ISCN Global Mixer
Digital Damage Assessment of Structures

From Damage Recording to Emergency Response:

Planning with Evidence, Planning with People — The Nikopol Experience

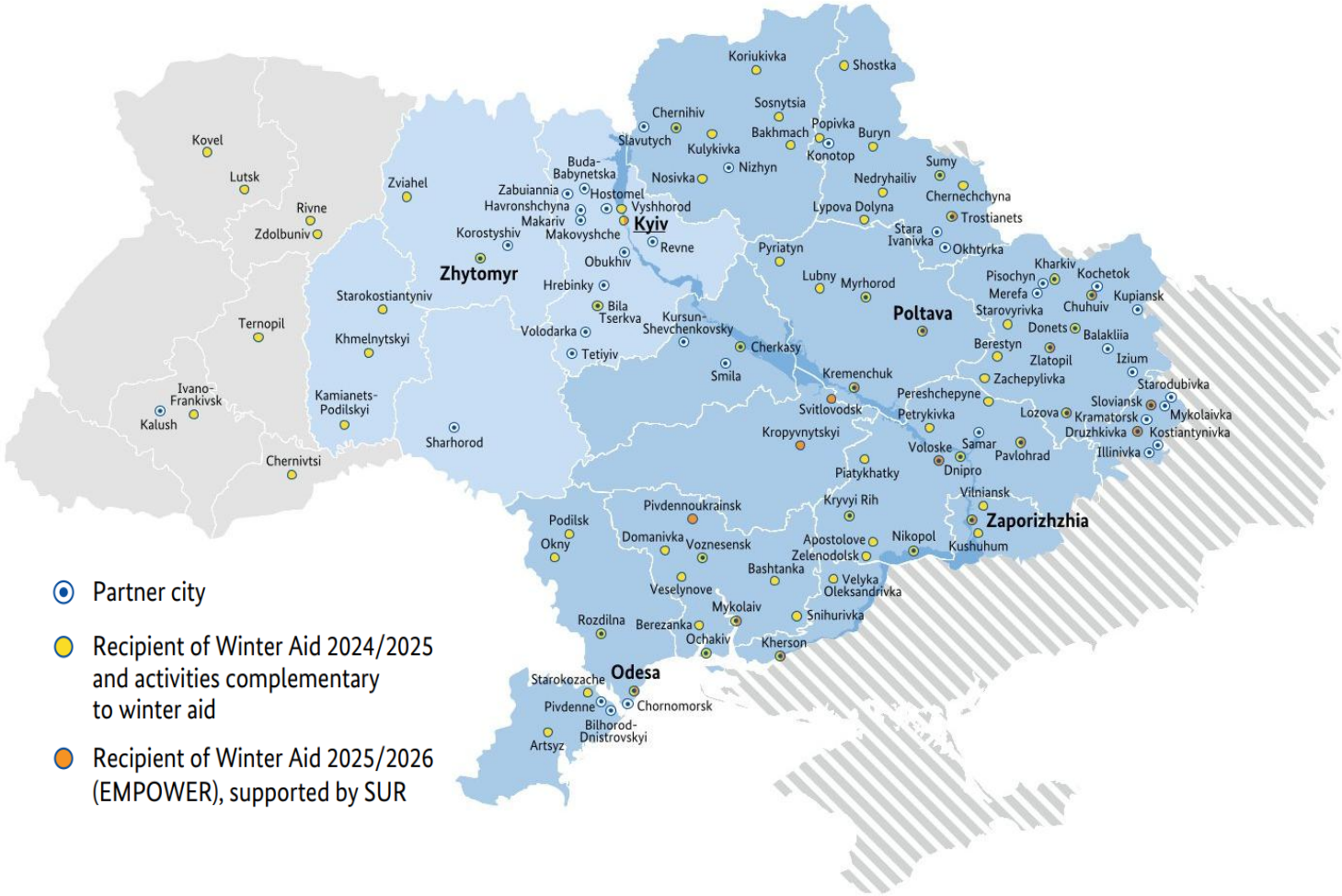
October 29, 2026

співпраця з німеччиною
DEUTSCHE ZUSAMMENARBEIT

Implemented by

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Strengthening of Urban Resilience in the Areas of Supply Infrastructure and Housing in Ukraine (SUR)



