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SAVE UKRAINE TEAM 

# REBUILD UKRAINE

Reconstruction of private residential buildings destroyed by the war in the village of Moschun, Kyiv region

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Vice-president of National  
Union of Architects of Ukraine

Kyiv- 2022

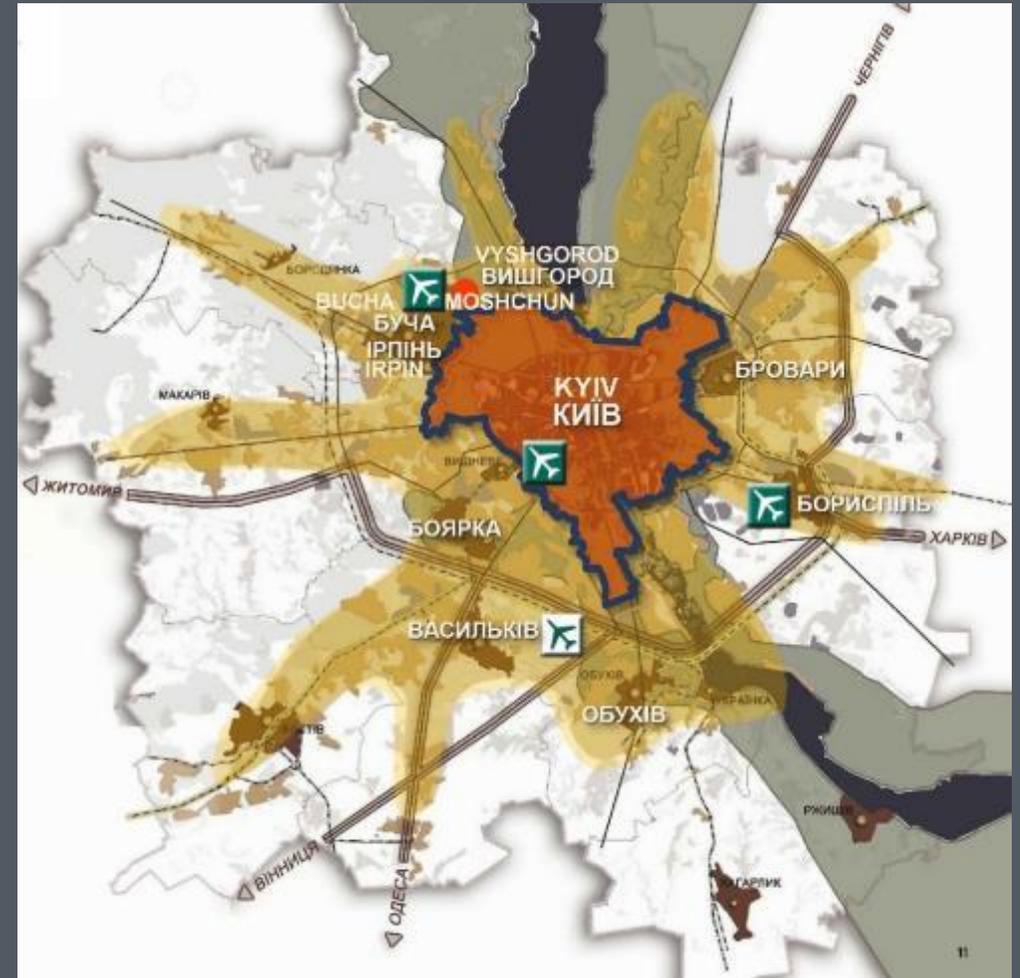
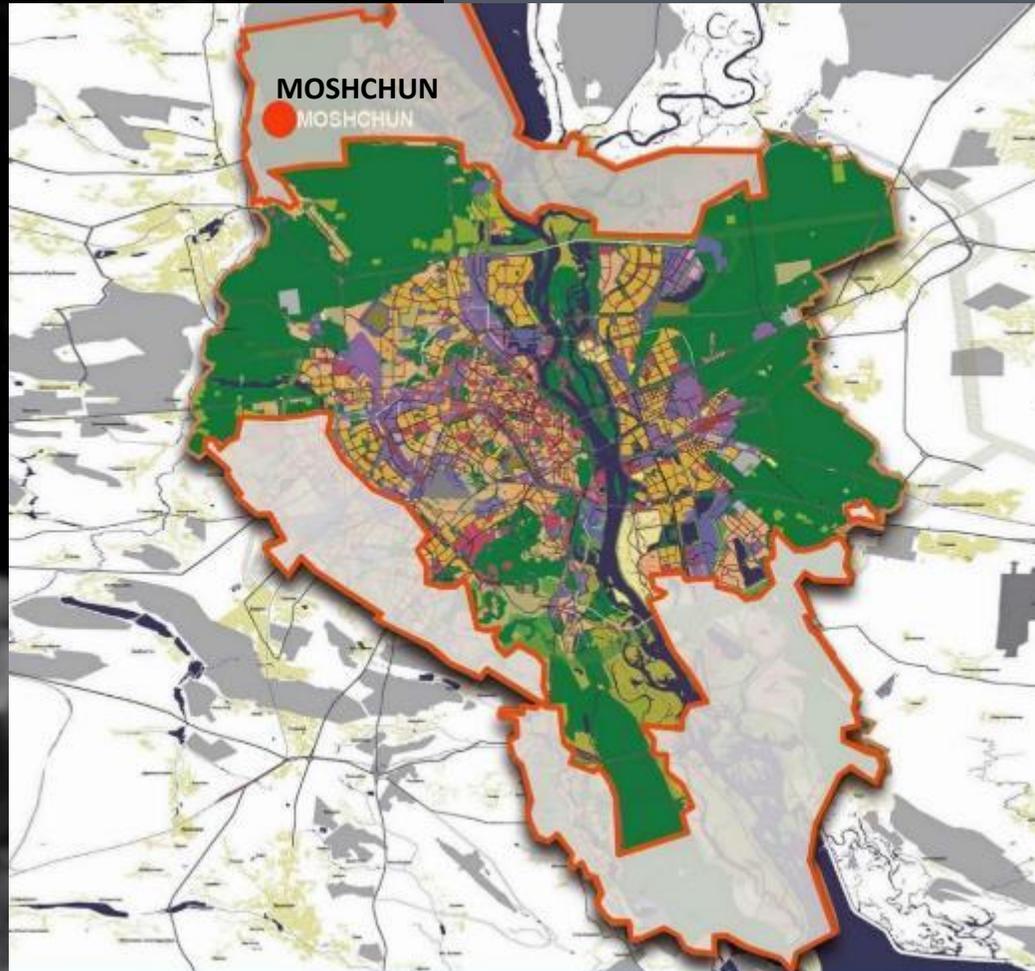


