

PRESERVING UKRAINE'S CULTURAL HERITAGE: RESTORATION AND INCLUSIVITY

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Abstract

The article substantiates the relevance of the research topic related to the destruction of cultural heritage objects during the Russian-Ukrainian war. The general issues related to the preservation of architectural monuments and urban planning are analyzed, the existing legislative framework in Ukraine in the field of protection and restoration and the existing shortcomings in this field are determined and special attention is paid to the fate of cultural heritage in times of war when the main factors of the destruction of objects and the destruction caused by various types of weapons come to the fore. The directions of cooperation between the Ministry of Culture and Information Policy and the Ukraine International Institute of Restoration (UIIR) in the field of surveying war-damaged heritage sites with the subsequent creation of an electronic archive of objects and the application of the 3D scanning method and the reconstruction of the cultural heritage of the war-affected regions of Ukraine are highlighted. The aspect of access to objects of the cultural heritage of people with disabilities is considered.

Keywords: *Object of cultural heritage; Ukraine; Restoration; Inclusiveness factor*

Introduction

Today, the activities of all monument protection institutions have become more complicated as a result of active military operations, when missiles and drones will destroy heritage objects throughout the territory of Ukraine.

In addition to the problems of monitoring the condition of immovable cultural heritage objects, which became impossible as a system during the war and the problems of the absence of legally approved historical areas in most of the settlements, there remains the problem of insufficient documentation for many objects (especially in the regions) and their attribution. The attribution of architectural monuments and works of art is particularly relevant for Ukraine, where, as of December 31, 2022, the total number of monuments and objects of cultural heritage recorded and entered into the Register was 144,643.

At the same time, the total number of cultural heritage monuments entered into the State Register of Immovable Monuments as of January 2024 was 24,502 objects, i.e., 17% of the total number taken into account. Monuments of architecture and art were destroyed and damaged not only during the Russian-Ukrainian war but also due to the lack of funds for their maintenance.

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Of course, the main losses of the cultural fund of Ukraine today are related to the war; the number of destroyed and damaged objects of cultural heritage in the period from 24/02/2022 to 25/02/2024 amounted to 945 objects, of which 128 are monuments of national importance, local value – 742 and newly discovered objects of cultural heritage – 75. This figure is constantly growing.

Objects of cultural heritage were damaged or destroyed in 17 regions, in particular:

Kharkiv region – 235 damaged/destroyed monuments of cultural heritage, including 10 of national importance, 221 of local importance and 4 newly discovered objects of cultural heritage (Bogodukhivskiy district – 6; Izyumskiy – 14; Krasnohradskiy – 2; Lozivskiy – 1; Kharkivskiy – 197; Chuhuivskiy – 15).

Donetsk region – 128, including 15 of national importance and 113 of local importance (Kramatorskiy district – 44; Mariupolskiy – 27; Bakhmutskiy – 28, Pokrovskiy – 24; Volnovaskiy – 5).

Odesa region – 119, including 28 of national importance, 91 of local importance (Bilhorod-Dnistrovskiy district – 1; Odeskiy – 117, Izmailskiy – 1).

Kherson region – 116, including 17 of national importance, 64 of local importance and 35 newly discovered objects of cultural heritage (Beryslavskiy district – 18; Kakhovskiy – 35; Khersonskiy – 63).

Chernihiv region – 70, including 27 of national importance, 37 of local importance and 6 newly discovered objects of cultural heritage (Chernihivskiy district – 63; Koriukivskiy – 1; Novhorod-Siverskiy – 2; Nizhynskiy – 3; Prylutskiy – 1).

Kyiv region – 69, including 16 monuments of national importance, 37 monuments of local importance and 16 newly discovered objects (Bilotserkiivskiy district – 1; Brovarskiy district – 5; Buchanskii district – 14; Vyshhorodskiy district – 6, Kyiv city – 43).

Zaporizhzhia region – 38 sights of local importance (Vasylivskiy district – 12; Zaporizkiy – 15; Polohivskiy – 10; Melitopolskiy – 1).

