechanisms of interaction of various cultural traditions. It can be assumed that the theoretical basis for the development of cultural diffusion was the phenomenon of “interpretatio Graeca” – the process

of finding analogues to other deities among their own religious tradition, and, consequently, the ability to dedicate their temples to not their gods.

In Egypt, the temples of Isis remained Egyptian in shape and structure, continuing the building traditions of the New Kingdom. However, the rich decoration, the departure from the canons in form-making, and the introduction of Hellenistic elements into iconography indicate the blurring of cultural boundaries, their gradual diffusion, due to close economic and artistic ties, and political and ideological expediency.

On the lands of the Greco-Roman civilisation, the temples of Isis remained true to the ancient tradition of construction. However, the subjects of the murals and details testified to the inspiration of another culture. The elements, even minor ones, introduced from another culture, became a kind of marker that gave the usual shapes completely new meanings: ancient temples in shape became Egyptian in meaning due to new iconography.

Temple construction, centred around the cult of Isis, demonstrated a new methodological approach in architectural formation – the ability to mix elements from different cultural environments, which became a prerequisite for the next stage of development of form and meaning in architecture: conscious choice and mixing of forms from several different prototypes within one artwork, as demonstrated by the example of construction in the time of Hadrian. From this aspect, the architecture of Imperial Rome during Hadrian's time can already be interpreted as a phenomenon that represented the establishment of a trend of historicism in architecture, and the methodological prerequisites for this trend were laid hundreds of years ago – in the phenomenon of cultural diffusion of Egyptian and Greco-Roman traditions.

## CONCLUSIONS

The study proposed the term cultural diffusion, which can be interpreted in architecture as interpenetration, the blurring of clearly defined cultural boundaries. This phenomenon is on the one hand a necessary consequence of the political and ideological situation (incorporation into one's own culture of the achievements of other, often enslaved, peoples to achieve a certain goal, most often political or ideological), and on the other – an important methodological step in form and meaning development, which opened new opportunities and prospects in architecture.

The architecture of the ancient world, despite a huge number of papers and studies, still carries a lot of unknown. At that time, the foundations of world architecture were laid not only in the formal aspect (the emergence and development of the order system and building typology, etc.) but also in the methodological and design aspect, since then various methodological approaches in architectural formation were established. These were both autonomous processes that took place in one isolated cultural environment and mixed processes that attracted the capabilities and means of different cultures, and which are proposed to be defined as cultural diffusion.

The examples of temple construction associated with the cult of Isis analysed in the study demonstrate various variants of mixing, where autochthonous architectural traditions remain dominant, combined with elements-markers introduced from another cultural environment. Thus, the dominance of the Egyptian tradition is evident in the architecture of the temple complex on Philae Island. However, the purity of the design is blurred by Hellenistic influences: the asymmetry of the layout, excess and variety of decoration. Temple of Isis on the island of Delos is a typical Greek temple in Anta, where the Egyptian deity was indicated only by initiation and individual elements. Examples of combining Roman architectural traditions with Egyptian influences include the temple of Isis and Serapis in Rome and the temples of Isis in Pompeii and Benvenuto. These were typically Roman temples in their overall architectural and spatial design, where only decorations and frescoes indicated a close connection with Egyptian culture. A more complex example of combining different cultural elements in one object is the Villa Adriana complex in Tivoli, where Roman, Greek, and Egyptian motifs created an original and eclectic architectural work. It also demonstrated a new issue for the architect that had not previously arisen: the problem of choosing a prototype and justifying it for solving a specific creative problem.

Cultural diffusion, as a method in architectural creativity, is a necessary prerequisite for the next stage of development of architectural form and meaning – conscious borrowing and use within one architectural unit (building or complex) fragments from different (sometimes several) architectural environments, which is evident in the next stages of architecture development (in particular, in the architecture of historicism). However, the formal and substantive aspects of cultural diffusion, theoretical foundations and mechanisms of implementation still require further investigation.

