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Housing Stock and Management Assessment of Multi-Apartment Buildings in the Western Region of Ukraine

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Research Report

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For more information, or to request access to primary research findings, please contact Annika Grafweg: agrafweg@habitat.org

Glossary of terms

APPS	Advanced Prefabricated Panel System
ATC (OTG)	Amalgamated Territorial Community
BTI	Bureau of Technical Inventory – usually communal enterprises that carry out technical inventory and accounting of real estate objects.
CLGS	Center of Local Government Studies
Czech House	A residential building that usually includes nine floors (less often, only five) and uses a reinforced concrete panel (less often, a white silicate brick) for the main structure.
EEF	Energy Efficiency Fund
FGD	Focus Group Discussion
HFHI	Habitat for Humanity International
HOA / OSBB	Homeowners Association
IDP	Internally Displaced Person
IHP	Individual Heating Point
Khrushchevka House	A house constructed in the USSR during the reign of Khrushchev.
MAB	Multi-Apartment Building
SQM	Square Meter
UAH	Ukrainian Hryvnia
USSR	Union of Soviet Socialist Republics

The aim of this research project was to analyze the existing housing stock of multi-apartment residential buildings (MABs), including their management structures and practices, and build a framework to effectively guide energy-efficient modernization and upgrades of such buildings in three western regions of Ukraine (Lviv, Zakarpattia, and Ivano-Frankivsk). The research was conducted by the Center of Local Government Studies (CLGS) from March to December 2024 in partnership with Habitat for Humanity International (HFHI) and took place in two stages:

- **Stage 1** comprised a detailed desktop study.
- **Stage 2** was primary data research involving 300 buildings across 9 pilot cities: Lviv, Kalush, Uzhhorod, Drohobych, Ivano-Frankivsk, Kolomyia, Khust, Mukachevo and Stryi.

MABs selected for assessment were proposed by representatives of the local authorities and the MAB community/associations. All collected data was recorded using the KoboToolbox.

The main finding of the assessment was a consistent need for renovation across almost all buildings. In each city, most MABs were built during the Soviet era, lack adequate thermal insulation, have outdated utility systems, and have received minimal structural upgrades over the years. A central part of the study was a detailed assessment of each MAB's main technical system. The research showed that only a small number of buildings (around 4%) are fully insulated, while approximately 75% of the assessed MABs have no insulation at all, and less than 10% have patchwork insulations. Overall, foundation conditions in MABs are mostly positive, with the vast majority rated as good or satisfactory. Roof, water supply, sewerage, and electrical systems show more variation, with a significant portion in satisfactory condition but notable percentages requiring repairs or urgent attention. Around three-quarters of buildings have established repair funds, while the rest lack them. In terms of management, most MABs are overseen by homeowners associations (HOAs), with fewer relying on management companies or individual managers.

How to read this report

Following a more detailed description of the methodology and geographical focus (see pages 5 to 22), this report is then organized into several key chapters. It begins with an analysis of the physical condition of buildings, focusing on key structural elements (roofs, facades, and foundations) as well as the state of utilities (water, sewage, electrical, and heating). Next, it looks at management and governance, including how HOAs are funded, how effectively they collect fees, and how social and economic factors – like the number of pensioners or internally displaced persons (IDPs) – impact the likelihood of collective repairs.

The final chapter consolidates these findings and offers practical recommendations, emphasizing the need for complete insulation, upgraded heating systems, carefully coordinated public-private financing, and steps to strengthen HOA operations.

Who is this report for?

Given its comprehensive scope, this report will be most useful to local authorities, national policy makers, international donors, housing agencies, and financial institutions that want to support energy saving upgrades or structural repairs in Ukraine. Engineering consultants, urban planners, and researchers can also use its data to plan pilot projects or expand successful renovation methods. Overall, the report aims to inform interested groups about both the needs and potential of these MABs, ensuring they remain safe, energy efficient, and better able to meet the changing needs of communities in Ukraine.

Conducting a housing stock assessment in Ukraine is challenging due to a lack of data, statistics, poor housing management and maintenance practices, leading to an overall lack of documentation on the condition of MABs. A mixed research methods approach was therefore applied and implemented in stages to achieve comprehensive results and provide new insights into the state of MABs in the Western regions of Ukraine.

Stage 1: Desktop Research

In the first instance, desktop research was conducted to collate and analyze any existing data on MAB housing stock in the selected regions. This stage of the research identified general estimates and trends, while highlighting the limitations of the available data. Currently, data on Ukraine's housing stock is both limited and overly broad. While it is widely recognized that much of the housing is in poor condition, there is a lack of detailed and specific information to fully understand the situation. Many statistical figures, particularly regarding the number, condition, and classification of MABs, are either missing or inconsistent across different government sources. This report aims to help fill that gap.