Lviv region – 36, including 2 of national importance and 34 of local importance (Zolochivskiy district – 1; Stryiskiy district – 1; Lvivskiy district – 34).

Dnipropetrovsk region – 34, including 1 of national importance, 27 of local importance and 6 newly discovered objects of cultural heritage (Dniprovskiy district – 15; Kryvorizky – 4; Nikopolskiy – 14, Pavlohradskiy – 1).

Luhansk region – 31 monuments of local importance (Svativskiy district – 5; Severodonetskiy – 24, Shchastynskiy – 2).

Sumy region – 25, including 5 of national importance and 20 of local importance (Konotopskiy district – 5; Okhtyrskiy – 12; Sumskiy – 7; Shostkynskiy – 1).

As of 07/05/2024, according to the calculations of the Ministry of Culture and Information Policy, based on the data of the regional and Kyiv military administrations, 1,085 monuments have already been damaged and destroyed, of which 5 damaged or destroyed objects were added to the list in June alone.

Of these 1,085 objects, 121 objects have the status of monuments of national significance, 884 objects have the status of monuments of local significance and 80 are newly discovered monuments.

Thus, as of 05/07/2024, the largest number of damaged and destroyed objects of cultural heritage are in the Kharkiv region (307), Kherson region (150), Donetsk region (125) and Odesa region (116) and these data do not include objects in the temporarily occupied territories of Zaporizhzhia, Kherson, Donetsk and Luhansk regions.

So, a comparison of the data on the loss of cultural heritage for two periods – from 24/02/2022 to 25/02/2024 and from 25/02/2024 to 05/07/2024 – showed the following:

– in the period from 24/02/2022 to 25/02/2024, 945 objects were damaged and destroyed, including 128 monuments of national significance, 742 of local significance and 75 newly discovered objects of cultural heritage; in the period from 25/02/2024 to 05/05/2024,

1,085 were already damaged and destroyed objects, of which 121 are monuments of national significance, 884 are of local significance and 80 are newly discovered objects of cultural heritage, therefore, the main amount of losses falls on monuments of local importance, which can cause certain difficulties in finding funding for their restoration;

– there is a comparison of losses in the regions of the East and the South, which indicates that the post-war reconstruction programs of the destroyed cultural heritage should be focused primarily on these regions.

Scientific sources were developed in the following areas:

- publications dedicated to the war in Ukraine and its impact on cultural heritage [1-12];
- general issues related to the preservation of the historical environment [13-16];
- the influence of ideology and environment on objects of cultural heritage [17-18];
- the concept of art in restoration [21-22];
- Internet sources related to inclusiveness issues [23];
- sources about the conservation of heritage objects [25-31].

The analysis of the source base proved the insufficiency of studies that would provide a statistical analysis of destruction and damage by region; this information remains unsystematized.

Today, a scientific source base dedicated to the destruction of the war in Ukraine and methods of restoration of cultural heritage sites is just beginning to form.

Studying the sources devoted to the restoration of specific monuments of cultural heritage provided a basis for the development of postwar restoration and restoration methods.

At the same time, we should note that today the causes of the state of emergency of monuments are completely different than before the war; therefore, these methods must be adjusted since the main destruction is caused by various types of weapons.

Materials and Methods

The methodological foundations of the research are developed, in particular, the choice of methods for surveying and recording damage and destruction of cultural heritage objects and a systematic approach that will optimize the process of post-war restoration are proposed. The expert systems of restoration activities developed by M. Orlenko for peacetime conditions were analyzed and expert systems for post-war restoration of cultural heritage sites were developed based on a similar principle.