Primary geographical focus

Secondary geographical focus

Temporarily occupied territories

City Main office

City Regional office

Partner city

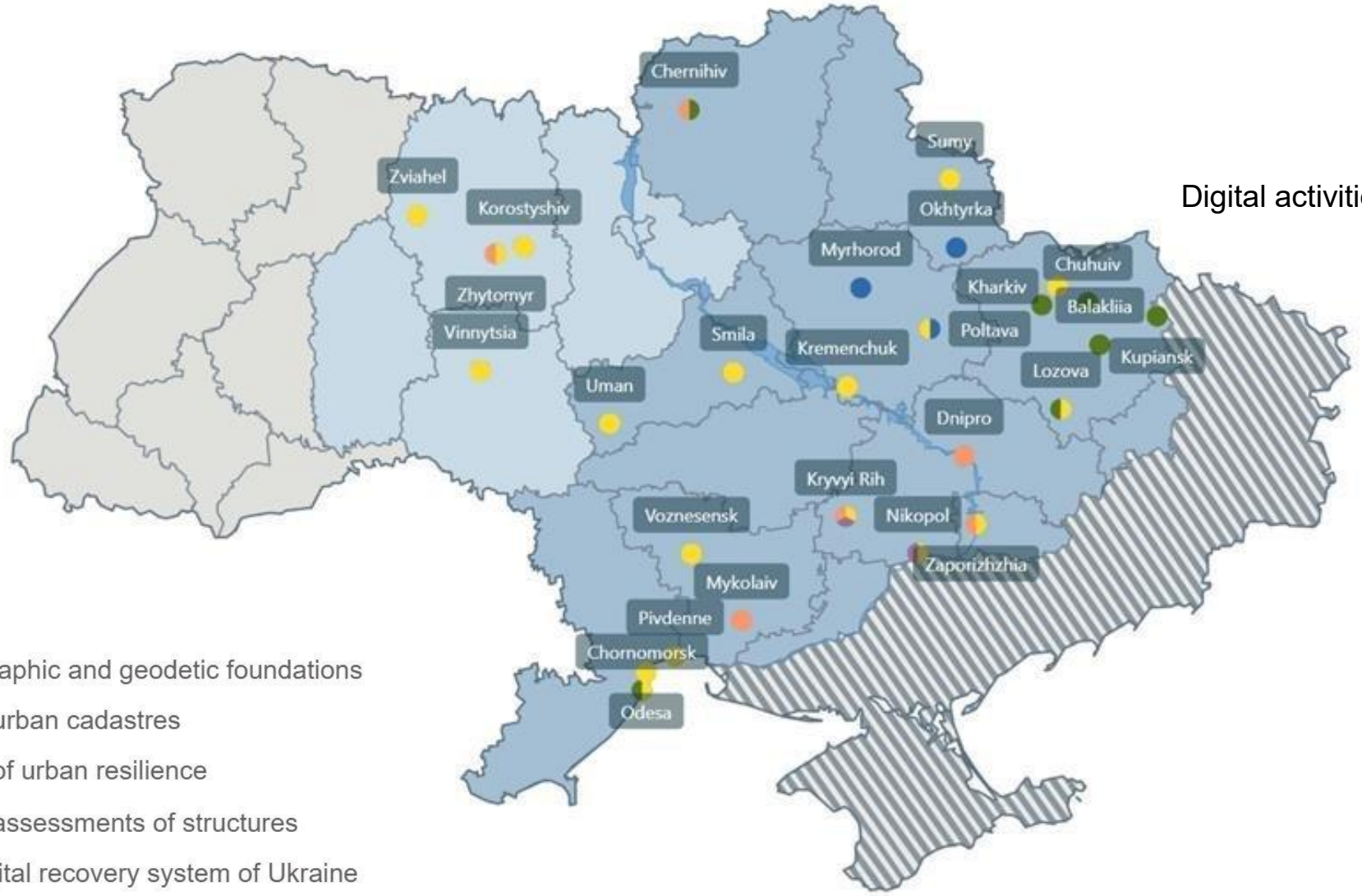
Recipient of Winter Aid 2024/2025 and activities complementary to winter aid