**CASE: VILLAGE OF**  
Issues of

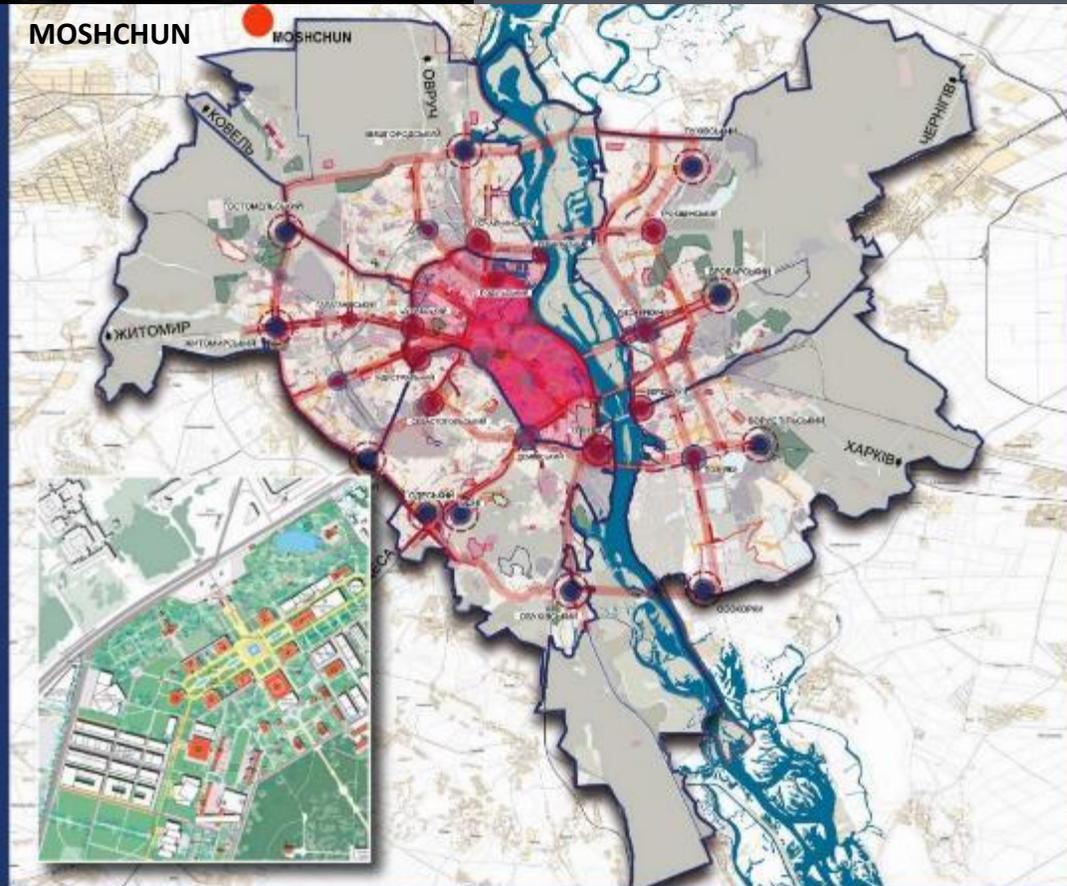
**MOSHCHUN**  
Renovation



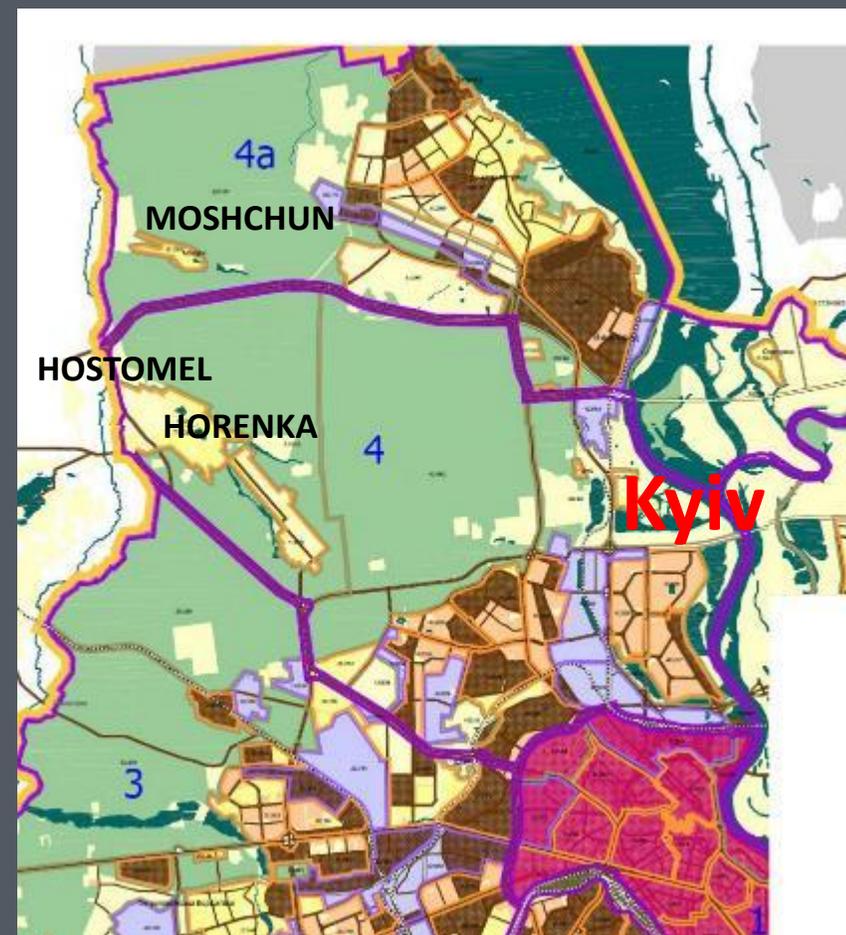
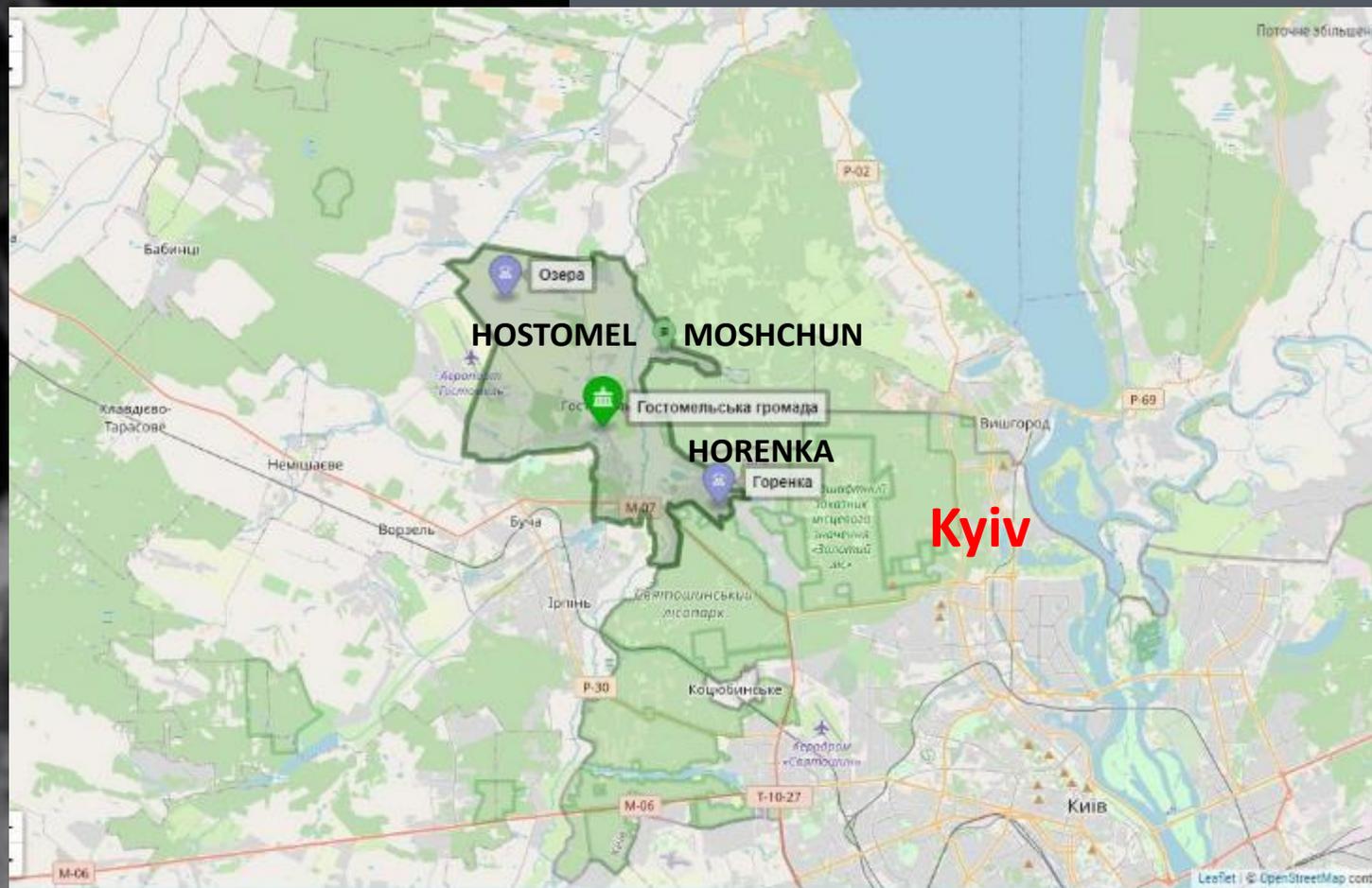
# Location



