

Research Article

Planning of Park Areas on Territories of Destroyed Cities

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Abstract

A study has been conducted on the state of cities affected by hostilities. The degree of damage to large cities and small towns in the war zone on the territory of Ukraine has been determined. An assessment of the cost of reconstruction of Ukrainian cities and the availability of state programs and mechanisms that will regulate such processes has been submitted, a review of draft laws for the restoration of damaged or completely destroyed settlements has been made. Proposals for the reconstruction of completely destroyed cities are given, taking into account the feasibility of restoring some of them. Measures for restoration work in the completely destroyed territories are proposed based on the study of world experience after military reconstruction. The world experience of countries on the territory of which large-scale tragedies with significant destruction and a large number of human casualties took place is considered in detail, as well as the processes of their impressive transformations are considered in detail. It is described how, as a result of the transition from a warring country and a completely destroyed territory, a center of peace was created and an example of honoring the memory of the victims of a tragedy that shook the world and still lives in people's memory as a reminder of painful and unnecessary experiences. In view of the events in Ukraine, it was proposed to create a recreational zone on the territory of cities that no longer exist, as a tribute to the memory of participants in hostilities on the territory of Ukraine.

Keywords

Military Operations, Destruction, Catastrophe, Reconstruction, Memorial Park

1. Introduction

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 existence, 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] (p. 326; 2, p. 159). 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 Commission, 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

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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. It is called "Program for Comprehensive Restoration of the Region (Region) and the Territory of the Territorial Community (Part of It)". 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 a result, it is the community that forms the main issues on its territory and a detailed understanding of what is happening in them. It is equally important to improve communication between local authorities, the public and experts, because it is the latter who will collect data, develop tasks and plans for the implementation of the project, others will perform and control the process of each other's work, and therefore, the feasibility of reconstruction of a particular settlement will be determined in tandem by these three groups.

In addition to certain draft laws, the Government approved Resolution No. 382 "On the implementation of an experimental project for the restoration of settlements affected by the armed aggression of the Russian Federation", which identifies six settlements where, within the framework of the pilot project, the restoration will take place comprehensively and according to new principles, the main of which is the principle of "Build back better", i.e. "rebuild better than it was". The following settlements were selected: Borodyanka and Moshchun in the Kyiv region, Trostyanets in the Sumy region, Posad-Pokrovske in the Kherson region, Tsyrkuny in the Kharkiv region, and Yahidne in the Chernihiv region. However, the analysis of the implementation of this resolution made by Transparency International Ukraine revealed a number of problems, one of which is the lack of funding. It should be noted that the resolution includes settlements, although with significant damage, but none of them was completely destroyed, for example, in Trostyanets, Sumy region, the total level of destruction was a little more than 4%.

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.

2. Materials and Methods

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.

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.

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.

In addition, the creation of a park can carry several more functions, for example, the temperature in Ukraine is currently breaking all temperature records, and September has become the warmest since 1881, and the question of how to

survive the heat is acute, it is worth paying more attention to parks that allow you to hide from the sun. Donbass will be in ruins after the end of the war, so Ukraine has the opportunity to completely change its face and make it less urbanized, restoring industry and the affected environment at parity [3, 4].

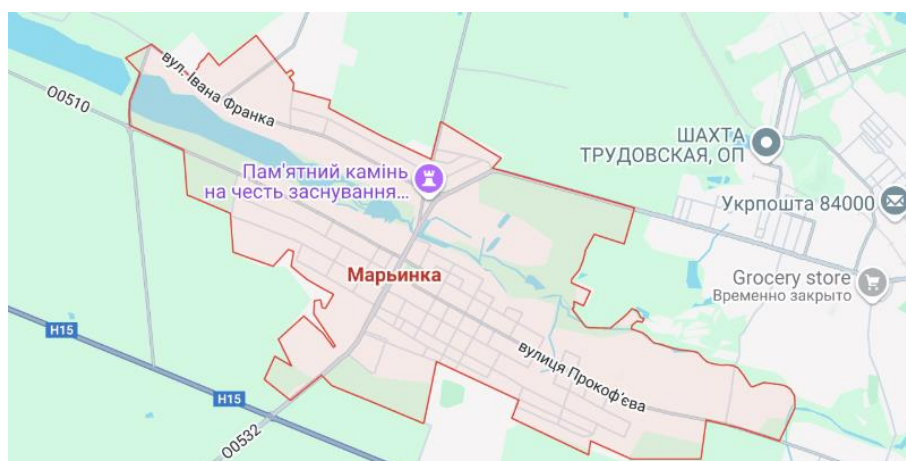


Figure 1. Map of the remains of Maryanka.