The desktop research focused on three regions in Western Ukraine: Lvivska, Ivano-Frankivska, and Zakarpattia oblasts. It provides an overview of the current housing situation in these areas, presents key indicators, and explains how cities and buildings were chosen for the next phase of research. Based on the findings, the scope of the study was narrowed to nine cities, with a sample of 300 MABs selected for a more detailed assessment of their physical condition and management methods.

The desktop study also reviewed data on communal (non-privatized) and unoccupied apartments in the three Western oblasts. However, the latest official statistics date back to 2015, making them outdated and unreliable. This underlines the need for updated, primary data on where communal and vacant housing units are currently located.

Nationwide figures show:

- **39,792** communal apartments
- **4,344** unoccupied apartments, with nearly half (2,099) in newly constructed buildings

Regional figures include:

- **Lviv Oblast:** **3,011** communal apartments; **344** unoccupied apartments (**323** in new buildings)
- **Ivano-Frankivsk Oblast:** No communal apartments; **393** unoccupied (**371** in new buildings)
- **Zakarpattia Oblast:** No communal or unoccupied apartments reported

The second stage of this research aimed to help fill these data gaps for the three Western regions.

Stage 2: Field-Based Primary Research

The second stage of the research began with engaging local stakeholders. The research team connected with local governments, HOAs, and other key players in each city to introduce the project, build support, and gather early insights and suggestions on how best to carry out the research. This was followed by focus groups discussions (FGDs) with key stakeholders in each city to review and refine the primary data collection tools, especially the survey questions. Through this process, a sample of MABs was selected for an in-depth technical assessment, and contact was established with representatives from each building.

From May to November 2024, a technical survey team conducted on-site assessments. Representatives from each MAB participated in the survey, which included detailed questions (see Annex 1) about the buildings' physical condition and how they are managed. The research methods, procedures, and sampling strategies used throughout the project are explained in more detail in the following chapters.

Stakeholder engagement

Engaging stakeholders was key to facilitate buy-in and was conducted in two phases:

1. Introductory letters were sent to the oblast and city administration of the sample cities. All responded positively to the project and assigned focal points to support the initiative. The focal points liaised with the heads of HOAs and building managers to coordinate the MABs assessment.
2. FGDs were organized in all 9 selected cities, with the support of local administrations and experts within the community.

The aim of these discussions was to encourage MAB representatives (heads of HOAs or managers) to apply for the in-depth assessment, gather first-hand and expert testimonies on the general conditions of the housing stock and each city's housing sector, and collect answers to the assessment questionnaire (see Annex 1).

The focus groups revealed several common trends across all sample cities and provided insight into the current needs and challenges facing the housing stock:

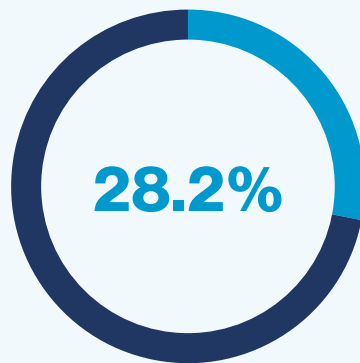
- Local government representatives and MAB managers demonstrated a strong understanding of the general condition and challenges of residential buildings in their cities. There is a clear interest in exploring and collaborating on modernization efforts.
- Participants showed a high level of knowledge about MAB renovations and the work of the State Energy Efficiency Fund (EEF), which has been financing such renovations for over a decade. However, with the EEF suspending its operations due to the war, participants expressed concern about the urgent need to find alternative funding sources, as housing conditions continue to decline.
- The most pressing issue highlighted by participants was the lack of resources for housing repair, renovation, refurbishment and energy-efficient upgrades, which they see as critical to improving poor housing conditions. For example, authorities in Drohobych emphasized the deteriorated condition of local MABs, attributing it to decades of substandard management and maintenance following the collapse of the USSR and before the implementation of appropriate legislation. Heads of local HOAs (OSBBs) in Drohobych confirmed this, adding that many owner-occupiers in their buildings cannot afford the necessary renovation or modernization work.
- Some local authorities highlighted their willingness to co-finance modernization works using city budgets, and certain OSBB representatives expressed their readiness to contribute alongside owner-occupiers (e.g., in Lviv, see Table 1). However, local budgets have been significantly reduced due to the diversion of essential tax revenues to defense efforts, further limiting leaving the funds available for housing renovations.
- Participants stated that support from alternative donors with local housing improvement programs could enable cities to align with these initiatives and co-finance renovation activities more effectively.

Summary of Research Stages and Key Findings

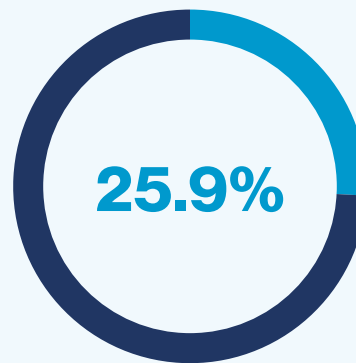
This report combines findings from both the desktop research (Stage 1) and the field-based primary research (Stage 2), while also examining the presence of HOAs in the three regions as a critical factor in accessing funding and organizing modernization efforts. HOA formation remains slow overall.