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### Світлана Лінда

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## «Культурна дифузія» в архітектурі стародавнього світу (на прикладі культу Ізиди в III ст. до н.е. – II ст. н.е)

**Анотація.** Практика запозичення та змішування архітектурних форм і змістів із різних культурних середовищ бере свій початок ще в архітектурі стародавнього світу і є актуальною до цього часу. Тому з'ясування її витоків, механізмів та причин розвитку представляється важливим питанням теорії та історії архітектури. Метою статті є ввести у науковий обіг поняття «культурної дифузії», як методичного прийому змішування архітектурних форм із різних мистецьких середовищ, що сприяє напрацюванню якісно нових вирішень, які формують нові архітектурні образи та синтезують нові змісти. Також важливим є обґрунтувати явища культурної дифузії як першого та необхідного етапу наступних процесів розвитку архітектурного формо- та змістоутворення – етапу свідомого та обґрунтованого вибору архітектурного прототипу для нового проектування. Основним матеріалом для статті є об'єкти, пов'язані з культом Ізиди – одним із найбільш розповсюджених релігійних культів в архітектурі стародавнього світу, що належав до греко-римської цивілізації. З аспекту методики стаття спирається на аналізі та систематизації наукових публікацій, присвячених архітектурним об'єктам, пов'язаних із культом Ізиди, а також на результатах візуальних спостережень (описах та порівняльному аналізі). У статті на прикладі архітектурних об'єктів, пов'язаних із культом Ізиди, показано, що в архітектурі Стародавнього світу були сформовані різні методичні підходи в архітектурному формоутворенні: як автономних процесів у різних культурах, так і «змішаних», які залучали можливості та засоби різних культурних середовищ, що відкривало безмежні перспективи для розвитку як архітектурної форми, так і архітектурних змістів. Науковою новизною є інтерпретація процесу культурної дифузії як важливої методичної передумови нового архітектурного формо- та змістоутворення в архітектурі наступних періодів. Цим зумовлюється практичне значення роботи, оскільки явище культурної дифузії, як методичного прийому для творчості архітектора, є актуальне і сьогодні

**Ключові слова:** Стародавній Єгипет, елліністична Греція, імперський Рим, архітектурне формоутворення, взаємодія культур, храми Ізиди



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## Architectural and Artistic Features of the Entrance Portal of the Church in Velykyi Khodachkiv of Ternopil Region

**Abstract.** The design of the main entrances in cathedrals and churches has always been one of the main tasks of artists. Realising the importance of the entrance to the Temple of God, the sculptors tried to design it in the form of a portal and give it prominence with an original sculptural design. This study covers the features of the architectural and artistic structure of the main portal of the Church of the Mother of God in Velykyi Khodachkiv, justifies its artistic value, examines the technical condition of the newly discovered monument, and identifies aspects of the restoration of the portal. Based on the general scientific and special restoration research methods used, the paper investigated the style characteristics of the portal, identified the main reasons for the degradation of the monument, and developed a set of restoration measures. In the study, based on literary sources and field surveys, an attempt to investigate the influence of one of the main architectural elements of the temple decoration – the portal, on the architectonics of the main facade of the shrine was made. Special attention was drawn to the unexplored Velykyi Khodachkiv Church in the Ternopil region, which is in a dilapidated state with an interesting architectural design of the main entrance. The architectural, artistic, and compositional design of the entrance portal of the Church of the Mother of God the Comforter and St. Joseph in Velykyi Khodachkiv was analysed in detail. Its stylistic and proportional solutions were examined. The portal is characterised by the expressiveness of architectural details, the integrity and aesthetics of this work of art were created according to the laws of beauty. Based on a thorough study of the features inherent in the portal, its architectural and artistic value was determined, and its technical condition was investigated. The Church of the Mother of God the Comforter in the former town of Velykyi Khodachkiv, Ternopil region, is not included in the Register of architectural monuments of Ukraine, so there is little information about the monument under study. Overlooked by researchers and art historians, the church has been in ruins for centuries and continues to collapse. The results of the study can be used in the system of historical and architectural education and practical restoration activities

**Keywords:** main entrance of the Church of the Mother of God, portal, stylistic solution, portal composition, portal proportions, artistic value, restoration measures

