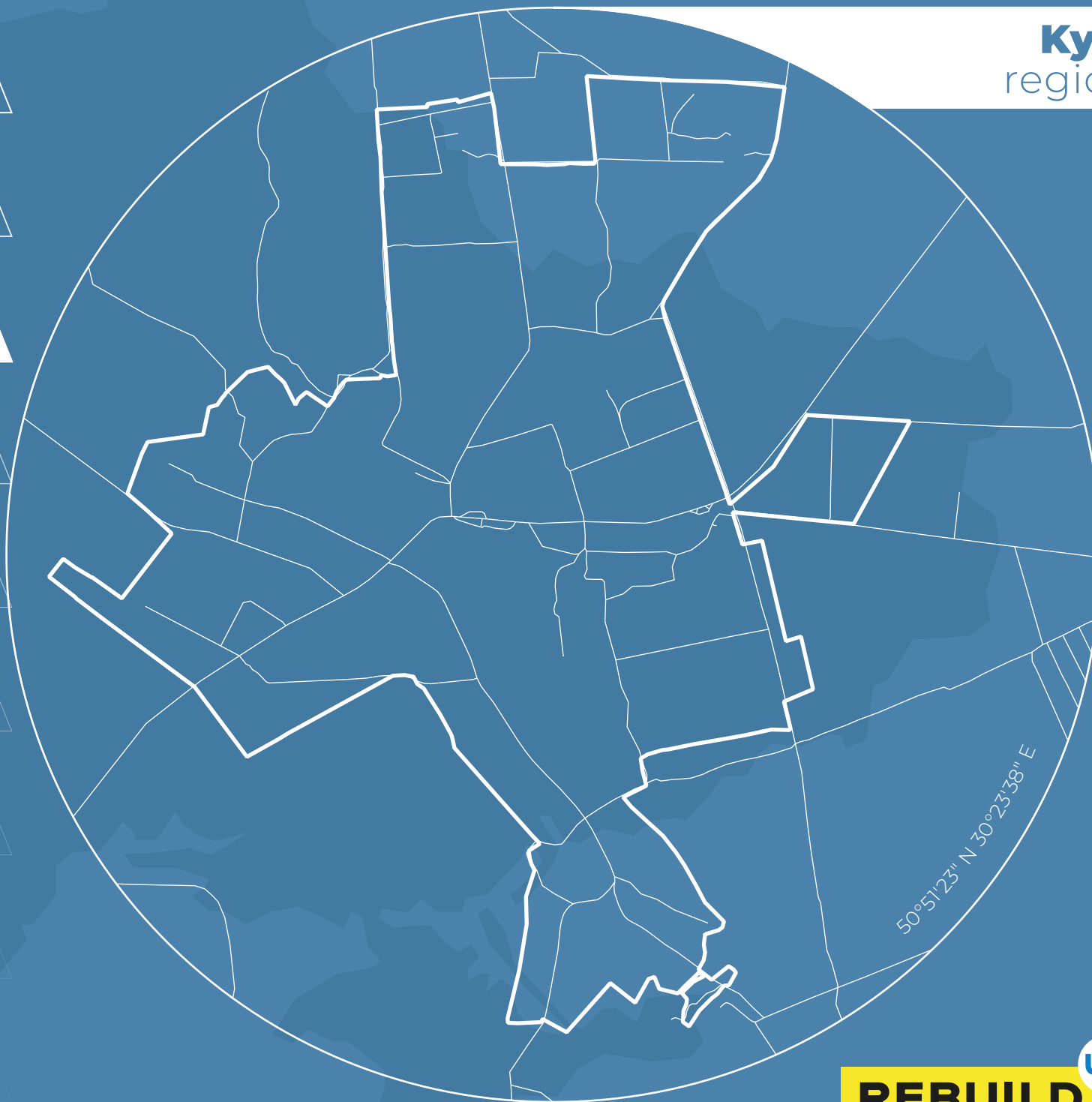


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YASNOGORODKA

**DIGITIZATION  
OF DESTROYED  
INFRASTRUCTURE**

**Kyiv**  
region



**REBUILD** 

# ABOUT THE PROJECT

## Background

The Russian aggression has caused a large amount of damage and destruction in almost all regions of Ukraine — housing and infrastructure have been destroyed, and industrial facilities and local businesses shut down.

The speed and efficiency of the country's recovery processes directly depend on a competent assessment of the damage, correct budgeting and a step-by-step plan for reconstruction. A transparent assessment of damages will justify the need for funding as well as simplify the process of raising funds for recovery.

## About the project

The RebuildUA project aims to digitize, analyze and demonstrate to the world the destruction of Ukraine's infrastructure. The geography of the project covers all regions of the country affected by military aggression.

The results will be made public, communicated to communities, public authorities and specialized recovery funds.

## Project founders:

Drone survey and digitization of geospatial information:



Land analysis and interaction with communities:



The initiative is being financially and technically supported by the United Nations Development Programme in Ukraine.

## Methodology

### 1. Drone photography and orthophoto creation

The use of drones allows the project team to collect detailed data on the destruction: to fly at low altitudes, and shoot buildings at different angles and from all sides. For localities where drone shooting is not possible, we use high-resolution satellite images.

### 2. Collection of photos and videos

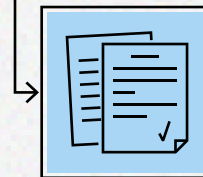
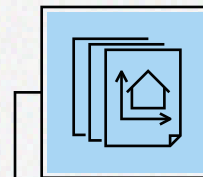
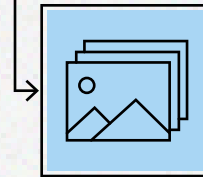
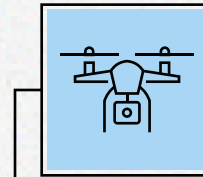
To ensure completeness of the input data, the project team captures photos and videos, as well as collects additional information from verified sources.

### 3. Destruction detection and data processing

Based on orthophotos, GIS specialists digitize all buildings, identify destroyed objects, classify building types, and determine levels of destruction.

### 4. Publication of analytical reports

Designers and content managers present the complete information in public infographic reports.



Find out more at the project website:





# ABOUT THE LOCALITY

The village of Yasnohorodka in the Kyiv region is known for its eco-park and one of the largest ostrich farms (before the war).

The first shelling of Yasnohorodka began on February 27, and the intensity of it only increased day after day. Heavy shelling by "Hrads" led to the destruction of private houses, churches, and industrial buildings. Animals either became live targets for the invaders or suffered from hunger hiding in the forests.

Learn more about the destruction of the village and the damages caused by russian invaders in the report.