Recipient of Winter Aid 2025/2026 (EMPOWER), supported by SUR

Intervention Areas:

- Supply Infrastructure
- Housing
- Disaster Risk Management
- Urban Resilience

Strengthening of Urban Resilience in the Areas of Supply Infrastructure and Housing in Ukraine (SUR)

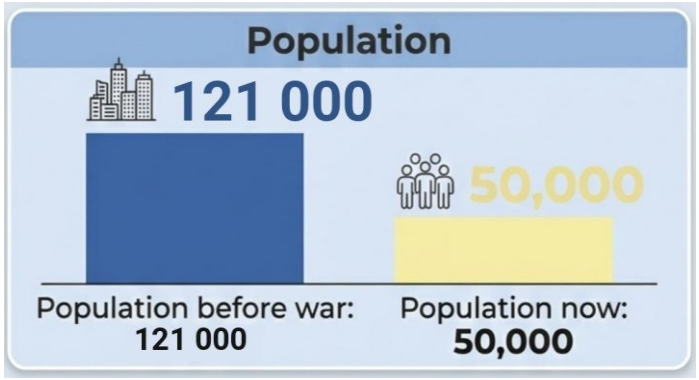


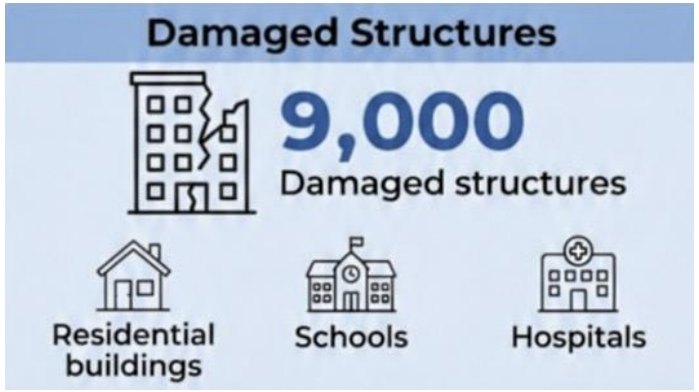
Digital activities of SUR project

Nikopol city profile

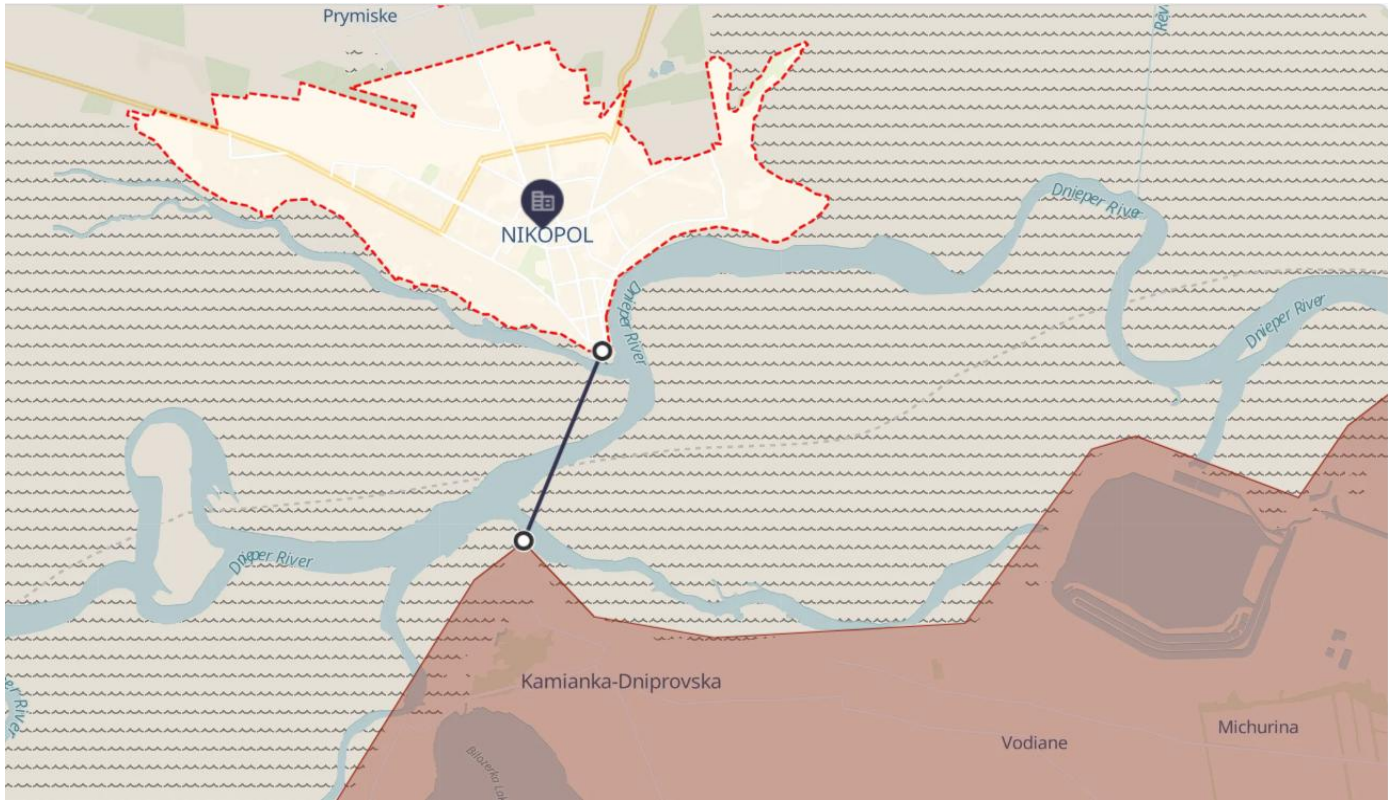
4 kilometres from the occupied territories