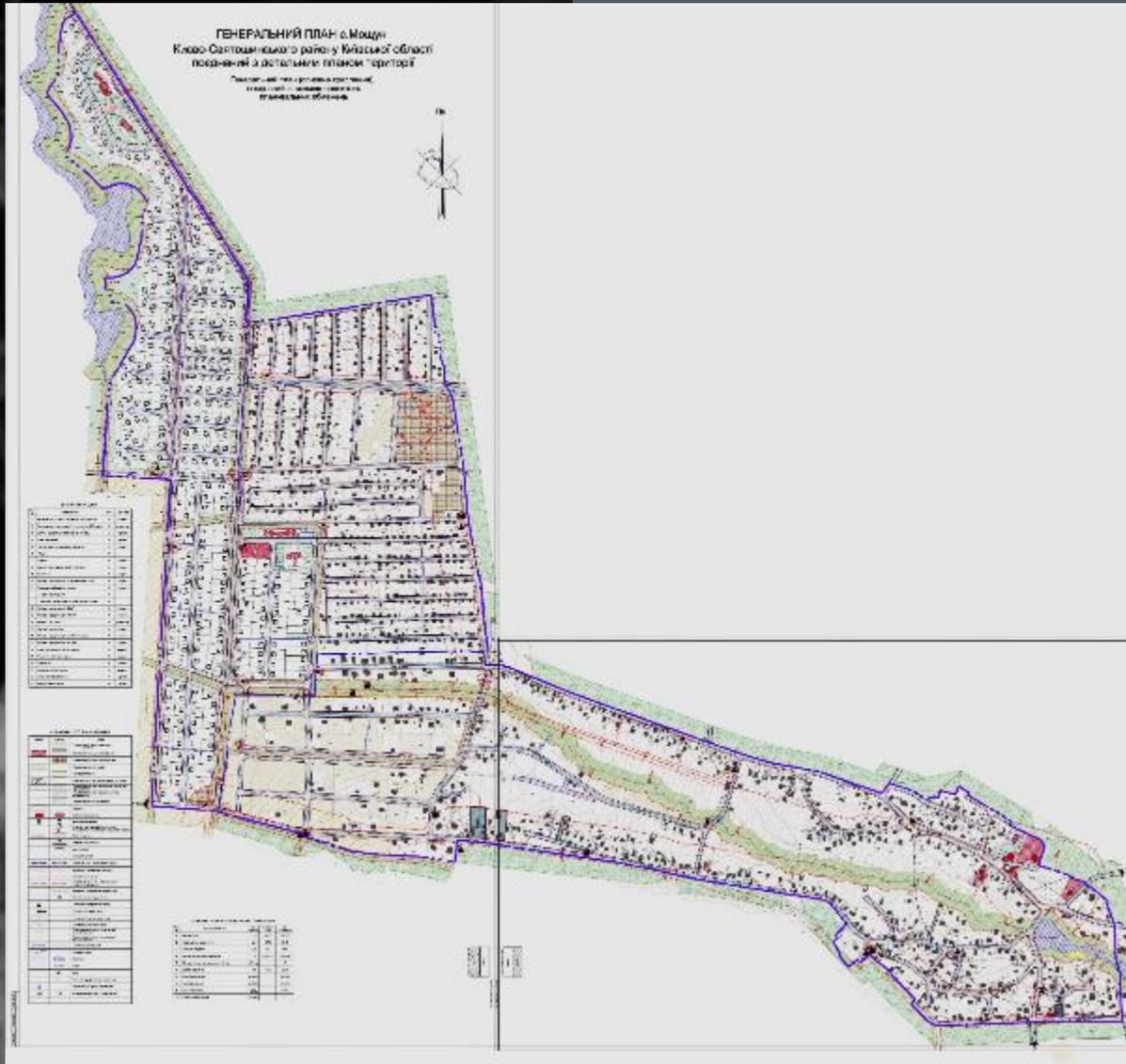
# Location



# Location



# Master plan



The area of the village is 126.73 hectares, the population 1,679 people

Existing housing stock of Moschun consists of 427 manor houses

The village of Moschun is located on the banks of a small river, which is a tributary of the Irpin River, with a coastal protection strip of 25 meters.