 [rebuildua.net](https://rebuildua.net)


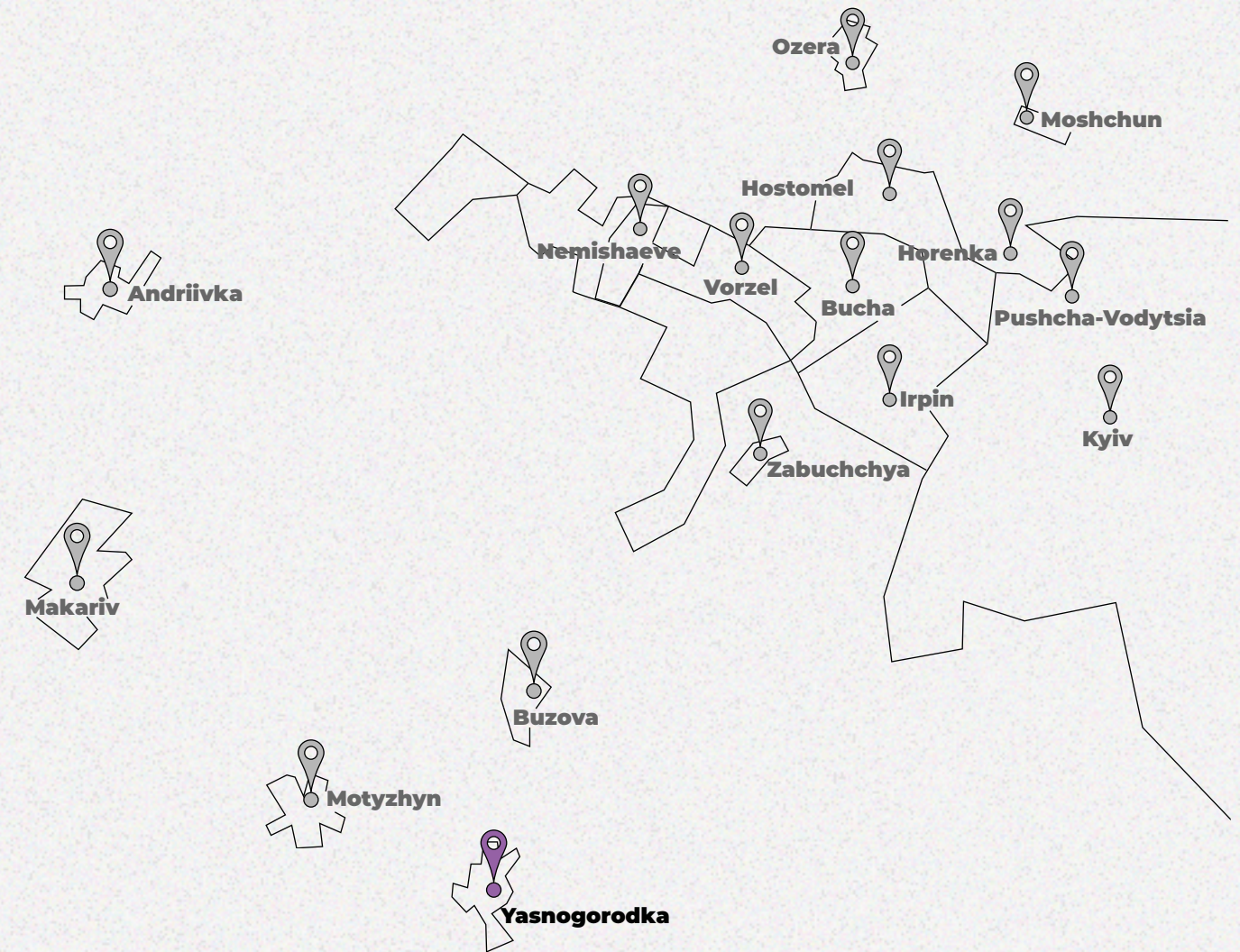

 [/rebuildua.net](https://facebook.com/rebuildua.net)