Provided by Nikopol City Council



Source: DeepState

Inspection of damaged buildings

Recording and categorising building damage, documenting it in official inspection reports to support recovery and compensation processes.



ЗАТВЕРДЖЕНО
Голова комісії
Марина ТАРИНОВА

АКТ № 7010
комісійного обстеження об'єкта, пошкодженого внаслідок збройної агресії Російської Федерації

Нікопольська територіальна громада,
м. Нікополь
(назва адміністративно-територіальної одиниці)

22.04. 2026

Назва об'єкта, що обстежувався, код згідно з ДК 018:2023 (ДК 018-2000):
ОДНОКВАРТИРНИЙ ЖИТЛОВИЙ БУДИНОК; 1110 (1110.3)

Адреса розташування:

Кадастровий номер земельної ділянки (у разі присвоєння): 1211600000:03:033:0007, загальною площею – 0.0864 га

Форма власності – приватна

Власник (управитель):

прізвище, власне ім'я, по батькові	
частка	
паспорт громадянина України	
серія №/ID картка №	
виданий	
дата видачі	
реєстраційний номер облікової картки платника податків	
унікальний номер запису в Єдиному державному демографічному реєстрі	
поштова адреса	
телефон	
додаткова інформація	----------

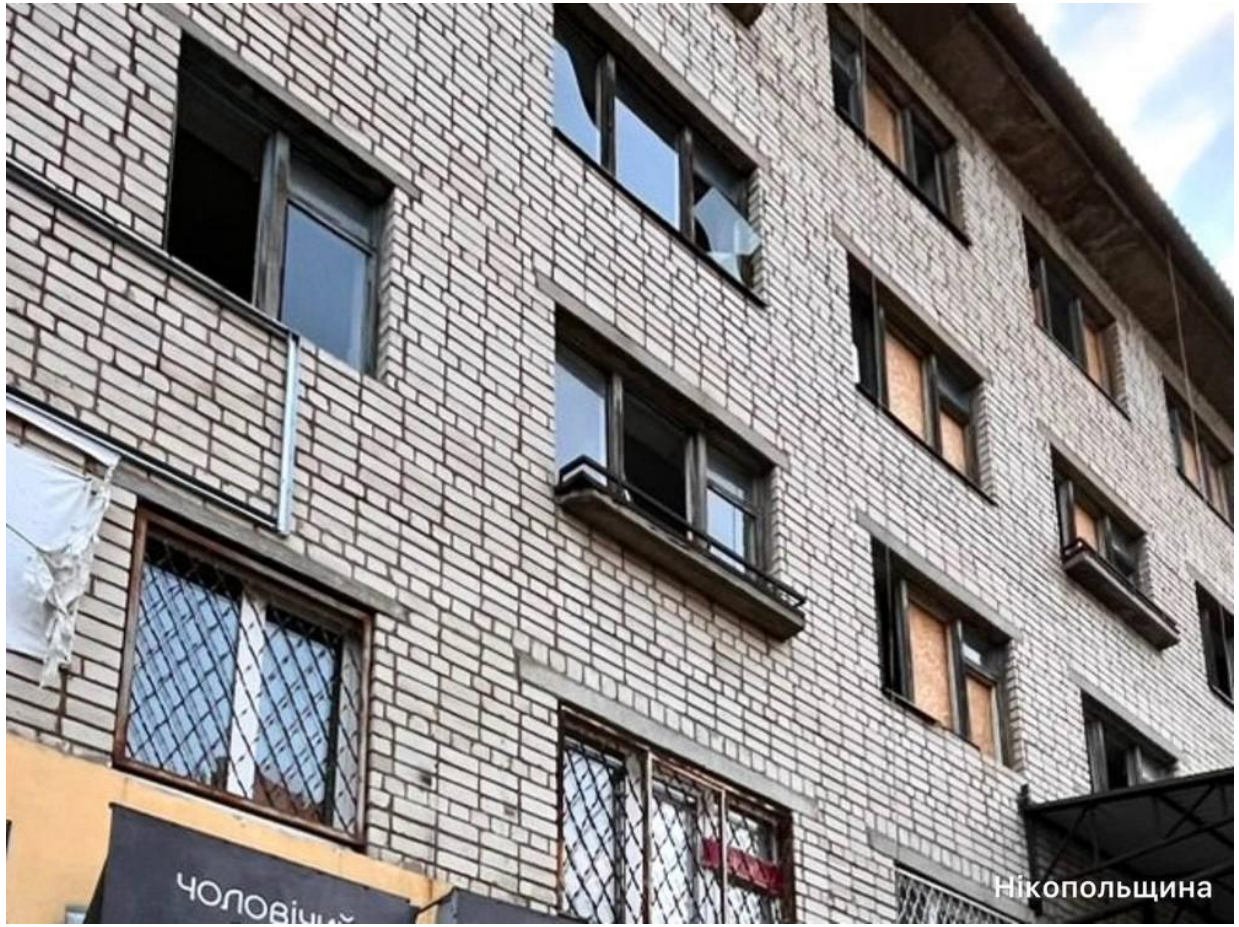
(прізвище, власне ім'я, паспортні дані, реєстраційний номер облікової картки платника податків; назва юридичної особи, ЄДРПОУ)

Act of damage object



Provided by Nikopol city council

Classification of building damage categories



Source: Nikopolshchyna Portal; Main Directorate of the State Emergency Service of) Ukraine in Dnipropetrovsk Oblast (SES)

Category 1
Minor Damage:

damage up to 40%;
functional use maintained.

Classification of building damage categories



Source: Nikopolshchyna Portal; Main Directorate of the State Emergency Service of) Ukraine in Dnipropetrovsk Oblast (SES)

Category 2
Significant Damage:

damage from 41% to 80%; repair works required.

Classification of building damage categories



Source: Nkopol city councili: buildings on the Dnipro River coastline

Category 3 Destroyed:

damage from 81% to 100%; reconstruction required.

Recording of damage and building structures



Provided by LLC_ MagneticOne Municipal Technologies _ Nikopol city council

SUR Remote damage assessment approach



Definition building footprints



Automated satellite damage analysis



Before / After damage check



Damage classification



Analysis building measurement and debris volume calculation



Integration to urban cadastre

Benefits of remote damage assessment

- Accurate georeferencing and verified data
- Remote assessment for the safety of assessors
- Low cost of maintaining up-to-date data
- Automatic calculation of debris volumes
- Transparent recovery progress tracking
- Compensation for damaged houses (Resolution No. 815 of 07 July 2025)

LiDAR technology in damage assessment



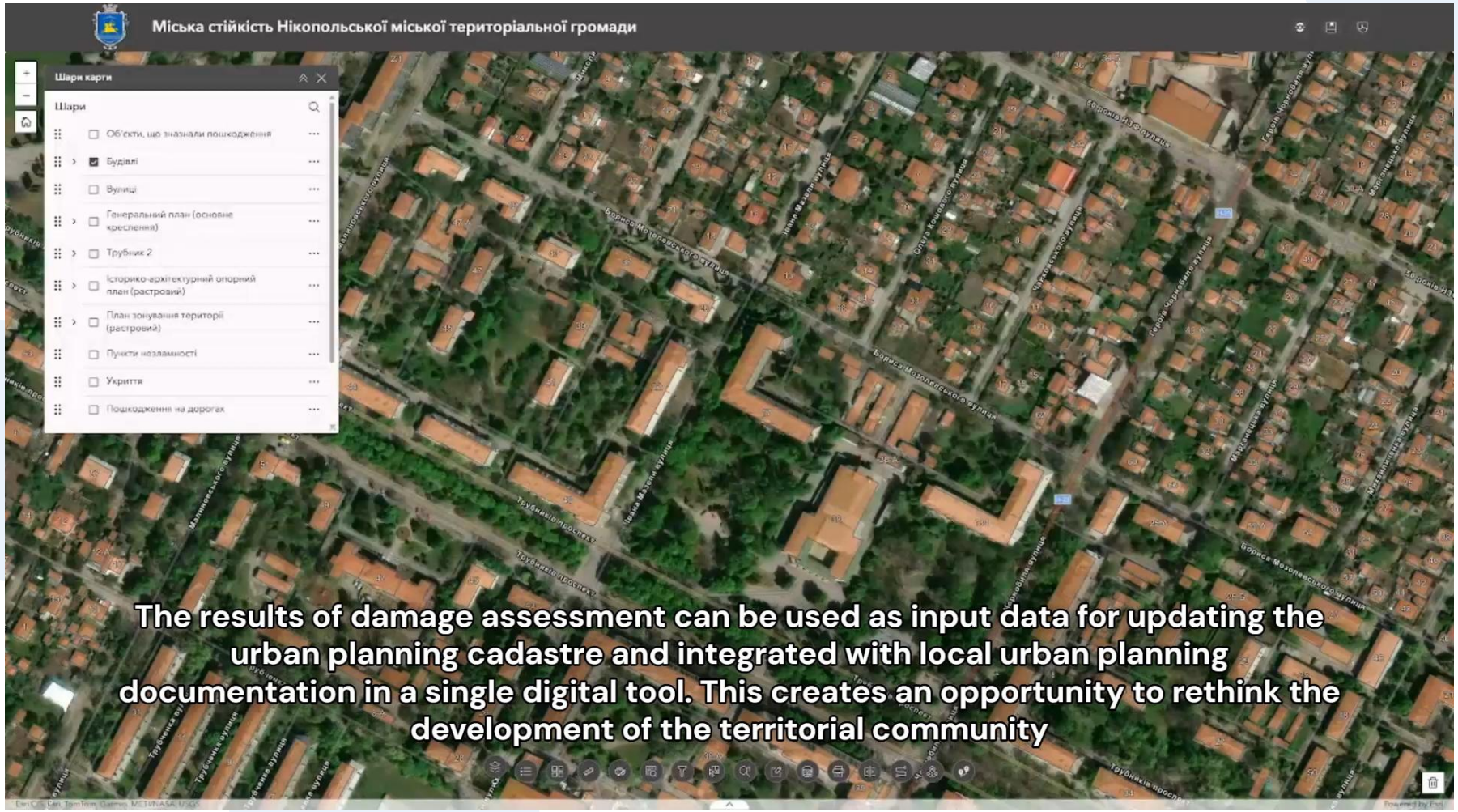
Provided by UA DAMAGE LLC_Chernihiv Library, built in 18th century

LiDAR technology achieves measurement accuracy up to 2 mm.

This level of detail enables the creation of actionable BIM models, empowering architectural and development agencies.