The geographical position and the availability of convenient transport links with the cities of Kyiv, Gostomel, and Irpin determine the attractiveness of the territory and the development of the settlement.

The residential quarters of the manor building are planned to be built with residential manor houses of the II-III degree of fire resistance in 1-2 floors with a conventional height of 9 m.

In addition to the residential building, there is a garden, vegetable garden, outbuildings, garage, greenhouses, garbage container, and compost pit on the homestead.



# Invasion of Russia on February 24, 2022

Російський план взяття Києва був двоколонним просування вздовж західного і східного берегів річки Дніпро. Щоб зупинити такий прогрес, Україна створила два кільця оборони, один в центрі міста, а інший на околицях міста.



Україна зруйнувала дамбу та затопила річку Ірпінь, фактично заблокувавши російські сили в аеропорту Антонова від Мощуна, який вони вважали воротами до Києва.



«Moschun could become a gate for the enemy on the way to the capital. However, our soldiers showed miracles of military skill. Not only the land was burning under the feet of the invaders, but also the water. Ukrainian defenders blew up bridges, pontoon crossings, preventing the enemy from advancing further. They kept Moschun. And with this, Kyiv was protected.»

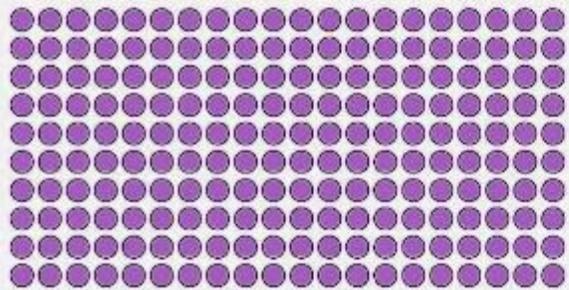
*from the Facebook page of the Commander-in-Chief of the Armed Forces of Ukraine Valery Zaluzhny*



# Bombardment level

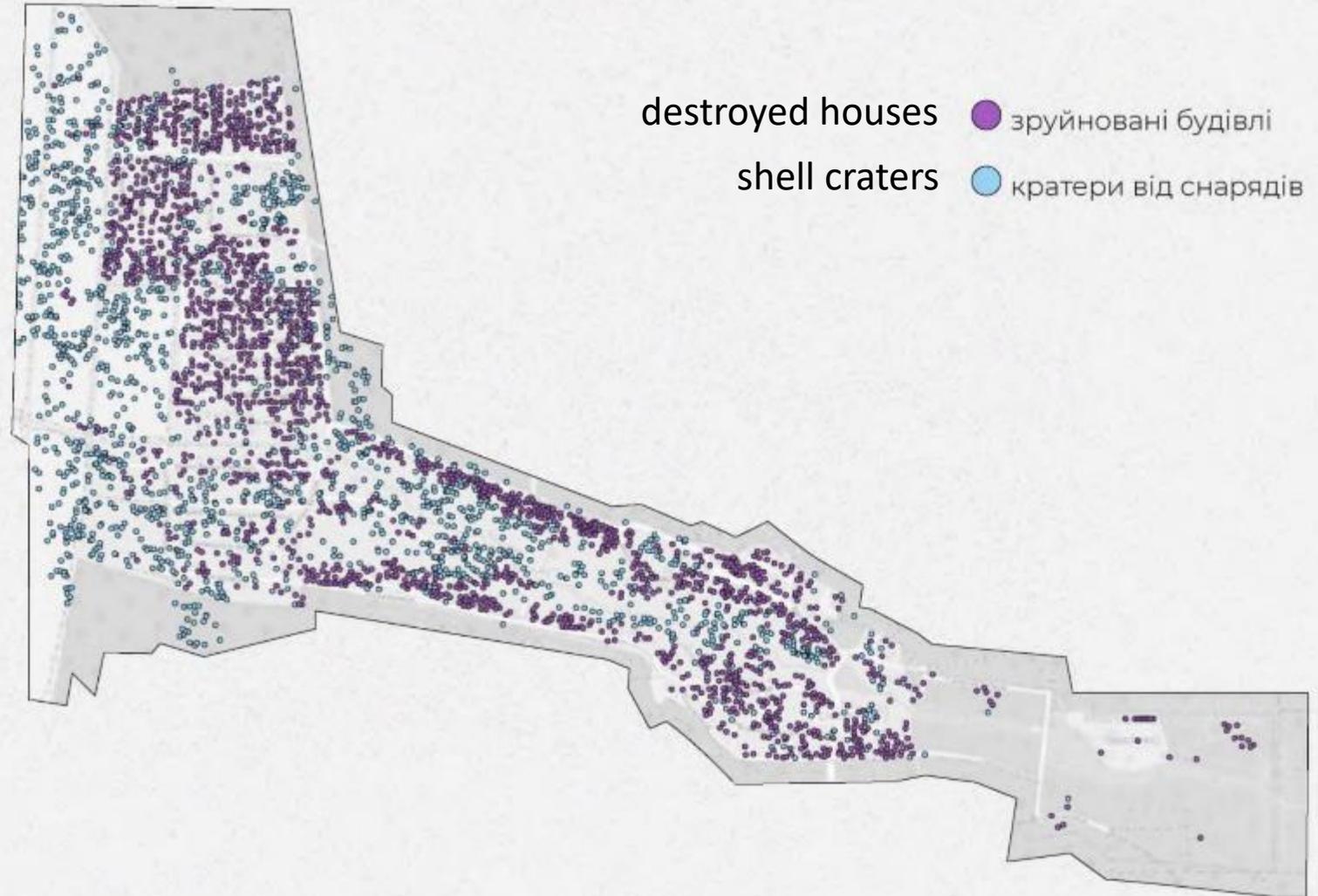
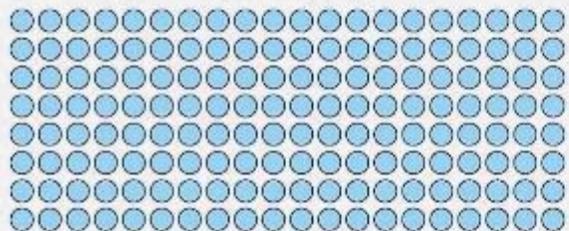
**2 000** destroyed houses