### INTRODUCTION

Portals in all historical periods were valuable architectural elements for decorating the entrances of not only public and residential buildings but also sacred structures: cathedrals, temples, and chapels. Portals are diverse in shape and size,

construction material, composition, and structure [1]. The main function of the portal is to complement the main entrance to the shrine with architectural and artistic means [2]. Entrance portals often served as the primary accents of the

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main facades of buildings [3]. Depending on the task set for the architect, the entrance portal could be simple (Church of St. Anthony of Padua in Losyach, Borshchevskiy district, Ternopil region, Church of the Perpetual Help of the Mother of God in Trybukhivtsi, Buchanskyi district, Ternopil region) or solemnly and luxuriantly decorated (Church of the mother of God in Stryi, Lviv region, Church of St. Elizabeth in Lviv, Church of St. Anthony in the village Chernelytsia, Ivano-Frankivsk region).

A peculiar portal decorates the Church of the Mother of God the Comforter and St. Joseph in Velykyi Khodachkiv, Kozivskiy district, Ternopil region. It presents Romanesque, Gothic, and Baroque elements, fascinating tourists and explorers. However, both the church and its portal were not investigated by anyone. The problem is that due to the closure of the church in 1944 and its conversion into a warehouse, the facility has suffered considerable damage due to oversight and fire. Now it is in a neglected state of disrepair and requires a comprehensive examination of the church and its main portal. Conservation and restoration measures should be proposed and included in the local Register of architectural and Art Monuments to preserve this architectural and artistic piece. Considering the need to preserve the newly discovered monument, it is necessary to discuss with the public and specialists the outlined monument protection measures with minimal interference with the material structure to ensure its preservation [4]. The law on the protection of monuments provides for the use of three types of work: restoration, conservation, and repair, which must be conducted with the knowledge and control of state bodies for the protection of monuments and with the approval of project documentation [5]. The investigation of portals as special architectural elements of collapsing temples is of interest to researchers and restorers. Information about the construction of a church in Velykyi Khodachkiv

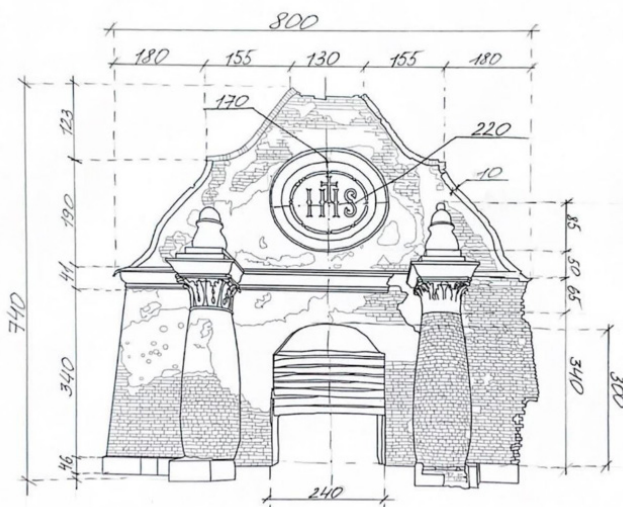
is found only in the Polish edition “Słownik geograficzny Królestwa Polskiego i innych krajów słowińskich” (1880-1902), where it is stated that the first stone for the church in the town of Velykyi Khodachkiv was laid in honour of the 25<sup>th</sup> anniversary of the marriage of Emperor Franz Joseph and Elizabeth of Bavaria in 1879, the temple was built in a year and it was destroyed during the First World War, so in 1934 a new temple was built in the central part of the town and it is indicated that Thaddeus Schneider was the author of the project [2]. The study of portals in Ukrainian architecture of the 17<sup>th</sup>-18<sup>th</sup> centuries was conducted by D.N. Yablonskyi, who focused on the stylistic and compositional analysis of portals of monastic and temple structures of the Left-bank Ukraine and the Dnieper region [3]. However, in the Ukrainian architectural and art history source base, information about the structure under study in Velykyi Khodachkiv is missing.

*Purpose of the study* – to cover the features of the architectural and artistic structure of the main portal of the Church of the Mother of God in Velykyi Khodachkiv, justify its artistic value, investigate the technical condition of the newly discovered monument, and identify aspects of the restoration of the portal.