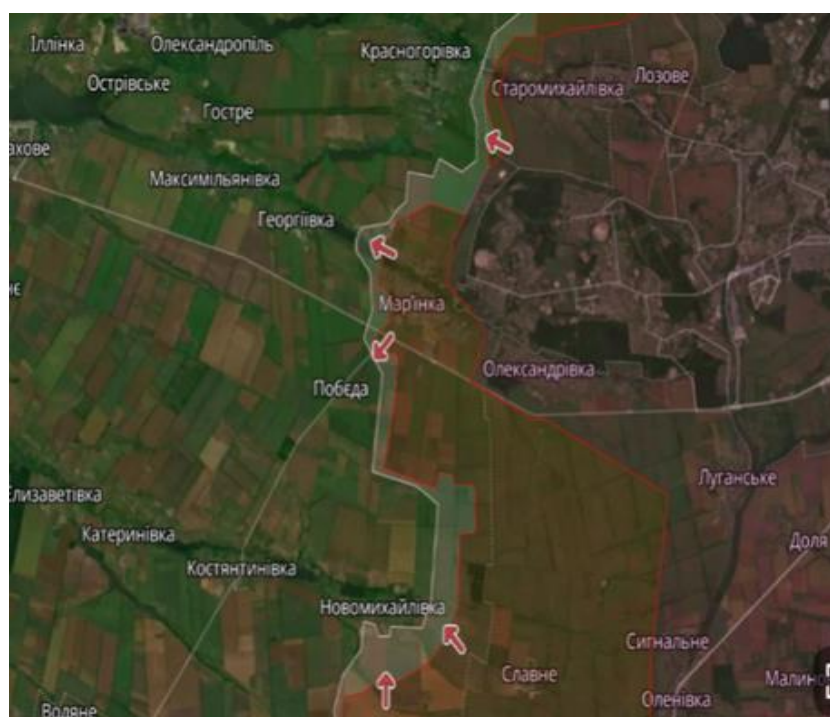


Figure 2. Map of battles in Maryanka, 2023 [12].

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 2014-22, 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 outstanding 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 [5].

The world knows many situations when parks were built at the site of mass deaths of people. A prime example is the Hiroshima Peace Memorial Park. The city, which turned into ashes in August 1945 as a result of the first use of atomic weapons in the history of mankind, has not only recovered, but also turned into the world center of peace and the greenest urban oasis in Japan. Many Japanese cities were in ruins after the end of World War II, but already in November 1945, the national government of Japan established the Agency for the Restoration of Affected Cities, and on December 30, the Cabinet of Ministers adopted the "Basic Reconstruction Policy", one of the points of which was the allocation of 10% of the city area for landscaping [6].

Ukraine is also familiar with the radioactive contamination of the territory as a result of the man-made accident at the Chernobyl nuclear power plant, which is why the territory of the Chernobyl Exclusion Zone appeared on the territory of the country. Unfortunately, it will take at least half a century to make this area a memorial park. The disaster was explosive in nature, the reactor was partially destroyed and a large number of radioactive substances was released into the environment.

There was an eruption with a capacity of 300 Hiroshima. Memorial zones have been created in the city of Chernobyl, which honor the memory of those who laid down their lives and health during the elimination of the fire at the nuclear power plant, as well as those who died as a result of this man-made disaster. about 600,000 people, primarily the liquidators of the disaster [7]. The monument to the firefighters-liquidators of the Chernobyl accident is shown in Figure 5 and the monument to all those affected by this large-scale disaster is shown in Figure 6.

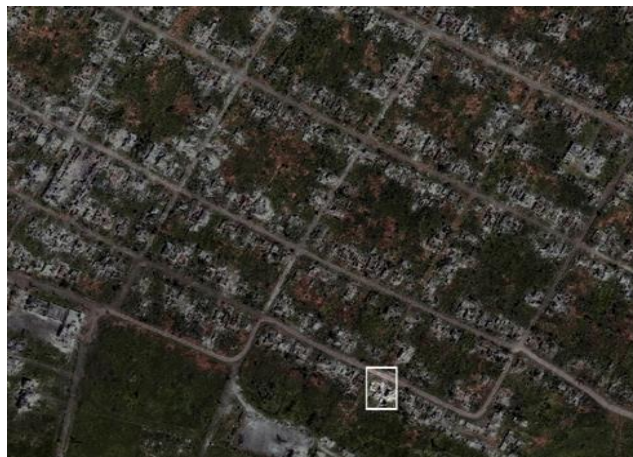


Figure 3. The state of Maryinka during hostilities (Source: Satellite image by Maxar Technologies, June 2022 *The New York Times*).



Figure 4. Ruins of Maryinka [Photo source: Ground Forces of the Armed Forces of Ukraine.



Figure 5. Monument "To Those Who Saved the World".



Figure 6. Monument "The Trumpeting Angel"

Green areas in the city have important functions, such as ecological, economic, city-forming, aesthetic, etc. That is why green spaces are an effective means of environmental protection of the city. It is necessary to carefully develop their arrangement and management, guided by the basic principles of urbanism and landscape design [8]. Taking into account the fact that most of the settlements where hostilities are taking

place were almost completely destroyed, we can allocate even more than 10% of the area and make Maryinka a memorial park [9]. Part of the park can be dedicated to the memory of the victims of numerous war crimes committed by the aggressor's troops, for example, as was done in Sandakan (Malaysia) – to perpetuate the memory of the British and Australian military who died in the Sandakan Death Marches in the Sandakan Memorial Park.