Будівель зруйновано

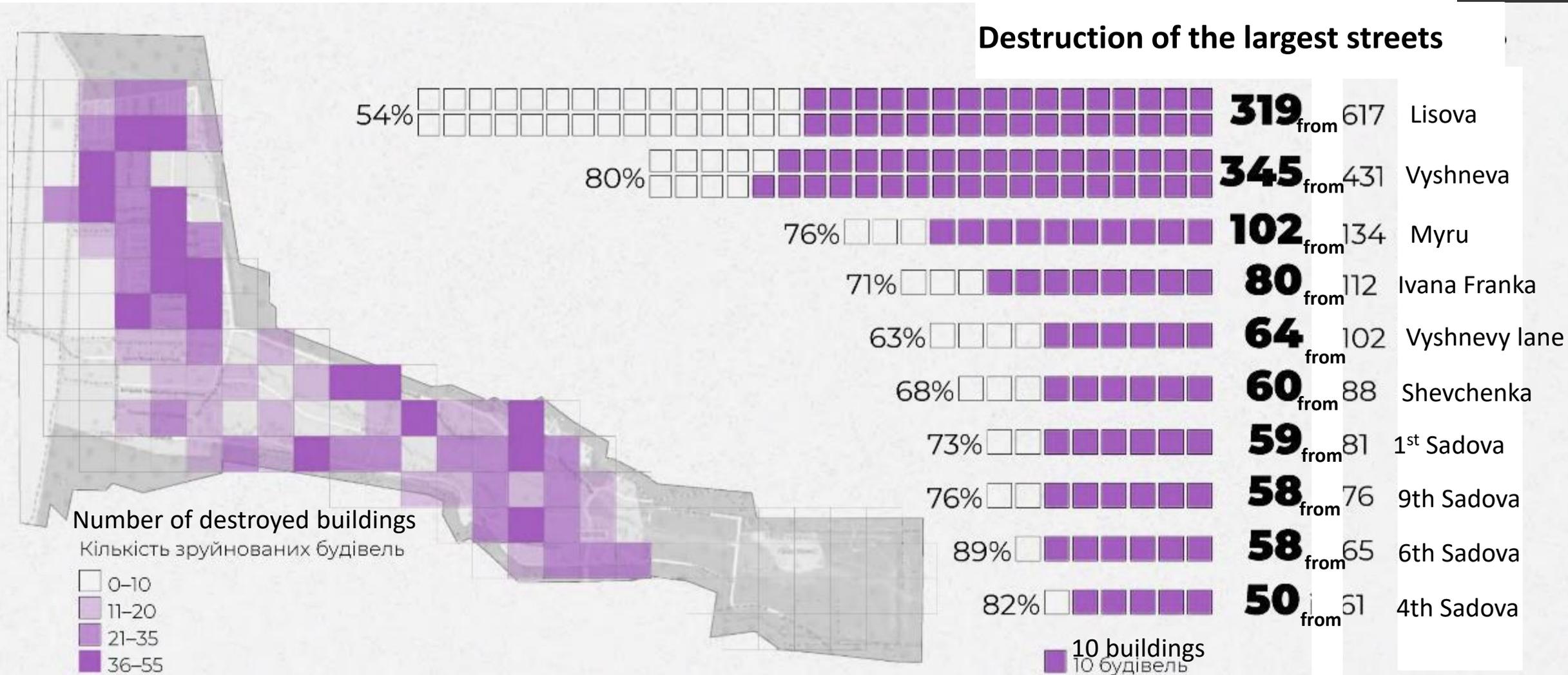


**1 597** shell craters

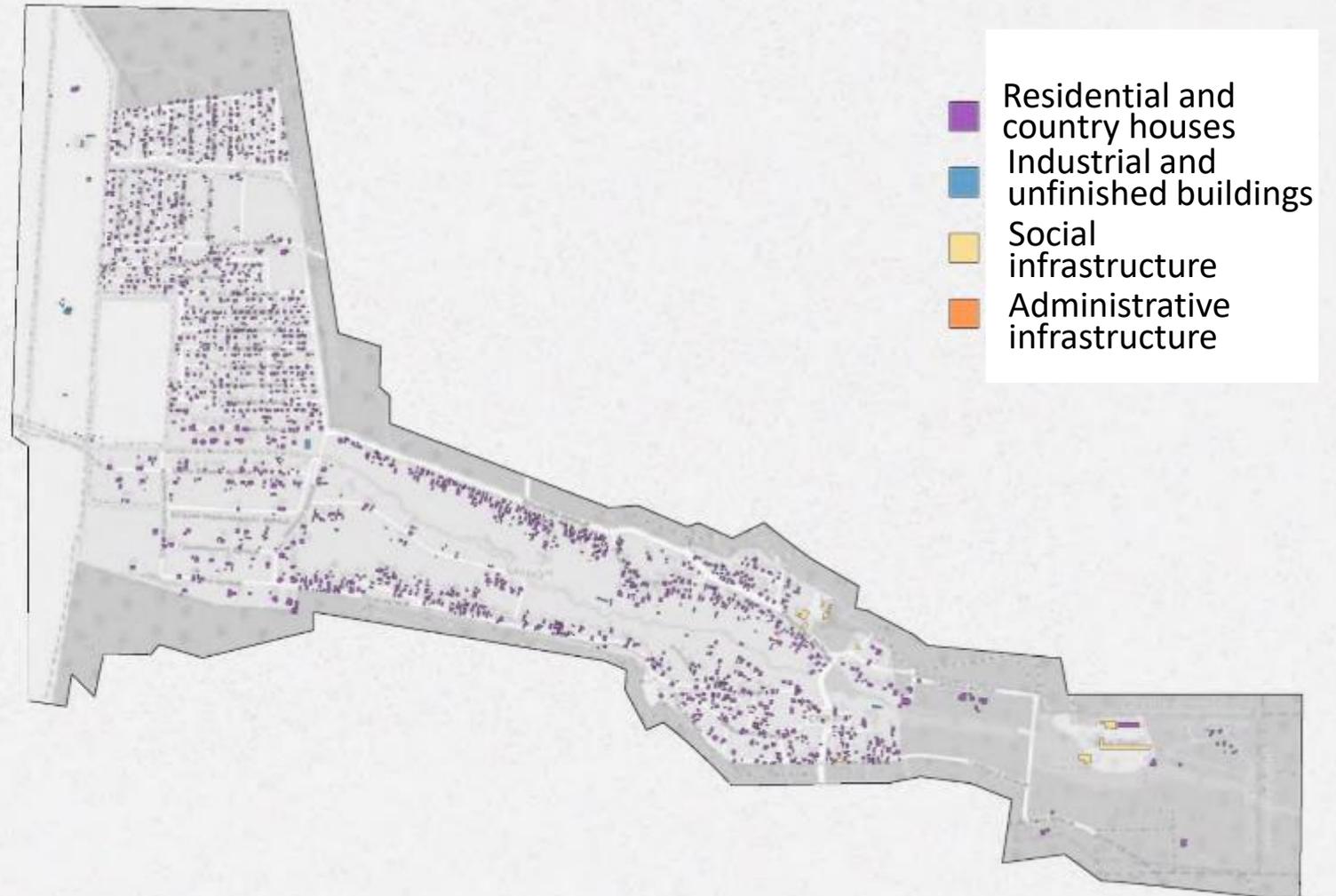
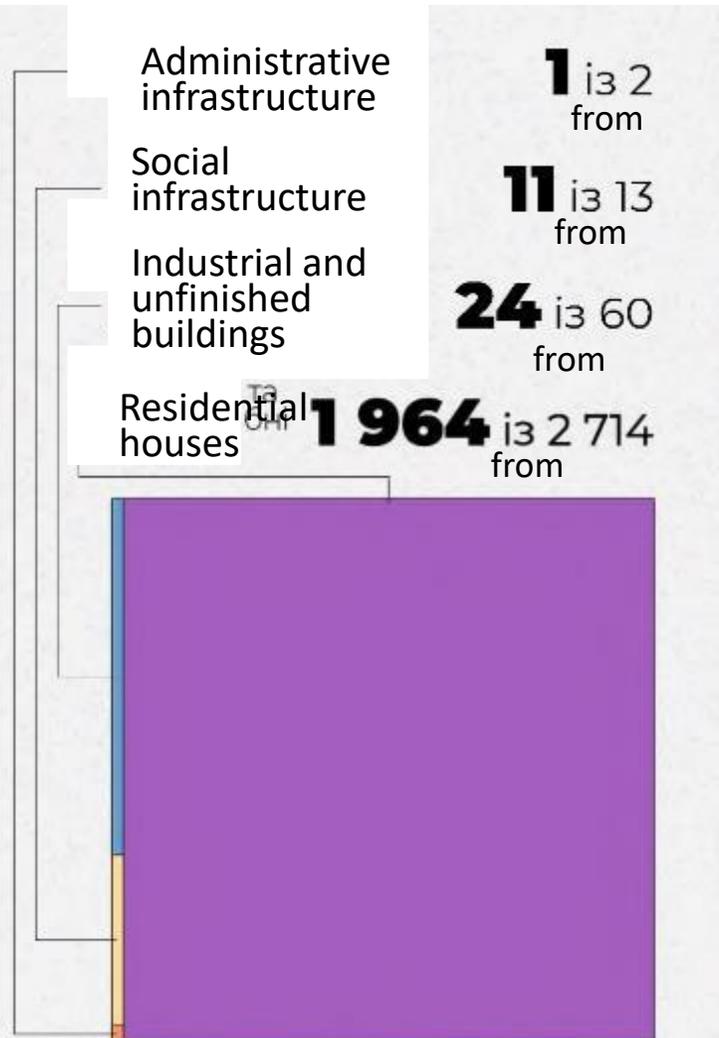
Кратерів від снарядів