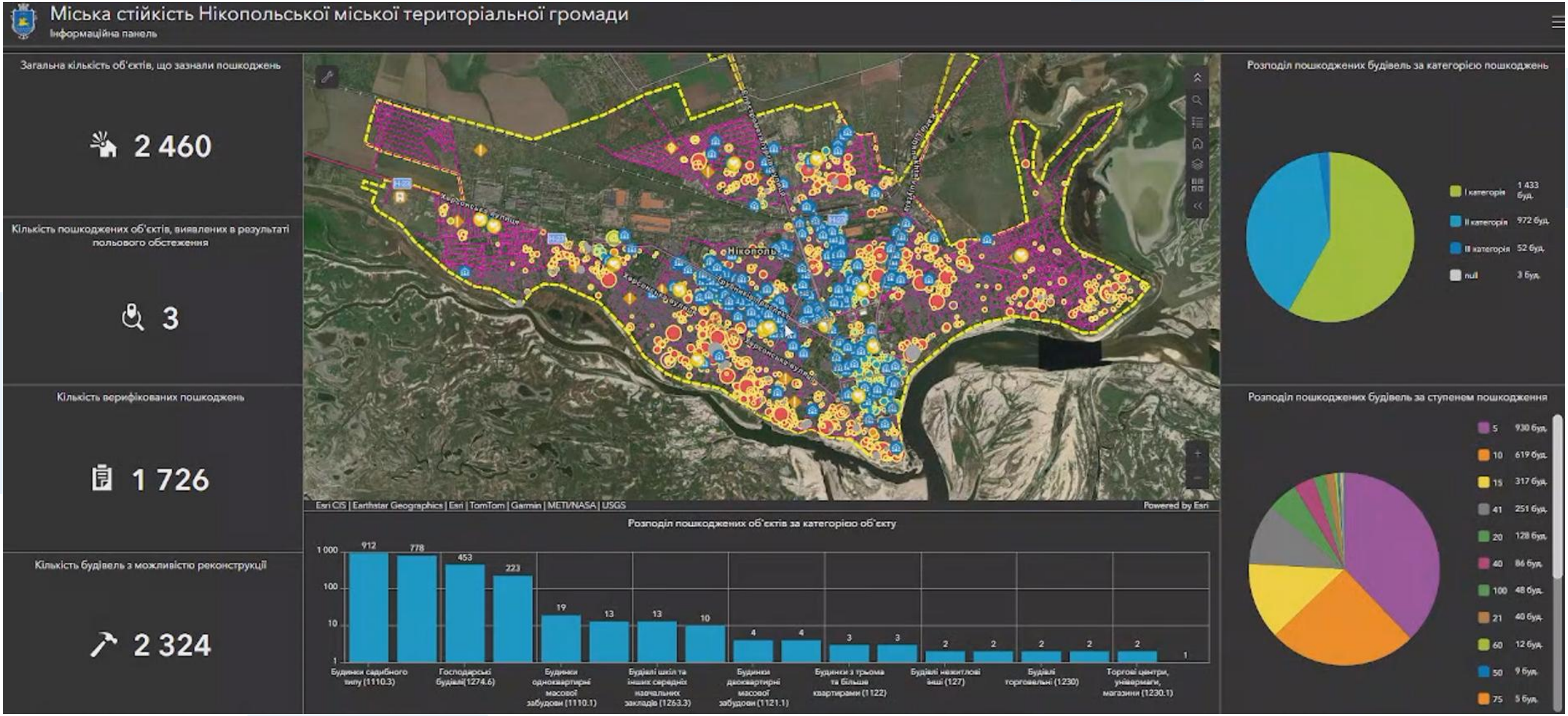
It enables:
precise planning of materials and resources, optimization of utilities, calculation of costs, estimation of timelines, simulation of structural resilience, coordination of construction activities, and support for sustainable design choices.

Application of damage assessment results: rethinking of urban planning



Provided by LLC_ MagneticOne Municipal Technologies _ Nikopol city council

Digital analysis of urban resilience: Damaged buildings and structures



Provided by LLC_ MagneticOne Municipal Technologies _ Nikopol city council

Thank you

Maryna Lytvynchuk
Project advisor
Project "Strengthening of Urban Resilience in the Areas of Supply Infrastructure and Housing in Ukraine (SUR)"

Maryna Tatarynova
Head of the Urban Planning Cadastre Department,
Acting Head of the Urban Planning and Architecture Department of the Nikopol City Council

Contact

Deutsche Gesellschaft für
Internationale Zusammenarbeit (GIZ) GmbH

Registered offices: Bonn and Eschborn

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