## MATERIALS AND METHODS

In the process of the research of the main portal of the Church of the Mother of God in Velykyi Khodachkiv, general scientific (empirical – observation, survey, description, theoretical – analysis, systematisation, comparison, generalisation) and special professional research methods (morphological (stylistic) analysis, conservation, restoration, field surveys, and photogrammetric fixation) were used [6]. Using these research techniques, the authors identified the causes of the object’s soaking, which led to the destruction of portal fragments, peeling of plaster, loss of part of the cornice, and potholes in the brick (Fig. 1).

**Drawing of the portal      Scale 1:1**



**Figure 1.** Dimensional drawing of the portal

**Note:** drawn by N. Yavna



The visual survey of the portal conducted at the first stage of the study enabled the determination of the range of relevant problems of step-by-step research. Analysis of literature sources allowed determining the level of knowledge about the object. The method of art history analysis presents the artistic features of the portal and its details. Based on the analysis of architectural and artistic detailing of parts of the portal, it can be argued that its architectonics tend to the traditional neo-Gothic and late Baroque styles with Romanesque elements (proportions of the columns). The compositional analysis allowed discovering the three-dimensional structure of the monument and identifying patterns of compositional design. The stylistic and compositional analysis allowed analysing of individual features, establishing the architectural and artistic value of it. Analysis of the perception of the silhouette of the portal from a long distance allowed stating its proportionality and perfection in relation to the main facade of the structure.

Through full-scale surveys, measurements, and photo recording, drawing of the object under study, the authors managed to examine the architectural and structural characteristics of the portal and establish its unique artistic value. When measuring the investigated portal of the church and its elements, their exact parameters were established.

At the diagnostic stage, the state of preservation of the structure was investigated, the main factors of its degradation were identified, and the restoration programme of the object under study was determined.

## RESULTS AND DISCUSSION

Portal – an architecturally designed entrance to a public or sacred structure, with decorative elements, often in combination with sculpture, modelling, etc. [1], which enhances the architectural and artistic impression of the structure in general. Portals are not only important elements in finishing

residential, public, and sacred structures, but also perform a symbolic role. In cathedrals, temples, and chapels, the main entrance, as a rule, was designed by sculptors in the form of a portal symbolising the Heavenly Gate of the Temple of the Lord. As a rule, the entrance portal was embellished with decorative elements: stucco, columns or pilasters, cornices, and sculptures carved from stone blocks or laid out of profile bricks [3].

Attention was drawn to the peculiar design of the main portal of the Church of the Mother of God the Comforter in the former town, and now Velykyi Khodachkiv, located 18 km east of Ternopil. The church was built in 1879-1880 by Thaddeus Schneider [2] in the neo-Gothic and late Baroque styles in the central picturesque part of the village on a plot of land donated in 1870 by the Sheliskiy family [2]. In terms of architectural and spatial structure, it is a basilica with side arcades, along the back of which baroque chapels are attached in the form of small round towers, with an elongated semicircular apse and a low square sacristy attached to it on the right behind the chapel (Fig. 2). The elongated building with massive walls, narrow paired windows of the side naves, semi-arches – central naves, round windows of the apse and small towers with oval windows resembles a fortress structure. The roof during the fire, according to local residents, was completely lost. The walls of the side facades are decorated with pilasters, between which there are paired narrow windows in rectangular niches. The main facade of the church is decorated with symmetrically placed four pilasters and a baroque deconstructive pediment with arranged oval and round niches. The facade was decorated in an oval niche with a relief sculpture of the Virgin Mary, destroyed during the Soviet era. The main facade of the church is complemented by a protruding portal, which in its overall composition repeats the outlines of the main facade of the church (Fig. 2).