# Map of destruction by streets



# Types of destroyed buildings

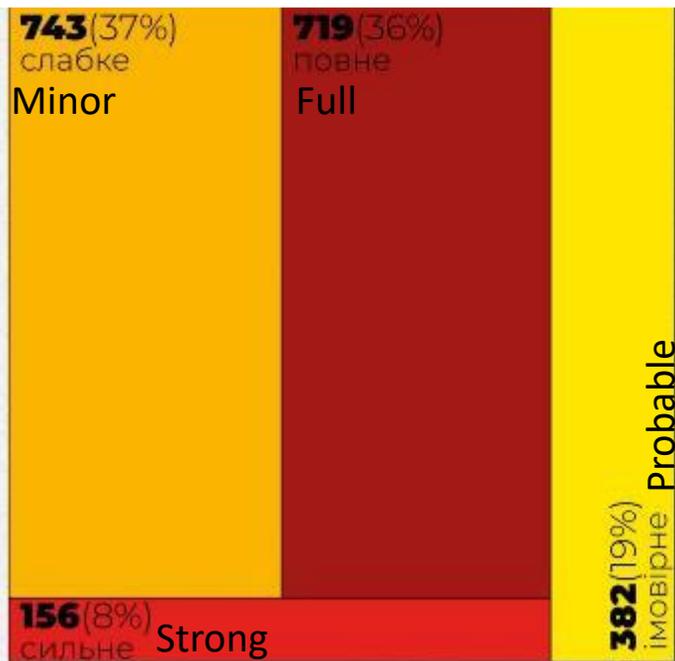


# Destruction levels

Destroyed buildings

**2 000** from 2 789

Degree of destruction,  
number of buildings

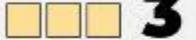


# Destruction levels

## Social infrastructure

Готелі та ресторани  
 **3** із 5

Освітні будівлі  
 **3** із 3

Магазини  
 **3** із 3

Заклади культури  
 **1** із 1

Церква  
 **1** із 1

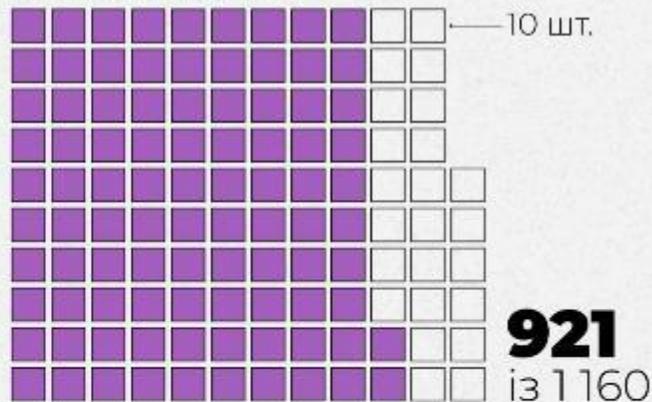
## Administrative infrastructure

 **1** із 2

## Residential and outbuildings houses

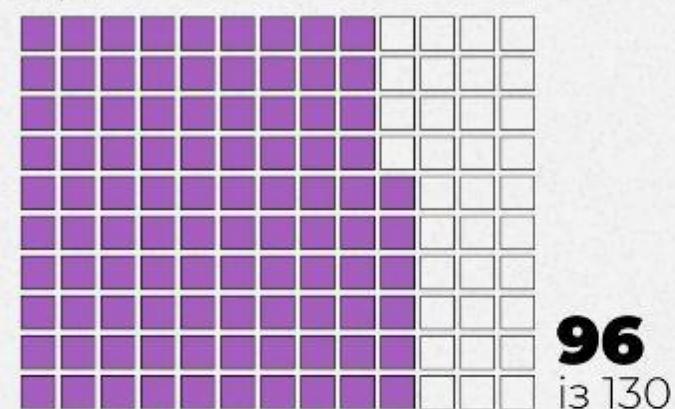
### Residential

Приватні будинки



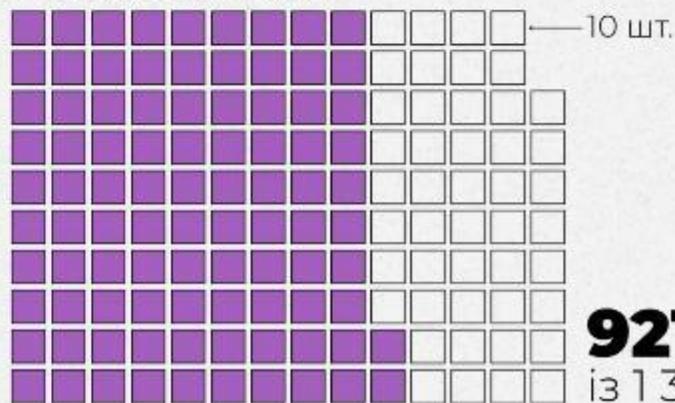
### Garages

Гаражі



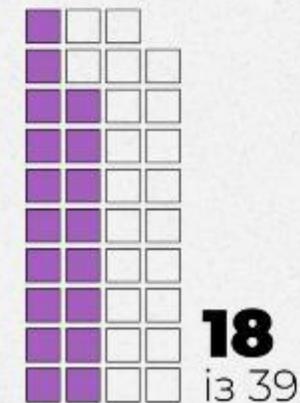
### Outbuildings

Господарські будівлі



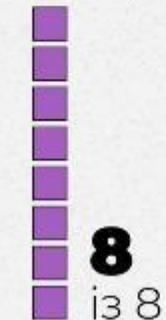
### Greenhouses

Теплиці



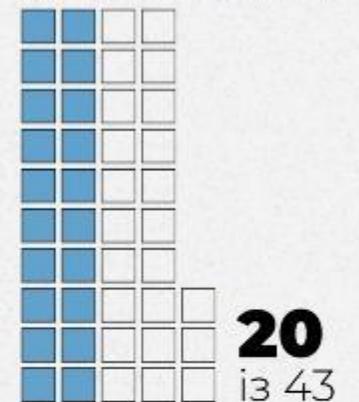
### Townhouses

Таунхауси



## Industrial and unfinished buildings

Промислові будівлі



Незавершене будівництво



# Damage assessment

## Social infrastructure

### Соціальна інфраструктура

Готелі та ресторани

1 UAH mln **1,06**  
млн грн

Освітні будівлі  
0,21  
млн грн

Магазини  
2,12  
млн грн

Заклади культури  
1,06  
млн грн

Церква  
0,42  
млн грн