Photo: NV, RebuildUA



Region **Kyiv**  
 District **Fastivskiy**  
 Community **Byshivska**

  
 Area  
**4.86 km<sup>2</sup>**

  
 Population  
**630 people**



# DIGITIZATION PROCESS



**5** flight missions

**522** pictures for orthophoto

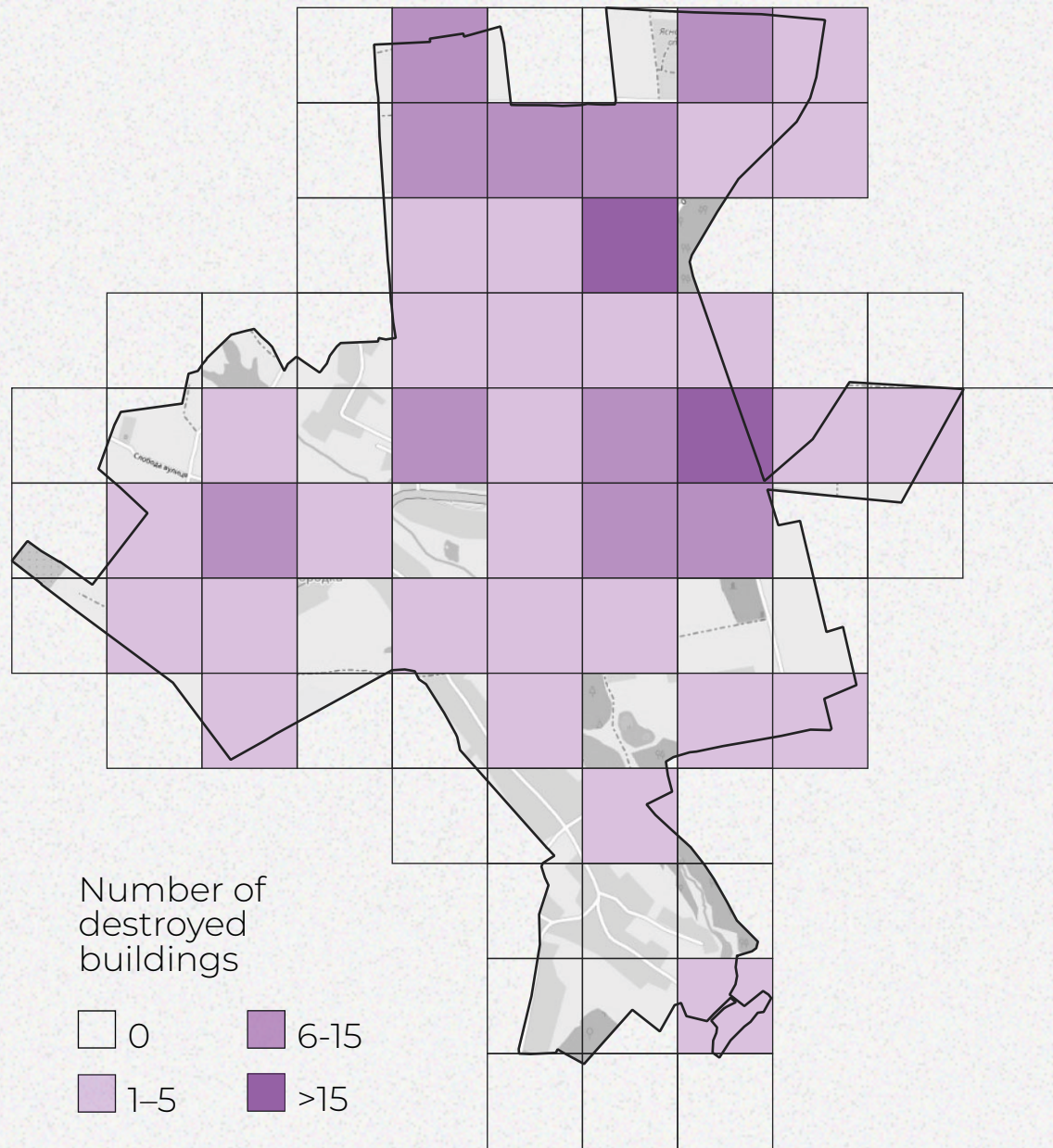
**60** hours of data processing

**5.1** Gigabytes of data

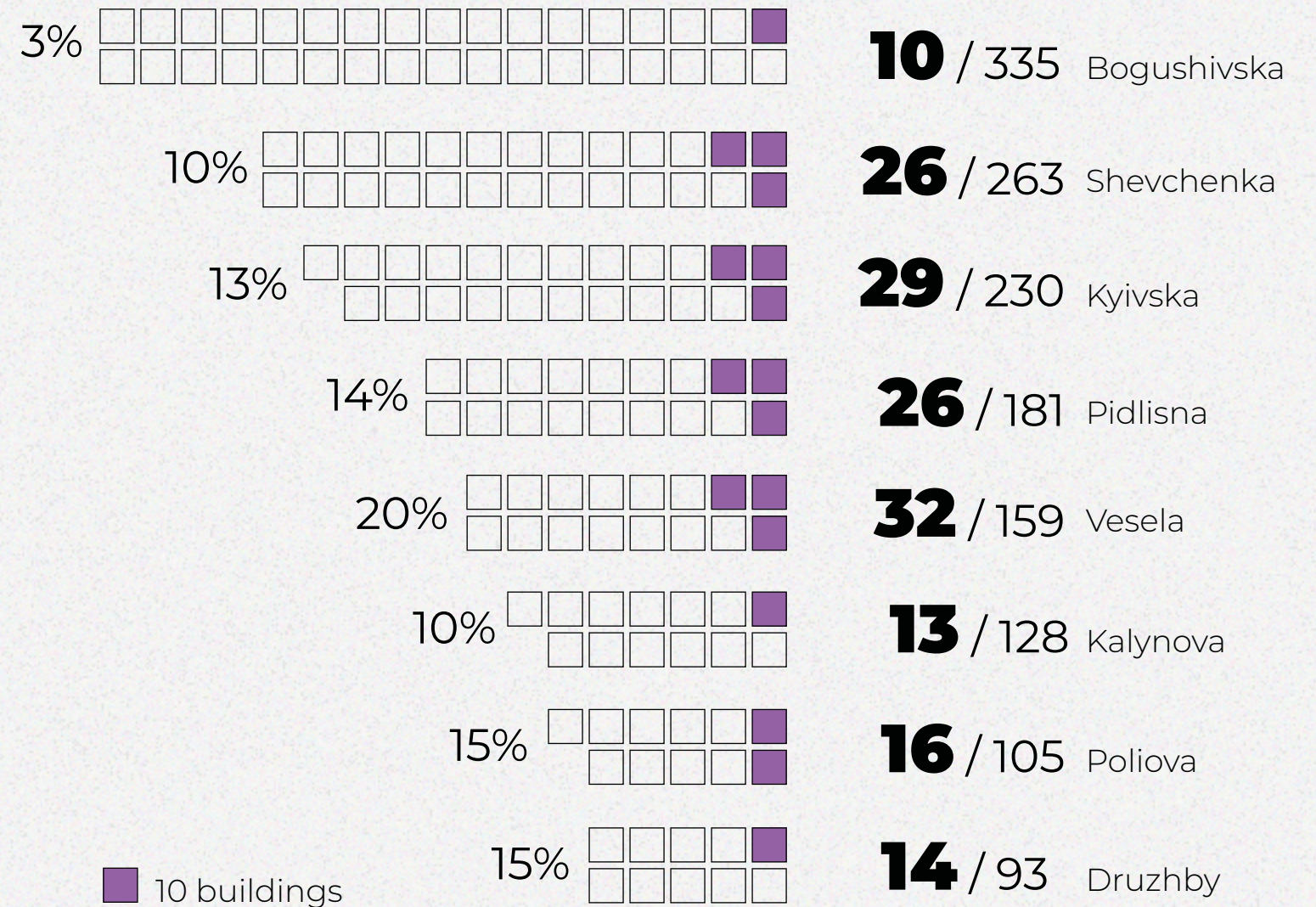
— border of the locality  
... trajectory of drone shooting