**Figure 2.** General view of the church in Velykyi Khodachkiv, Ternopil region

**Note:** photo by N. Yavna



During the study, the authors discovered that the entrance portal, like the church, is built of red brick, locally produced. When measuring the brick from which the portal is built, its parameters of 29x14x6.5 cm were established by N. Yavna, and the width of the masonry of the pedestals under the columns is 93 cm, and the height of the Masonry is 46 cm. (Fig. 1). The originality of the portal is especially notable when considering its individual elements: the central entrance, vertical elements, and the end of the portal. The entrance opening has an arched brick lintel, which greatly simplifies the layout of such a lintel without the use of metal (Fig. 1). The authors measured the opening of the portal entrance, which has a width of 2.40 m and a height of 3.00 m. An important role in the composition of the portal is played by vertical architectural elements that compositionally emphasise the entrance axis, visually directing the visitor to the temple. The portal is decorated with symmetrically placed two three-quarter columns laid out of brick, covered with a thin layer of plaster, with stone capitals of the Corinthian order, on which decorative stone acroteria in the form of vases are placed (Fig. 3). The columns of the portal rest on very low square stone pedestals. Moving away from the canonical proportional interpretation of

the columns, the architect Thaddeus Schneider decided to borrow the columns in the portal from the temples of the Romanesque period – rough, squat, in contrast to the elegant columns of the Byzantines, which were already spread throughout Europe at that time. Despite the squat and plastic roughness of the columns in the portal, they are expressive and well perceived from a distance. The vertical elements of the columns at the top are combined by a profile brick cornice covered with a layer of plaster, above which there is a pediment of deconstructive (broken) smooth shape [3], which was typical for the late Baroque era. The compositional accent of the portal pediment is in a round decorative frame with a diameter of approximately 1.5 m, artfully arranged in an elegant relief symbol–the abbreviation– IHS, which means – Jesus Hominum Salvator (Jesus the Savior of Mankind) (Fig. 4). The remains of plaster on the facades of the church and the portal indicate that the entire portal, like the church, was plastered, which influenced the character and originality of the architectonics of the work of art. The plaster not only served as a protective and levelling layer but also softened the sharp and clear contours of the brickwork, visually enriching the plasticity of the portal.



Figure 3. The main portal of the church in Velykyi Khodachkiv

Note: photo by N. Yavna

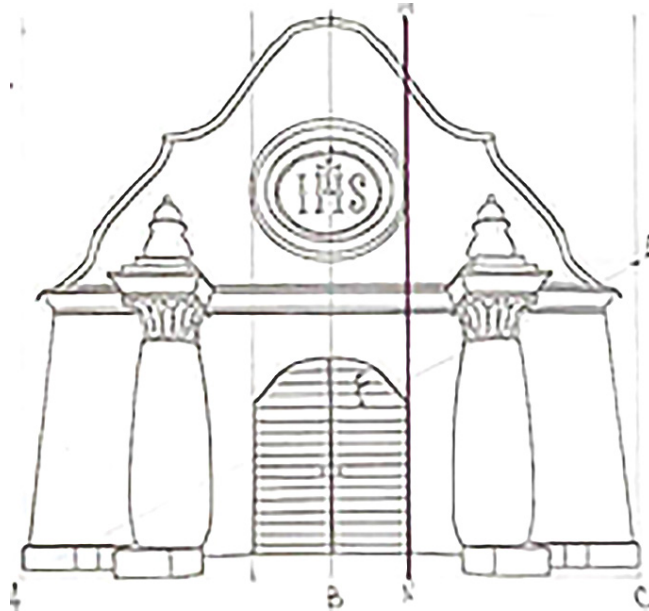


Figure 4. Abbreviation on the gable of the portal

Note: photo by N. Yavna

The basis of proportional portal construction is a system of rational simple relations: the ratio of width to height of the portal is 1:1 (Figs. 1, 5), that is, its composition fits into a square, respectively, the basis for building the portal is based on the principle of the Golden Section [3] (Fig. 5). When designing the portal, not only the general proportions and ratios of their individual parts, mainly the load-bearing

and finishing parts, but also the ratio to the size of the church itself were particularly important [7]. When measuring the object under study, the authors discovered that the ratio of the height of the portal to the height of the church is 1:2, and its width to the width of the church is 1:1.5. The classical proportions of the Corinthian order Capitals to columns are 1:10 [8], and in this case, it is 1:6 (Fig. 1).



**Figure 5.** Portal proportions  $BC=CD$ ;  $CD=DF$ ;  $MN$  – golden section

The master (sculptor), striving to achieve artistic perfection and make an aesthetic impression, moved away from the canonical proportional ratios in creating three-quarter columns of the portal, thereby creating an individual composition of the portal. The portal itself is built according to the rules of ideal proportion, where all harmonised elements are combined due to balance, symmetry, and proportional relations, forming the integrity and unity of a work of art [3].

Since the analysis of the stylistic and compositional design of the portal identifies its architectural and artistic value, accordingly, it belongs to the cultural legacy of Ukraine. The preservation of the Velykyi Khodachkiv portal is important for the spiritual, cultural, and social development of not only the settlement of a certain region, but the people of the country in general, so it is proposed to include the monument in the State Register of immovable monuments of Ukraine of local importance. According to the Law of Ukraine “On the Protection of Cultural Legacy” [5], the protection of cultural legacy provides for the implementation of a set of measures to record, protect, preserve, and conduction of scientifically based measures that will protect the monument from further destruction and ensure

the preservation of its authenticity with minimal interference with its existing appearance (conservation of the object), to restore lost or damaged elements, that is, restoration, and museification of the object, that is, bringing it into a state suitable for excursion visits [9].

In the course of field surveys, the authors discovered that the portal has serious mechanical damage, namely: loss of plaster along the entire portal, weathering of stone on the reliefs of the capitals, lost parts (the upper decorative element on the vase-shaped part on the left side, the lower part of the right side of the portal, and the top of the portal) (Figs. 1, 6). The cornice on the right side has considerable damage and losses. The entire portal suffered partial losses of bricks, potholes, and damage to masonry joints. As a result of soaking, cornices of capitals and vase-like acroteria are covered with micro-sprouts of bioorganisms (lichens). The door to the main arched entrance is completely lost. The entrance to the church is laid in the upper part with several wooden planks. It should be emphasised that in the decoration of the portal, an equally important role was assigned to the decoration of doors, made of solid wood.



Figure 6. drawing of the portal in the Velykyi Khodachkiv village

Note: author – N. Yavna

Based on a long-term study (from March to May 2022) and full-scale surveys of the entrance portal of the church, a programme of restoration and protection of the object was proposed, namely, to examine it from the artistic and historical importance standpoint based on the analysis of archival and literary sources, determine the authenticity of the architectural work and appropriate security, restoration methods, and the factors of destruction, conduct a survey with the implementation of measurement drawings using various methods of fixating the technical condition, create a scientific report, and develop monument protection and restoration measures [10].

Restoration measures were developed and the following types of priority works were proposed to preserve the monument:

- conducting conservation and restoration of brickwork;
- cleaning of the outer surface from dirt, efflorescences, and destructive layers;
- filling hollow cracks in brickwork;
- structural strengthening of brick surfaces with special mortars, putty of chips and fixing minor losses, restoration of masonry joints;
- biocide treatment;
- tinting sections of inserted bricks;
- protective treatment of the monument surface, hydrophobisation of the portal.

In case of losses of brickwork for structural strength, it is allowed to supplement using bricks. The process of strengthening and complementing the material structure should be accompanied by the use of natural materials that are compatible with authentic ones. Injection of cracks should be conducted after the completion of work on replacing losses, putty, and fixing emergency areas. Restoration of masonry joints must be conducted with solutions as close

as possible to the original ones. Plastering requires a strong surface that has been cleared of destructive mortar. Plastering of chips is performed on the surface of the brick, which has a depth loss of less than 3 cm, with deeper losses, the brick must be completely or partially replaced. For this, a lime-sand mortar that is as close as possible to the brick surface in texture and colour must be selected [11]. Biocidal treatment of brick surfaces is conducted in the summer, eliminating all sources of moisture, in the absence of precipitation.

For the control of bio-destructors and long-term biosecurity of the stone brick surface, it is recommended to use biocidal compositions of a wide spectrum of action. The lost doors of the main portal, in the absence of iconographic materials, must be recreated based on analogues or other scientifically based materials. Despite the damage and losses, the portal under study has historical, architectural, and artistic value and requires priority urgent measures.

The uniqueness of the main portal of the church in Velykyi Khodachkiv indicates the acquaintance and high skill of the builders.

## CONCLUSIONS

Upon investigating the portal of the Church of the Mother of God in Velykyi Khodachkiv of the Ternopil region, as one of the important architectural elements of the building decoration, it was identified that the work of art has a unique architectural and artistic design and an interesting individual composition. Based on general scientific and special methods, the architectural, artistic, and compositional features of the portal were identified. In its architectural features, elements of Romanesque, Gothic, and Baroque styles have been preserved, compositionally and proportionally-harmoniously combined with each other, and interesting



from the restoration science standpoint. Despite the massiveness of the columns with a violation of their proportions, the smooth shape of the pediment and the calming decor of the portal give the impression of heaviness and simultaneous simplicity, expressiveness, and indissoluble integrity of the composition. Based on the study of the features inherent in portal, its architectural and artistic value was determined, and its technical condition was investigated. The sculptor created an interesting unique architectural and artistic work according to the rules of perfect proportion, which has a high architectural and artistic value and belongs to the cultural legacy of Ukraine.

During the study of the central portal of the church, full-scale surveys, measurements, and photo recordings

were involved, sketches were made, its style and composition were analysed, and a proportional solution was used to determine its value as a work of art and architecture in the state of degradation.

The newly discovered work of art is proposed to be included in the State Register of immovable monuments of Ukraine of local importance. The technical condition of the entrance portal of the church was analysed, and urgent restoration measures were developed to preserve it from further destruction: conservation, restoration, and museification of the object under study. Theoretical studies of the entrance portal of the church can be used in scientific and practical restoration activities. The theoretical part can serve as a basis for further restoration research and work.

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## Архітектурно-мистецькі особливості вхідного portalу костелу у с. Великому Ходачкові Тернопільської області

**Анотація.** Оформлення головних входів у соборах та храмах в усі часи було одним з основних завдань митців. Усвідомлюючи значення входу у храм Бога, скульптори намагались оформити його у вигляді portalу і підкреслити оригінальним пластичним вирішенням. В дослідженні розкрито особливості архітектурно-мистецького вистрою головного portalу костелу Матері Божої в селі Великому Ходачкові, обґрунтовано його мистецьку цінність, досліджено технічний стан нововиявленої пам'ятки та розкрито аспекти реставрації portalу. На підставі використаних загальнонаукових та спеціальних реставраційних методів дослідження авторами вивчені стильові характеристики portalу, визначені основні причини руйнування мистецького твору та розроблений комплекс реставраційних заходів. У статті на основі літературних джерел та натурних обстежень здійснена спроба дослідити вплив одного з головних архітектурних елементів оздоблення храму – portalу, на архітектоніку головного фасаду святині. Особливу увагу привертає недосліджений Великоходачківський костел на Тернопільщині, що перебуває в напівзруйнованому стані з цікавим архітектурним вирішенням головного входу. Детально проаналізовано архітектурно-мистецьке і композиційне вирішення вхідного portalу костелу Матері Божої Утішительки і



св. Йосифа Улюбленця в селі Великому Ходачкові, Тернопільської області. Проаналізовано його стилістичне та пропорційне вирішення. Портал характеризується виразністю пластики архітектурних деталей, цілісністю і естетичністю архітектурної форми художнього твору, створеного за законами краси. На основі ґрунтовного вивчення особливостей порталу визначено його архітектурно-мистецьку цінність та досліджено технічний стан. Костел Матері Божої Утішительки у колишньому містечку Великому Ходачкові Тернопільської області не включений до реєстру пам'яток архітектури України, тому відомостей про досліджувану пам'ятку знаходимо дуже мало. Випущений з поля зору науковців і дослідників та мистецтвознавців костел протягом століть знаходиться в руїні і продовжує руйнуватися. Результати дослідження можуть бути використані в системі історико-архітектурної освіти та в практичній реставраційній діяльності

**Ключові слова:** головний вхід костелу Матері Божої, портал, стилістичне вирішення, композиція порталу, пропорції порталу, мистецька цінність, реставраційні заходи

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