### Адміністративна інфраструктура

0,21  
млн грн

## Residential and outbuildings houses

### Житлова забудова

Приватні будинки Residential

10 млн грн 10 UAH mln  
1 млн грн 1 UAH mln  
100 тис грн 100 thous. UAH

**954,06** UAH mln  
млн грн

Господарські будівлі Outbuildings

**94,72** UAH mln  
млн грн

Гаражі Garages

**13,88** UAH mln  
млн грн

Теплиці Greenhouses

**0,27** UAH mln  
млн грн

## Industrial and unfinished buildings

### Промислова інфраструктура

Промислові будівлі

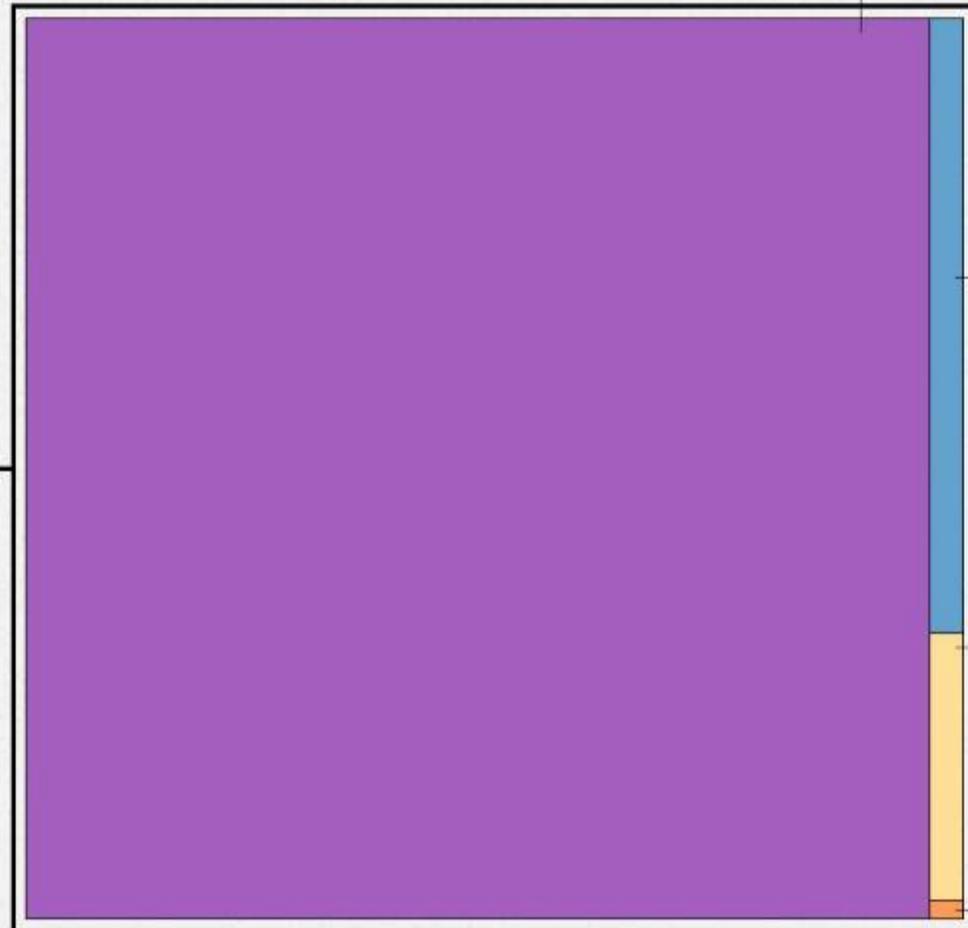
**21,02** UAH mln  
млн грн

Незавершене будівництво

**3,40** UAH mln  
млн грн

# Damage assessment

Damages by types of buildings



Residential and outbuildings houses

**1 062,65** млн грн

Industrial and unfinished buildings

**24,42** млн грн

Social infrastructure

**4,87** млн грн

Active infrastructure

**0,11** млн грн

Total cost of damages

**1,1 млрд грн**  
(\$37,34 млн)

The family of TETYANA TOPAL (92 Lisova St.)



# Specific examples



The house was built in 1965 with an area of 128.4 m<sup>2</sup>. Tetyana Topal (born in 1967), her son Mykola Topal (born in 1990) and daughter-in-law lived in the house. The house was completely destroyed and uninhabitable. There is an expert report on the inspection of the facility.

