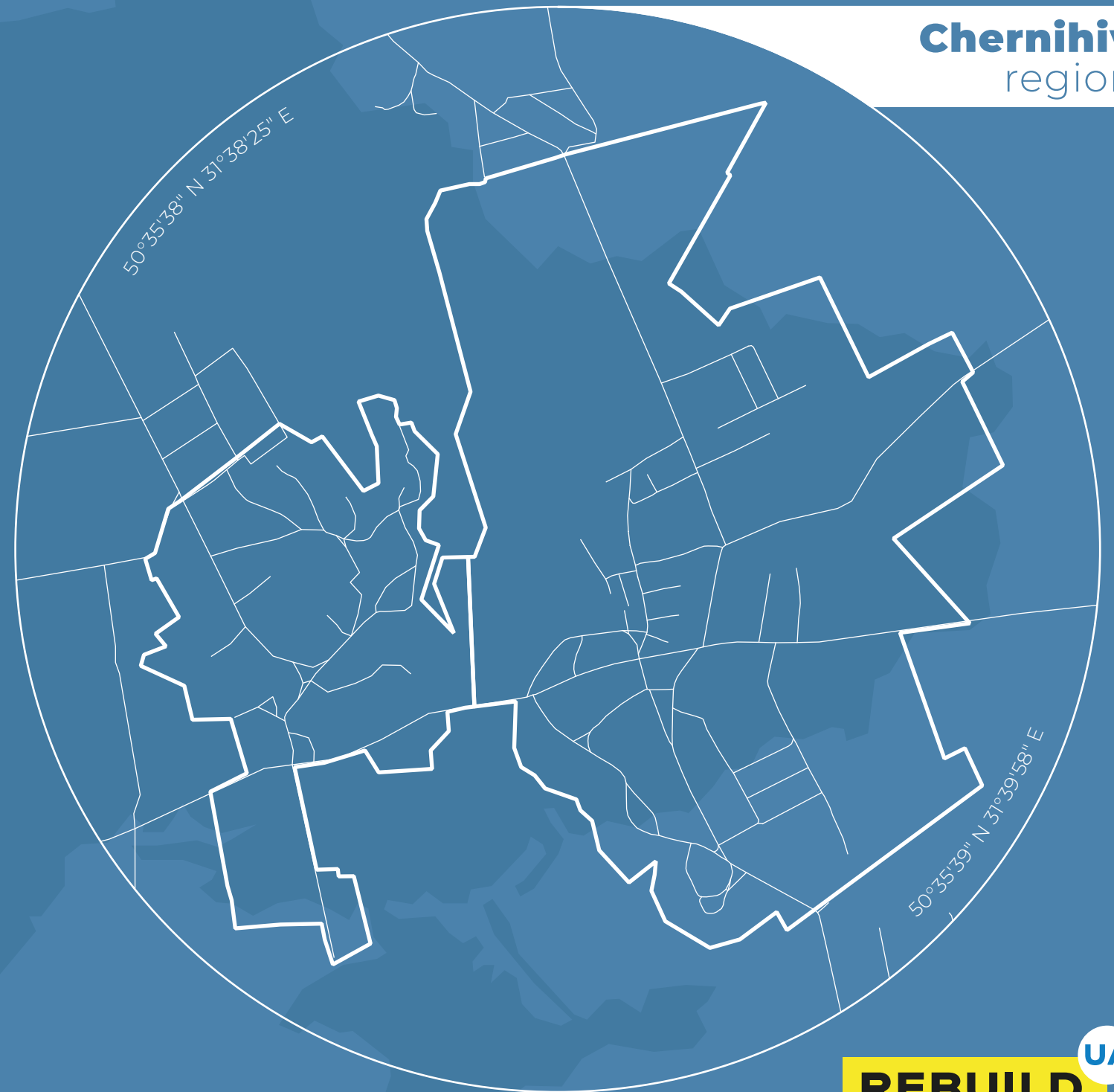


STARYI BYKIV

NOVYI BYKIV

DIGITIZATION OF DESTROYED INFRASTRUCTURE

Chernihiv
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

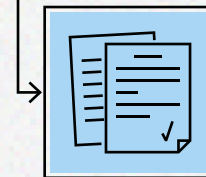
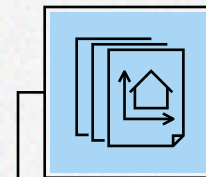
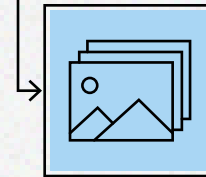
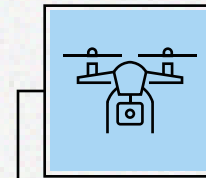
To ensure completeness of the input data, the project team captures photos and videos, as well as collects additional information from verified sources.

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:

 rebuildua.net

ABOUT THE LOCALITIES


Sary Bykiv and Novyi Bykiv are villages of the Novobasanska united territorial community. They are located on different banks of the Supii river and connected by a bridge.

The settlements survived more than a month of russian occupation. The russian military occupied the local school, hospital, kindergarten, and they made their headquarters in the bomb shelter of the local club. As a result of military actions in the villages, residential buildings were significantly damaged, and almost the entire infrastructure was destroyed. Residents were simply grabbed on the streets and shot, and children were used as human shields...

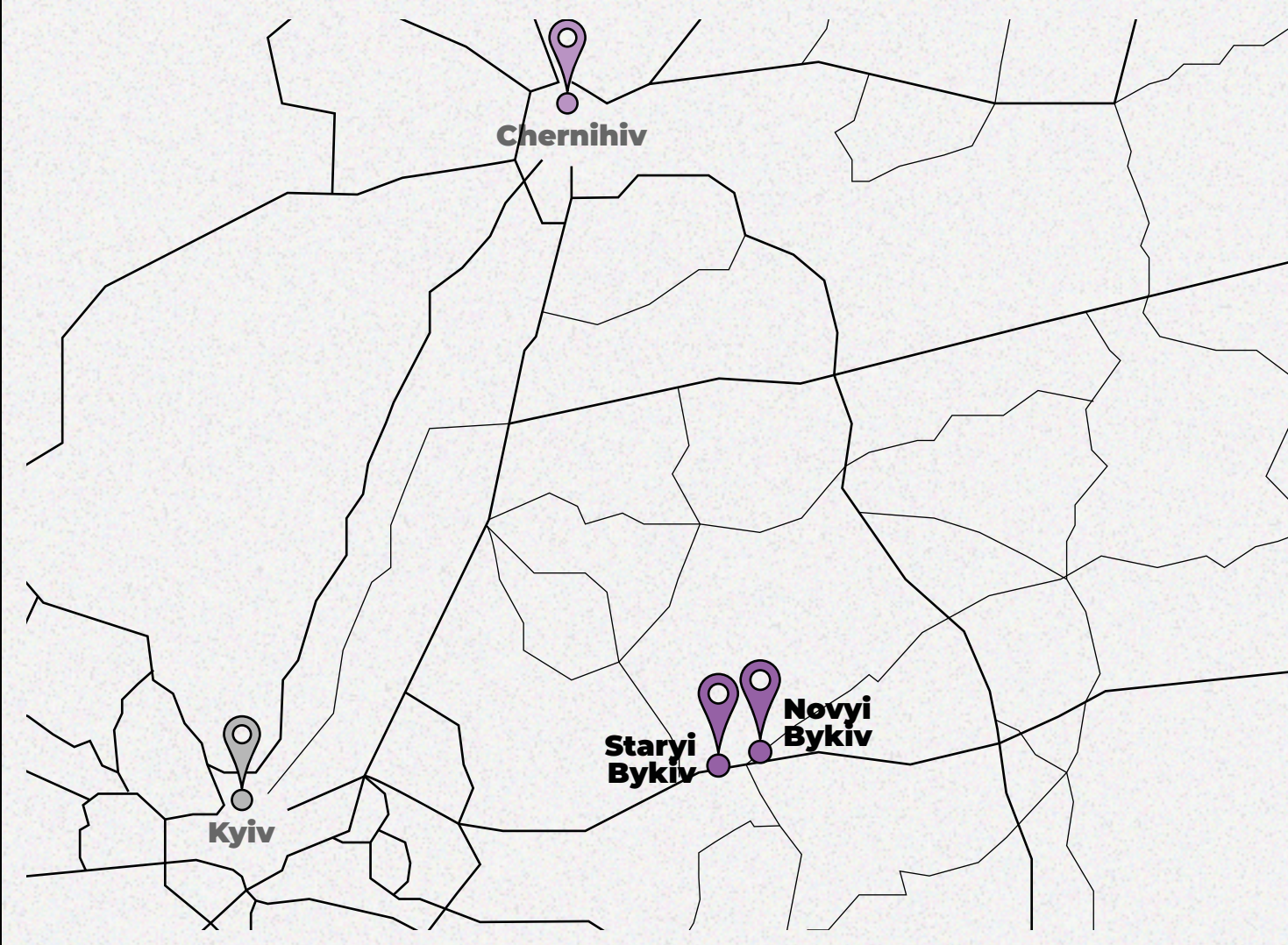
Read more about how the villages suffered from the war in our report.