The methods of theoretical and practical groups are used to solve research problems. The important role of the statistical analysis method as the main one in the field of monument protection is determined, as it provides information on the number of objects under protection by region and according to their status (of national importance, local importance, newly discovered monuments), allows you to determine the sequence of restoration of objects, to calculate the amount of work and the resources needed for this and to analyze the situation with the training of specialists of various profiles. Let's talk about the conditions of war. It is the method of statistical analysis that allows you to determine the statistics of destruction by year and by region, to identify those objects that cannot be examined now, to record data on monitoring the state of the object over time and to determine the most affected areas with the largest amount of damage and destruction of objects of cultural heritage and what kind of objects they are (religious, public, residential, industrial, monuments, objects of garden and park art).

The systematization of such information is necessary for the development of documentation for the restoration of damaged objects of cultural heritage and on its basis, the necessary material and human resources can be calculated.

Results and Discussion

The general issues related to the preservation of architectural monuments and urban planning are analyzed and the existing legislative framework in Ukraine in the field of protection and restoration and the existing shortcomings in this field are identified. Special attention is paid to the fate of cultural heritage in times of war when the main factors of the destruction of objects change fundamentally and the destruction caused by various types of weapons comes to the fore.

Since the topic of the thesis is multifaceted, this led to an extensive source base, in particular, an analysis of publications on monument protection and restoration legislation in Ukraine and the world, a review of restoration documentation and publications in the field of monument protection, publications on the history of architecture and restoration, as well as an analysis of articles in recent years dedicated to the consequences of the war in Ukraine.

Statistics on the number of monuments with protected status are detailed: as of 1999, more than 130,000 historical and cultural monuments had been granted protected status in Ukraine, of which 57,206 are archeological monuments (including 418 of national importance), 51,364 historical monuments (of which 142 are of national significance), 5,926 monuments of monumental art (of which 44 are of national significance) and 16,237 monuments of architecture and urban planning (of which 3,541 are of national significance and 12,697 are of local significance). Another 6,800 newly discovered monuments of architecture and urban planning were proposed for inclusion in the state register.

The legislative framework of monument protection activities as the basis of work on cultural heritage monuments has been analyzed. Among those aspects that are addressed by monument protection and restoration activities, such as preservation of the authenticity of the historical environment, compliance with the principles of zoning of city territories, legislation in the field of protection and restoration, restoration methods and technologies and the important aspect of dating architectural objects, decorative elements and works of art is determined.

This aspect is important, since many cultural heritage objects may have different temporal layers and this problem will be particularly acute during the post-war reconstruction of Ukraine.

It is already possible to predict huge amounts of cultural heritage restoration and important in this process will be the aspect of dating objects, establishing different temporal layers, assessing their value and identifying valuable and low-value works of art and elements of interior decoration to determine the sequence of restoration and restoration measures.

It is objectively clear that the most significant objects will be restored first, while the situation with monuments of local importance is more complicated due to lack of funds and lack of technical information.

Even for those objects that are monuments of national importance, only conservation measures are currently being carried out, which should preserve the monument from negative natural factors with the possibility of further complex restoration measures.

Poland's experience has proven that the process of rebuilding cities is a long and costly process, which, in the case of historical parts of the urban fabric or individual objects, is complicated by the addition of requirements to maintain authenticity during such rebuilding processes.

The experience of Poznań, analyzed in detail by A. Nadolny and K. Sluhotska [10], will be useful in the post-war restoration of cultural heritage. Among the specifics of the post-war restoration of the city's historical districts, the authors singled out the following [16]:

– Poznań is a city with a history of over 1,000 years, with an ancient historical part, the third oldest municipal center in Poland after Krakow and Warsaw, with a central model of a

medieval city with a market square and a network of streets around it, which underwent urban planning transformations in the 19th and 20th centuries by demolishing defensive walls;

- like many other European cities, the city of Poznań suffered large-scale destruction as a result of military actions;

- Poznań was liberated by the Soviet army in February 1945 and at that time the Old Town and the center on the eastern side of the main station were badly destroyed;

- an important role in the post-war reconstruction, in particular in ensuring the authenticity of such reconstruction, was played by documentary photography – archival and post-war time, which became an important basis for recording losses, creating drawings of destroyed territories and restoring massifs of historical buildings; photography left a legacy of the entire life process of the urban environment – before the war – after the war in the form of ruins, in the process of reconstruction and after reconstruction;

- the reconstruction of Poznań began immediately after the end of the war according to the following principle: first, municipal infrastructure and industrial production were restored and only then residential construction (after 1946);

- the medieval Old Town was destroyed by 60%, so several concepts of its use were proposed. There was even a proposal to conserve the ruins of the Old Town following the example of Hiroshima and turn them into a war memorial, but this idea was rejected.