It should be noted that the Second World War gave humanity many memorial parks, which are also dedicated to Soviet soldiers [10]. There are such monuments in almost every city of Ukraine, but the memorial park in Maryinka should be completely different from them. that Ukraine will never return to the Soviet past or the so-called "Russian world".

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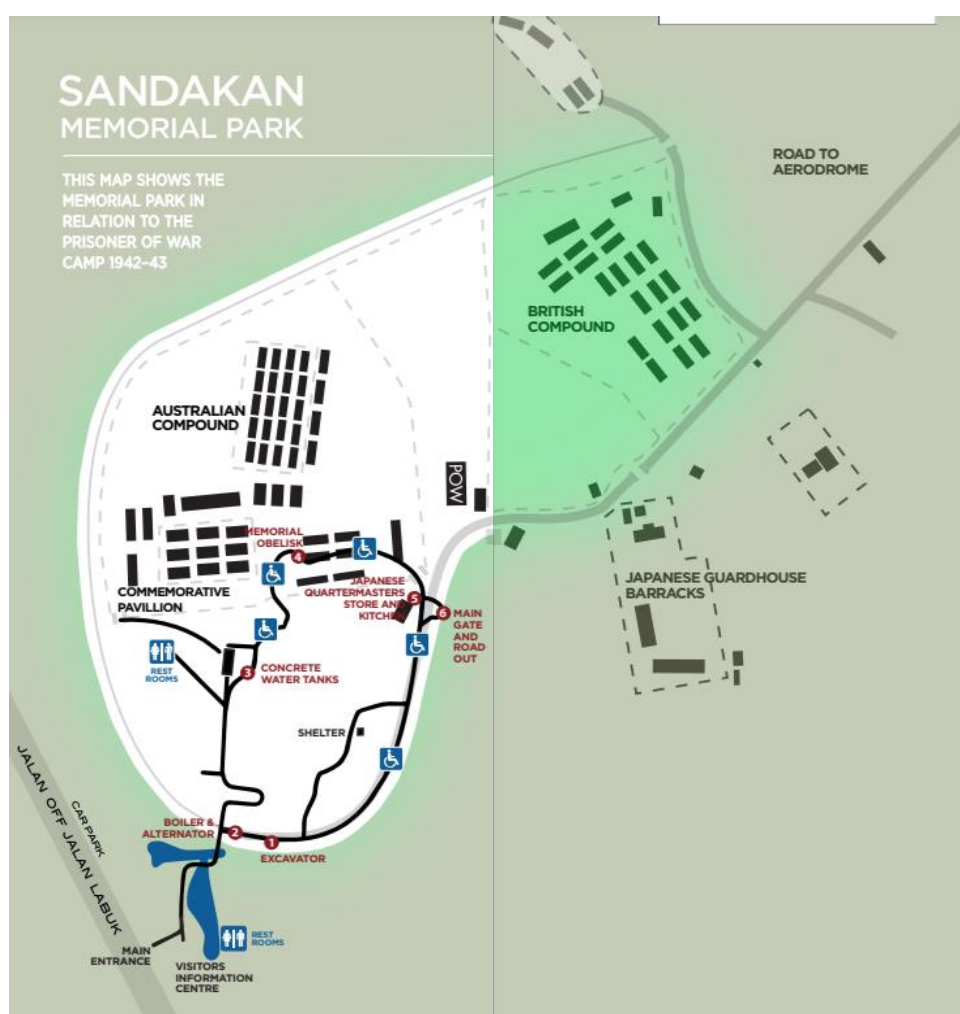


Figure 7. Map of the Sandakan Memorial Park.



Figure 8. View of the memorial park in the Memorial Park das S érejeiras

One of the clearest examples is the das S érejeiras Memorial Park in Jardim Angela, in the south of S ão Paulo, created according to the principles of neuroarchitecture (Figure 7, Figure 8). This memorial park is designed to help people experience grief through the practice of biophilia. Parque das S érejeiras is an open-air gallery of sculptures, artworks, and installations created especially for this place. The architects not only studied the religious and spiritual side of saying goodbye to loved ones, but also received training from geriatricians, psychiatrists and psychologists to better understand grief as a process and turned to an extensive study by Sincep (Union of Cemeteries and Private Crematoria of Brazil), in which grieving people were asked what they were looking for – most thought about acceptance and transformation.

3. Results and Discussion

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, but even according to the most optimistic forecasts, the population of Maryinka will not reach the pre-war figure.

4. Conclusions

In general, we consider the restoration of Maryinka irrelevant and propose to create a memorial park in its place, which will improve the ecology of Donbas, as well as attract tourists to the region, which will provide jobs for local residents who decide to return. Cleaning and maintaining the park in a decent condition will require human resources, the main thing is that such a park will become a cultural center that will honor the memory of all those who died in this war for Independence. Such a park will become a symbol of our victory, which will always remind us how expensive the

price for the Independence and Unity of Ukrainians was.

Author Contributions

Simonov Serhii: Conceptualization, Formal Analysis, Project administration

Vitaliia Harkusha: Methodology, Investigation, Writing – review & editing

Conflicts of Interest

The authors declare no conflicts of interest.

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