 rebuildua.net

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

Photos:
open sources



Region **Chernihiv**
District **Bobrovytskyi**
Community **Novobasanska**

 Area
10,43 km²

 Population
2 469 people

DIGITIZATION PROCESS



1 plane platform

1 flight mission

2 492 pictures for othophoto

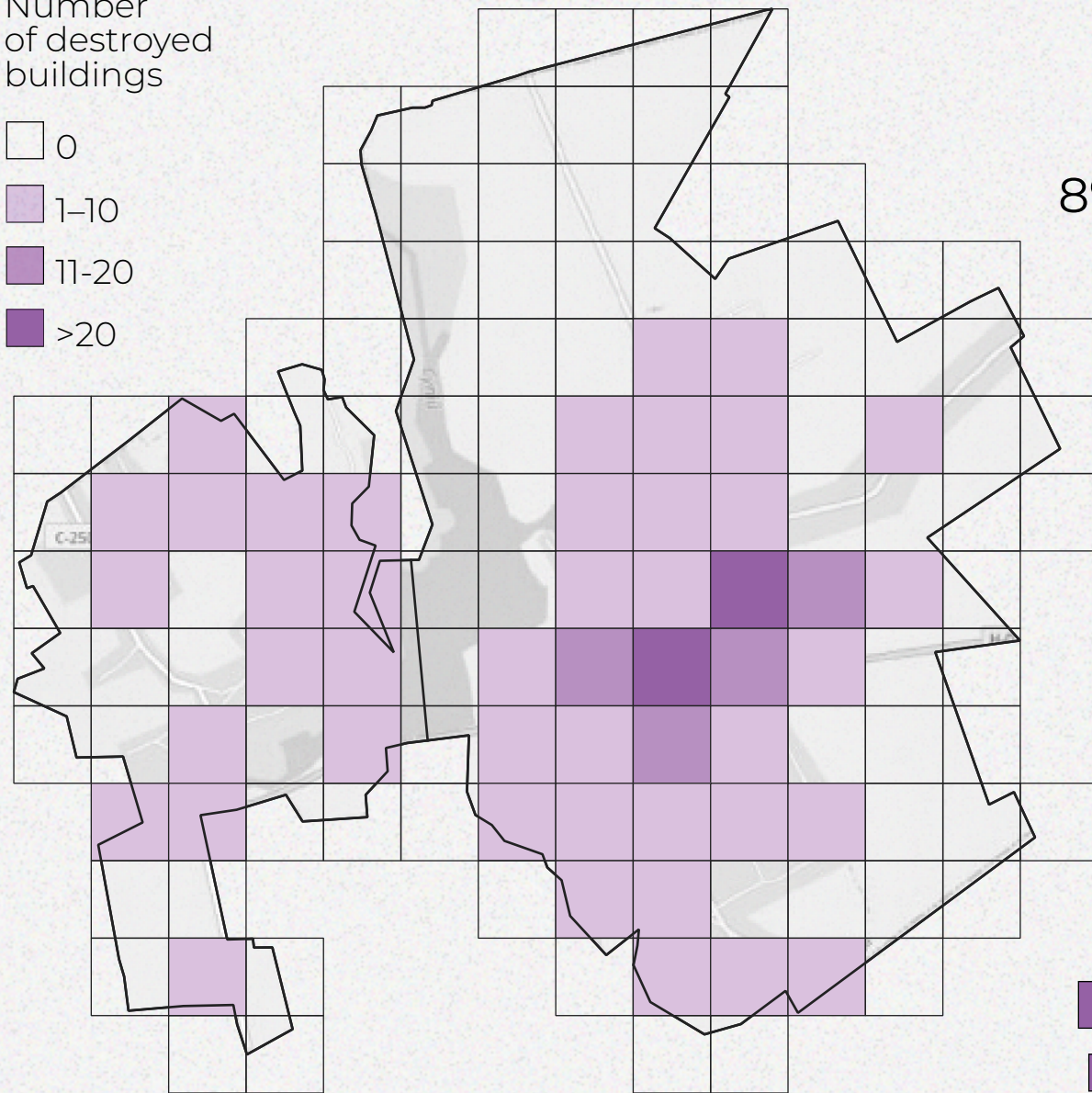
80 hours of data processing

115.6 Gigabytes of data

THERMAL MAP OF DESTRUCTION

Number of destroyed buildings

- 0
- 1-10
- 11-20
- >20



8%



51 / 686 Shevchenka

11%



35 / 317 Petrovskogo

19%



49 / 253 Tsentralna

Novyi Bykiv

Staryi Bykiv

4%



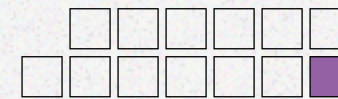
18 / 408 Akimova

7%



11 / 152 Tsentralna

8%



10 / 131 Sadova

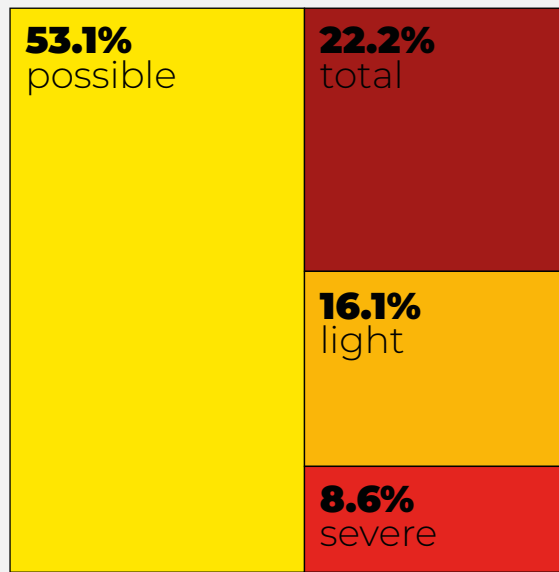
- 20 buildings
- 10 buildings

LEVELS OF DESTRUCTION

Novyi Bykiv

Buildings destroyed:

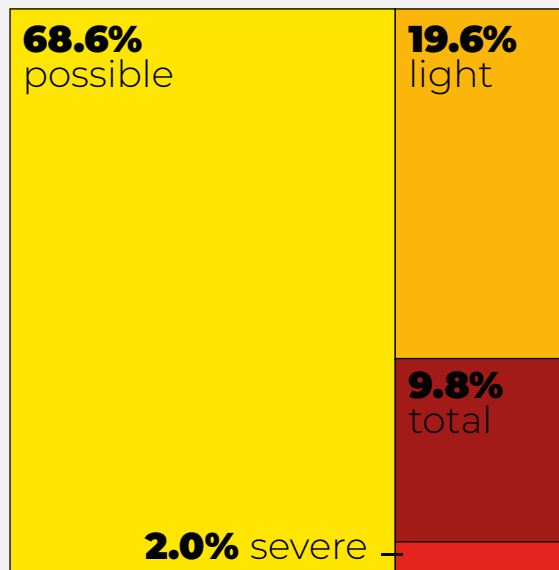
243
/ 3,429



Staryi Bykiv

Buildings destroyed:

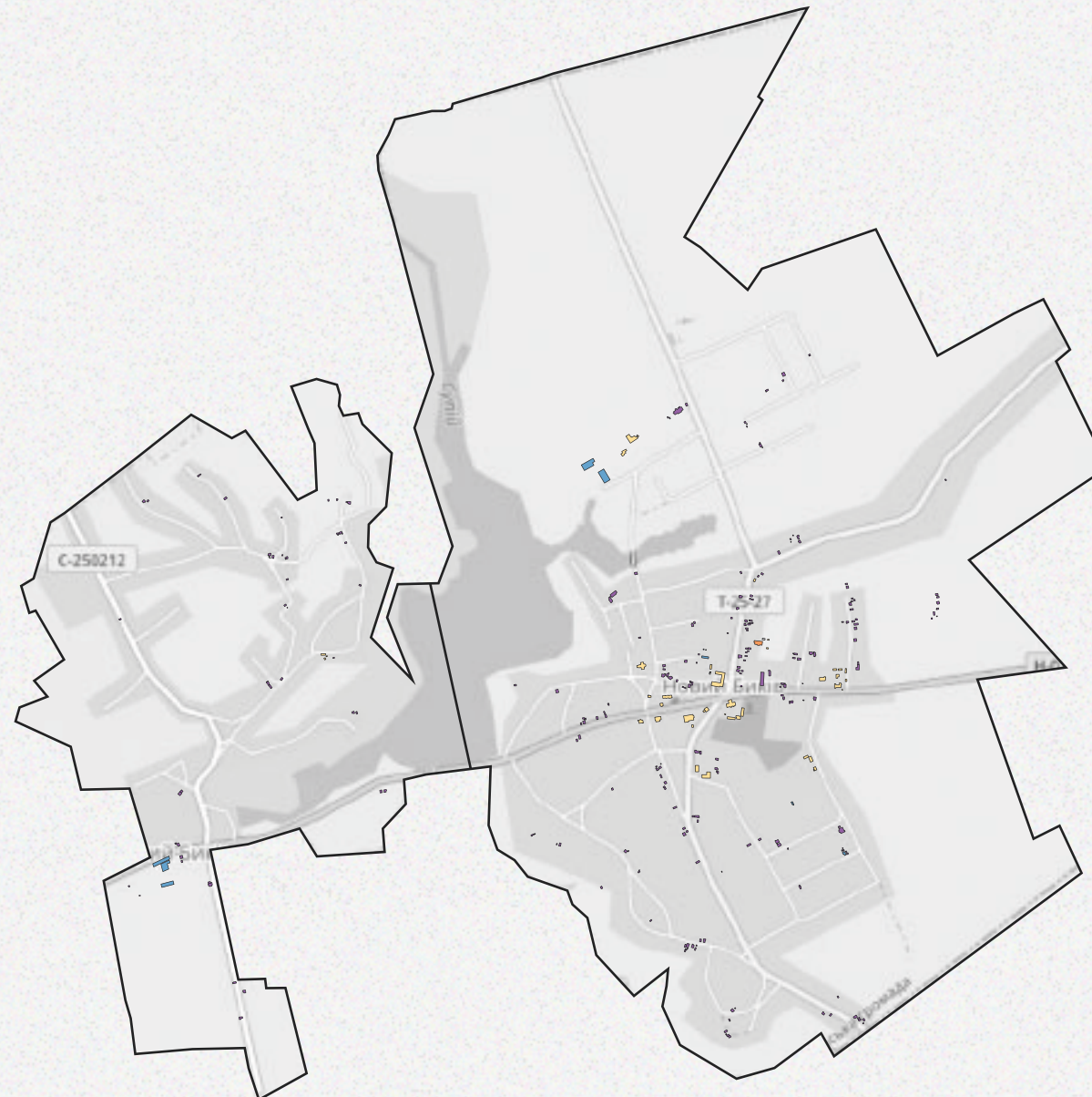
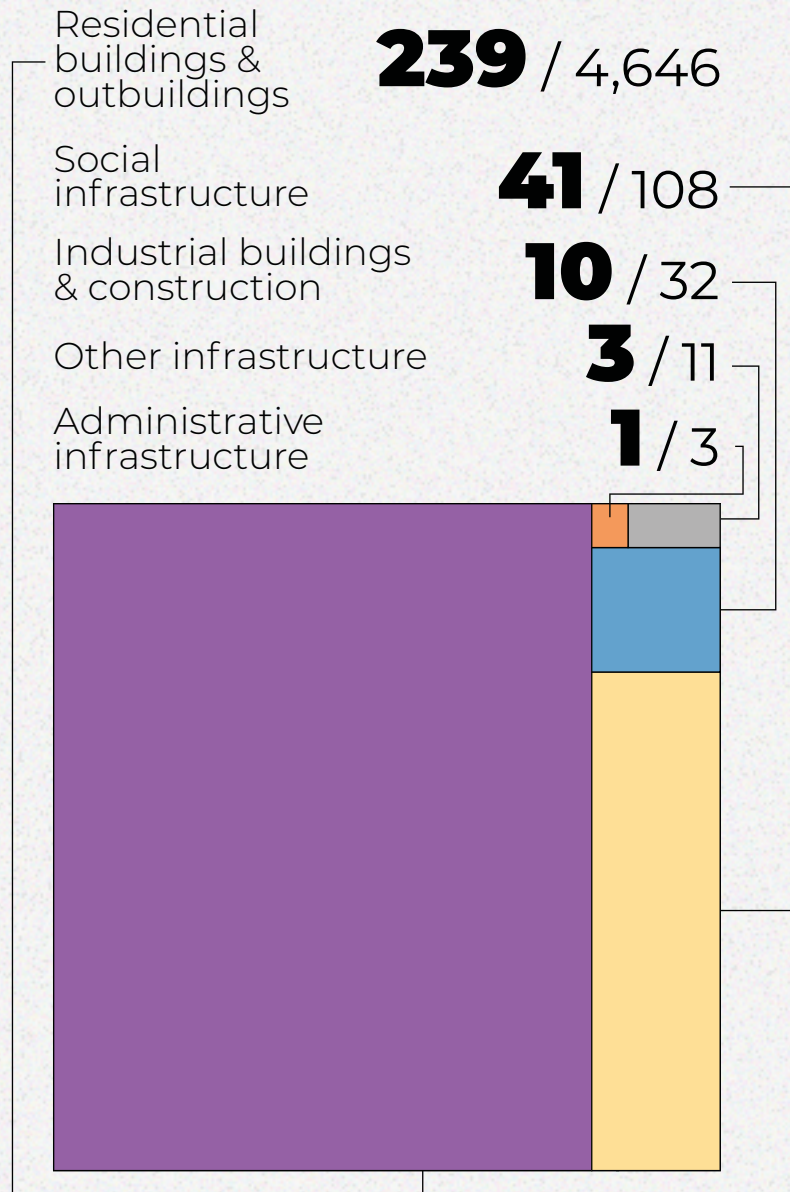
51
/ 1,371



- total destruction
- severe destruction
- light destruction
- possible destruction
- no destruction



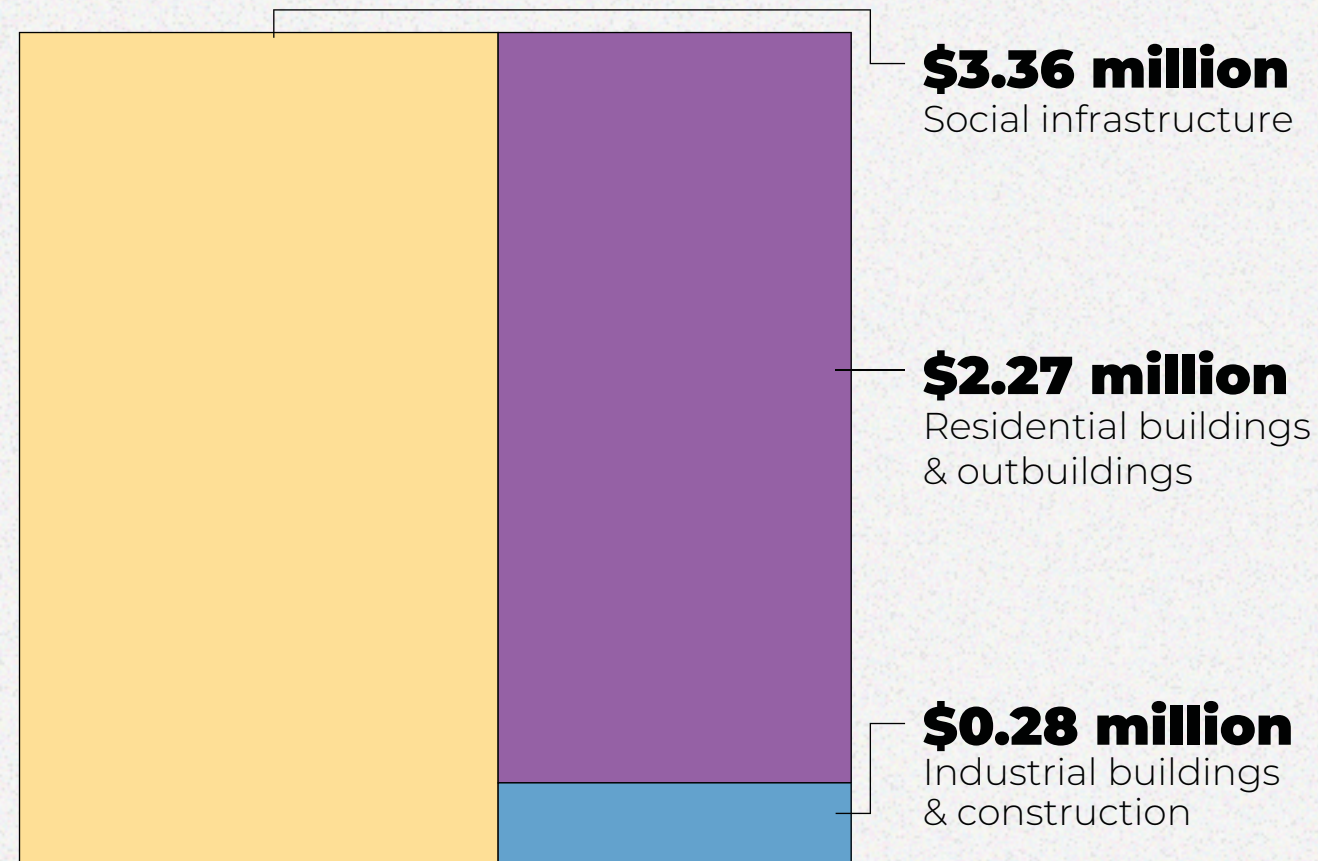
TYPES OF DESTROYED OBJECTS



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

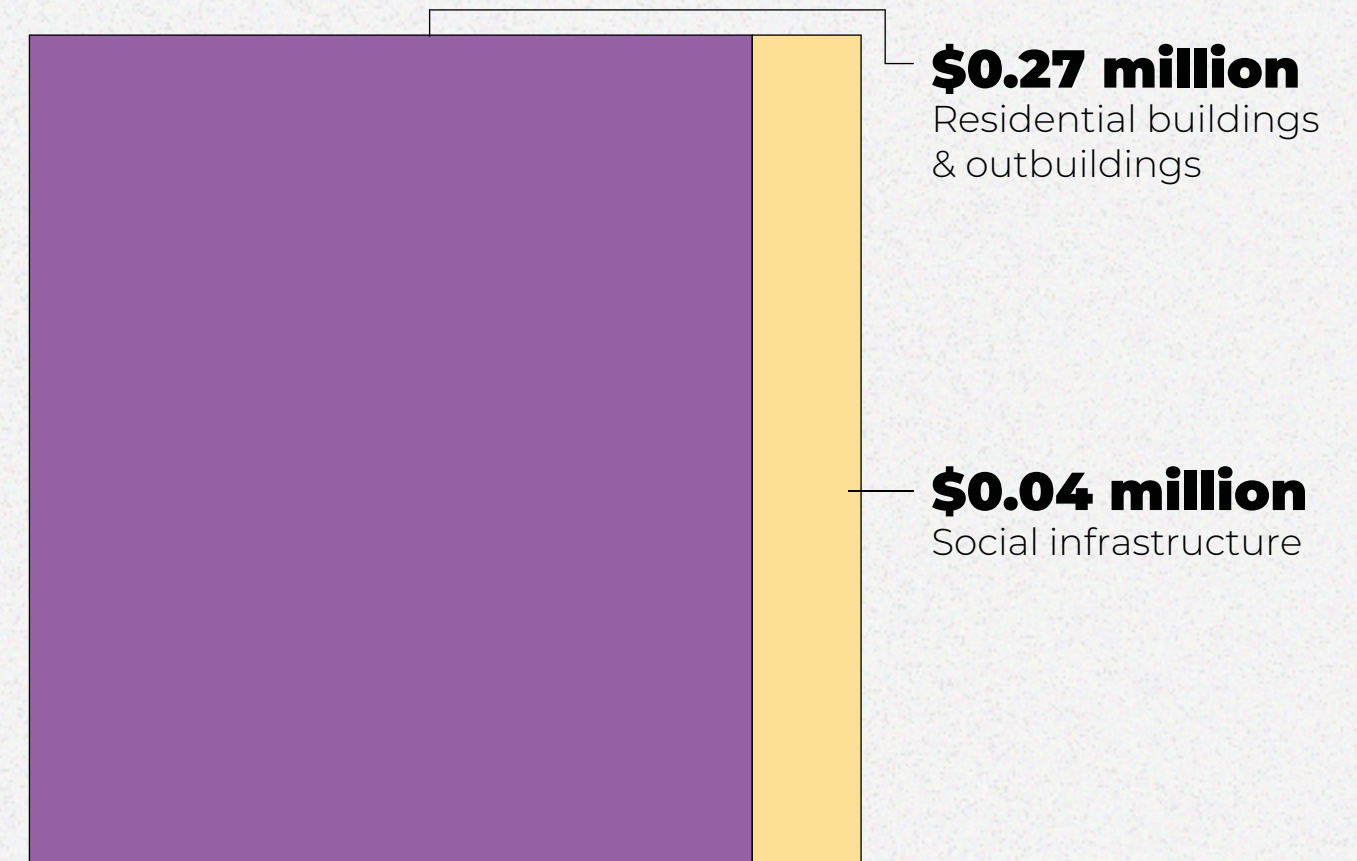
ASSESSMENT OF DAMAGES

Novyi Bykiv



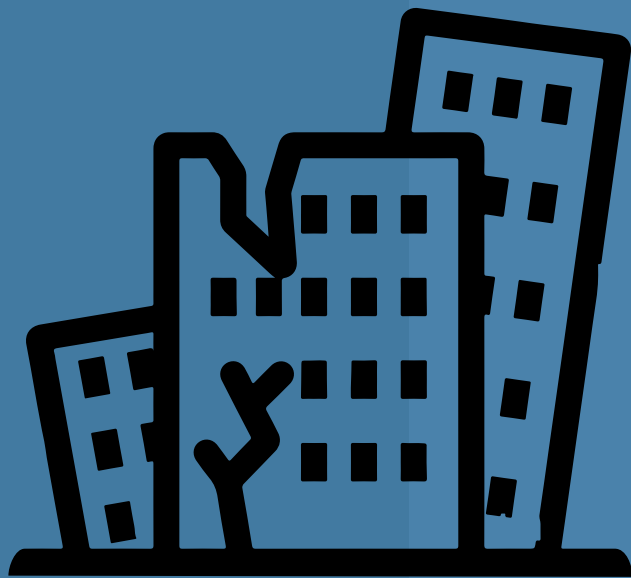
Total damages **\$5.9 million**

Staryi Bykiv



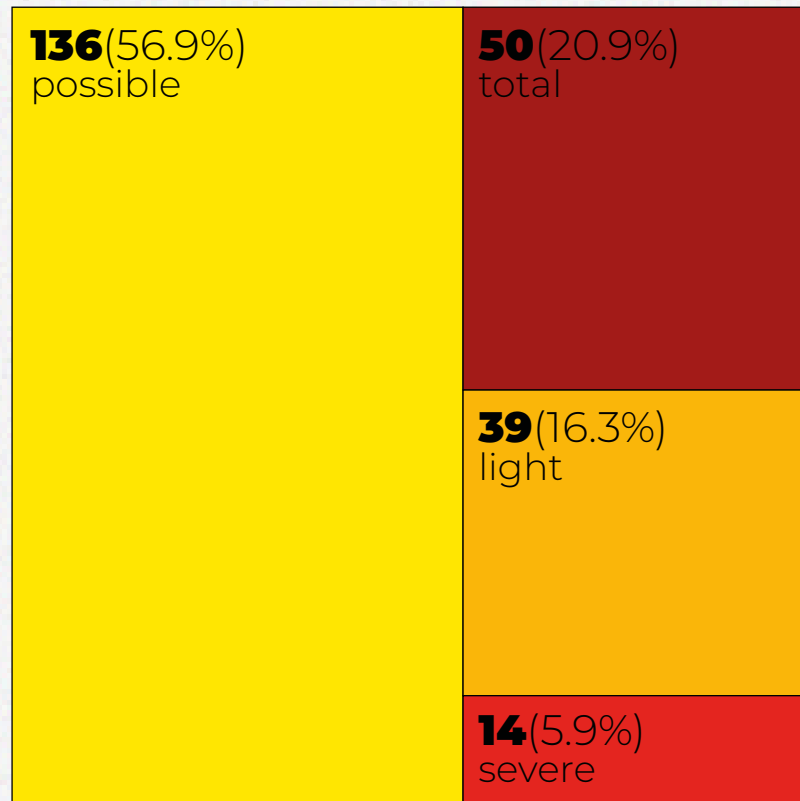
Total damages **\$0.3 million**

SCALE OF DESTRUCTION



SCALE OF DESTRUCTION

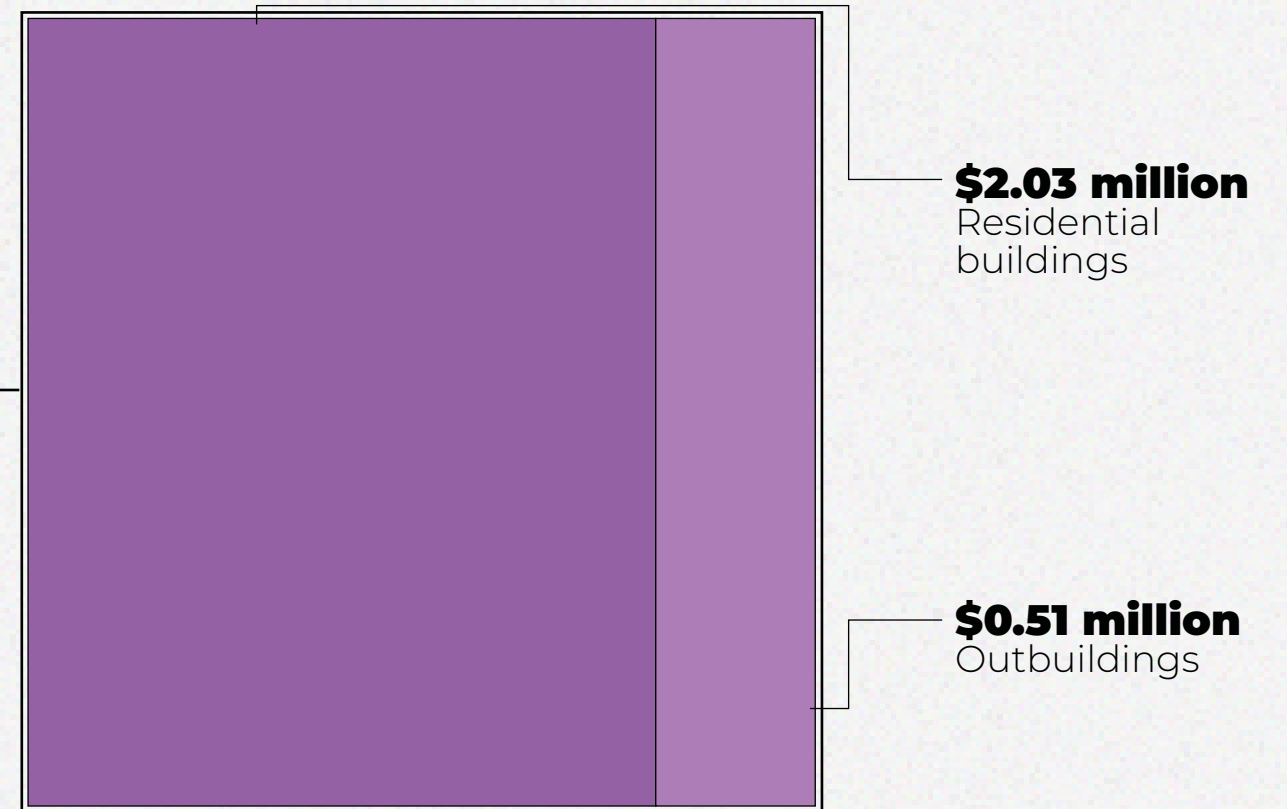
Level of destruction



Assessment of damages

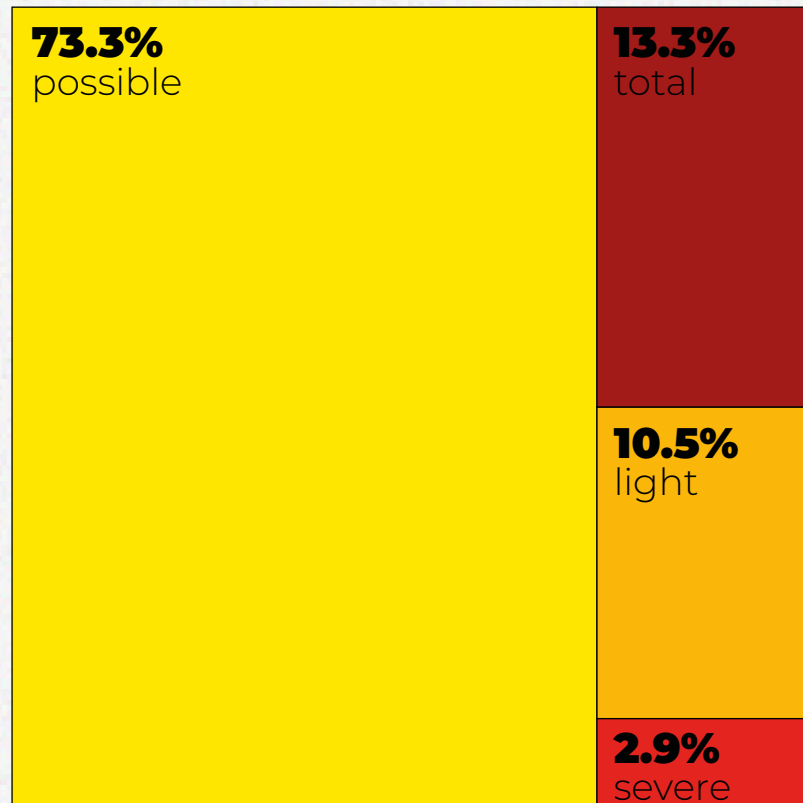
Total damages

\$2.5 million

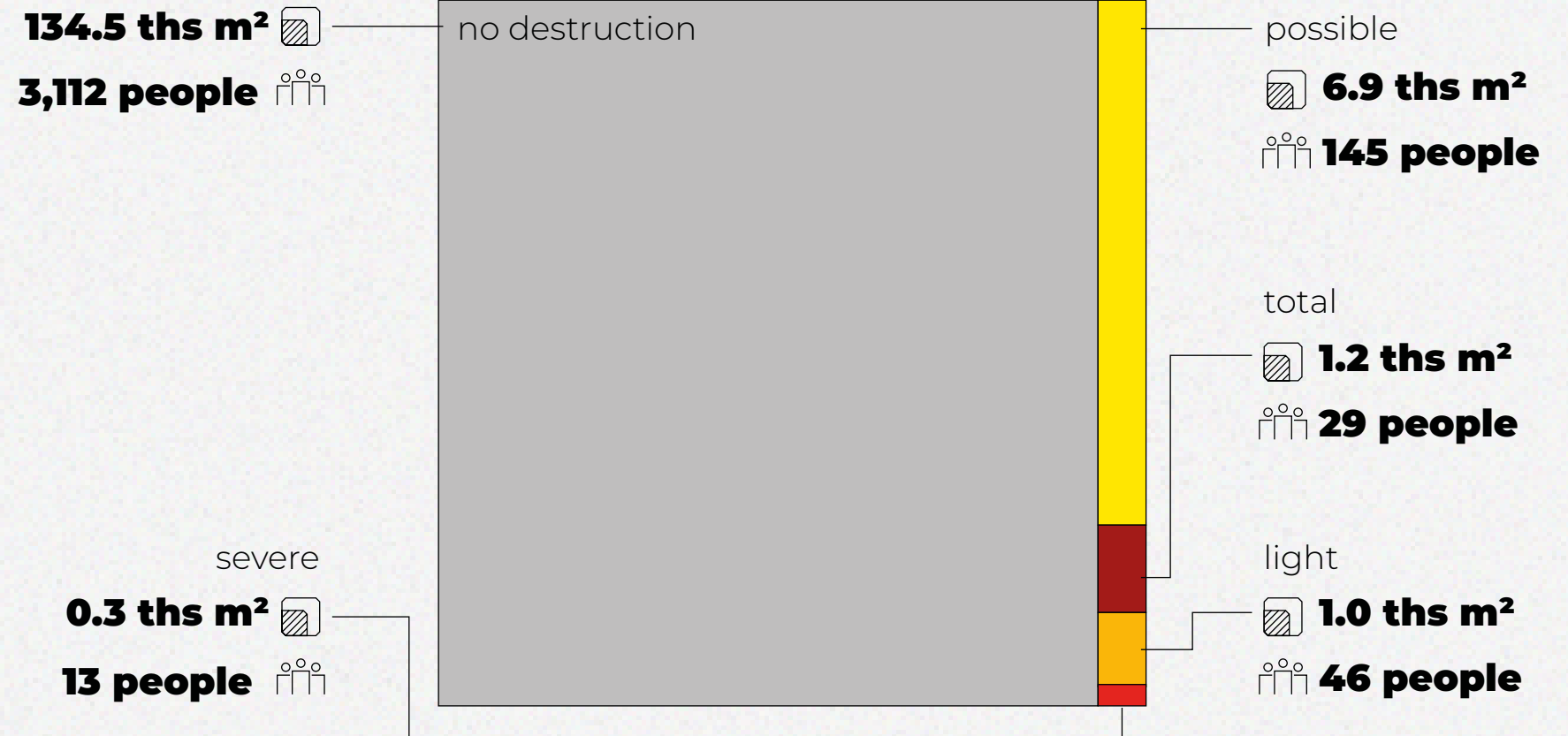


RESIDENTIAL BUILDINGS

Level of destruction



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

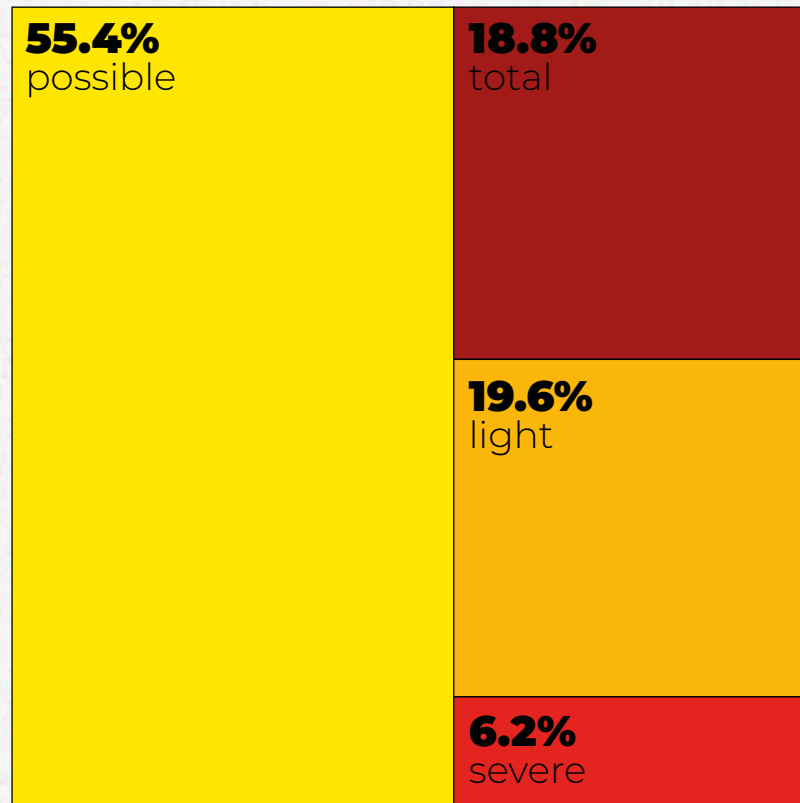


Total area of damage
9.4 ths m²

Number of residents affected
233

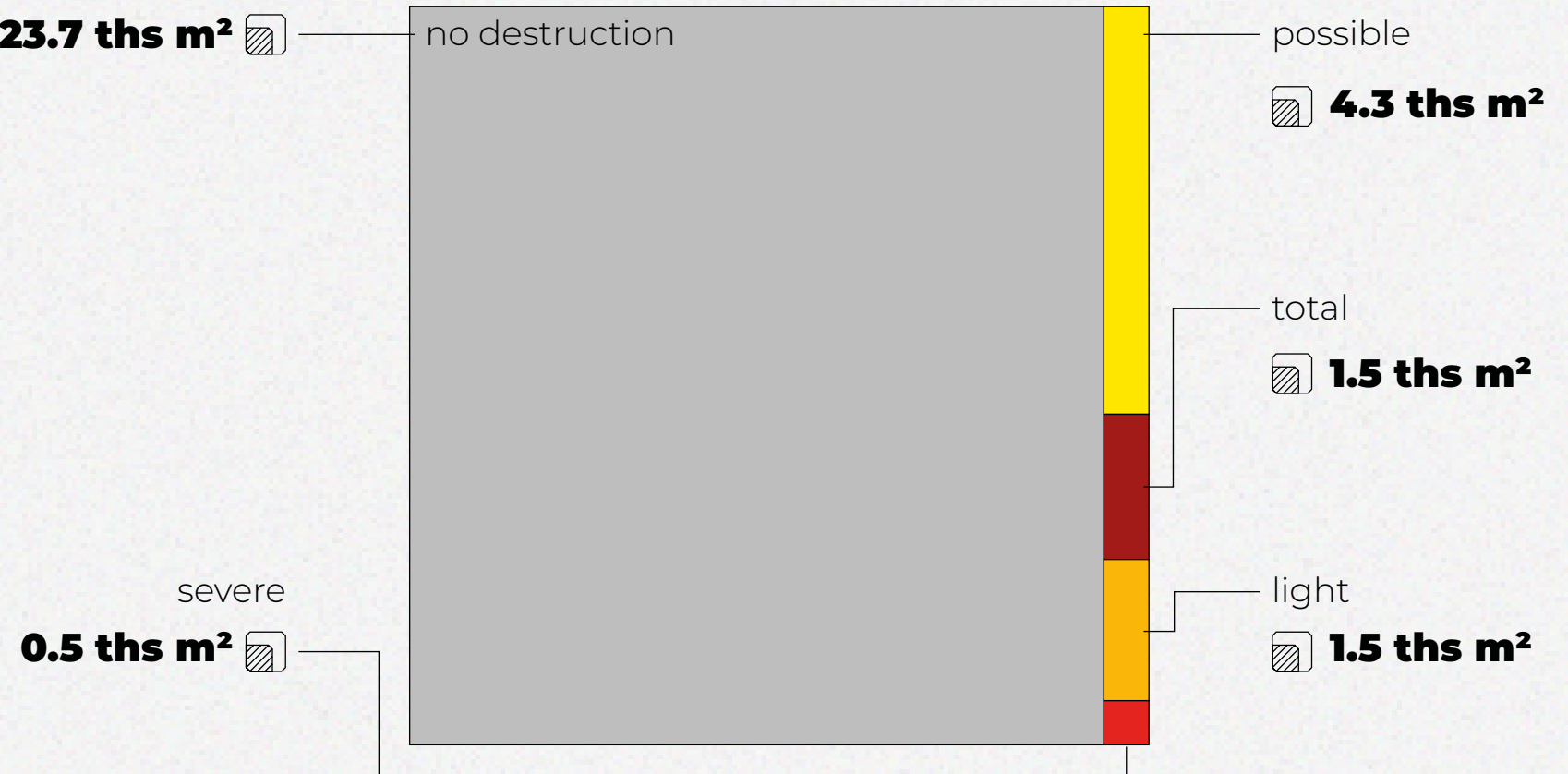
OUTBUILDINGS

Level of destruction



Area of destruction

123.7 ths m²

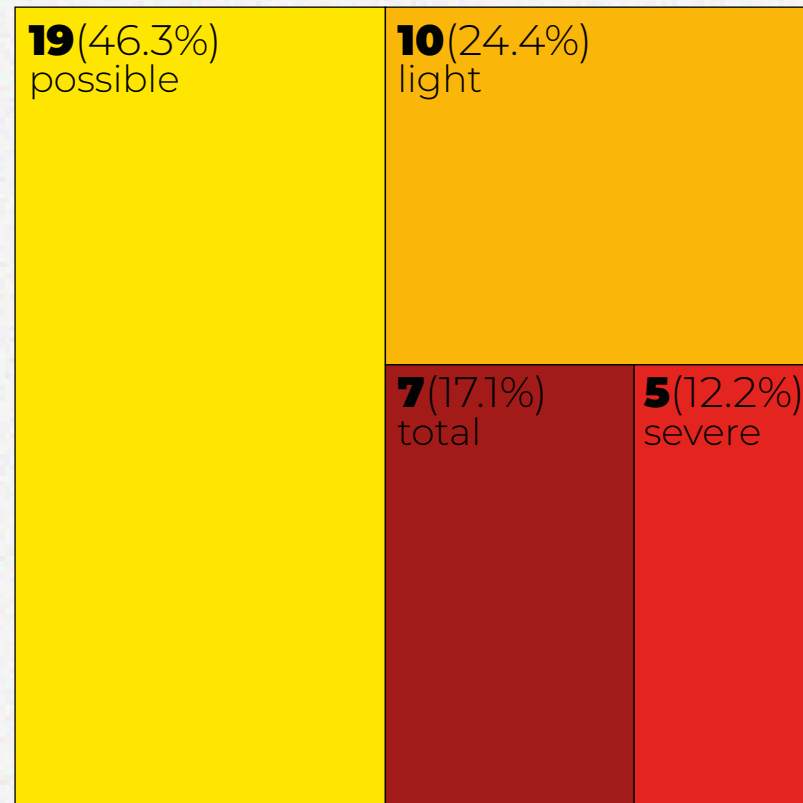


Total area of damage

7.8 ths m²

SCALE OF DESTRUCTION

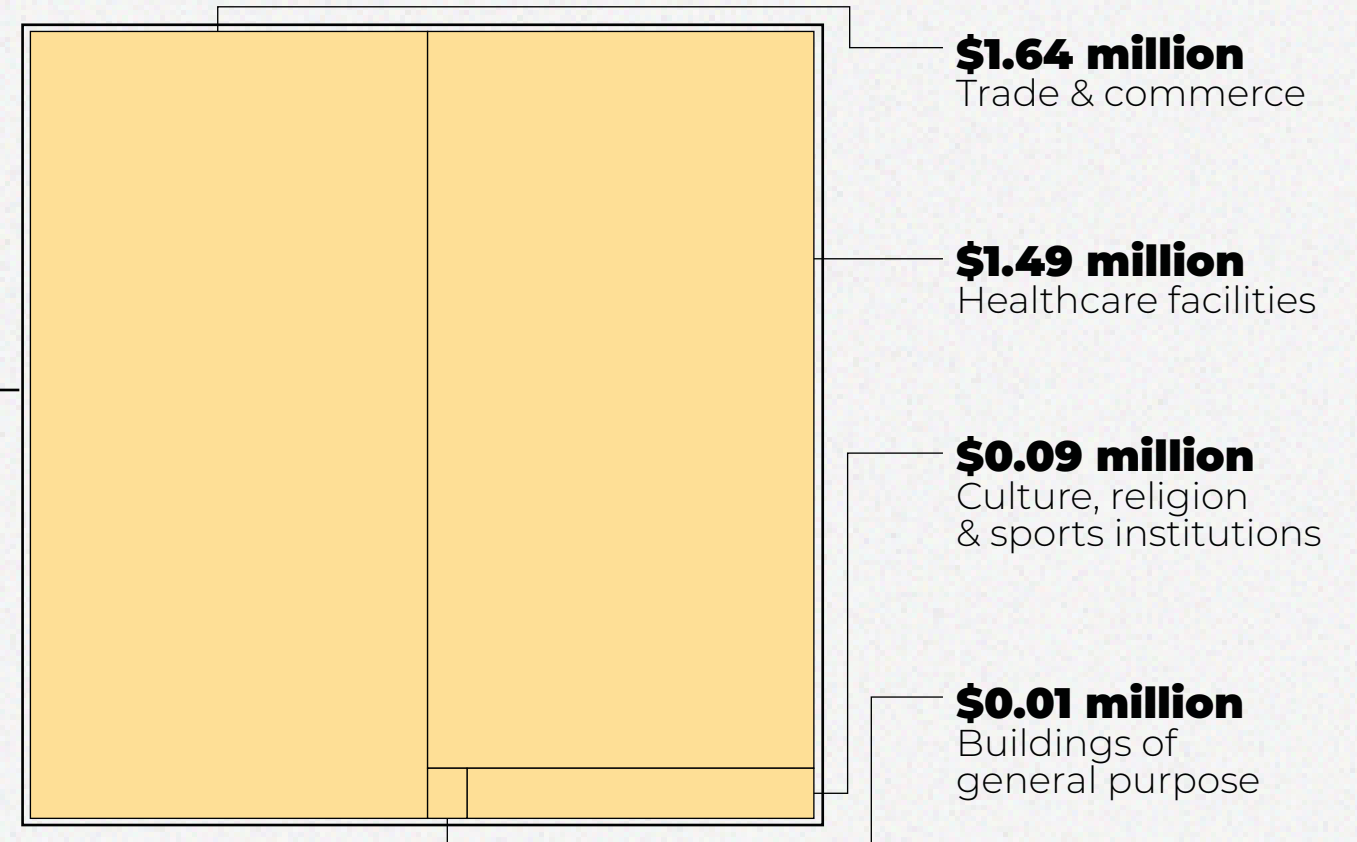
Level of destruction



Assessment of damages

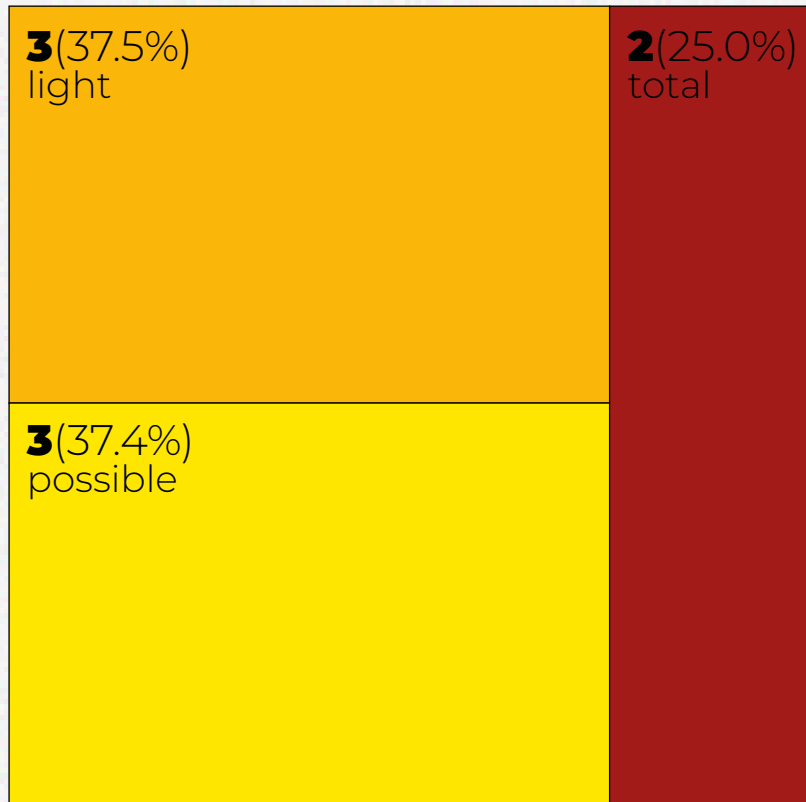
Total damages

\$3.2 million



EDUCATION & HEALTHCARE

Level of destruction



Total damages

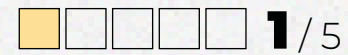
\$1.5 million

Scale of destruction

Hospital (buildings)



School

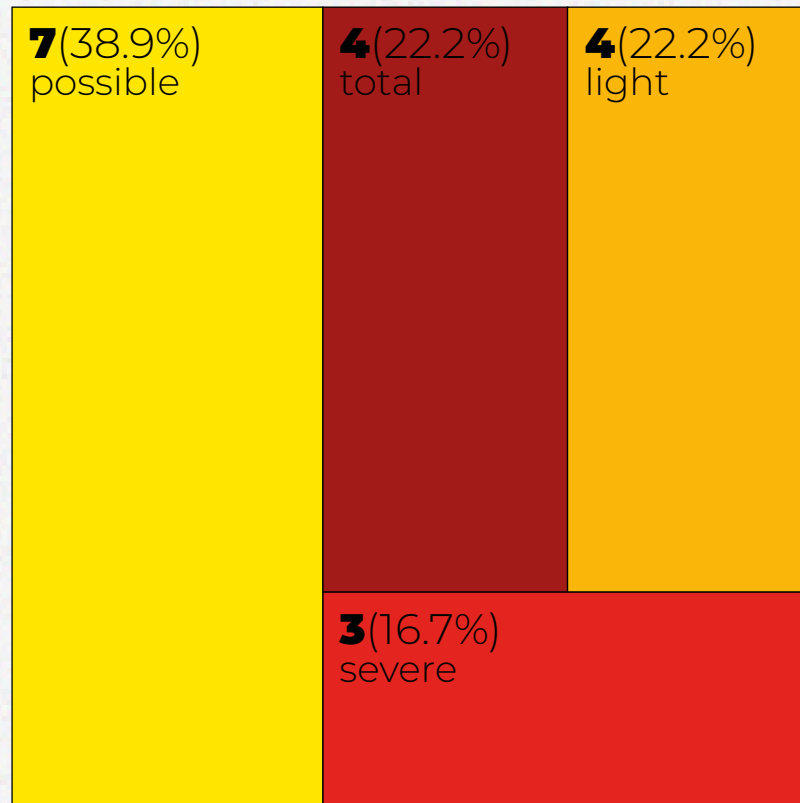


School, Novyi Bykiv



COMMERCIAL BUILDINGS

Level of destruction

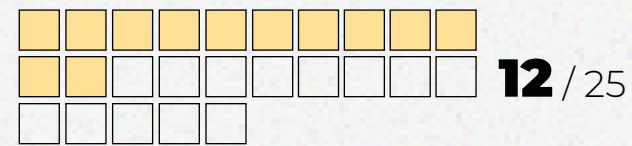


Total damages

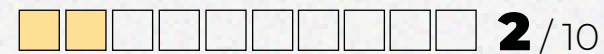
\$1.6 million

Scale of destruction

Commercial services and institutions



Grocery stores



Trade

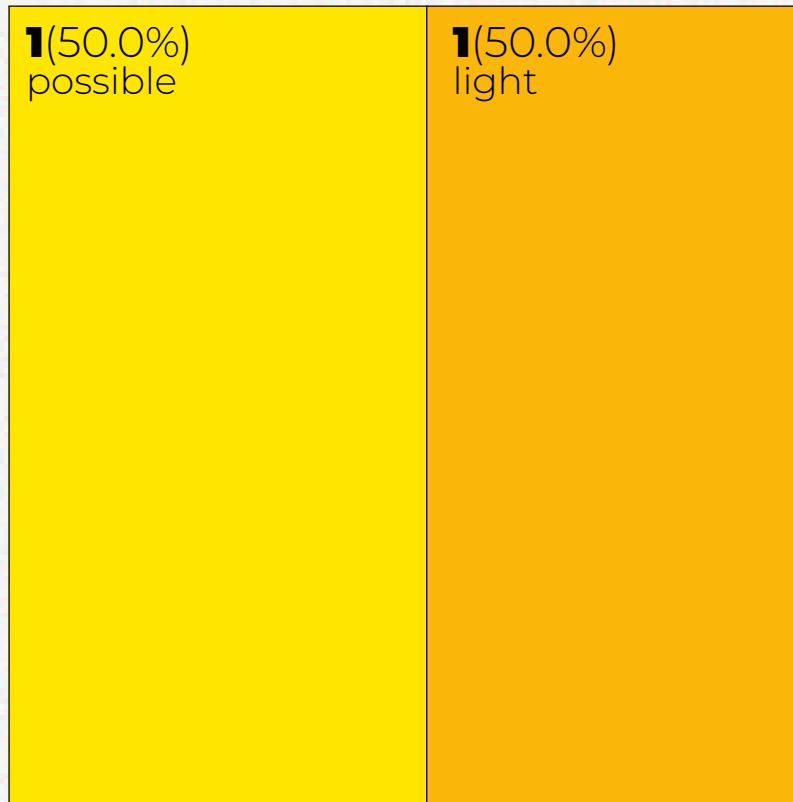


Grocery store

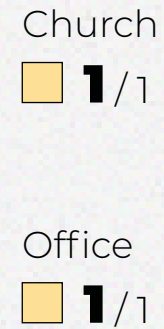


OTHER BUILDINGS

Level of destruction



Scale of destruction



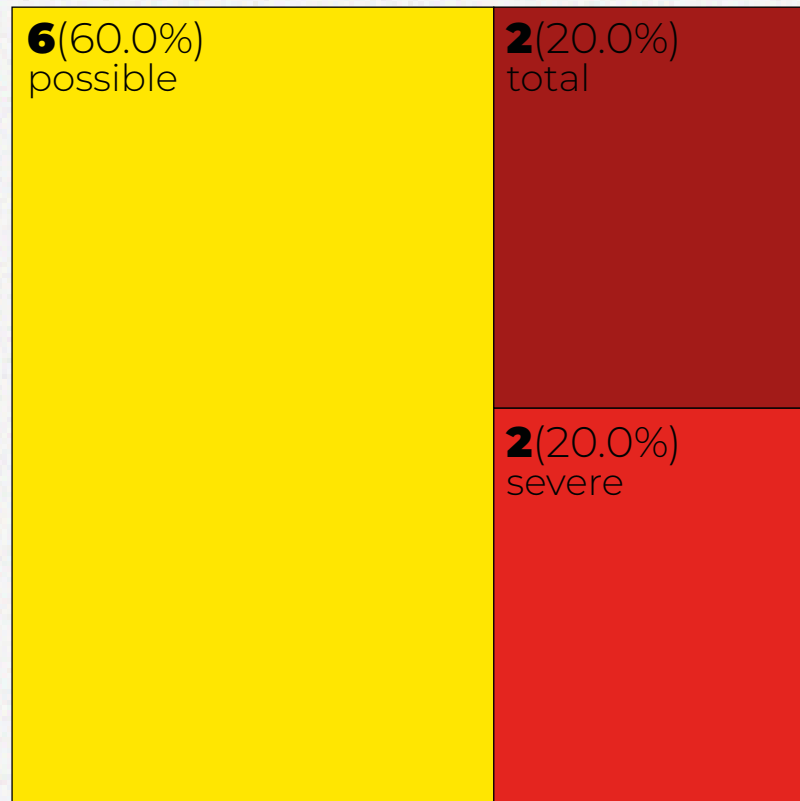
Church, Novyi Bykiv



Total damages
\$0.1 million

SCALE OF DESTRUCTION

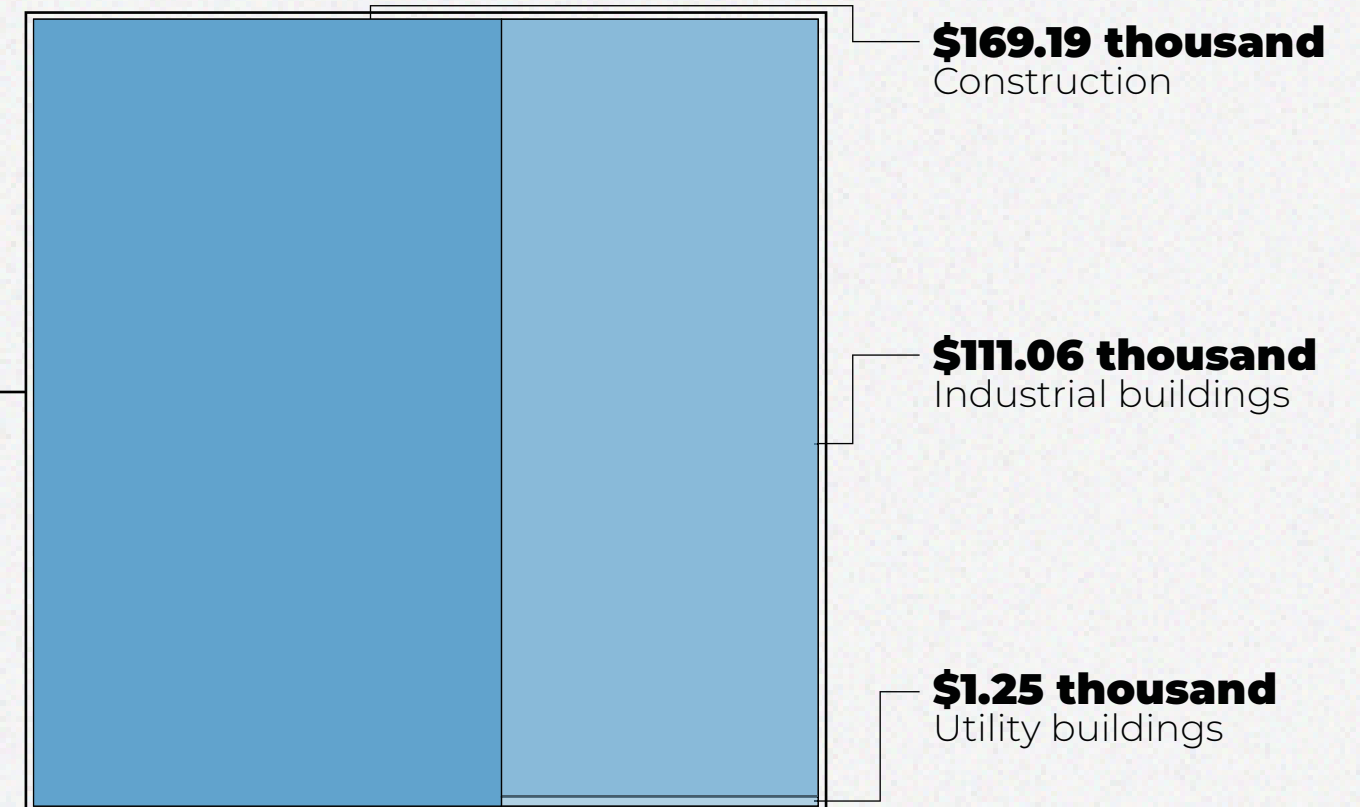
Level of destruction



Assessment of damages

Total damages

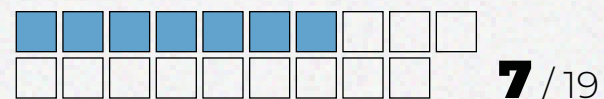
\$0.3 million



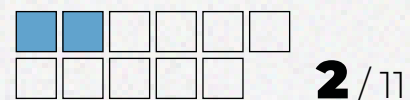
SCALE OF DESTRUCTION

Number of destroyed buildings

Industrial buildings



Utility buildings



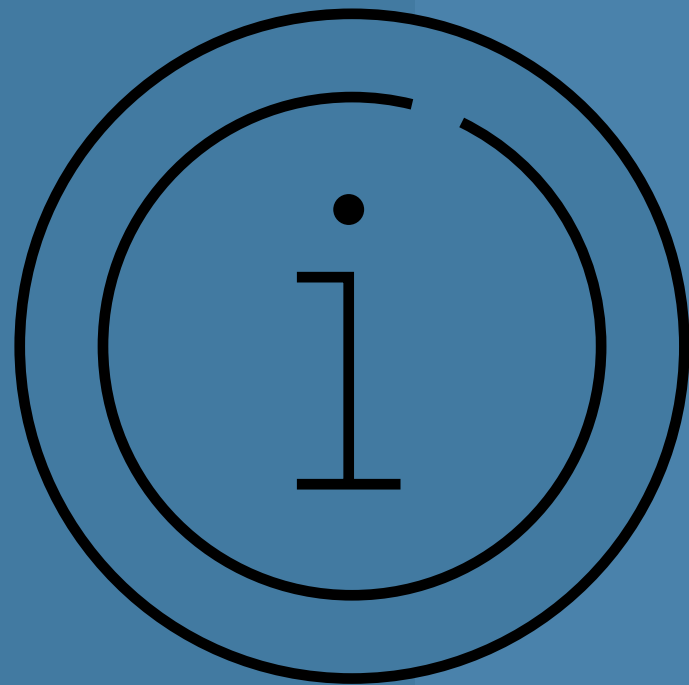
Construction



Industrial object, Novyi Bykiv



METHODOLOGIES & ADDITIONAL INFORMATION



REBUILD

UA

HOW WE DETERMINE LEVELS OF DESTRUCTION

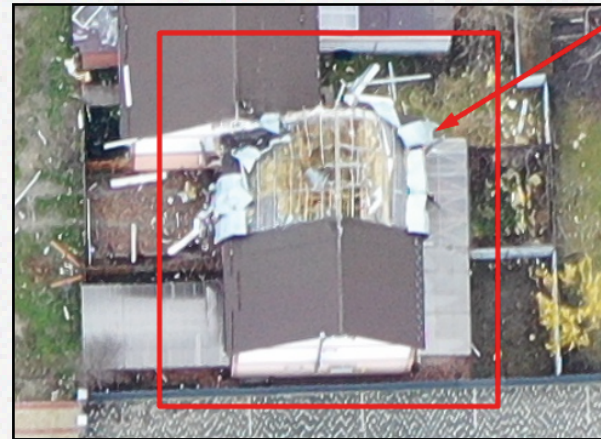
Total destruction



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).

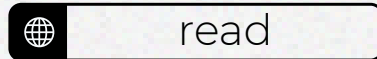


Small objects

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).

LOCALITIES THROUGH THE EYES OF BEHOLDERS

«They were taken out one by one and shot»: mass murders during the russian occupation of Chernihiv region