# Specific examples

The family of Oleksandr Yushchenko (96 Lisova St.)



Three houses with an area of approximately 130 m<sup>2</sup> were located on the plot. Oleksandr Yushchenko (born in 1971), his wife Yushchenko Vira (born in 1963), Yushchenko's daughter Yulia (born in 2005), Yushchenko's mother Olga (born in 1935), sister Nadia Zablokutska lived in the house. (born in 1959) and son Vladyslav Oliynyk (born in 1990). The buildings were completely destroyed and uninhabitable. There is no expert report on the inspection of the facility.

# Specific examples

The family of Gonchar (82a Lisova St.)



The Gonchar family - Olena (born in 1983) and Volodymyr (born in 1958) The house with a total area of 192 m<sup>2</sup> was completely destroyed and unfit for habitation. There is no expert report on the inspection of the facility.

# Principles of renovation

## Basic principles:

- Construction of new settlements on the basis of creating an urban concept for each settlement, with the formation of all necessary functional zones, ie capital and durable;
- Creation of complex project groups that worked on the construction sites until their completion, carrying out constant author's supervision
- Simplification of technology and sequence of urban planning schemes
- Control over social and sustainable content
- Use of standard projects of housing, schools, kindergartens, shops, communal constructions, engineering objects with binding on construction sites according to the simplified schematic general plans



# Principles of renovation

## Types of destruction

Housing groups and infrastructure are completely destroyed

Infrastructure is destroyed

Partial destruction of houses

## Types of reconstruction

Reconstruction of partially damaged houses

Reconstruction of the existing old housing

New building of private housing

# Types of new construction

## Temporary housing

Adapted public buildings

Modular prefabricated houses

Residential units

## New permanent housing

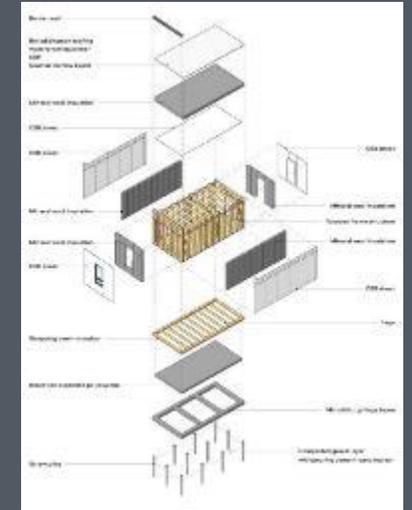
Restoration of lost buildings with improvement of its characteristics

Construction in new territories with simultaneous mass restoration of roads and infrastructure

New construction with reconstruction of existing housing estates, using new technologies

# Temporary housing

## Proposals of Ukrainian architects



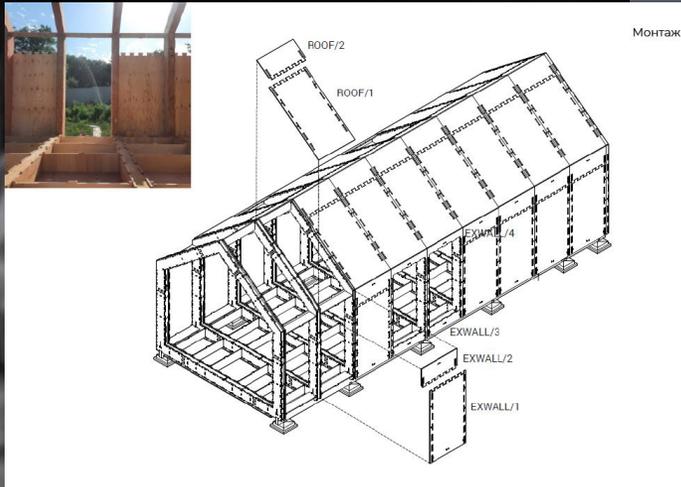
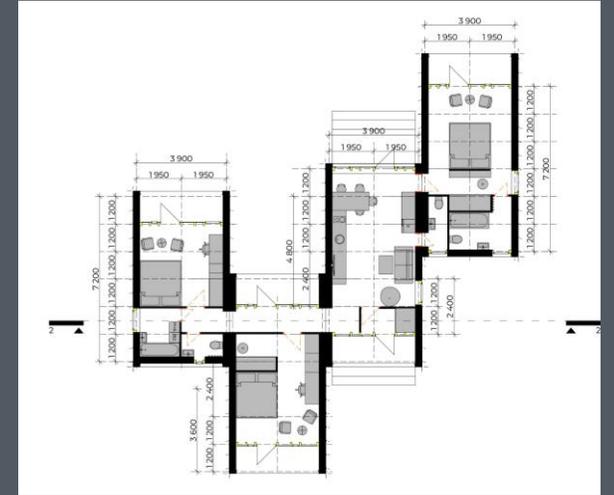
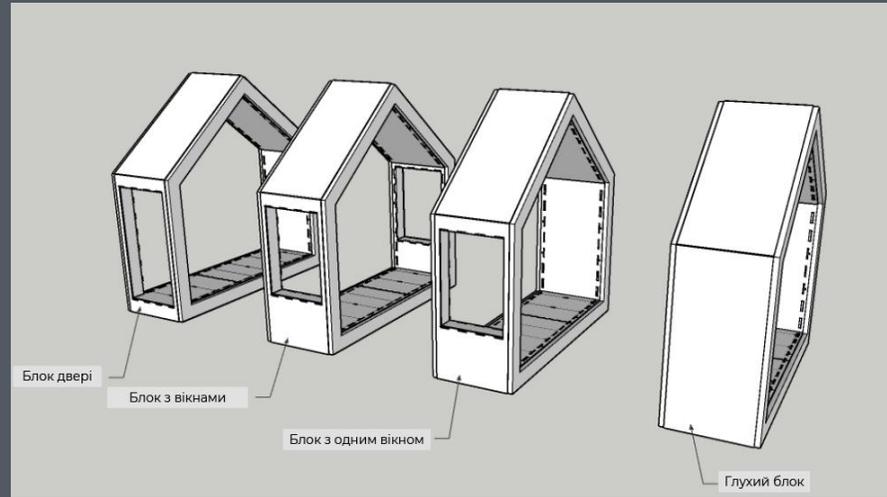
There are three ways to further use modular elements:

- further reuse of modules for other functions,
- further reuse of component modules for other needs and
- redesign of modules (more precisely materials and elements).

All of these pathways correspond to the concept of cradle-to-cradle

# Permanent housing

## Modul wooden privat houses using energy-saving technologies



# Stages of project implementation



- Adaptation of typical projects of houses for permanent residence
- Determining the approximate value of the house
- Finding funds for construction
- Conclusion of an agreement with the affected residents on the provision of assistance and further compensation for the construction at the expense of the funds received by the residents from the state
- Construction
- Partial compensation is possible



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