Percentage of MABs that are managed by HOAs:

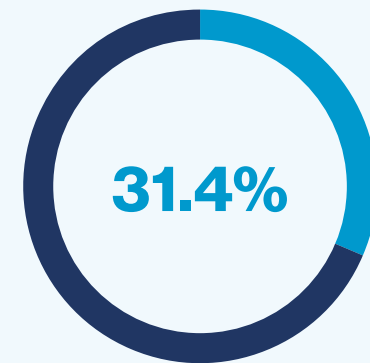
Lviv Oblast



Zakarpattia Oblast



Ivano-Frankivsk Oblast

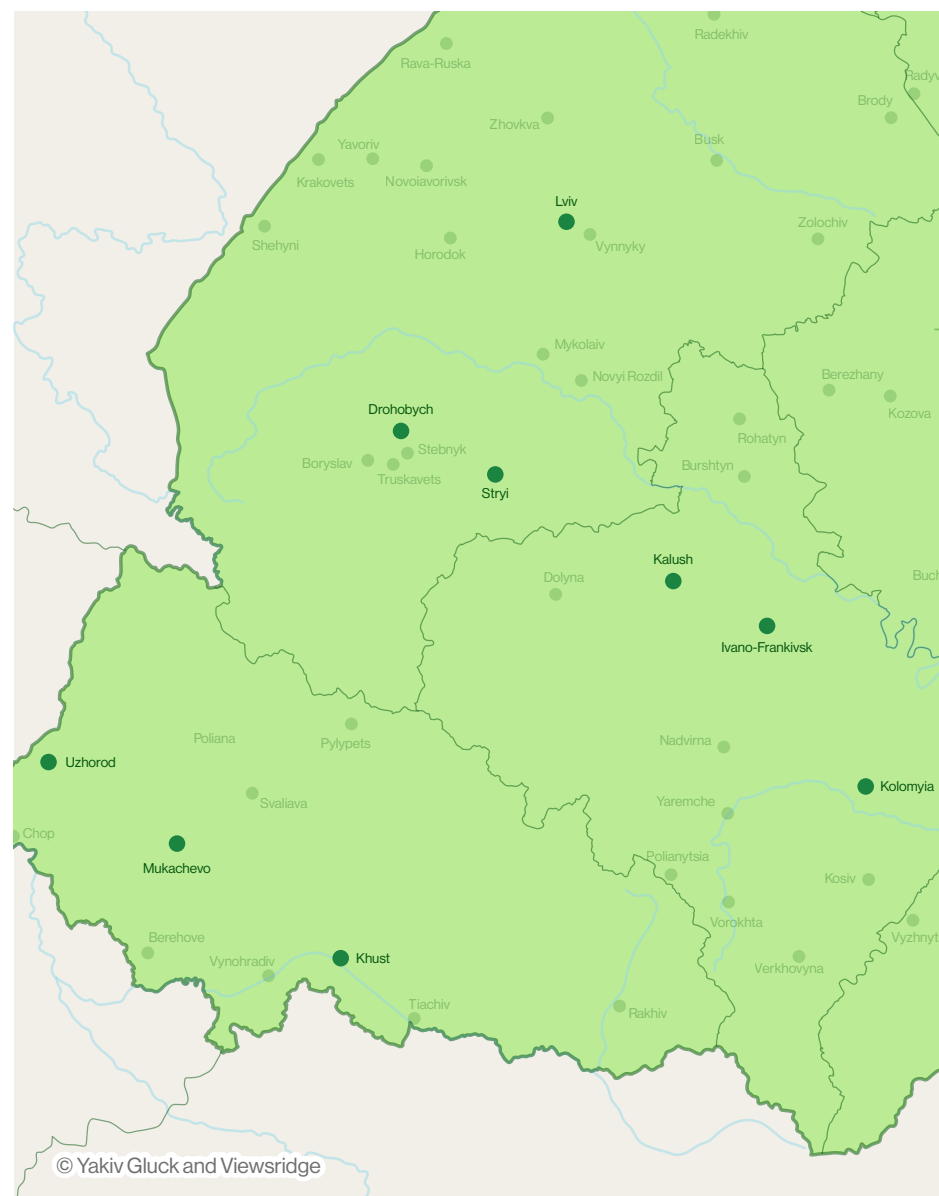


While these numbers show some progress, the slow pace limits the effectiveness of building maintenance and energy efficiency improvements.