# THERMAL MAP OF DESTRUCTION



## Destruction of the largest streets



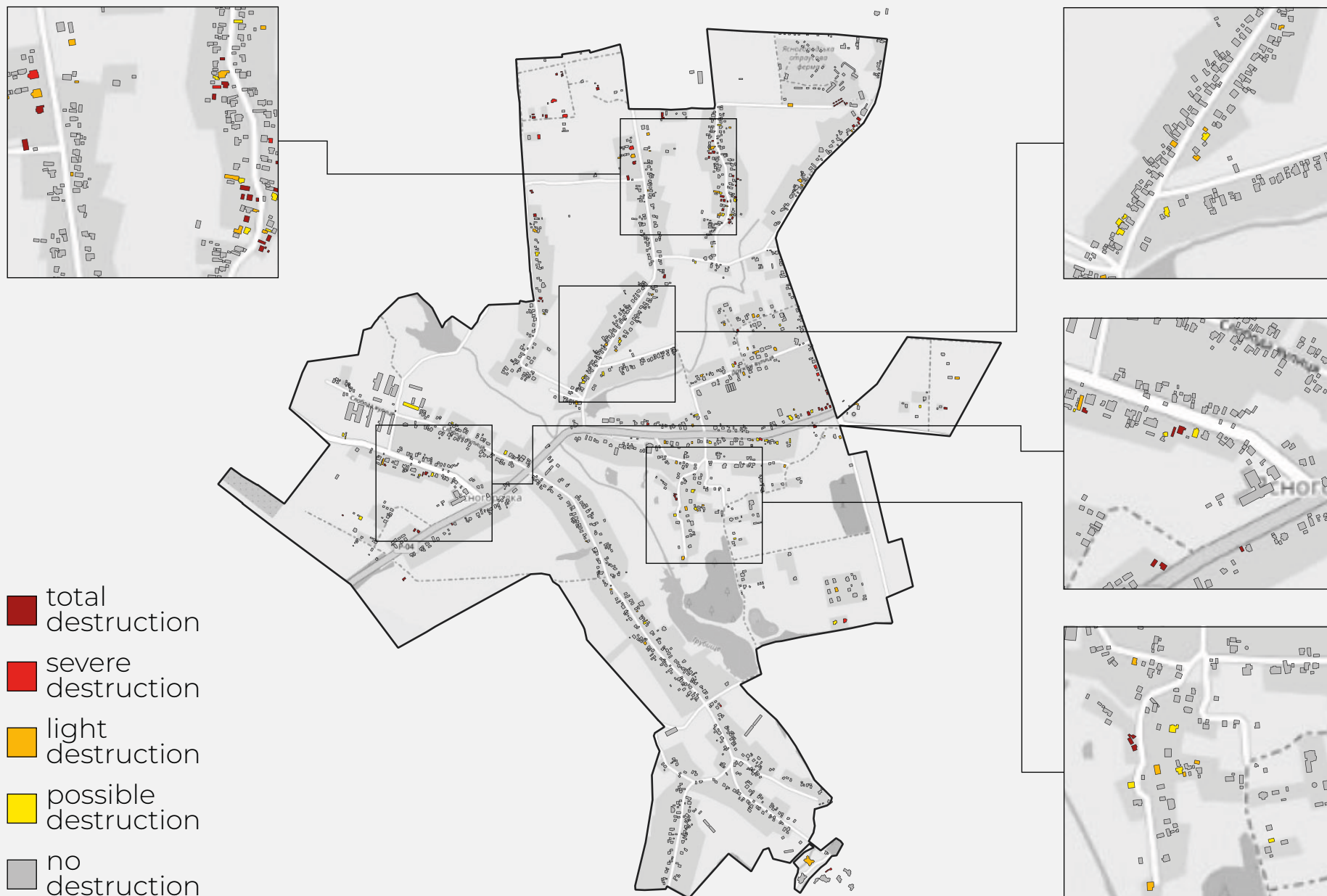
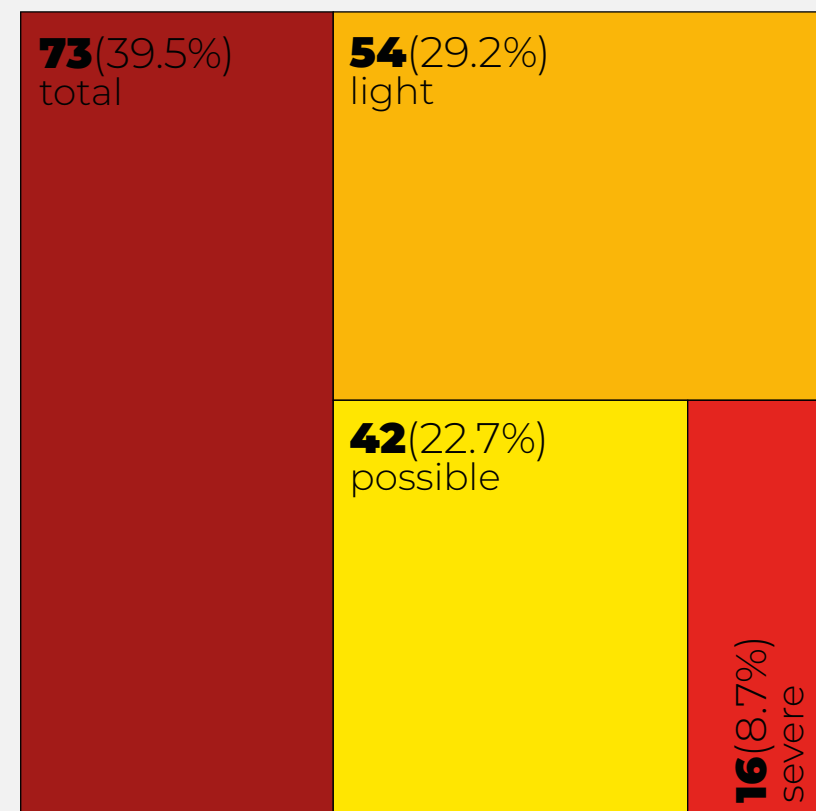


# LEVELS OF DESTRUCTION

Buildings destroyed:

**185 / 1,880**

Level of destruction, number of buildings





# TYPES OF DESTROYED OBJECTS

Residential buildings & outbuildings

**162** / 1,762

Social infrastructure

**17** / 78

Industrial buildings & construction

**5** / 23

Other infrastructure

**1** / 17



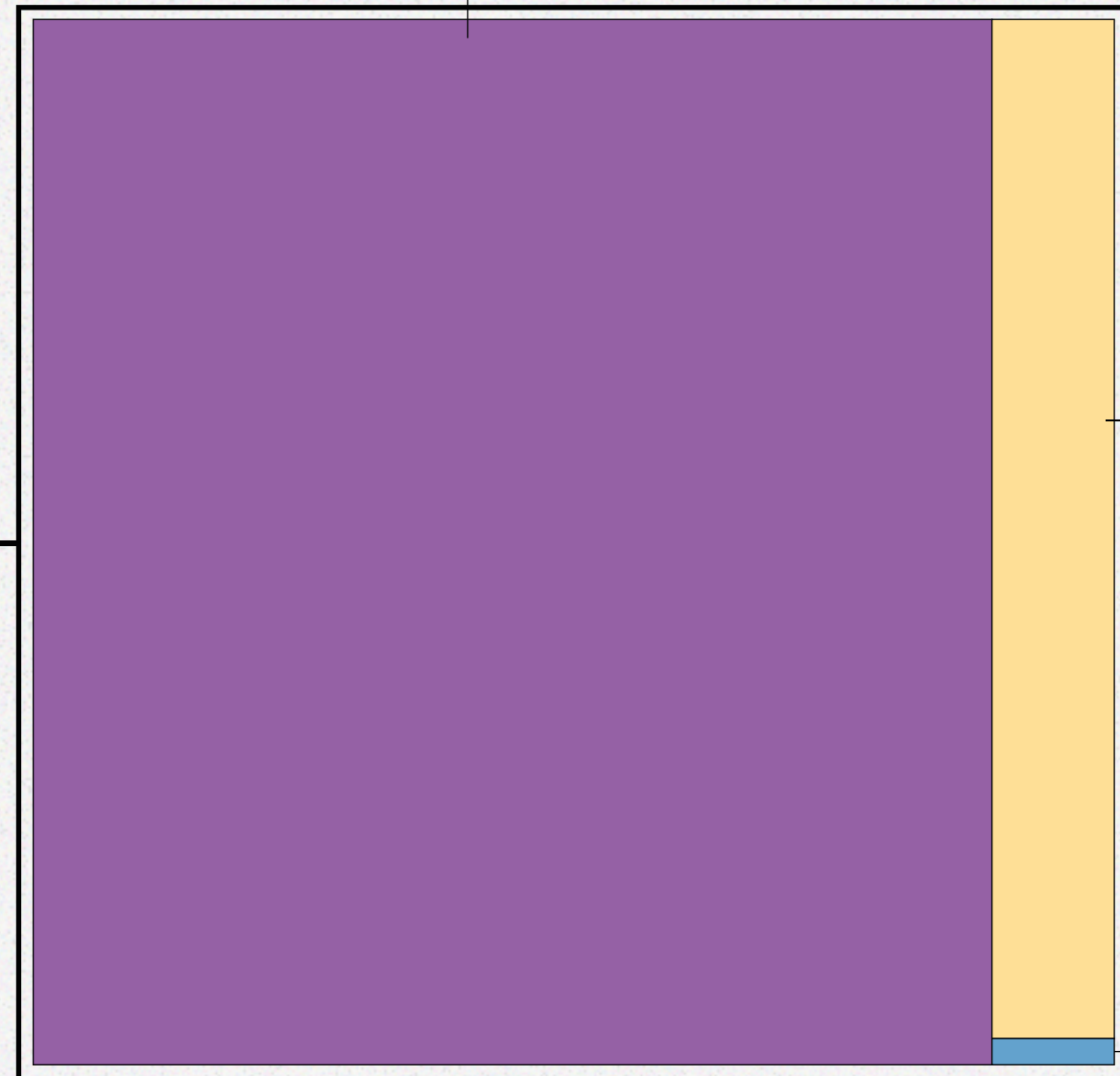
- Residential buildings & outbuildings
- Industrial buildings & construction
- Social infrastructure
- Other infrastructure



# ASSESSMENT OF DAMAGES

### Damages by types of buildings

Total damages  
**\$6.5 million**



**\$5.68 million**  
Residential buildings  
& outbuildings

**\$0.82 million**  
Social infrastructure

**\$0.02 million**  
Industrial buildings  
& construction



# SCALE OF DESTRUCTION



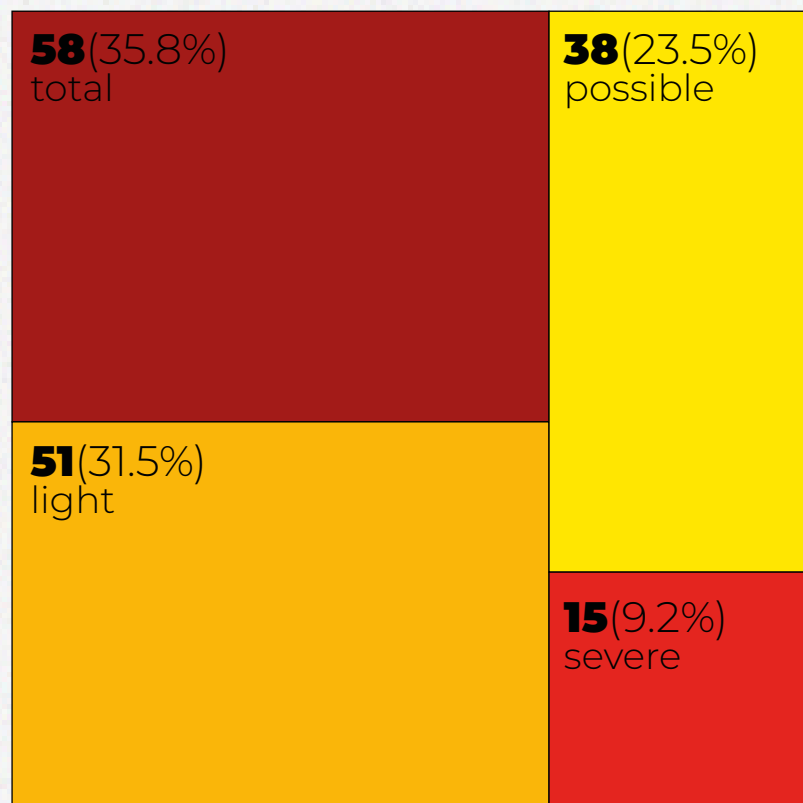
**REBUILD**

UA

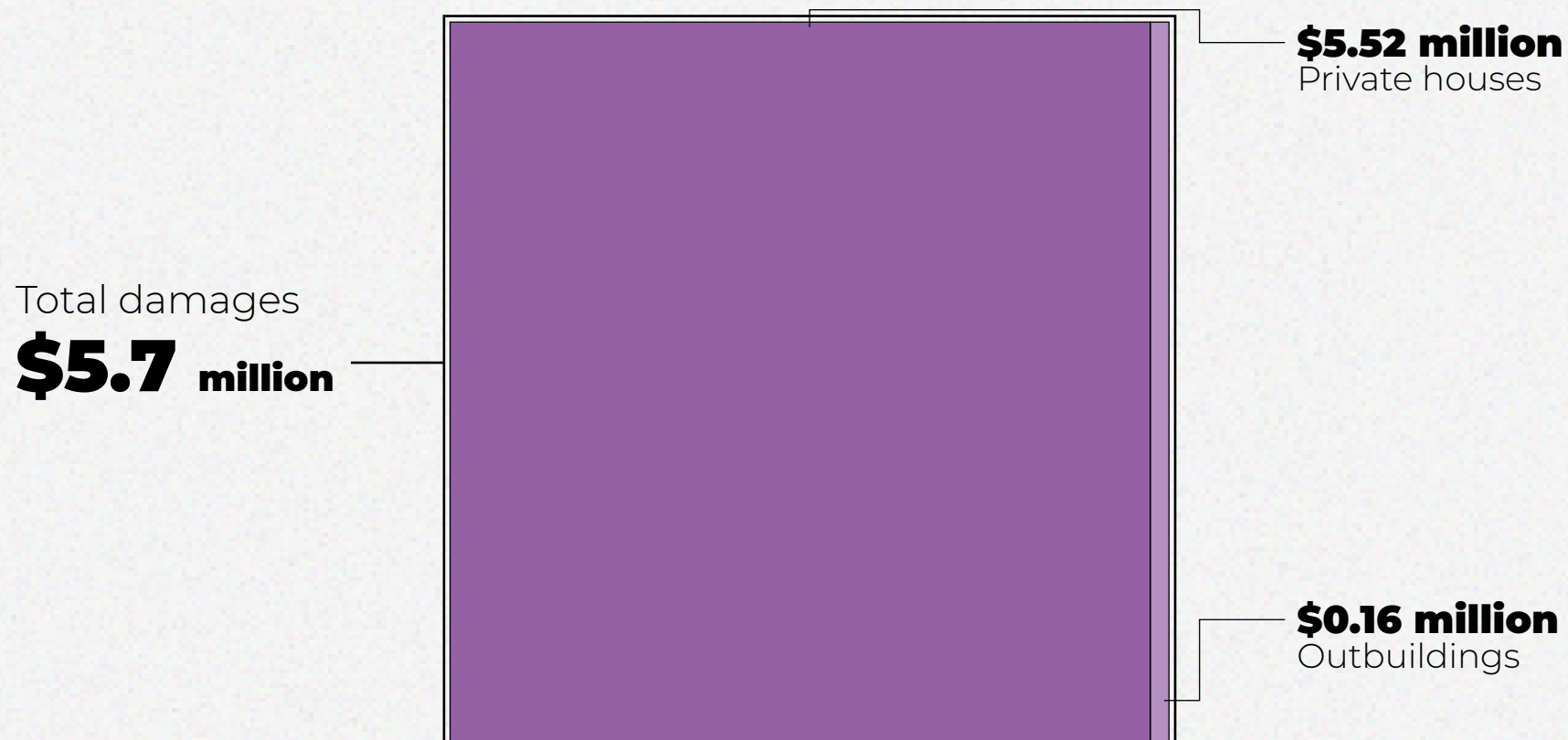


# SCALE OF DESTRUCTION

## Level of destruction



## Assessment of damages





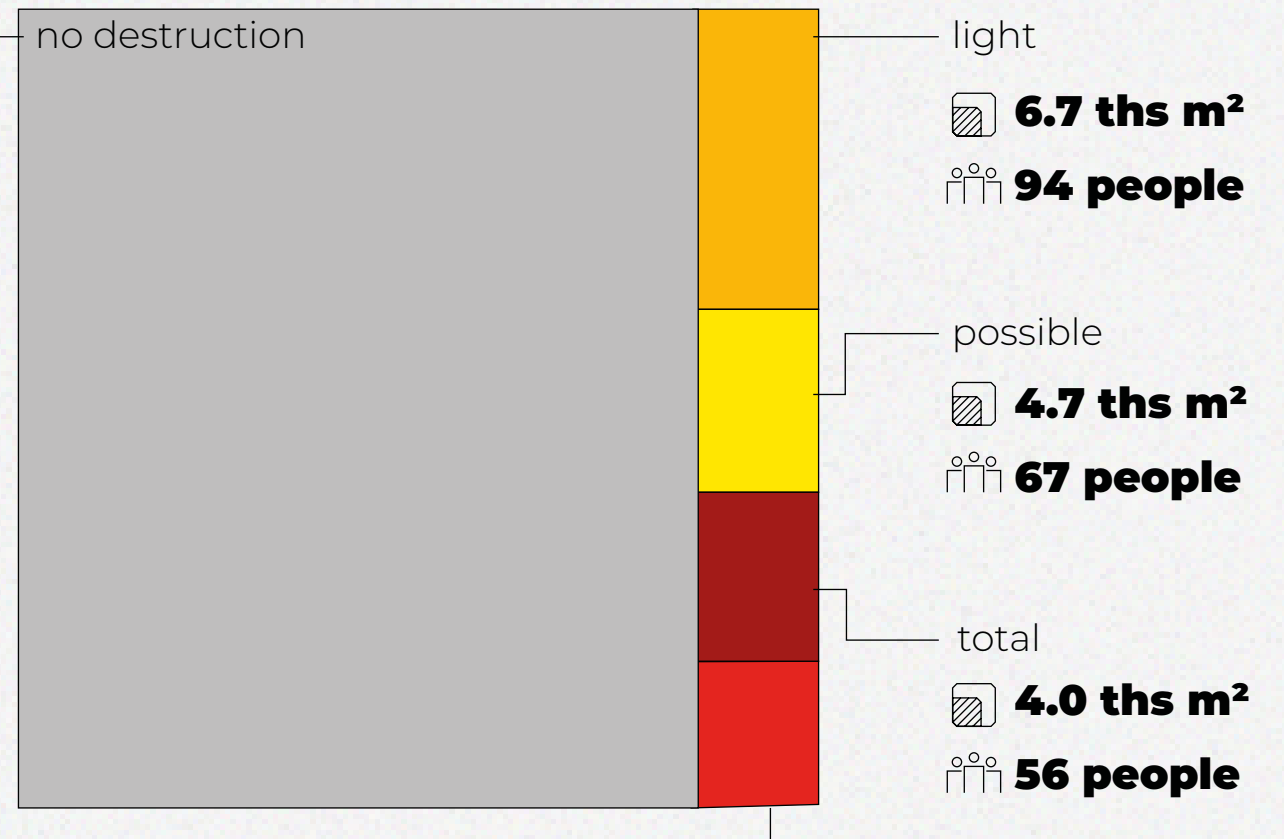
# PRIVATE HOUSES



## The area of destruction and the number of residents who suffered damage

**106.9 ths m<sup>2</sup>**   
**1,503 people** 

severe  
**3.1 ths m<sup>2</sup>**   
**44 people** 



Total area of damage  
**18.5 ths m<sup>2</sup>**

Number of residents affected  
**261**



# OUTBUILDINGS

Utility buildings



## Area of destruction

**54.9 ths m<sup>2</sup>**

**0.4 ths m<sup>2</sup>**

no destruction

severe

light

**1.9 ths m<sup>2</sup>**

total

**1.5 ths m<sup>2</sup>**

possible

**0.9 ths m<sup>2</sup>**

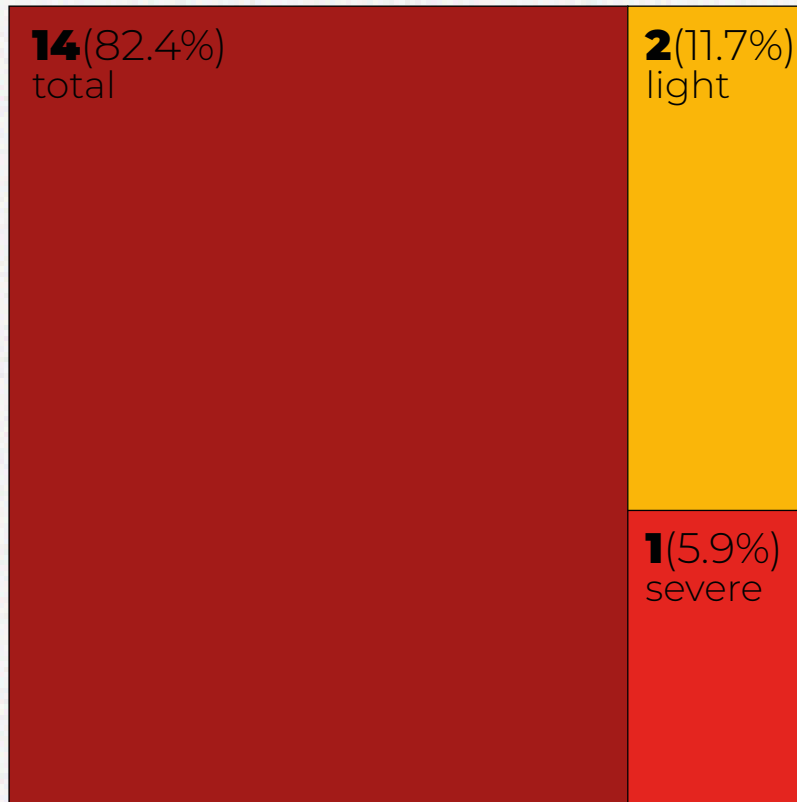
Total area of damage

**4.7 ths m<sup>2</sup>**



# SCALE OF DESTRUCTION

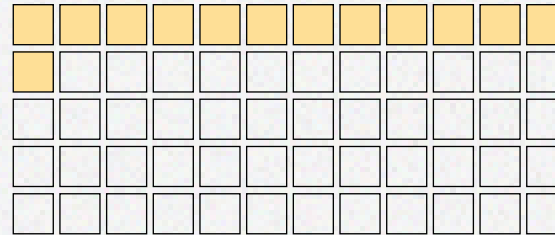
## Level of destruction



Total damages  
**\$0.8 million**

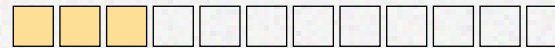
## Number of destroyed buildings

Culture and religion institutions (buildings)



13 / 60

Trade & commerce



3 / 12

Healthcare institutions



1 / 1

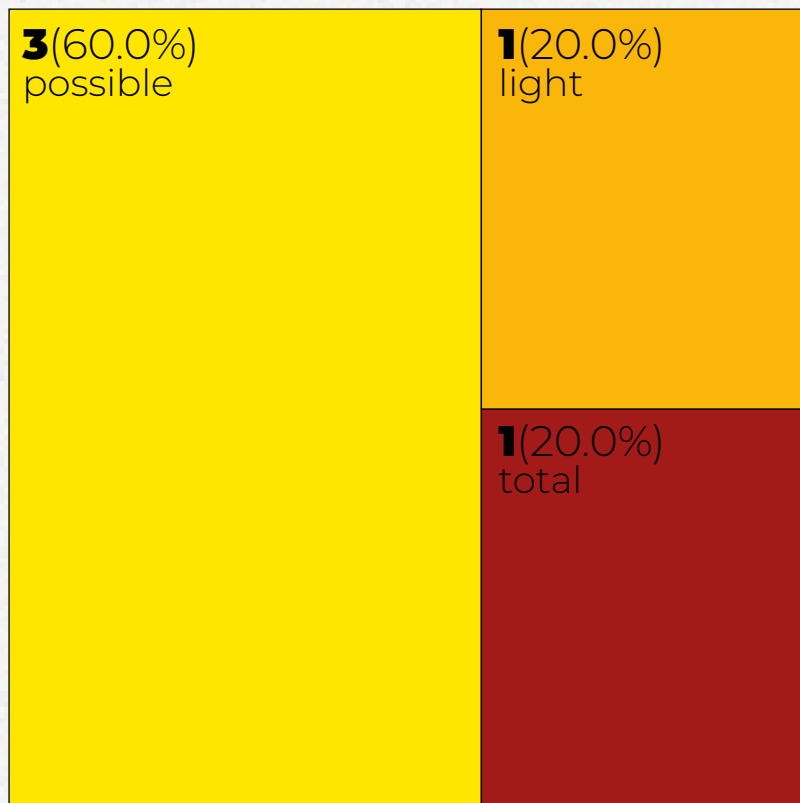
Church





# SCALE OF DESTRUCTION

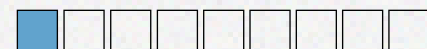
## Level of destruction



Total damages  
**\$0,02 million**

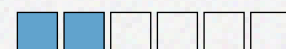
## Number of destroyed buildings

Utility buildings



**1/9**

Construction



**2/6**

Warehouses



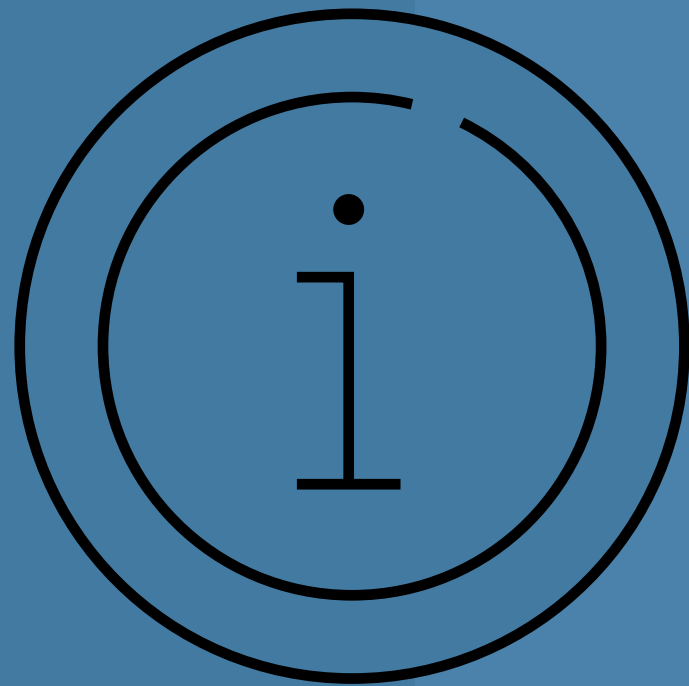
**2/3**

Warehouse





# METHODOLOGIES & ADDITIONAL INFORMATION



**REBUILD**

UA



# HOW WE DETERMINE LEVELS OF DESTRUCTION

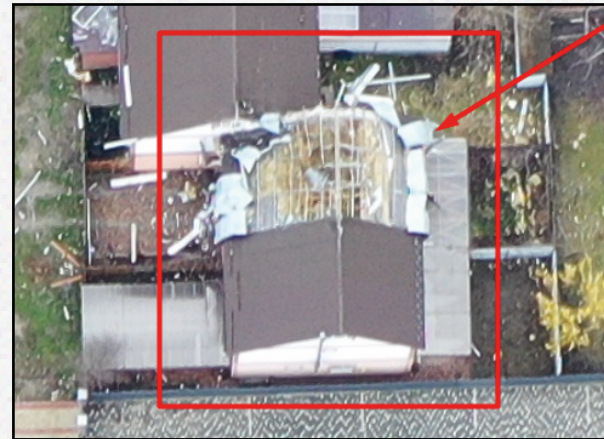
## Total destruction



Appointed when the original structure of the building is no longer detectable restoration is impossible, namely:

- the building is completely or significantly destroyed (> 50%);
- only part of the building collapsed to the foundation.

## Severe destruction



Implies significant visible damage to the building and its structure, which includes:

- collapse of part of the roof;
- serious destruction and damage to the walls.

## Light destruction



Implies minor partial damage to the building and its structure:

- minor damage to the roof,
- collapse of chimneys,
- damage to facade, decorative and removable elements,
- a large amount of debris.

## Possible destruction



Intended for buildings that are difficult to interpret due to lower image quality (for example, shadow or poor resolution due to high angle of shooting).

Visual signs may include be small amounts of debris, gravel or sand around the building.



## 1. Assumptions

The following fractions were used for calculations:

**100%**

of the replacement cost of total destruction

**50%**

of the replacement cost of severe destruction

**10%**

of the replacement cost of light destruction

**0%**

of the replacement cost of possible destruction

## 2. Value determination



### Large objects

The assessment of large objects, in particular enterprises, is calculated individually on the basis of financial statements and other public sources regarding value information.



### Medium objects

Medium facilities, in particular, social infrastructure, trade objects, and services (health, education and culture, shops, hotels, restaurants, etc.) are calculated on the basis of average cost data, taking into account the type of area (urban/rural).



### Small objects

Small objects, which include residential buildings, outbuildings and garages, are calculated based on the average footage (taking into account the area and type of area) and the cost per square meter (nominal cost + cost of redecoration repairs + cost of dismantling).



# YASNOGORODKA THROUGH THE EYES OF BEHOLDERS

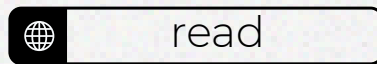
Life after the enemy. Destroyed houses and killed animals in the eco-park — what Yasnohorodka in Kyiv region looks like after shelling by russian troops



The connection with the Russian people is broken forever: residents of Yasnohorodka told about their experience



Ostriches died, deer, mouflons and porcupines escapes into the forest. The tragedy at the Yasnogorod ostrich farm



«Asvabaditeli» in Yasnohorodka: what happened at an ostrich farm



Survival in hell. Yasnogorodka



De-occupied Yasnogorodka. Local residents clear their destroyed houses



Family ecopark «Yasnohorodka» comes to life after the «russian peace»

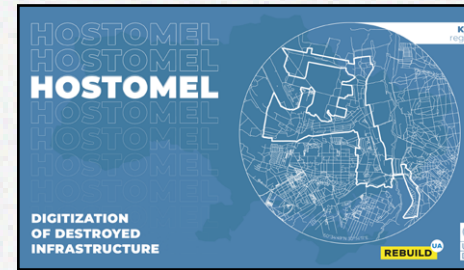
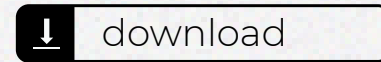




# PREVIOUS REPORTS



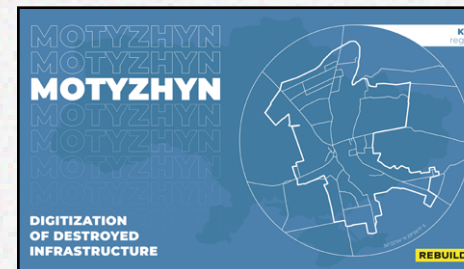
**Moshchun,**  
Buchanskyi district,  
Kyiv region



**Hostomel,**  
Buchanskyi district,  
Kyiv region



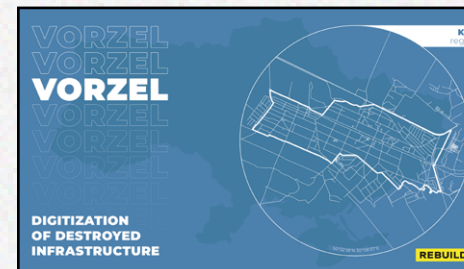
**Horenka,**  
Buchanskyi district,  
Kyiv region



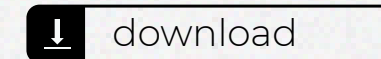
**Motyzhyn,**  
Buchanskyi district,  
Kyiv region



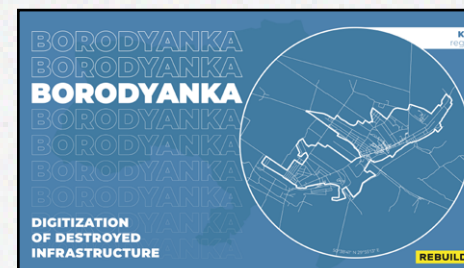
**Irpin,**  
Buchanskyi district,  
Kyiv region



**Vorzel,**  
Buchanskyi district,  
Kyiv region



**Bucha,**  
Buchanskyi district,  
Kyiv region



**Borodyanka,**  
Buchanskyi district,  
Kyiv region





# REBUILD



[rebuildua.net](http://rebuildua.net)

### Partners:

Assessment of losses and damages, budgeting:



Financial and technical support



Shooting of settlements



Digitization of geospatial information:



Visual style and content:



Support in cooperation with public authorities:



Cooperation & analysis of community economy, Vkursi Hromada:



Creation of an online map of destroyed new buildings



### Supported by:

