

ABOUT THE PROJECT

Background

The military actions of Russia and Belarus cause numerous damages and destruction in almost all regions of Ukraine — housing and infrastructure are being destroyed, 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 losses 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:



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

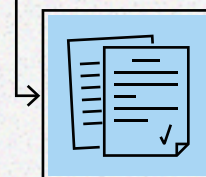
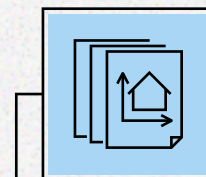
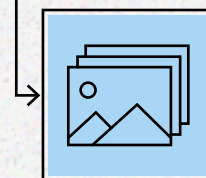
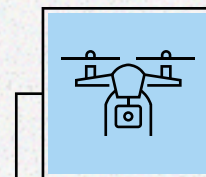
To ensure completeness of the input data, the project team captures photos and videos, as well as collects additional information from verified sources.

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 LOCALITY

The village of Zabuchcha in Kyiv region is one of many occupied by russian troops. The occupiers did not allow locals to leave their houses, firing at private homes with various weapons.

For almost a month, the village was under occupation and on the verge of a humanitarian catastrophe. As russian military forces retreated, they burned and destroyed everything in their path.

The RebuildUA team witnessed the consequences of these events. We are moving forward on our sad but important route.



 rebuildua.net


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

Photo: kontrakty.ua



Region **Kyiv**
 District **Buchanskyi**
 Community **Irpinska**

 Square
78 hectares

 Population
275 people

DIGITIZATION PROCESS

- border of the locality
- - - trajectory of drone shooting

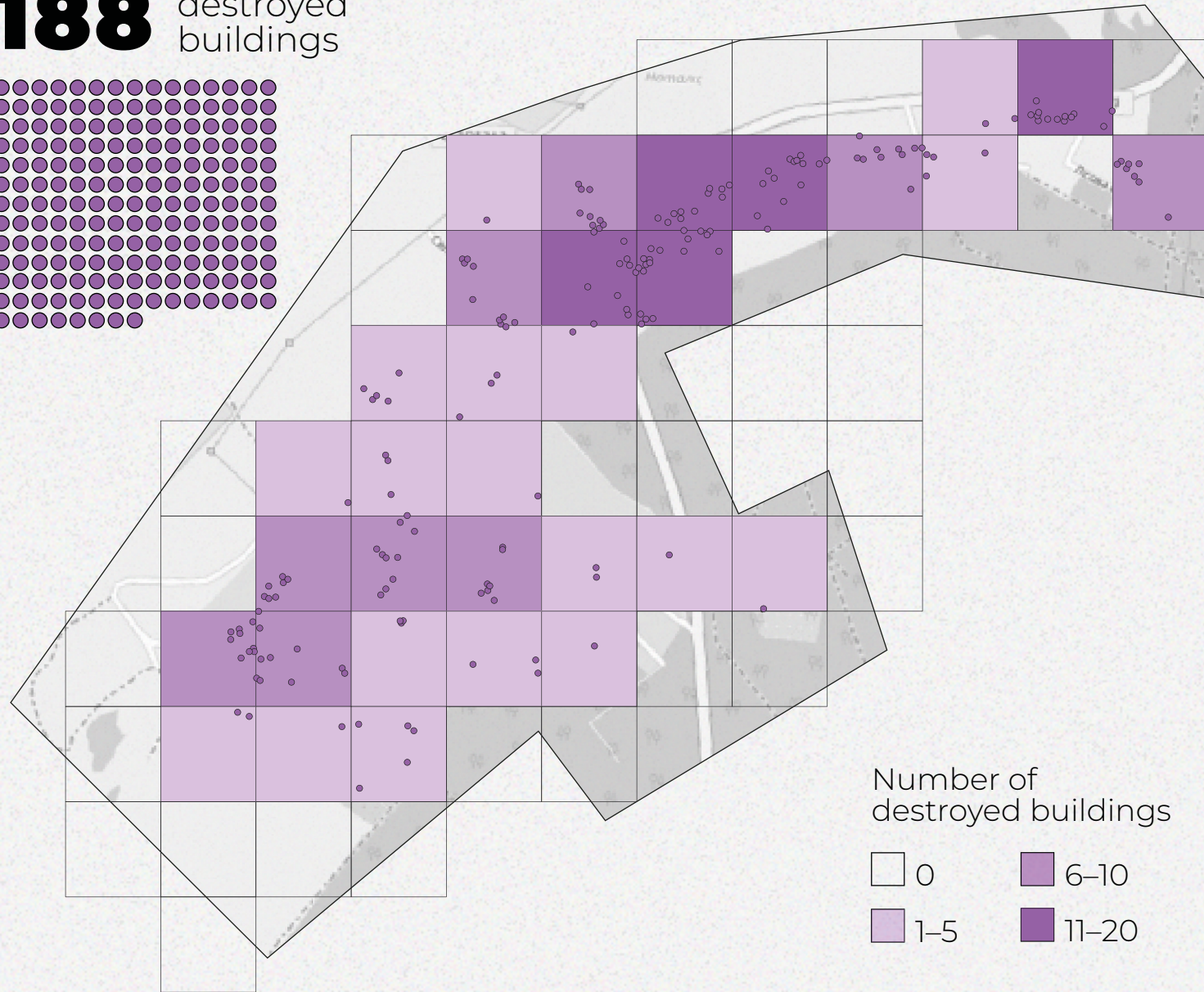
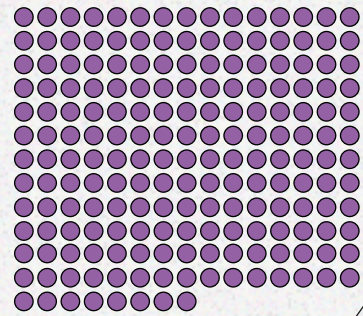


- 2** flight missions
- 200** pictures for orthophoto
- 60** hours of data processing
- 2** Gygabites of data

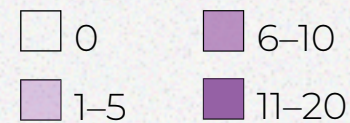


THERMAL MAP OF DESTRUCTION

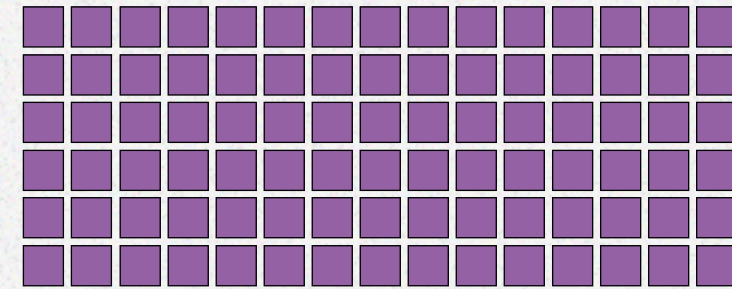
188 destroyed buildings



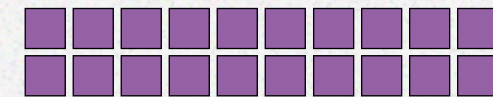
Number of destroyed buildings



Destruction of the largest streets



90 Ridna



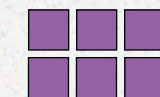
20 Tekhnichna



11 Volodymyrska



7 Vyshneva



6 Svitla

HOW WE DETERMINE LEVELS OF DESTRUCTION

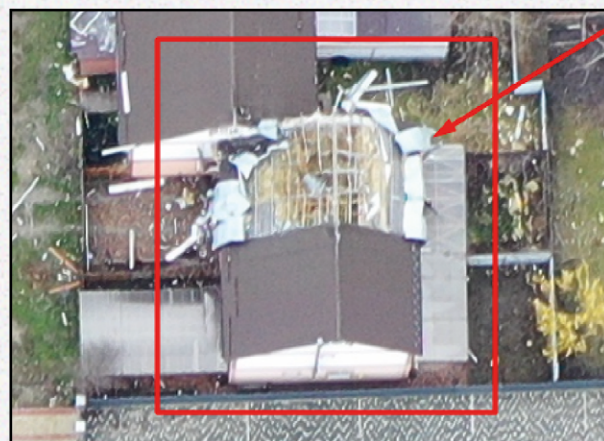
Total destruction



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).

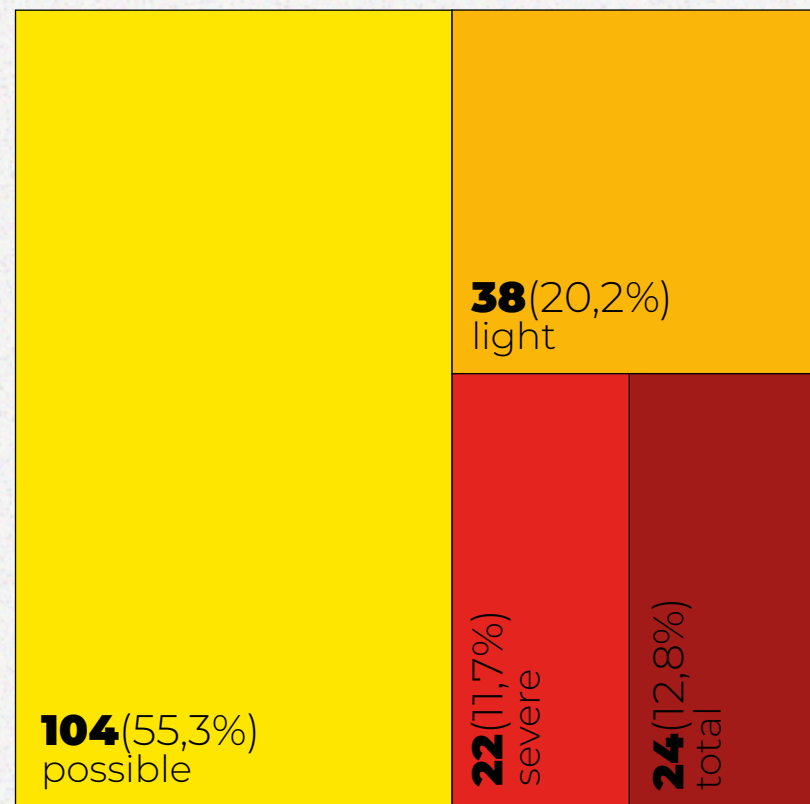
Visual signs may include be small amounts of debris, gravel or sand around the building.

LEVELS OF DESTRUCTION

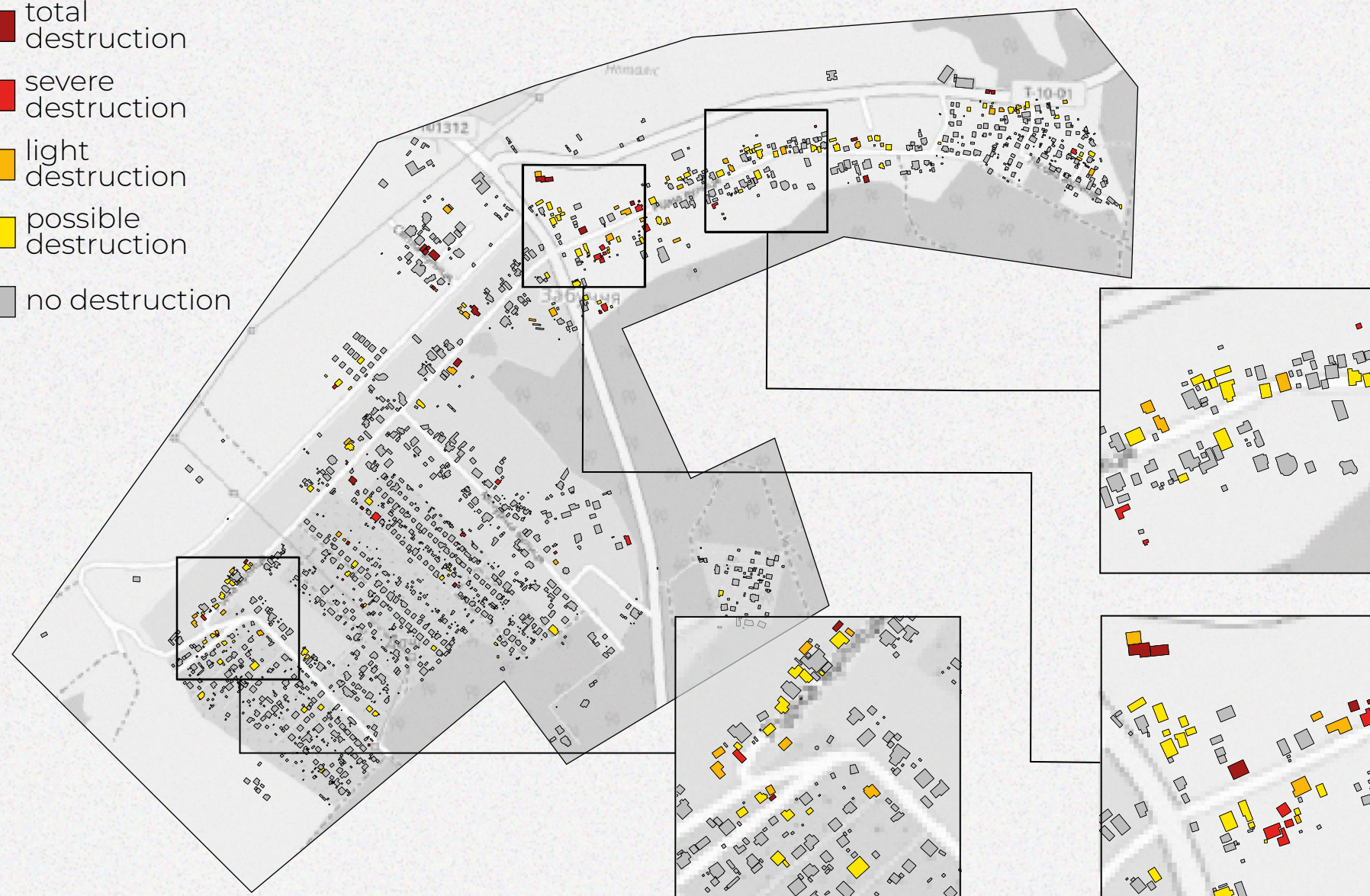
Buildings destroyed:

188 out of 1 820

Level of destruction, number of buildings



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



SCALE OF DESTRUCTION

Industrial infrastructure

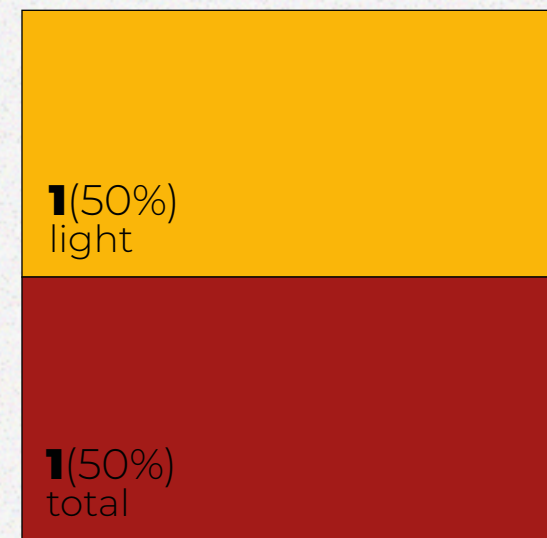
Utility buildings

■ **1** / 16

Solar panels

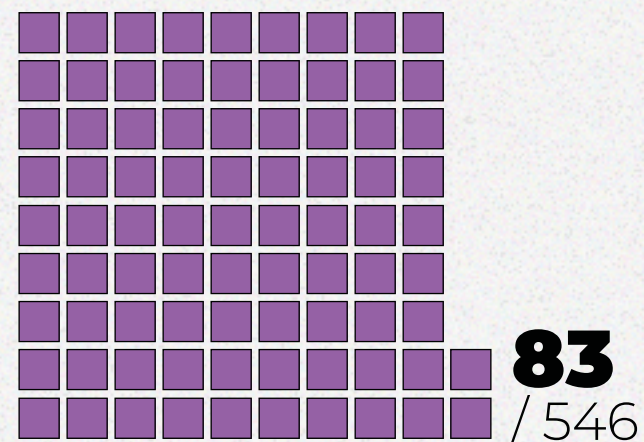
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Level of destruction

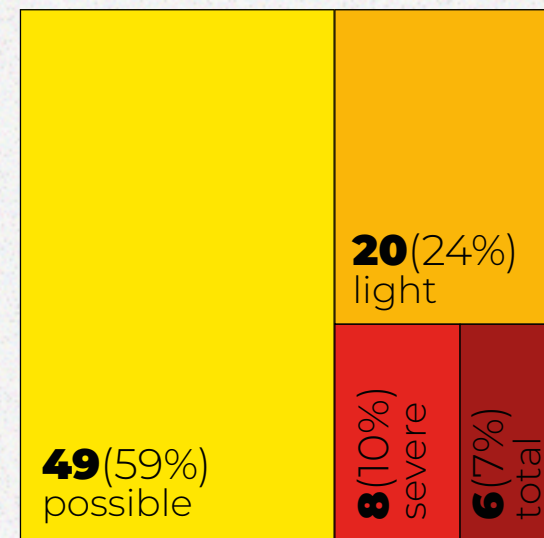


Residential buildings and outbuildings

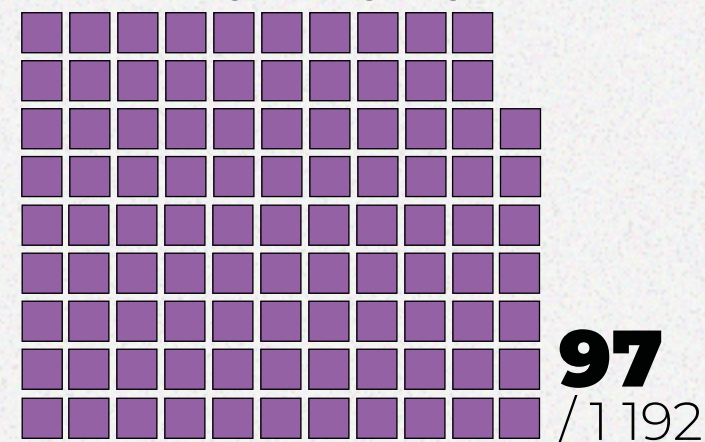
Private houses



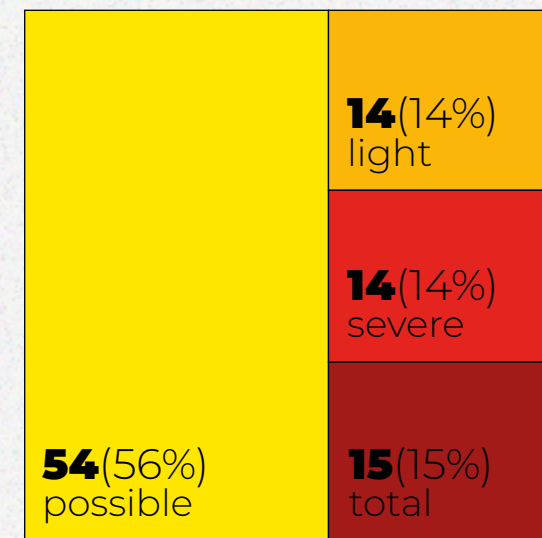
Level of destruction



Outbuildings and garages



Level of destruction



Social infrastructure

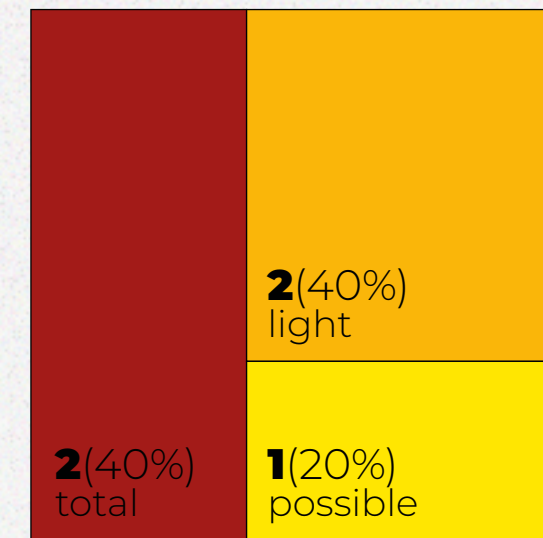
Grocery stores

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Retail

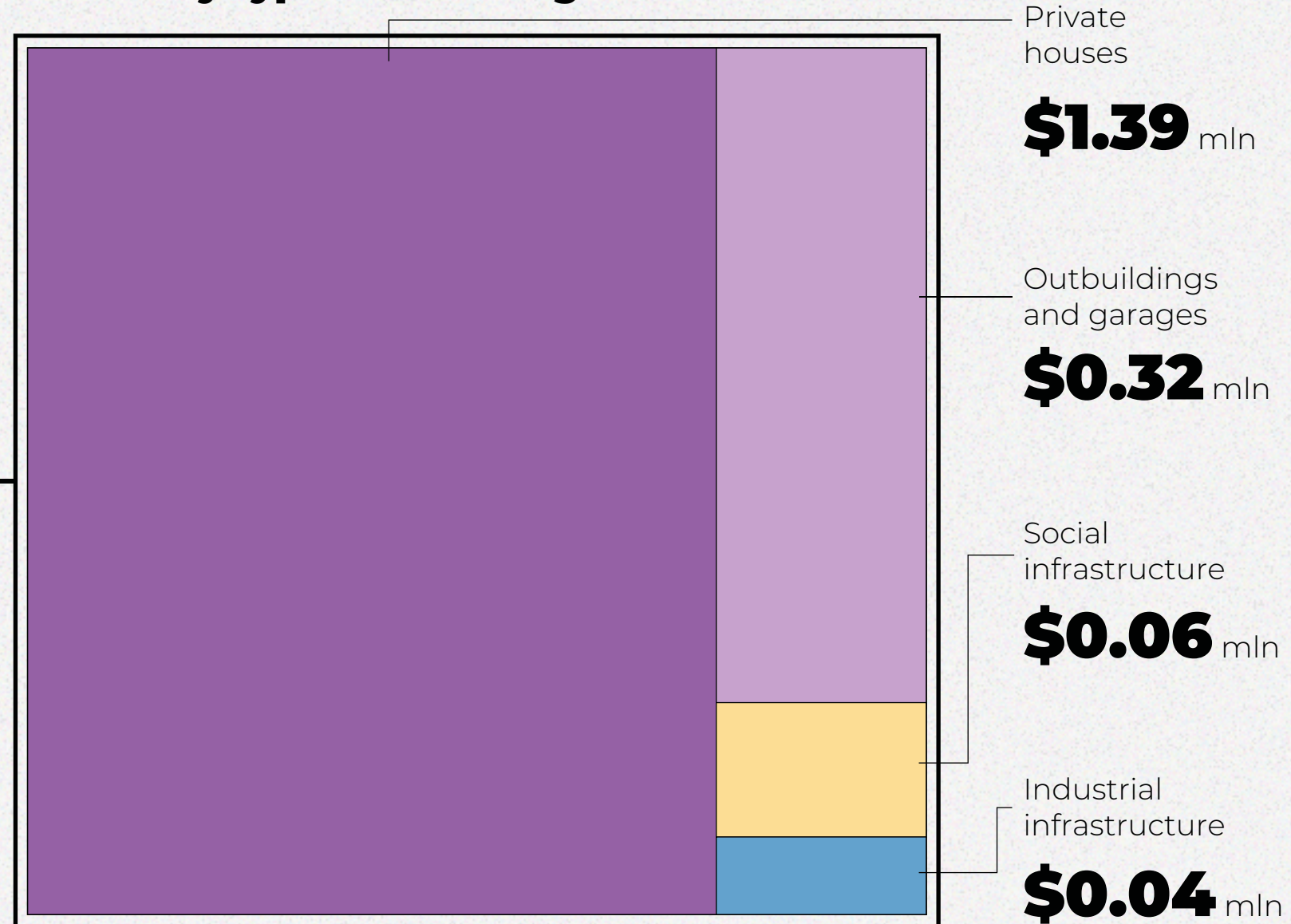
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Level of destruction



Losses by types of buildings

Total losses
\$1.8 mln
(52.65 mln UAH)



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).

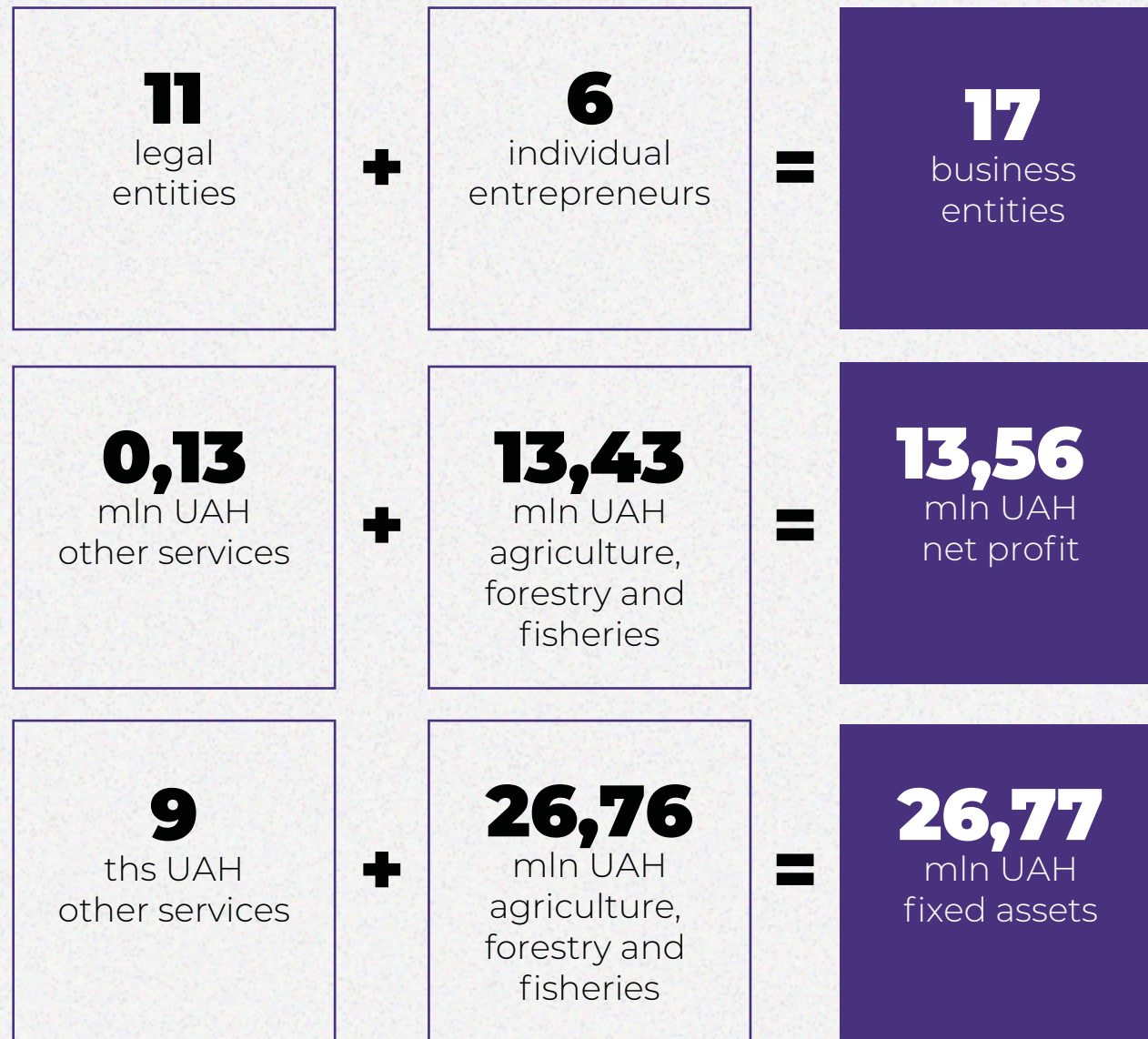


Small objects

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).

LOCAL BUSINESS ANALYSIS*

Characteristics of local business



Business by clusters of economy



REBUILD

UA

The RebuildUA project aims to analyze and visualize the destroyed infrastructure of Ukraine, make this information public and share the results with communities, public authorities and specialized foundations



rebuildua.net

Partners:

Visual style and content:

TOP
LEAD

Assessment of losses and damage, budgeting:

KSE | Institute

Digitization of geospatial information:

Урбанина

Support in cooperation with public authorities:



Centre for Economic Recovery

Cooperation & analysis of community economy, Vkursi Hromada:

Center for
Innovations
Development

Supported by:



ПАТРУЛЬНА
ПОЛІЦІЯ



КІБЕР
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УКРАЇНИ



ДЕПАРТАМЕНТ
МІСТОБУДУВАННЯ
ТА АРХІТЕКТУРИ



ODGERS
BERNDTSON

KERNEL



TVIS



FLY TECHNOLOGY