Selection Process: Cities

As outlined in stage 1 of the methodology, 9 cities were selected across the target research area, based on the following criteria:

1. **Urban scale:** MABs are the predominant housing typology in large and medium cities, many of which are in deteriorated and substandard condition. Consequently, many of these cities have established necessary governance structures and processes to address housing conditions. As such, the research team focused on the oblasts' capital and medium-sized cities (i.e., over 30,000 inhabitants).
2. **MAB governance structure:** Cities with a higher number of established HOAs were prioritized in the geographical selection, as this typically reflects stronger housing sector capacity and more effective city administration. Past experience has shown that MABs with organized co-ownership structures – such as HOAs, housing cooperatives, or general assemblies that elect a manager – tend to have the necessary capacity and organization to successfully carry out renovations and energy-efficient upgrades.
3. **Availability of local targeted housing management programs:** The availability of such programs is important for the support and development of HOAs and housing cooperatives, while also demonstrating the capacity and political will of local self-government bodies.
4. **Availability of local targeted repair programs:** This includes repairs focused on elevators, roofs, insulation, and the thermal modernization of MABs.
5. **Cooperation of local authorities and housing entities:** strong cooperation between local authorities and HOAs, management companies, and utility companies.
6. **Variety of MAB housing typologies:** built in different time periods for instance, or varied series of MABs.



The following table presents the 9 cities (3 per oblast) that were selected:

Table 1. Selected cities for housing stock assessment in the Western region of Ukraine.

#	Selected cities	Criteria					
		1	2	3	4	5	6
Lvivska oblast							
1	Lviv: This city has all types of buildings from different construction periods, a strong movement of condominiums, and strong support from the authorities for the renovation and energy-efficient refurbishment of MABs (through local targeted programs). Almost half of the region's MABs are concentrated in Lviv. Based on the city's size, a study of 50 MABs was proposed.	✓	✓	✓	✓	✓	✓
2	Drohobych: The second largest city in the oblast and meets all selection criteria. This city has all types of buildings, different periods of construction, a well-developed movement of condominiums, and the authorities are developing local targeted programs to support thermal modernization and repairs of MABs. An in-depth study of 30 MABs was proposed.	✓	✓	✓	✓	✓	✓
3	Stryi: A city with almost 60,000 inhabitants and with a typical structure of multi-family housing constructed as a series over the course of several years. The city meets all criteria. Accordingly, a study of 20 buildings was proposed.	✓	✓	✓	✓	✓	✓
Ivano-Frankivska oblast							
4	Ivano-Frankivsk: The largest city in the region where more than half of the region's MABs are concentrated. The city meets all selection criteria. The city authorities actively support measures to modernize and repair MABs through co-financing programs. 40 MABs were proposed for in-depth study.	✓	✓	✓	✓	✓	✓
5	Kolomyia: The third largest city in the oblast with a population of 60,000 inhabitants. Meets all the criteria. More than half of the city's MABs have organized HOAs. The authorities actively cooperate with HOAs in various programs to co-finance repairs and thermal modernizations. It was proposed to include 20 buildings in the in-depth study.	✓	✓	✓	✓	✓	✓
6	Kalush: This city was defined in the research project's Terms of Reference as a pilot city, with 50 MABs recommended for in-depth analysis. The city meets most of the criteria. The city contains a typical series of buildings from various periods (including pre-war, 1950-60s, and 1970-90s). The city authorities actively support repairs and renovation of the stock of MABs. This city was noted as a special case.	✓		✓	✓	✓	✓

#	Selected cities	Criteria					
		1	2	3	4	5	6
Zakarpattia oblast							
7	Uzhhorod: This is the largest city in Zakarpattia region and meets all the criteria. The city has an actively developed housing cooperative sector. The city authorities cooperate well with condominiums and housing cooperatives, and there are established co-financing programs for the repair of MABs. 50 buildings were proposed for the in-depth study.	✓	✓	✓	✓	✓	✓
8	Mukachevo: Second largest city in the region. The city has an association of condominiums, and local authorities actively support MABs with repair programs. 25 buildings were proposed for the in-depth study.	✓	✓	✓	✓		✓
9	Khust: A city with a population of about 30,000. Meets all of the criteria. The city has an association of condominiums which actively cooperates with local authorities to implement co-financing programs for repairs and renovation of MABs. 15 MABs were proposed for the in-depth study.	✓	✓	✓	✓	✓	✓

Selection Process: MABs

Selecting which MABs to include in the assessment took place in two stages:

1. Voluntary application to participate:

MAB representatives (such as the head of HOA or a manager) could apply to take part by filling out a selection form provided by the CLGS. The final selection was then based on specific technical criteria.

During this stage, FGDs helped share information about the study with local experts and engaged key stakeholders. These stakeholders then further disseminated the call to participate and encouraged others in the target group to apply. Moreover, city councils supported the process by promoting the open call and recommending key informants, experts and housing managers. The call for participation was also published in local newspapers.

2. Selection of MABs:

Once the voluntary application period closed, the final selection of 300 MABs was conducted according to the following criteria:

a) Period of construction

A sample of each period of construction was included (except for MABs built after the year 2000 as their average lifecycle is not yet complete):

- Buildings built before the 1940s;
- Post-war construction in the 40s and 50s;
- Serial buildings built in the 60-80s;
- Serial buildings of the 90s

b) Established HOA management

Only MABs with established owner associations (HOAs or OSBB) were considered eligible to participate in this study. This requirement was crucial because only MABs managed by an HOA have the organizational capacity¹ and legal authority needed to implement renovations. However, it is important

to note that this criterion excluded a significant number of MABs (i.e., all those without HOA or OSBB management).²

The assessment results therefore do not accurately represent the overall condition of MABs in the 9 pilot cities. As a reference, the 9 cities have an average HOA/OSBB management of 38,5 % (ranging from 70% in Kolomyia to a low of 9,5% in Ivano-Frankivsk).³

It is vital to understand that the current context in Ukraine makes it difficult to conduct a representative study – especially one that includes MABs without any form of management. This is mainly due to operational barriers in reaching MAB owners as a group and their limited organizational capacity.

In the case of Kalush city, where there are few HOAs, two additional selection criteria were applied:

a) MABs held an official meeting (as required by law).

b) A professional manager is selected by the owners.⁴

These criteria were developed to ensure that a diverse sample of MABs was selected, providing a well-rounded overview of housing stock conditions. The focus was on buildings that not only require renovation but also show some level of organizational ability among the residents—shown by the second criterion.

Methodology limitations:

As the sampling of the 300 MABs was based on voluntary application by the HOAs, MABs in good condition had no incentive to apply. MABs with no HOA capacity or lack of connection to the local active community were also excluded. That said, all efforts were made by the municipal administration and the focal points to reach all HOAs in their cities.

Assessment Questionnaire

The MAB housing condition questionnaire (see Annex 1) covered the following thematic areas:

1. Technical condition of the key building components⁵
2. HOA management, capacity and financial situation⁶
3. Social and socio-economic aspects

The questionnaire data sets were collected and analyzed through KoboToolbox.

Once the participating MABs of each city were confirmed and contact made with a representative of each building, information sessions were held with all 300 MAB representatives.

During these sessions, the assessment questionnaire was explained in detail, and the technical team provided individual support as needed.

The geographic distribution of the cities and spatial distribution of the assessed buildings in each city can be reviewed below (see figures 1-10).

Assessment sample:

Following the selection process and application of the criteria, nine cities from three western regions were chosen. A total sample of 300 buildings was formed, as shown in the following table:

#	Selected cities	Number of assessed MABs	% of the city's total housing stock
Lvivska oblast			
1	Lviv	57	19%
2	Drohobych	42	14%
3	Stryi	13	4.33%
Ivano-Frankivska oblast			
4	Ivano-Frankivsk	33	11%
5	Kolomyia	19	6.33%
6	Kalush	48	16%
Zakarpattia oblast			
7	Uzhhorod	56	18.67%
8	Mukachevo	15	5%
9	Khust	17	5.67%



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Figure 1. Geography of the cities included in the survey, with the number of assessed buildings per city.

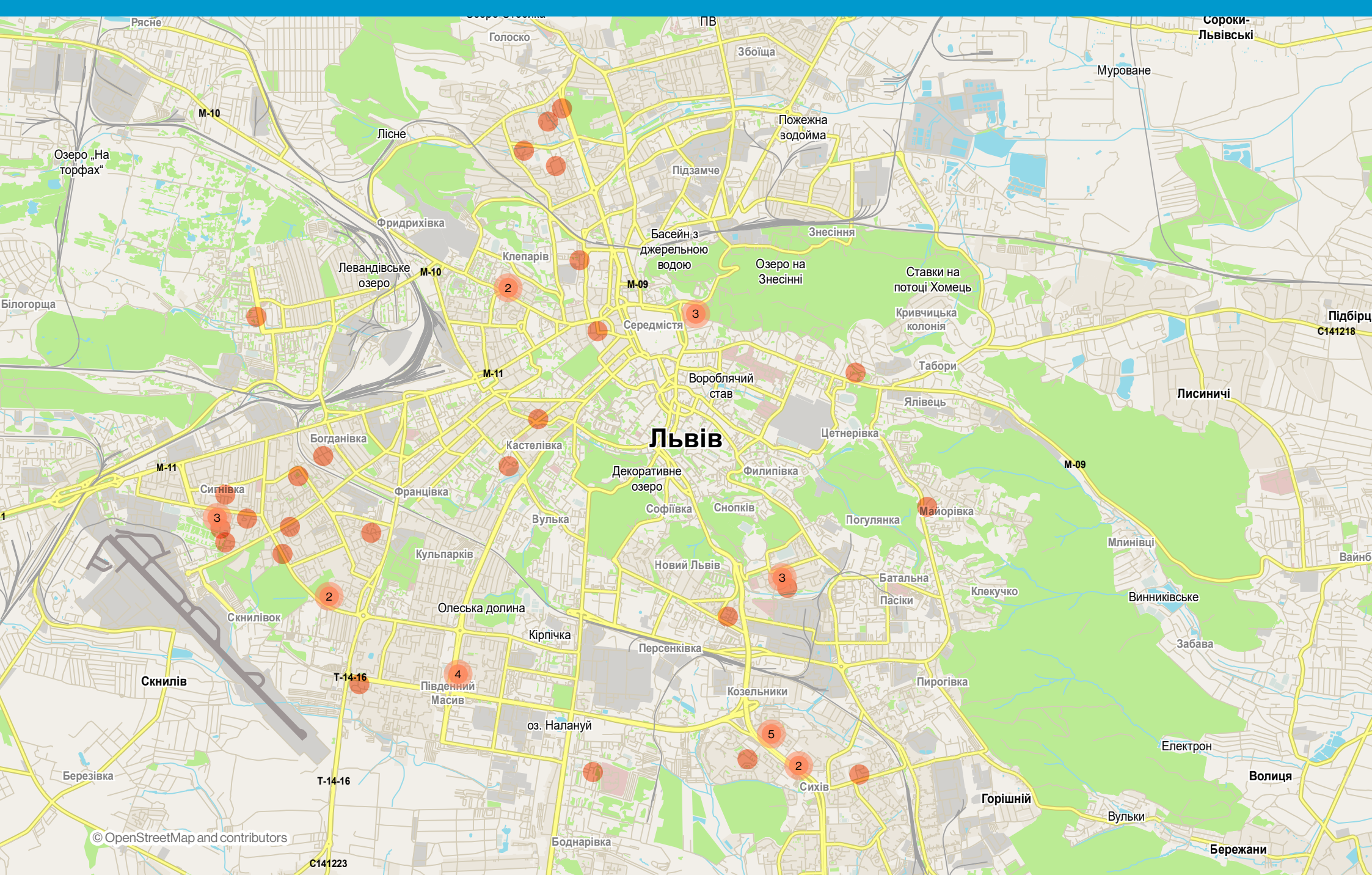


Figure 2. Spatial distribution of the assessed buildings in Lviv.

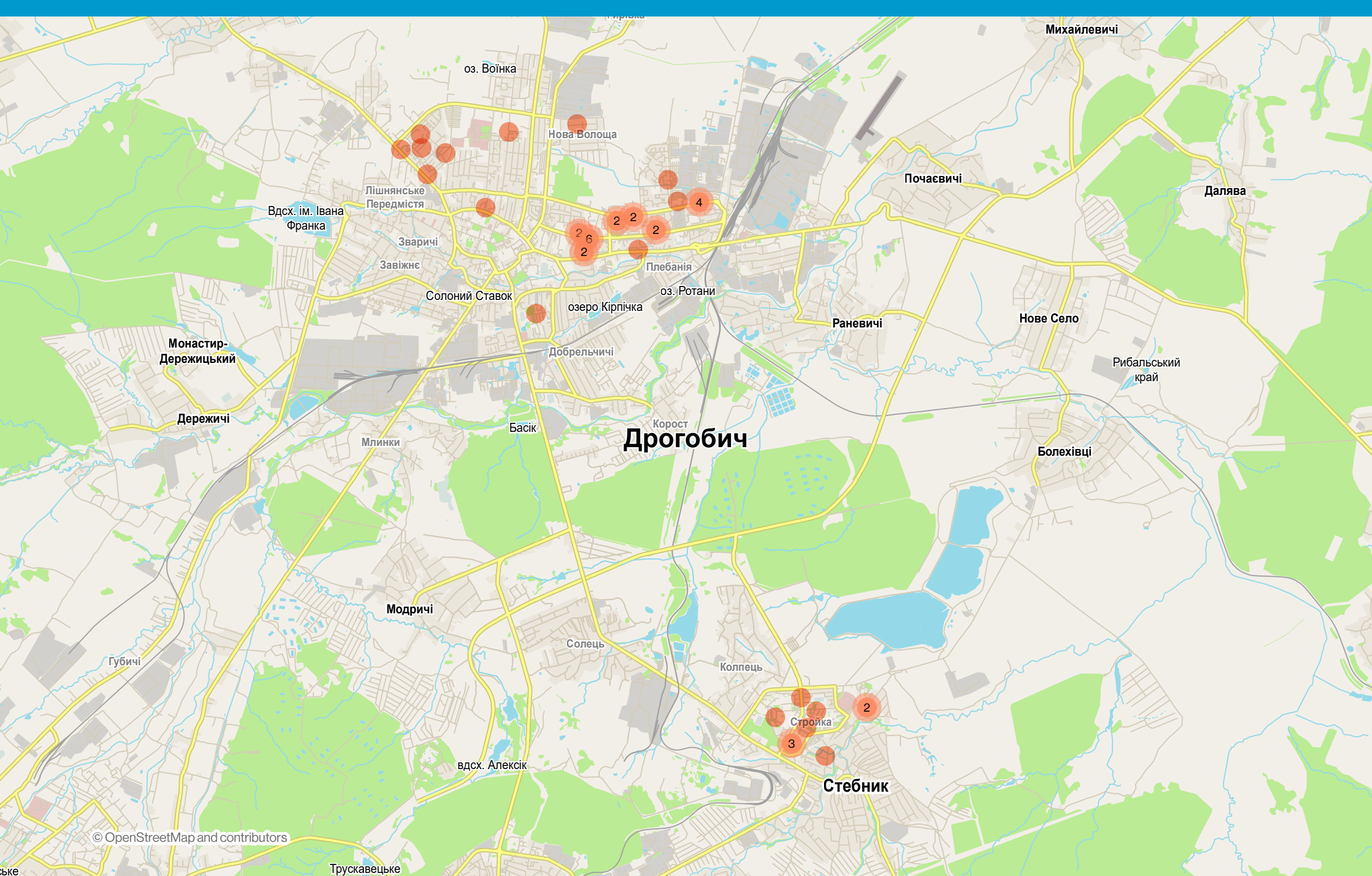


Figure 3. Spatial distribution of the assessed buildings in Drohobych.

