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RESTORATION OF DESTROYED CITIES IN UKRAINE

ВІДНОВЛЕННЯ ЗРУЙНОВАНИХ МІСТ УКРАЇНИ

Harkusha V. S.

*Candidate of Technical Sciences
Associate Professor
at the Department of Architecture
SHEI "Pryazovskyi state
technical university"
Dnipro, Ukraine*

Гаркуша В. С.

*кандидат технічних наук,
доцент кафедри "Архітектура"
ДВНЗ "Приазовський державний
технічний університет"
м. Дніпро, Україна*

After the proclamation of Independence, Ukraine faced the biggest challenge in its history in the form of Russian aggression and the largest war in Europe since World War II. Millions of people became displaced, dozens of villages and cities were destroyed, some cities were completely destroyed. But over the thousand-year history of its ex-istence, humanity, states and settlements have constantly faced the problems of eliminating the consequences of various factors, which caused significant damage and destruction of buildings, infrastructure, and sometimes the complete destruction of cities [1].

After the end of the war, the question of what to do with these cities and whether they should be restored will become relevant. In the period of one year, from the date of Russia's invasion of Ukraine from February 24, 2022 to February 24, 2023, according to estimates by the Government of Ukraine, the World Bank Group, the European Com-mission, and the UN, recovery costs \$411 billion. Already in December 2023, according to estimates, the total cost of reconstruction and recovery in Ukraine is \$486 billion. Since the war is still going on, the cost of reconstruction and reconstruction will only increase every day.

At the moment, there is no state program for the restoration of destroyed territories in Ukraine, there are only separate draft laws, so far, government officials have developed a draft law that contains only legislative initiatives on the first conceptual steps to restore settlements. The process of developing a comprehensive recovery program is divided into three stages, and during each of them, the public is involved, public discussion events are held. Obviously, people who are directly interested in the restoration of their region will be involved in this discussion.

As we can see, despite the dominance of rules, there is no single state program for the restoration and development of war-torn territories to rebuild cities and return Ukrainians to their homeland, and each community decides on its own. In our opinion, at the moment, the Mariupol

Reborn program for the restoration of Mariupol best answers this issue, which predicts that the city's population will be smaller than before the war and will recover only in 15–20 years.

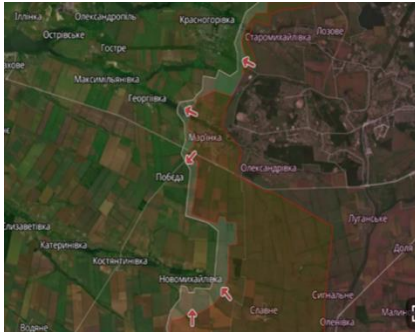
In addition to Mariupol, large cities such as Severodonetsk, Lysychansk and Rubizhne were affected during the hostilities, and the question arises whether it is worth restoring these three cities separately or creating one large urban agglomeration from these three cities. In general, it should be recognized that some settlements will no longer be restored and the question of what we want to see in the de-occupied territories and how urgent the restoration of settlements in the pre-war form is becoming, because many residential buildings were already living out their term, and the so-called "Khrushchevs" had long outlived it and, one way or another, the question was what to do with them next. And measures had to be taken to deconstruct them, and the war only accelerated this process.

After the Second World War, Europe lay in ruins. In particular, all the cities of Central Poland were destroyed by more than half. But even against their background, Warsaw and Gdansk stood out, where the situation was especially critical. However, it was these cities that later became an example of post-war reconstruction [2]. As we can see, the world knows examples of the restoration of post-war cities, there are examples of Warsaw, Gdansk, Rotterdam, Dresden, but we note that these are large cities, and most of the affected settlements in Ukraine have a population of less than 100 thousand. For example, according to the community passport, less than 35 thousand people lived in the Maryinka city territorial community, including less than 10 thousand in Maryinka itself.

It is already possible to make a forecast that after the end of hostilities, the population of this city will be several times smaller, so the question of whether it is necessary to restore the city becomes relevant. Today, Maryinka remained only on the maps, along with the names of its streets – Blahodatna, Zavodska, Green, Kashtanova, Urozhayna, Stepova. It should be noted that there were battles in Maryinka in 2014, but on January 1, 2014, 9829 people lived there, but after Russia's open external aggression and fierce fighting in the city, on January 1, 23, there were zero people living there. Map of battles in Maryinka on Figure 1 and ruins of Maryinka on Figure 2.

In this article, we will consider the foreign experience of urban restoration and such a concept as a ghost town, since some settlements in Ukraine risk becoming such ghost cities, when, after the restoration of urban infrastructure, local residents who left there due to the war will not return, and if Bakhmut, Popasna and Volnovakha are in logistically advantageous places, and Avdiivka and Shchastia grew next to strategic facilities, then the population of Maryinka may not reach the pre-war level, so the issue of restoring this city becomes relevant. Unlike Trostyanets, which suffered

4%, Maryinka was completely destroyed, so we propose to make a difficult decision not to restore this city, but to create a modern memorial park in its place, dedicated to the victory over Russia and the memory of soldiers and civilians who died during the Russian-Ukrainian war.



**Fig. 1. Map of battles
in Maryinka**



**Fig. 2. Ruins of Maryinka
[Photo source: Ground Forces
of the Armed Forces of Ukraine]**

The creation of such a park will allow at least a little restoration of the affected ecology of Donbas, which was going through hard times even before the war. It should be noted that Donetsk was regularly included in the rating of the most polluted cities in Ukraine. That Park with the use of modern trends in green architecture will attract the attention of tourists and remind of the consequences of the aggression of one country against another, as well as the price that Ukraine had to pay to defend its integrity and statehood. The park will be a tribute to the memory and respect of all fallen patriots. The purpose of the work is to study the state of the destroyed territories as a result of hostilities and man-made disasters on the territory of Ukraine and the world, to assess the state of the occupied territories, especially small settlements, and to determine the directions for the reconstruction of the destroyed territories, taking into account the world experience in creating park zones in the post-war territories and territories that were destroyed as a result of man-made disasters.

After our victory and the end of the war, there will be places in every city that will remind of the war and the price of victory in it. This will also be manifested in the names of streets renamed in honor of the fallen heroes of the war, monuments will be made in some places, there is already an idea to make a memorial on the Singing Field in honor of the Heroes of Azovstal.

We propose to develop one large memorial park, on the site of Maryinka, and to divide the park itself into several zones, where the entrance will

resemble what this city and other places in Ukraine were before the war, and then the park will be divided into two large zones, symbolizing the two main periods of the war, where the first period is from 2014–2022, and the second from February 24, 2022–present. which will symbolize the era of the ATO-JFO, we propose to make a reminder of the out-standing and tragic events in this period, the creation of the battalions "Aidar", "Donbass", "Azov" and others, as well as to outstanding figures in this period (military, volunteers, civil activists). In the second zone, everything related to events after 2022. The park itself should end with a place of remembrance for all citizens of Ukraine, and foreigners who fell in this war for the Independence of Ukraine. The creation of the park in Maryinka will have a symbolic look as the end of the era of industrial and industrial Donbas, and the revival of Donbas with a new face [3].

We believe that after de-occupation, it is not necessary to restore everything as it was before the war, but it is necessary to create a new living space using modern technologies and modern trends in architecture and construction, and instead of possible ghost towns, which will take a lot of time and money to restore, it is better to create something new, for example, recreational areas, taking into account the nature and ecology of Donbas, which was not in the best condition even before the war, and even more suffered. For those residents of Maryinka who still decide to return, it is necessary to build housing and involve them in the work of the park.

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