The Russians fired at people and then blamed the «Banderians»



In Novyi Bykiv, the Russians used children as a human shield



A teacher was captured in Chernihiv region — she reported on the movement of russian troops



In several villages in Chernihiv region, russian military killed six civilians, held captive and tortured dozens of people



Novy Bykiv — headquarters in a kindergarten, trenches on playgrounds, and stolen pillows



War in Ukraine. Novy Bykiv — ruins left by the «liberators»



Destroyed school, kindergarten and looting: a month of russian occupation in Novobasanska community



Novyi Bykiv after liberation from the occupiers



PREVIOUS REPORTS



Moshchun,
Buchanskyi district,
Kyiv region

↓ download



Horenka,
Buchanskyi district,
Kyiv region

↓ download



Ozera,
Borodianskyi district,
Kyiv region

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Irpin,
Buchanskyi district,
Kyiv region

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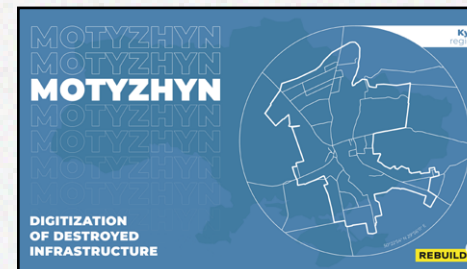
Bucha,
Buchanskyi district,
Kyiv region

↓ download



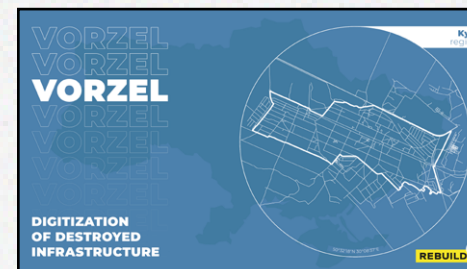
Hostomel,
Buchanskyi district,
Kyiv region

↓ download



Motyzhyn,
Buchanskyi district,
Kyiv region

↓ download



Vorzel,
Buchanskyi district,
Kyiv region

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REBUILD



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:

