INTERNATIONAL JOURNAL
OF
CONSERVATION SCIENCE

ISSN: 2067-533X Volume 16, Special Issue, 2025: 607-622 www.ijcs.ro

DOI: 10. 36868/IJCS.2025.si.18

TYPOLOGY OF HISTORICAL ENSEMBLES IN CITIES OF CENTRAL UKRAINE

Halyna OSYCHENKO[1,*], Victor YATSENKO[2],
Olga TYSHKEVYCH[3], Oleksandr KHLIUPIN[4]

[1] Zaporizhzhia National University, 66 University Street, Zaporizhzhia, 69600, Ukraine
[2] Kyiv National University of Construction and Architecture, 31 Povitrinykh Syl Avenue, Kyiv, 03037, Ukraine
[3] National University "Yuri Kondratyuk Poltava Polytechnic", 24 Vitaliia Hrytsaienka Avenue, Poltava, 36011, Ukraine
[4] National Aviation University; 1 Lyubomyra Guzara Street, Kyiv, 03058, Ukraine

Abstract

The article examines the urgent issue of preserving the architectural heritage represented by different types of historical architectural ensembles on the example of the cities in Central Ukraine. The article identifies 4 periods of the composition development of the studied cities and types of architectural ensembles. The novelty of the study is the classification of the historical types of architectural ensembles found in the cities of Central Ukraine, accompanied by the definition of their typological and system-preserving features. The typological features and construction patterns of the historical types of ensembles are considered as a compositional tool in the regeneration of historical city centers and become the basis for the development of architectural regulation of new development in the historical environment. The observance of the typological features of ensembles in the development of new territories will ensure the continuity of urban development, allow for the harmonization of the composition of new buildings with the historical ones and preserve the 'spirit of the city' in the development of new territories.

Keywords: *Typology; Historical architectural ensembles of cities; System-preserving features of ensembles; Composition of cities; Regulation of new development in the historical environment; Hereditary development of cities*

Introduction

Architectural ensembles are characterized by integrity, originality of character and a certain isolation both in the urban landscape and in people's perception of the city. They help to navigate the urban space, dominate the environment and form panoramas and silhouettes of cities from the outside. They provide the identity of cities and a continuous link between the collective memory and culture of certain places. Historic architectural ensembles are the dominant elements of urban composition and the main component of the cultural heritage of historic cities. Target 11.4 of the UN Sustainable Development Goals recognizes the importance of preserving cultural heritage in order to make our cities 'inclusive, safe, resilient and sustainable' [1].

Most of the surviving ensembles are located in areas that serve as city centers, i.e., the most investment-attractive areas that are in demand for new development. Therefore, the

* Corresponding author: osychenko-galyna@ukr.net

architectural heritage in the centers of historic cities, which are being actively developed, is in most cases under threat of destruction and transformation.

The practice of extensive new development around historic cities adopted in Ukraine after the Second World War made it possible to partially preserve the cultural heritage of their historic centers. However, ignoring the principles of forming the historic urban environment and its compositional features has led to the creation of an inexpressive, monotonous, individual and aesthetically unattractive environment in the newly created residential areas. Thus, the hereditary development of historic cities has been lost. And the current war on the territory of Ukraine is leading to the destruction of cultural heritage and the destruction of historical architectural ensembles of cities.

The above-mentioned problems raise the issue of the need to study these types of ensembles, principles and patterns of their construction for the purpose of the scientifically grounded regeneration of city centers, their post-war reconstruction and the hereditary development of historic cities in general.

The typological studies are an integral part of historical heritage research. The historical architectural forms with comparable structural characteristics can be classified and their features and specific cultural and traditional images can be restored and represented in the course of regenerating the historic environment and forming the characteristics of the modern urban environment in new territories [2-4].

The theoretical basis of this study is the works related to the use of the typological analysis methods in the field of cultural heritage protection:

– at the level of individual types of historical objects (residential buildings, mosques, folk dwellings, summer residences, monasteries etc.), it is the works of *S. Ayyıldız et al.* [5]; *M. Jurić et al.* [6]; *Y. Kassou et al.* [7]; *K. Siountri et al.* [8]; *E. Jahić* [9];

– at the level of historical city centers, it is the works *of B.M. Pozas et al.* [10]; *C. Santos et al.* [11]; İ.M. Özdemir et al. [12]; *S. Xie* [13]; *A.C. Rosado et al.* [14]; *N. Leshchenko* [15] and *O. Oliinyk* [16] that substantiate measures and methods of urban environment rehabilitation;

– at the regional level, it is the work of *H. Gao et al.* [17], which creates an information base for the management and rational use of heritage buildings.

Regional types of architectural objects in relation to architectural styles are considered in the works of K. Suphamityotin, *T. Min and T. Zhang* [18], *M. Górski and W. Lach* [19]. Particularly important were the works devoted to the study of monastery complexes, namely *N. Miroshnyk* [20]; *K. Lens et al.* [21] and *V. Khaidukov and O. Sleptsov* [22]. Despite the fact that the typological analysis methods are widely used, the typologies of compositional elements of the historic urban environment have not been properly considered [23].

Thus, the relevance of this study is determined by the insufficient level of preserving the architectural heritage and its use as an urban design factor of historic cities in Ukraine; the lack of existing theoretical works aimed at studying the typology of historic city ensembles in Central Ukraine; and the need to improve the methodological approaches to the rehabilitation of historic cities.

The purpose of the study is to determine the types of historical city ensembles in Central Ukraine with valuable historical and cultural heritage for further regulation of new development in the historical city centers and to ensure hereditary urban development.

The objectives of the study are:

– the retrospective analysis of the composition development and planning of the studied cities with the identification of their architectural ensembles;

– the identification of the types of ensembles in the studied cities;

– the identification of the system-preserving features of the ensembles that ensure their integrity and stability over time.

The objects of study are the cities of Central Ukraine belonging to the first category according to the degree of historical and cultural heritage value [24, p. 100-115], namely Poltava, Chernihiv, Nizhyn, Pereiaslav and Novhorod-Siverskyi.

Materials and methods

The study is based on the materials of the field research and photographic documentation of the historical environment of the cities carried out by the authors in 2003–2006 and 2022 [4, 25, 26], as well as on the materials of the historical, literary, archival and iconographic sources on the origins and development of the studied cities and the construction of ensembles in them [27-30].

The research methodology is comprehensive and based on the main provisions of the systemic and cultural approaches to architecture. Within the framework of the systemic approach, an architectural ensemble is considered as a system characterized by 1) system elements, their types and number; 2) system-forming connections between the elements; and 3) the degree of orderliness and the principle of spatial organization. Within the framework of the cultural approach, the ensemble is considered 1) as an object that reflects social, cultural, economic, technological and political factors of a certain historical period in the architecture; 2) as a text and a process that forms the social and subjective identities of historical cities at the present stage.

The research methodology includes the following algorithm:

The first stage is the retrospective analysis of the history, composition, development and planning of the studied cities, accompanied by the identification of the architectural city ensembles. It includes the use of historical analysis methods, analysis of archival, cartographic and iconographic materials, graphic analysis, comparative and compositional analysis, methods of field and visual inspection and mapping.

The second stage is the comparative analysis of urban ensembles and their classification. It includes methods of typological, compositional and morphological analysis; comparative analysis; synthesis; and systematization. Ensembles are considered to be an integral system. From the point of view of the systemic approach, the most stable characteristics of the system are external typological features and internal regularities of construction. External typological features can form a system of the same elements in different ways. Internal features are generated by individual elements that are combined into a system. The system is characterized by a set of features; the features that are identical for ensembles of a certain group are typological features. The system features whose violation leads to a radical transformation or destruction of the system are defined by the authors as system-preserving.

The typological features of the architectural ensemble classification in the cities under study are as follows:

– the principle and type of spatial organization (1),
– the type of an ensemble structure that ensures its integrity (2),
– the nature of the composition (dynamic-static) (3),
– the nature of interaction with the natural background (4),
– the degree of isolation that characterizes visual interaction with the environment (5).

The third stage is determining the system-preserving features of the different types of historical ensembles. The comparative, compositional and morphological analysis and the methods of field and visual inspection are applied. The most general feature of systems is their interaction with the external space, which determines the nature of the environment and the degree of its closeness or openness. The most distinguished internal feature is the structure of the system, which ensures its unity through permanent, stabilizing links of elements. The structure is the main system-preserving factor of the system. The determination of system-preserving features takes place at two levels: general features and specific features of a

particular urban ensemble that determine its uniqueness. The identification of specific features requires a detailed study of the history of construction and transformations of a particular urban ensemble, analysis of its natural background, urban planning context etc.

The results were verified by expanding the geographical context and other cities in Ukraine and Europe were involved in the comparative analysis.

The results of the study are used to formulate architectural regulations and modes of use of the territories of historic city centers. The regulation of new development in the historic environment is understood as a set of regimes, types of use of territories and real estate, as well as permissible changes to real estate, architectural and urban planning requirements and parameters of new development, principles and techniques of architectural composition in urban planning activities in the relevant city territory.

Results and discussion

Stages of composition development and planning of the studied cities

The authors have identified four main historical periods in the composition development and planning of the studied cities; all of them correspond to the classification of types of urban planning cultures on the territory of Ukraine [24, p. 5].

The first period (from before the 10th century to the early 18th century)—the development of spatial and planning structures of cities was determined by the ancient Russian methods of urban planning, which were most clearly embodied in the majestic cities of Kievan Rus – Kyiv, Chernihiv and Pereiaslav. The traditions of ancient Russian urban planning continued during the Hetmanate, despite the change in architectural styles. This is demonstrated by the composition of the city of Nizhyn, which developed rapidly during the period of the liberation wars (1618–1796). In this period, the first type of architectural ensemble was born, associated with the irregular principle of space organization and planning, which is now represented only in the surviving complexes of religious buildings. At that time, monasteries and other religious buildings performed not only sacred but also cultural, social, political, economic and defensive functions, which ensured their ideological and compositional dominance in urban development. Most of these ensembles were created gradually over a considerable period (from the 10th to the early 19th centuries), organically and without a preliminary plan. Wooden or destroyed buildings were replaced by brick ones, the style of buildings changed and as the average number of stories in urban residential buildings increased, the height of new bell towers increased due to the increase in the average number of stories of residential buildings in cities, the composition of ensembles became more complex and developed and types of monastery temple buildings were formed. But the basic principles of the compositional and spatial organization of monastery complexes remained unchanged and were transmitted to new monasteries that appeared in the nineteenth and early twentieth centuries [4].

The second period (mid-18th century – mid-19th century)—the development of cities was determined by the methods of classicism in urban planning. The cities under study became part of the Russian Empire and their macro-position changed. Former border towns and fortresses became the center of the empire. This period is associated with large-scale reconstruction of Ukrainian cities on the basis of regular principles of spatial organization. The classical style spread from Europe to the former Russian Empire and gave rise to a new type of architectural ensemble (in European architectural theory and history, the style is called neoclassicism). European prototypes served as models for Ukrainian ensembles: Saint Peter's Square, Rome, Italy (1656–1667); Palace and Park Ensemble of Versailles (construction began in 1661); Place Stanislas, Place de la Carrière and Place d'Alliance in Nancy (1752–1755); Place de la Concorde (construction began in 1755) and Place Vendome (construction began in 1699) in Paris; Place de la Bourse (1730–1775); the new city of Napoleonville (reconstruction of Ponteville, 1802); and the city of Napoleon-Vendée (1802), France. Unlike European

prototypes, the implementation of the classical style in Ukraine had its own specific characteristics. First of all, the buildings of this period differed from the European ones by their much lower density and the predominance of manor buildings. Regular ensembles were created under state projects in a fairly short time according to pre-designed plans. The ensembles were an integral part of large-scale transformations in urban planning and development of the cities studied.

The principle of regularity has been given different meanings in different historical contexts. It was only in the era of classicism that it acquired its modern meaning and began to be associated with geometric correctness. In ancient Russian urban planning, as well as in the Middle Ages, the principle was associated with 'harmony,' the proportionality of individual buildings in relation to each other and the compliance of the planning structure with natural conditions. Classicism transfers the principle of regularity to the whole city, understanding it as a means of streamlining the planning structure on geometric principles, bringing city plans to a single idea that is easily perceived when moving around the city and, most importantly, as a means of simplifying orientation. And this is quite appropriate, since in the second period the cities grew so much that the territories of medieval cities were perceived as a single ensemble in the structure of the growing city and it became difficult to navigate in the city itself. For example, the area of the dytynets in Poltava was only about 0.7 hectares, the area of the Poltava fortress in the 17th century was about 28 hectares, the area of the Holy Cross Monastery was 1.5 hectares, the territory of the city in the mid-18th century was 45 hectares and the territory of the new city center in the 19th century (Round Square) was already 10 hectares [4].

However, even the radical reconstruction of the urban plan that took place in the studied cities during this period could not ignore the previously formed irregular principles of the urban structure, its main core and many important buildings. Most of the new construction in the studied cities took place on new territories with the preservation of the former historical core (dytynets or castle). Also, the new was inevitably influenced by the tradition, which added to the distinctive appearance of the cities. The churches retained their dominant significance, but the interaction of their composition with the urban space, as a rule, changed significantly. The traditions of manor houses in the studied cities also proved to be stable; in the 1830s and 1840s, the predominant building was again the construction of houses with gaps, rather than a 'continuous facade' [30 p. 39], as required by the style, which gave way to greenery on the street.

The third period (mid-19th century – early 20th century) is the period of capitalism in urban development. The internal development of the studied cities underwent a transformation due to the increase in the number of stories of residential buildings, the use of various styles and the spread of advertising in the urban environment. The architectural environment of the cities of Novhorod-Siverskyi and Pereiaslav has undergone the least changes. As a result of their diminishing political, economic and administrative role in the country, these cities practically did not develop during this period. The architecture of capitalist buildings and the architecture of classicism shared the same tectonic principles of building construction, so new buildings were compositionally consistent with those of the classical heritage. The land market led to an increase in the density and number of stories of buildings. And the 'solid facade' street construction, which had been proclaimed in the previous period and not implemented then, began to be implemented in this period under the influence of the economy in the cities of Poltava, Chernihiv and Nizhyn.

In general, the development of this period continued in the mainstream of the architectural and urban planning traditions of classicism, having a characteristic flavor for each city and retaining such valuable features of the previous stages as 1) the proportionality of the development to the planning module and the person, 2) an anthropogenized urban landscape that included many parks, gardens, green backyards and landscaping of city streets, 3) the use of the natural landscape in the city's composition and 4) visual and planning interrelationships

between the city's compositional dominants [4 p. 41]. It was during this period that the expressive and holistic compositions of the studied cities were formed.

The fourth period (early 20th century–late 20th century) is the period of Soviet occupation, when the historical environment of all cities underwent significant negative changes as a result of new multi-story construction, the formation of industrial hubs, territorial growth and the destruction of most religious buildings and historic houses. The latter led to the partial destruction of the historic spatial composition of the cities. The historical ensembles that were destroyed were replaced by newly built squares, also based on the principles of classical regularity. In Poltava during this period, the external silhouette of the city was completely lost, the floodplain of the Vorskla River was built up and most of the city's vertical dominants, i.e., churches, were lost. The architectural heritage of the first period in the city's development was severely damaged, but the architectural heritage of the second period was almost completely preserved. In Chernihiv, on the contrary, some of the monuments of the second period were destroyed, but most of the unique monuments of the first historical period were preserved or restored. New factories were built in the central part of Nizhyn. The intrusion of large-panel buildings into the context of the original historical environment was quite aggressive, despite the preservation of most religious buildings. The historical compositions of Pereiaslav and Novhorod-Siverskyi were also deformed. In general, during this period, the increase in the territory of cities and the absence of new architectural ensembles in new territories led to a mismatch between the scale and influence of the dominant elements of the historical urban composition and the modern size of the cities. The cities lost their integrity.

Typology of architectural ensembles of the studied cities

The study identifies two main types of architectural ensembles—an irregular ensemble and a regular ensemble—that have developed in the cities of Central Ukraine in the course of their historical development.

The typological features of the irregular type of ensemble are determined: irregular principle of organization and group organization of architectural forms (1); volumetric-spatial structure with a harmonious balance of vertical forms and spaces (2); dynamic composition (3); active use of the natural landscape (4); and openness of the ensemble and active interaction with the environment (5) (Fig. 1).

The external typological features of the regular type of ensembles are regular principle of organization and linear, radial, or central organization of architectural forms (1); spatial structure of the ensemble with a predominance of free space of squares and avenues (2); static composition (3); leveling of the features of the natural landscape (4); and closeness of the ensemble and formation of a closed space of squares and streets (5) (see Fig. 1).

The composition of irregular ensembles embodied medieval ideas about the world as a whole as a closed, theocentric and centripetal world centered on God. The monastery was seen as ‘the heavenly city of the righteous – the mountain Jerusalem,’ and the monastery temple was defined as the earthly heaven and ‘the eye of God,’ while the city was an earthly city compared to the heavenly one [21]. Hence the principle of the construction hierarchy and organization methods of all monastery complexes built on the territory of Ukraine.

The irregular type of ensembles includes the following: the complex of the Holy Cross Monastery in Poltava (17th–19th centuries); the Yelets (11th–17th centuries) and the Trinity and St. Elias (15th–18th centuries) monasteries in Chernihiv; the Transfiguration Monastery in Novhorod-Siverskyi (15th–18th centuries); the Vvedenskyi and Blahoveshchenskyi monasteries in Nizhyn (18th century), an ensemble of religious and civil architecture of the Nizhyn Greek Brotherhood, which was built in Nizhyn in the 18th–19th centuries on the territory of the Old Town; and the Voznesenskyi (18th century) and Mykhailivskyi (17th–18th centuries) monasteries in Pereiaslav (Fig. 2).

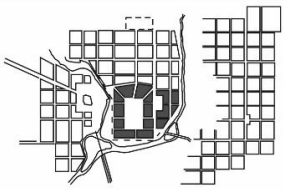
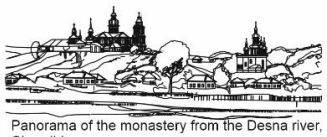
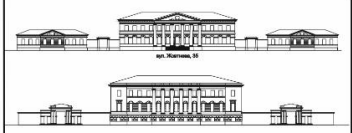
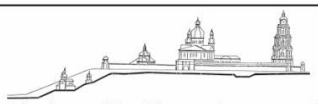
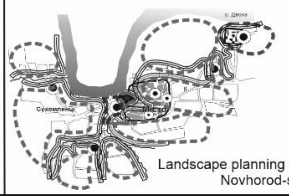
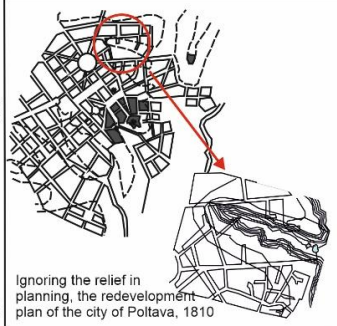
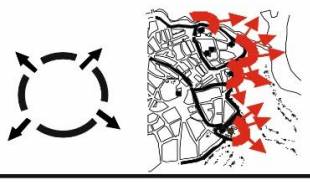
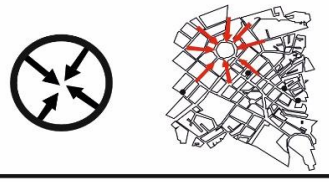
	IRREGULAR ENSEMBLE	REGULAR ENSEMBLE
Principle and type of organisation	Irregular principle and group organisation of forms	Regular principle and central, linear organisation of forms
	 18th century Pereiaslav city plan	 1818 Pereiaslav city redevelopment plan
Type of structure	Volumetric-spatial structure	Spatial structure
Nature of composition	Dynamic	Static
	 Panorama of the monastery from the Desna river, Chernihiv	 Buildings of the Round Square ensemble, Poltava
Interaction with the natural background	Strengthening of natural zoning	Levelling of natural zoning
	 Tiered composition of the monastery corresponds to the features of the relief, Chernihiv  Landscape planning districts, Novhorod-siverskyi	 Ignoring the relief in planning, the redevelopment plan of the city of Poltava, 1810
Degree of closure	Open system with predominance of external relat	Closed system with predominance of internal relations
		

Fig. 1. External typological features of ensembles as system-forming factors. (Drawings by H. Osychenko)

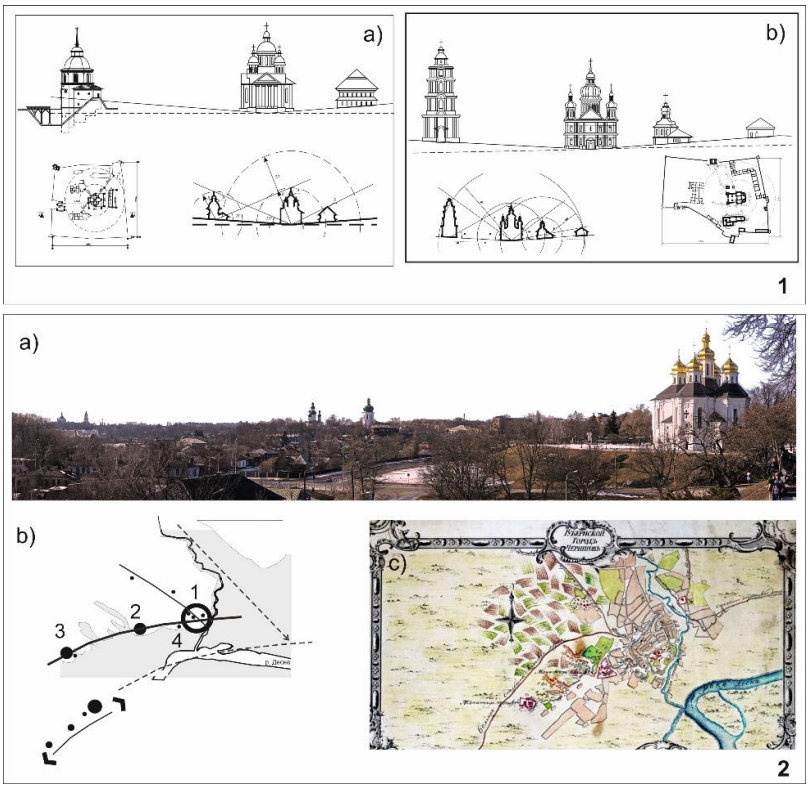


Fig. 2. Irregular type of ensemble. 1 – Monastery complexes: a) Preobrazhenskyi Novhorod-Siverskyi Monastery (founded in the eleventh century): plan, section and construction patterns; b) Trinity-St. Elias Monastery in Chernihiv (founded in 1069): plan, section and construction patterns; 2 – Chernihiv city: a) panoramic view of the city from Dytynets, b) a scheme of the frontal construction of the city's ensembles, c) 18th-century city plan [31]: 1 – Dytynets, 2 – Yelets Monastery, 3 – Trinity-St.Elias Monastery, 4 – St.Catherine's Church. (Drawings and photos by H. Osychenko)

The constellation of religious buildings in the studied cities formed their unique panorama from the outside. Not all the religious buildings of this period were preserved in the cities during the Soviet occupation. The churches and monasteries of Chernihiv suffered the least. The frontal landscape of the Desna Valley was matched by the frontal system of ensembles of the city of Chernihiv along the river, formed by the religious buildings of the Dytynets, the Yelets Monastery and the suburban Trinity and St. Elias Monastery. It formed a unique silhouette and panorama of the city from the river valley and from Dytynets (Fig. 2-2). This is the only surviving historical panorama of the city on the Left Bank of Ukraine. It is a visual expression of the process of architectural, urban and landscape development of the city; it identifies the city in the surrounding space and helps to read its internal space, the uniqueness of its architectural and semantic content.

The universality of the medieval model of world creation influenced the stable traditions in the construction of ensembles, which were observed for several centuries in ensembles of other functional types, regardless of external circumstances. It is only with the change in the conception of the world characteristic of the Classical period that the principles of ensemble construction change completely. Newton's understanding of the infinity of the universe and its boundlessness and the understanding of the body as a part of space, which can be absolute or relative, marked the beginning of changes in the architectural language. It was the

understanding of space as the container of all things, infinite and at the same time real, that became the basis of the new aesthetic. Thus, in the second period, a different type of architectural ensemble emerged – a regular one, in which the geometrically correct spaces of squares and streets became the main focus.

In contrast to the previous period, the regular ensemble formed a closed or semi-closed space with a limited number of views and a predominant horizontal movement of the eye, which made it balanced and static. And this is entirely justified, since classicism in urban planning in Ukraine, as well as neoclassicism in other European countries, was an official style with which the authorities sought to demonstrate their firmness, stability and greatness. The first code of rules and instructions for planning and building cities in the Russian Empire, called the 'Rules of the Architectural Expedition,' required "...to build every stone building in every street in the same proportion of height, as it is determined;...to maintain symmetry and to make all buildings of the same height, which adds considerable beauty to the city [30, p. 60].

The regular ensembles of the second period include the constellations of Palace, Senate and Admiralty squares in St. Petersburg and the city centers of Odesa, Poltava, Kerch and Kherson. In the cities studied, regular ensembles are not fully represente and not all projects were implemented for economic reasons. However, the fully implemented Kruhla ploshcha (Round Square) project in Poltava is a significant achievement in the art of urban planning.

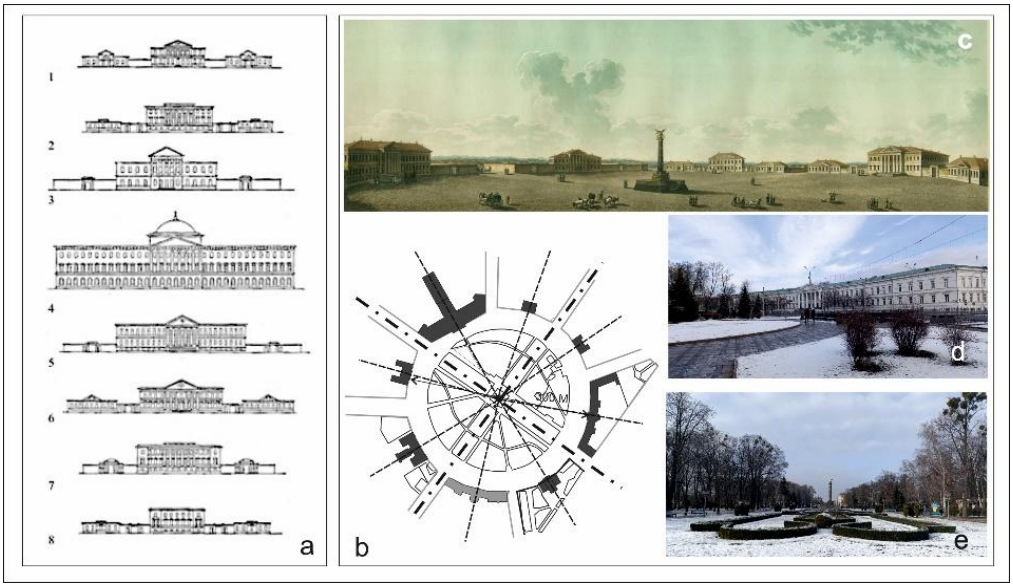


Fig. 3. Regular type of historical ensembles: 1 – Kruhla Ploshcha, Poltava (Round Square): a) facades of buildings, b) plan of the square, c) round square in the early nineteenth century. An engraving by K. Ceskyi after a painting by F. Alekseev, d) the governor's residence (now the town hall), January 2025; e) the Korpusnyi Garden, January 2025. Photos and drawings by H. Osychenko

The Kruhla Ploshcha is a new city center outside the fortress, in contrast to the medieval one inside the fortress. Its dominance in the composition of the city is ensured by 8 radial streets, which diverge from the center of the square (1805 city reconstruction project of the architect M.A. Amvrosimov). In 1805–1811 the Monument of Glory was built in the center of the square (architect Toma de Tomon, sculptor F. Shchedrin). The majestic space of the 10-hectare square is surrounded by public buildings built between 1809 and 1811: the post office,

provincial and district public places and palaces of the governor, vice-governor and the Noble Assembly. The cadet corps was built on the eighth plot between 1832 and 1840. All the buildings are in the classical style, have harmonious proportions and create a majestic impression (Fig. 3). The large size of the square led to the creation of a regular park in the center of the square in 1840 [25].

The completed administrative and cultural center of Odesa of this period has also been preserved; it is located in the coastal zone (designed by the architect F. Chalets, 1820, with the development of the quarters under the direction of the architect F. Boffo). Its compositional core was a symmetrical semicircular square with a monument to the first mayor of Odesa, A.-E. Richelieu (1825, sculptor I. Martos, architect A. Melnikov). In Odesa this monument is affectionately called "Our Duke." The symmetrical square ended with a huge staircase to the sea (architect F. Boffo, engineers J. Upton and G. Morozov and hydraulic engineer B. Fan-der-Flees). The staircase originally had 199 steps (now 192) and extended downwards from 13.4m to 21.7m, creating a perspective effect that enhanced the grandeur of the building.

This type of urban planning culture is also characterized by the development of a system of regular linear ensembles in cities: Kerch (former Vorontsov Street and Predtechinskaya Square, 1821, architect F. Schall), Odessa (former Potemkinsky, now Prymorsky Boulevard, 1820, architect F. Schall) and Kherson (linear ensemble of the former Erdelyiivska Street).

During the Soviet occupation, the regular ensemble was revived in the development of historical centers. The cities studied went through all stages of development of the classical style, including the neo-classicism of the 1930s and Stalinist classicism. City squares and large linear street ensembles were created on the basis of classical regularity: Teatralna Square in Poltava, Chervona ploshcha in Chernihiv (Red Square) and Bohdan Khmelnytskyi Administrative Square in Pereiaslav (Fig. 4). Bohdan Khmelnytskyi Square in Pereiaslav is located on the territory of the former fairground near the Ascension Monastery, which was built in the 18th and 19th centuries. According to the new regular plan of 1860, the main square was designed as a rectangle. The vaguely shaped square opposite the monastery buildings was replaced by perfect proportion. Thanks to the brick shops built in the middle of the square, which ran parallel to the monastery shops, the square in front of the Ascension Monastery formed a whole for the first time. In 1916, however, a fire destroyed the entire monastery building, which housed shops, a parochial school, an office and a candle store. Since the 1920s, the walls of the monastery buildings have been gradually demolished and in 1946 the church of Varvara was demolished. In 1947 the inhabitants of Pereiaslav created a park on the ruins of the ancient market square. In 1949 the Kyivoblproekt developed a new general plan for Pereyaslav, taking into account its historicity. The former marketplace was to be reconstructed. In particular, it was planned to create a front square along the main street of the city, according to the projects of I. Dabagian, I. Zaslavskyi, T. Eligulashvili, L. Semeniuk, B. Pritsker, O. Hryshchenko, O. Lozynska, H. Krasnokutska and V. Halalaev [4, 27, 31]. Today, the 60×90m symmetrical square forms an ensemble with administrative and public buildings built in 1953-54 in a single style of Stalinist classicism (Fig. 4-2).

Fig. 4. Regular ensembles of the Soviet period: 1 – Chervona Ploshcha, Chernihiv (Red Square): a) a scan of the square. Photo by H. Osychenko, 2006, b) a diagram of the modern system of ensembles in Chernihiv with identification of linear ensembles; c) a plan of the square; 2 – B. Khmelnytsky Square, Pereiaslav: a – b) Photos from the 1960s. Electronic copies of photographs from V. Yatsenko's own archive; c–d) current state of the square. Photos by V. Yatsenko, January 2025

System-preserving features of architectural ensembles in the cities studied

The comparative analysis allows us to conclude that the types of ensembles are opposed not only at the level of their semantic principles but also in the internal techniques and principles of compositional formation. The integrity and individuality of ensemble composition are ensured by its structure. The *structure* of an irregular ensemble is based on vertical dominants and visual connections between them, while in a regular ensemble a large, geometrically correct space unites all the elements into a single whole.

The system-preserving characteristics of regular and irregular ensembles have been defined and presented in Table 1.

Table 1. System-preserving features of architectural ensembles in the cities studied

Comparative characteristics	Typological features of ensembles	
	Irregular ensembles	**Regular ensembles**
1	2	3
Functional purpose of ensembles	Religious complexes, monasteries, city centres, civil and religious complexes	Administrative centres of cities, educational institutions, palace complexes, palace and park complexes, city gardens, hospital complexes
Structure of the ensemble	Volumetric and spatial, formed by vertical dominants and connections between them	Spatial
Ensemble configuration	Irregular, irregular shape, subordinate to the relief	Correct geometric shape as a manifestation of human will
Principles of achieving integrity	– Unity in plurality; – Hierarchical composition; – Dynamic composition; – Verticalism; – Monocentrism; – Subordination to the surrounding natural landscape; – Organicity	– Stylistic homogeneity of buildings; – The principle of mirror symmetry; – Static composition; – Horizontalism; – Metrical regularities of the ensemble construction
Elements of the ensemble	Buildings, space and natural landscape	Space, buildings as boundaries of space, small architectural forms. Fountains, staircases and gardens were elements inserted into a balanced relationship between the architectural buildings and the environment.
Compositional centre of the ensemble	The building of the main cathedral of the monastery	Geometrically correct directional space between buildings, anchored by a monument in the centre
Character of buildings	– All-facade stepped buildings; – Vertical monostructure buildings	– Differentiation of building facades into street (more representative) and courtyard facades; – Horizontal polystructural buildings
The nature of the space	A single flowing space	Clearly divided space into streets, squares, courtyards
Methods of using natural factors	Active use of the relief: – Placing vertical dominants at the highest points of the relief; – Reinforcing natural zoning and accentuating relief features with architectural structures; – Stepped forms of dominant buildings, repeating the forms of the relief.	Passive use of the relief: – Levelling of natural zoning and relief features; – Preferential construction of ensembles on the flat relief of the plain or transformation of complex terrain into flat terrain
Prevailing connections	External visual	Stable internal connections, limited by planning
The scale of the ensemble	A combination of monumentality and intimacy.	Monumentality
The nature of the planning	Irregular	Regular with the presence of the main axis of symmetry

Comparative characteristics	Typological features of ensembles	
	Irregular ensembles	Regular ensembles
1	2	3
Features and techniques of visual organisation	Synthesis of visual organisation techniques: – Hierarchy of buildings and spaces; – Visual connection of compositional elements through non-linear axes; – Lack of correspondence between visual and spatial connections; – Focusing on the main dominants in the visual frames as they move in a non-linear way within the ensemble; – An infinite number of visual views that combine near, medium and distant perspectives and that do not have a fixed horizontal beginning and end, but have a centre that points upwards towards the sky; – The verticality of the buildings and their visual unity with the surroundings gives the space an upward movement; – Lateral disclosure of dominants in the urban structure; – Opening up visual views of the surrounding landscape.	Synthesis of design techniques in the planning organisation: – Design connection between elements; – Approximation of dominants in the visual frames by moving along the design axes; – A limited number of visual perspectives determined by the layout; – The formation of linear visual perspectives gives the space a horizontal forward movement, 'into infinity'; – Disclosure of dominant facades along the planning axes of the city; – In most cases, the lack of visual views to the surrounding landscape, as the natural basis of most ensembles did not have this potential.
Compositional Techniques	– The presence of spaces between buildings; – The division of the overall form into separate vertical volumes at the level of the whole ensemble and at the level of a single building; – The concentricity of the belts of buildings in plan view from the centre of the composition; – The orientation of buildings towards the centre of the composition; – Free arrangement of buildings in space, taking into account their visual perception; – The separation of the main dominant in the space; – The integration with the surrounding natural landscape	– Striving for a continuous development of the perimeter of the dominant space; – The dimensions of the buildings are subordinate to the urban space and develop horizontally; – The scale proportionality of buildings; – The symmetry of building facades, the symmetry of space, the symmetry of ensemble layout; – The enrichment of squares with sculptural and architectural monuments; – The height of buildings along streets and squares is regulated and ideally tends towards a single height.
Background building features	Heterogeneity and pointed development: low-rise, small-scale urban development of the low-density manor type, much lower in height than the vertical buildings that dominate the composition	Homogeneous perimeter development of the same height with a 'solid façade', with the fixing of road junctions.

Comparative analysis shows that, in the context of the increasing number of stories and densification of modern buildings, it is the irregular ensembles that are most at risk. For irregular ensembles, the destruction of the system of vertical dominants, the links between them, the large-scale relationship between dominants and background buildings, as well as the disruption of links with the natural landscape and changes to the natural landscape are critical. It is therefore important to preserve irregular ensembles by regulating the height of new buildings in areas where they have a visual and compositional impact, preserving their links with the natural landscape, maintaining low densities and adhering to the principle of hierarchy between dominant and background buildings. For regular ensembles, it is necessary to complete the perimeter development of the quarters with homogeneous buildings of the same height, preserve and improve open spaces, adhere to the style and preserve historical landscaping and existing monuments.

A detailed study of a particular historic ensemble of a city reveals additional specific features that need to be preserved. For example, the peculiarity of the Poltava Round Square ensemble is its sparse perimeter development of manor-type buildings with their own well-greened areas.

Thus, we consider the system-preserving features of historical ensembles as the rules and principles of the composition of new buildings in the regeneration of the historical environment of cities and in the construction of new territories. By following these rules, we will ensure the continuity of the urban composition development, as well as preserve the historical architecture and all its values.

Conclusions

A retrospective analysis of the development of the studied cities has revealed 4 periods of development of their spatial composition and layout. The study identifies two types of historical architectural ensembles: irregular and regular. It was found that the types of architectural ensembles were determined by the types of urban planning cultures that developed in the area and their characteristics and principles of construction were extended to cities in general in the given period. The principles and methods of forming the ensembles, which constitute their typological characteristics, were revealed.

The novelty of the study is the classification of historical types of architectural ensembles of Central Ukrainian cities with the definition of their typological and system-preserving features. For the first time, the typological features and construction patterns of historical types of ensembles are considered as a compositional tool in the regeneration of the historical environment of cities and become the basis for the development of high-quality architectural regulation of new development.

The theoretical significance of the work is to improve the methodological approach to the regeneration of the historical environment and new construction by regulating new development. The proposed methodology allows us to ensure the preservation and continuity of the historical environment of cities, to coordinate the composition of new buildings with the historical one and to preserve the "spirit" of the city when building new territories.

The practical significance of the findings lies in the possibility of using the results of the study in the further development of architectural monument protection zones and regimes of their use, local regulatory legal acts of territory development and urban planning documentation.

The prospect of further research by the authors is the scientific substantiation of the quantitative regulation of new construction in historical cities.

References

[1] * * *, https://sdgs.un.org/2030agenda

[2] L.J. Wang, P. Shu, *Study on Typology Application of Historical Environment Protection and Regeneration: A case study on urban design of the Guangfu City protection and surrounding wetland ecological restoration in Handan City*, **Architectural Journal**, **2**, 2010, pp. 71-76.

[3] M. Zagroba, A. Szczepanska, A. Senetra, *Analysis and Evaluation of Historical Public Spaces in Small Towns in the Polish Region of Warmia*, **Sustainability**, **12**, 2020, 8356, DOI: 10.3390/su12208356.

[4] H.O. Osychenko, **Methodological foundations of the reconstruction of the compositional structures of historical cities (on the example of the cities of Central Ukraine)**: diss. Ph.D. arch., Kharkiv, 2006. (Original language: Г.О. Осиченко, **Методичні основи реконструкції композиційних структур історичних міст (на прикладі міст Центральної України)**: дис. канд. арх., Харків, 2006).

[5] S. Ayyıldız, F. Ertürk, Ş. Durak, A. Dülger, *Importance of Typological Analysis in Architecture for Cultural Continuity: An Example from Kocaeli (Turkey)*, **IOP Conference Series: Materials Science and Engineering**, **245**(7), 2017, Article number: 072033, DOI: 10.1088/1757-899X/245/7/072033.

[6] M. Jurić, M. Jurić, K. Šmit, *The Typology of Dubrovnik Summer Residences as a Spatial Planning Tool for Developing the Coexistence of Privacy and Sociality: A Case Study of the Gruž Area*, **Heritage**, **6**(12), 2023, pp. 7559-7577, DOI: 10.3390/heritage6120397.

[7] Y. Kassou, D. Alkama, S. Bouzaher, *Earthen Architectural Heritage in the Gourara Region of Algeria: Building Typology, Materials, and Techniques*, **Heritage**, **7**(7), 2024, pp. 3821-3850, DOI: 10.3390/heritage7070181.

[8] K. Siountri, C.-N. Anagnostopoulos, *The Classification of Cultural Heritage Buildings in Athens Using Deep Learning Techniques*, **Heritage**, **6**(4), 2023, pp. 3673-3705, DOI: 10.3390/heritage6040195.

[9] E. Jahić, *Mosques of Ottoman Period in Bosnia and Herzegovina: A typological classification of historical forms*, **Periodicals of Engineering and Natural Sciences**, **10** (5), 2022, pp. 115-135, DOI: 10.21533/pen.v10i5.3191.

[10] B.M. Pozas, F.J. Neila González, *Housing building typology definition in a historical area based on a case study: The Valley, Spain*, **Cities**, **72**(Part A), 2018, pp. 1-7; DOI: 10.1016/j.cities.2017.07.020.

[11] C. Santos, T.M. Ferreira, R. Vicente, J.A. Raimundo, M. da Silva, *Building typologies identification to support risk mitigation at the urban scale – Case study of the old city centre of Seixal, Portugal*, **Journal of Cultural Heritage**, **14**(6), 2013, pp. 449-463, DOI: /10.1016/j.culher.2012.11.001.

[12] İ.M. Özdemir, C. Tavşan, S. Özgen, A. Sağsöz, F. B. Kars, *The elements of forming traditional Turkish cities: Examination of houses and streets in historical city of Erzurum***, Building and Environment**, **43**(5), 2008, pp. 963-982, DOI: 10.1016/j.buildenv.2006.05.008.

[13] S. Xie, *Learning from Italian Typology- and Morphology-Led Planning Techniques: A Planning Framework for Yingping, Xiamen*, **Sustainability**, **11**(7), 2019, 1842, DOI: 10.3390/su11071842.

[14] A.C. Rosado, M. Reimão Costa, *The Contribution of Typological Studies to the Integrated Rehabilitation of Traditional Buildings: Heritage Enhancement of Urban Centres in Inner Alentejo, Portugal*, **Architecture**, **4**(1), 2024, 35–45, DOI: 10.3390/architecture4010004.

[15] N. Leshchenko, *Methodology of determining the genetic code of the city: a basis for restorative and reconstructive transformations in its historical center*, **Wiadomosci Konserwatorskie Journal of Heritage Conservation**, **69**, 2022, pp. 7-14, DOI: 10.48234/WK69GENETIC.

[16] E.P. Oleynik, **Spatial planning organization of the historical core in the structure of the center of a large city (on the example of cities in the western regions of the Ukrainian SSR)**, Dis. Cand. Arch., Kyiv, 1989. (Original language: Е.П. Олейник, **Пространственно-планировочная организация исторического ядра в структуре центра большого города (на примере городов западных областей УССР)**, дис. канд. арх., Киев, 1989).

[17] H. Gao, Y. Wang, H. Zhang, J. Huang, X. Yue, F. Chen, *Spatial Distribution and Typological Classification of Heritage Buildings in Southern China*, **Buildings**, **13**(8), 2023, 2025, DOI: 10.3390/buildings13082025.

[18] K. Suphamityotin, *Deciphering the styles and architectural features of Korat houses from traditional central Thai houses*, **Kasetsart Journal of Social Sciences**, **45**(2), 2024, pp. 651-660, https://so04.tci-thaijo.org/index.php/kjss/article/view/272034.

[19] T. Min, T. Zhang, *Bidirectional Transmission Mapping of Architectural Styles of Tibetan Buddhist Temples in China from the 7th to the 18th Century*, **Religions**, **15**(9), 2024, Article number: 1120, DOI: 10.3390/rel15091120.

[20] M. Górski, W. Lach, *"Świdermajer", the Architecture of Historic Wooden Summer Villas in the Polish Landscape: A Study of Distinctive Features*, **Land**, **11**(3), 2022, Article number: 374, DOI: 10.3390/land11030374.

[21] N.S. Miroshnyk, **Orthodox monastic complexes of Ukraine (Principles of functional and aesthetic rehabilitation)**: diss. Ph.D. arch, Kyiv, 1999. (Original language: Н.С.

Мірошник**, Православні монастирські комплекси України (Принципи функціональної і естетичної реабілітації)**, дис. канд.арх, Київ, 1999).

[22] K. Lens, B. Plevoets, K. Van Cleempoel, *Conservation of monasteries by adaptive reuse: The added value of typology and morphology*, **WIT Transactions on the Built Environment**, **131**, 2013, pp. 111-121, DOI:10.2495/STR130101.

[23] V. Khaidukov, O. Sleptsov, *Symbolism and functional organization of architecture of the Orthodox religious and educational complex*, **IOP Conference Series: Materials Science and Engineering**, **907**(1), Article number: 012020, DOI 10.1088/1757-899X/907/1/012020

[24] E. Vodzinskii et al., **Methodological recommendations for the study of historical and architectural heritage in the cities of the Ukrainian SSR**, Kiev, KievNIIPgradostroitelstva, 1982. (Original language: Є. Водзинский и др, **Методические рекомендации по исследованию историко-архитектурного наследия в городах Украинской ССР**, Киев, Киев НИИПградостроительства, 1982)

[25] H. Osychenko, O. Tyshkevych, V. Yatsenko, I. Dreval, *Preservation of the urban historical landscape as a response to the challenges of war*, **International Journal of Conservation Science**, **15**(SI1), 2024, pp. 141-156, DOI: 10.36868/IJCS.2024.si.12.

[26] H. Osychenko, *Principles of architectural and landscape organization of gardens of Ukraine orthodox monastery complexes*, **ARCHITECTURAE et ARTIBUS**, **8**(4), 2016, pp. 26-34.

[27] * * *, Archive of Naukovo-Research Institute of History, Theory of Architecture and Urban Planning (Archive of NDIITIAM of Kyiv), **Inv. cases No. 1633 (1989) and No. 1723 (1972)**. (Original language: Архів Науково - дослідного інституту історії, теорії архітектури та містобудування (Архів НДІІТІАМ м. Києва), **Інв. справи № 1633 (1989 рік) та № 1723 (1972 рік).**

[28] L.A. Plyashko, **To the issue of planning and construction of the cities of the Left Bank of Ukraine in the middle of the 18th century**, Archive of NDIITIAM of Kyiv, Inv. case No. 454, 1986. (Original language: Л.А. Пляшко, **До питання планування та забудови міст Лівобережжя України середини 18 сторіччя**, Архів НДІІТІАМ, Київ, Інв. справа № 454, 1986).

[29] A.I. Stanislavsky, **Planning and development of Ukrainian cities**, Kyiv: Budivelnyk, 1971. (Original language: А.И. Станиславский, **Планировка и застройка городов Украины**, Киев: Будивэльнык, 1971).

[30] A. Yu Becker, A.S. Shchenkov, **Modern urban environment and architectural heritage**, Moscow: Stroyizdat, 1986. (Original language: А.Ю. Беккер, А.С. Щенков, **Современная городская среда и архитектурное наследство**, Москва: Стройиздат, 1986).

[31] * * *, **Map of Chernigov province with division of districts and with the location of district towns in the circle of the same, plans and tables showing the distance of the same and the number of villages, buildings and people (1782-1791),** Vernadsky State Scientific Library, Kyiv, Cartographic Hall. (Original language**: Карта Черниговской губернии с разделением уездов и с расположением в круге оной уездным городам планов и табелей, показывающих расстояние оных и число селений, строений и народа, 1782-1791,** Державна наукова бібліотека ім. Вернадського, Київ, Картографічна зала.)

[32] * * *, https://phm.gov.ua/?p=114085

Received: November 22, 2024
Accepted: March 23, 2025