The reconstruction of the Old Town of Poznań became another practical experience of restitution not of a separate destroyed object but of the entire historical center, when historical buildings were recreated in practice; those mistakes that were made in the 19th century with the appearance of new objects of inappropriate height, “renovations,” were eliminated, which distorted the authentic appearance of the houses etc.

When introducing new objects into an established historical environment, often formed by a set of cultural heritage monuments, architects use two approaches – either they “neutralize” the new building as much as possible, subordinating it to the established development, or they create a deliberate contrast effect.

The experience of the post-war restoration of the historical cities of Poland made it possible to identify those problems that will be relevant for the post-war reconstruction of Ukraine:

- financial factor;
- proper awareness of the society regarding the understanding of the reconstruction of cultural heritage as a factor of national identity;
- long-term reconstruction processes (for example, the reconstruction of the Granary Island structure in Gdańsk, which was almost completely destroyed in 1945 during the fighting between the Wehrmacht and the Soviet army, is still ongoing);
- the debatability of specific reconstruction examples and the reproduction sequence in conditions of limited resources.

The effort to rebuild a cultural heritage object requires at the same time finding a compromise between the requirements of maintaining authenticity, the functional needs of today and the expediency of introducing new materials and technologies during reconstruction.

The role of international institutions in conducting surveys and recording the destruction of cultural heritage objects of Ukraine caused by the war is determined. The content of documents on scientific cooperation between the Ministry of Culture and Information Policy, the Kyiv National University of Construction and Architecture (KNUCA) and the Ukraine International Institute of Restoration (UIIR) was analyzed. Areas of cooperation have been recognized as analytics based on monitoring the condition of cultural heritage sites with further development of legislative documentation for valuable objects.

The directions of cooperation between the Ministry of Culture and Information Policy and the Ukraine International Institute of Restoration (UIIR) in the field of surveying war-damaged heritage sites with the subsequent creation of an electronic archive of objects and the application of the 3D scanning method and the reconstruction of the cultural heritage of the war-affected regions of Ukraine are highlighted. Such activities are relevant even before the end of the war, given the ever-increasing number of losses of cultural heritage objects: the number of destroyed and damaged cultural heritage objects. As of 07/05/2024, 1,085 monuments have already been damaged and destroyed, of which 5 damaged or destroyed objects were added to the list in June alone. Of these 1,085 objects, 121 objects have the status of monuments of national significance, 884 have the status of monuments of local significance and 80 are newly discovered monuments. There have also been recorded cases of repeated attacks on objects of cultural heritage in the Zaporizhzhia region. The largest number of damaged and destroyed objects of cultural heritage are in the Kharkiv region (307), Kherson region (150), Donetsk region (125) and Odesa region (116) and these data do not take into account objects in the temporarily occupied territories of Zaporizhzhia, the Kherson region and the Donetsk and Luhansk regions.

It was noted that in the conditions of the war and post-war reconstruction, there will be changes to the field of monument protection activities, which will relate to the systematization of data on damaged and destroyed objects, the development of expert opinions and the ways of financing, including with the involvement of foreign investments and therefore this will require legislative changes; the practice of training qualified specialists should change; in particular, the program of creating expert project groups to assess the condition of facilities, especially in the regions, should start working.

Based on M. Orlenko's interpretation of restoration activity as a complex system and the examples of expert systems created by him, this study created an expert system in the field of cultural heritage protection, taking into account the realities of today, namely the problems of the Russian-Ukrainian war. In graphic form, the main components of the system and the structural connections between them were identified to determine the consequences and causes of the problems that arose in the field of cultural heritage and to outline the ways to overcome them. The same expert system was created for training specialists in the field of restoration, created in cooperation with UNESCO and the Ministry of Culture and Information Policy of Ukraine.

According to the same principle, the scheme of the information model of profile training of restorers was developed in graphic form using the method of system-structural analysis, where the stages were divided into separate hierarchical levels.

Following the topic of the research, using the system-structural method in the form of an expert system, it is possible to present the field of training of specialists – experts of cultural heritage objects according to the principle of “problem-consequence-solutions.”

A statistical analysis of the loss of cultural heritage objects in Ukraine during the period of the full-scale Russian-Ukrainian war, starting from February 2022, was carried out; data on the specifics of damage during the war were analyzed and systematized; and based on the existing source base and own materials of surveys of damaged objects, it is proposed how exactly to create a program of training experts in the field of cultural heritage restoration based on a systematic approach.

As an illustration of the problems of cultural heritage protection, the Mykolaiv region was chosen, where 45 cultural heritage objects had been damaged by 2024. The main problems in the Mykolaiv region are related to the lack of an electronic register of damaged objects and insufficient attention to the preservation and document circulation of objects of local

importance and newly discovered monuments, which will make it difficult to find sources of financing for restoration works.

Using the example of the destroyed Mariinskyi Gymnasium in Mykolaiv, a list of first-rate emergency works is proposed and it indicates how the domestic experience of reproducing such unique objects as the Dormition Cathedral of the Kyiv-Pechersk Lavra and the St. Volodymyr Cathedral in Chersonese can be used during reconstruction.

The statistics of destructions in the Odesa region were analyzed with the determination of the statuses of damaged and destroyed objects of cultural heritage.

The problem of rebuilding the immovable cultural heritage damaged and destroyed during the Russian-Ukrainian war will require the following successive issues to be resolved:

- the need to compile a complete electronic register of damaged objects of cultural heritage with a determination of the state of damage in dynamics and a preliminary calculation of the amount of restoration work;
- training of domestic experts;
- the involvement of domestic and foreign experts in monument protection and restoration activities to assess the cultural and artistic value of objects and thus determine the order of their reproduction and the nature of the financing of works (international institutions, the state of Ukraine, local government bodies, private business, benefactors, foundations);
- creation of international programs for the reconstruction of damaged unique objects - monuments of national significance;
- determination of the executors of the works on the object or on a number of objects: investor, general designer, general contractor and subcontractors;
- development of complete documentation for the project and all types of work.

It is worth noting that although projects for the restoration of the damaged heritage are already being developed, it can be predicted that the absolute majority of the work will be carried out after the end of the war and during the war only the necessary primary conservation measures can be carried out in order to fix the state of the monument and provide the possibility of its restoration in the future.

The review of the source base proved that the Russian-Ukrainian war exacerbated and revealed the problems that already existed in the field of monument protection and restoration, in particular:

- the central organization for the protection of cultural heritage and local bodies (regions) is unable to ensure the performance of their duties due to their small number and low qualification of employees;
- lack of a unified database of technical monuments for cultural heritage objects with a description of all the repair and restoration works carried out and their results;
- there is no single electronic register of all damaged objects, the number of which and the level of damage are constantly increasing, with damage monitoring data;
- even before the war, the lack of a coordinated system of restoration activities and the admission of relevant specialists to such works led to the fact that restoration works were carried out by people without proper experience and such works led to the distortion of monuments;
- the requirements for the balance keeper of the memo about the obligations to preserve its authentic appearance were not strict enough, due to which the uncontrolled reconstruction, extension and change of the object had minimal consequences;
- the problem of the shortage of preservation specialists and restorers has intensified to the maximum, especially considering the need for special professional experience to carry out restoration works, appropriate qualifications and familiarization with modern world restoration technologies and materials;

- there is a lack of specialized literature on restoration in the Ukrainian language, taking into account the local specifics of the restoration of monuments and the lack of up-to-date foreign sources on restoration among Ukrainian architects;
- a necessary requirement for Ukrainian restorers in modern conditions is the command of the English language with an understanding of restoration terminology accepted in the world, which should provide them with access to foreign scientific sources and the possibility of contacts with foreign colleagues.

The relevance of the problems of preservation and subsequent restoration of cultural heritage objects damaged during the Russian-Ukrainian war led to the specific construction of the study in the absence of systematic scientific information regarding the count of all damaged cultural heritage objects with data on monitoring their condition, the calculation of the amount of damage and the predicted relic of restoration works with their cost.

Conclusions

To optimize the calculation of losses, it was suggested to use information models of architectural objects. How such a model can be adapted for survey tasks is shown on the example of one damaged object – the House of Scientists in Odesa, which, together with the Picture Gallery, is located at the address 4 Sabaneev Bridge and was hit by rocket fire on 23/07/2023.

Information models can be of several types – generalized for all facades and for all interiors and specified for a specific facade or the interior of a specific room. These two types of models perform different functions: a generalized model with the inclusion of problems on all facades creates a generalized picture of all damages; that is, it is performed for statistics. On the other hand, a specified model for a separate facade or room is aimed at a more detailed list of works and the specifics of damage in a specific case.

The author presented two such models: one specified for the facades and one generalized for all the interiors of the House of Scientists in order to show the differences in the obtained results.

Taking into account the large amount of destruction, it is proposed to create a Register of Destructions as part of the Register of Immovable Cultural Heritage and to activate the Program for the restoration of destroyed and damaged monuments. The result of complex actions should be the State Strategy for the formation of post-war reconstruction and development of the cultural heritage of Ukraine until 2030.

By the problems faced by the field of cultural heritage protection, a solution to the problem of the shortage of specialized personnel in the field of restoration was proposed.

Since the number of destroyed objects of cultural heritage is constantly increasing and most of them are monuments of local importance and newly discovered objects for which there is often no complete documentation at all, the priority for this war period and the first post-war years is the preparation of professional certification of experts based on a master's degree in architecture and at least three years of professional experience.

The study of the existing source base, statistics on the extent of destruction and damage to cultural heritage objects during the war and expert systems developed by M. Orlenko and I. Korotun in the field of monument protection and restoration activities proved that these expert systems should be adjusted, taking into account the realities of war, taking into account the nature of the damage, mass population migration, lack of personnel etc.

Thus, the primary tasks, taking into account the conditions of war, should be:

- development of a comprehensive program for accounting for damaged objects with an agreed program for carrying out surveys and entering the received data into the electronic database;
- transformation of organizations of restoration activities following war and post-war realities;
- borrowing foreign experience of the investment attractiveness of the sphere of cultural heritage, reforming domestic monument protection legislation and bringing it to European standards;
- changes in the training of specialized personnel, development of training programs for experts in the field of restoration activities capable of conducting consultations in the regions;
- digitization of the register of cultural heritage objects.

One of the most urgent issues is the reconstruction of facilities, taking into account the factor of inclusiveness.

Since the number of adults and children with disabilities increased sharply with the war, it is already clear that after the war such a number of people will be quite significant; therefore, this is already causing changes in the design and reconstruction of objects of various purposes.

One of the aspects that will have to be taken into account during the reconstruction of cultural heritage sites is the provision of access for people with disabilities. Inspections of cultural institutions for inclusiveness are already underway (for example, the School of Universal Design from the UN Development Program conducted an audit of several cultural institutions in Kyiv for accessibility for people with special needs [23]).

It is significant that participants with disabilities, even in wheelchairs, took part in the survey. The Ministry of Culture and Strategic Communications of Ukraine took part in this project.

Kharkiv became the first city in Ukraine that plans to create a department of inclusive accessibility and barrier-free environment [24].

It is planned to improve the monitoring of the effectiveness of barrier-free and inclusivity measures throughout Ukraine, since as of 2023, 22% of the 54,000 investigated objects were barrier-free [24].

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