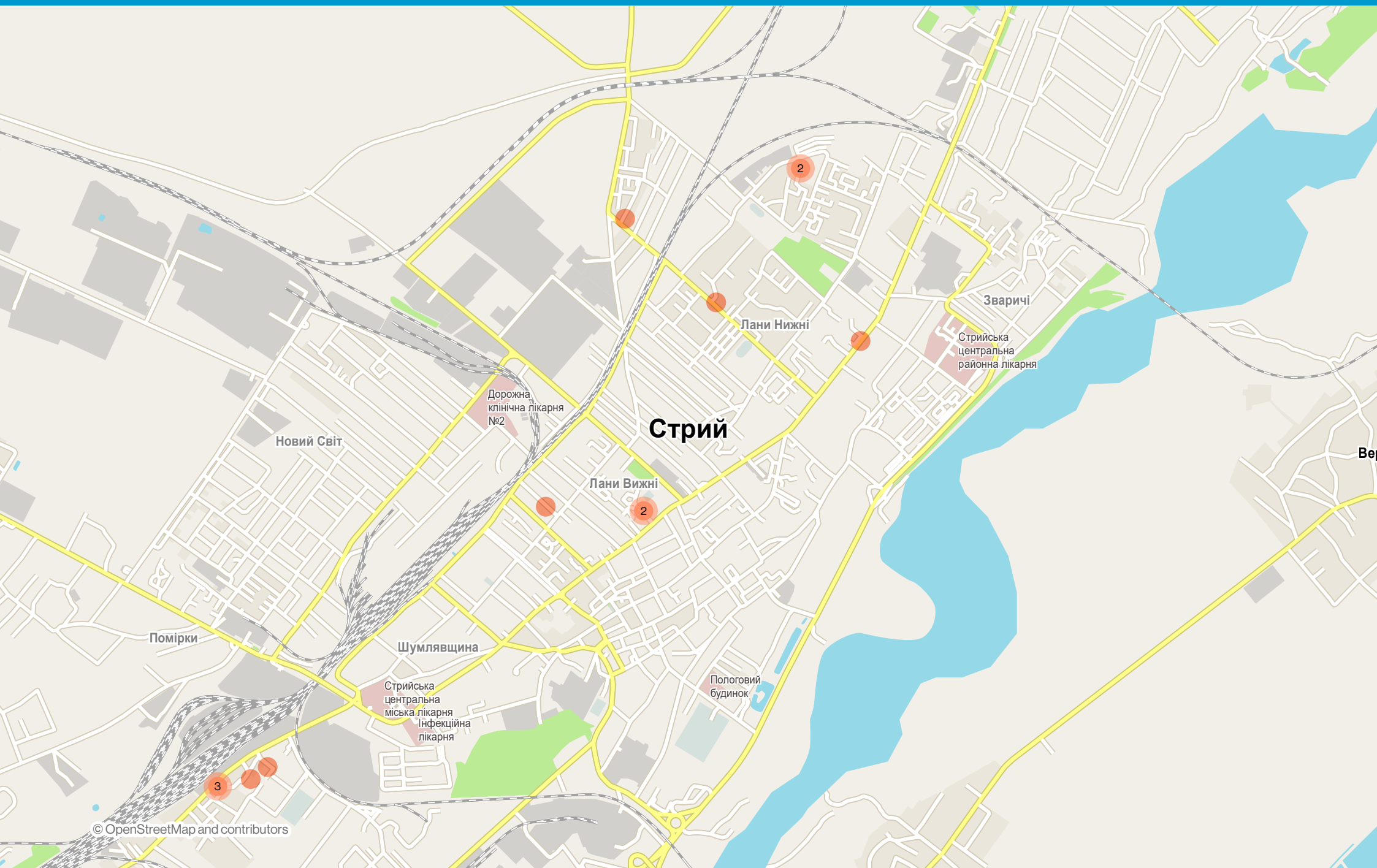


Figure 4. Spatial distribution of the assessed buildings in Stryi.

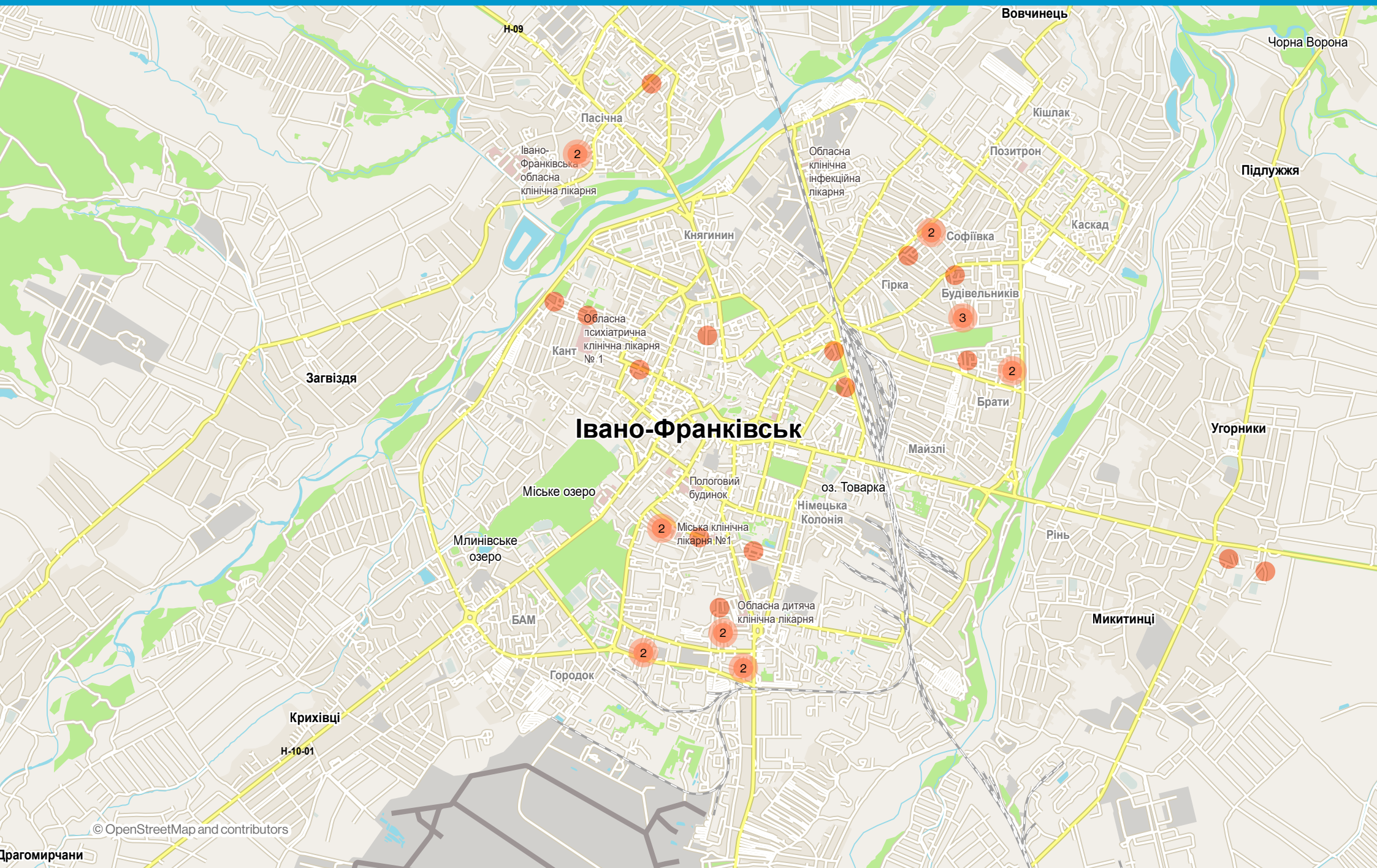


Figure 5. Spatial distribution of the assessed buildings in Ivano-Frankivsk.

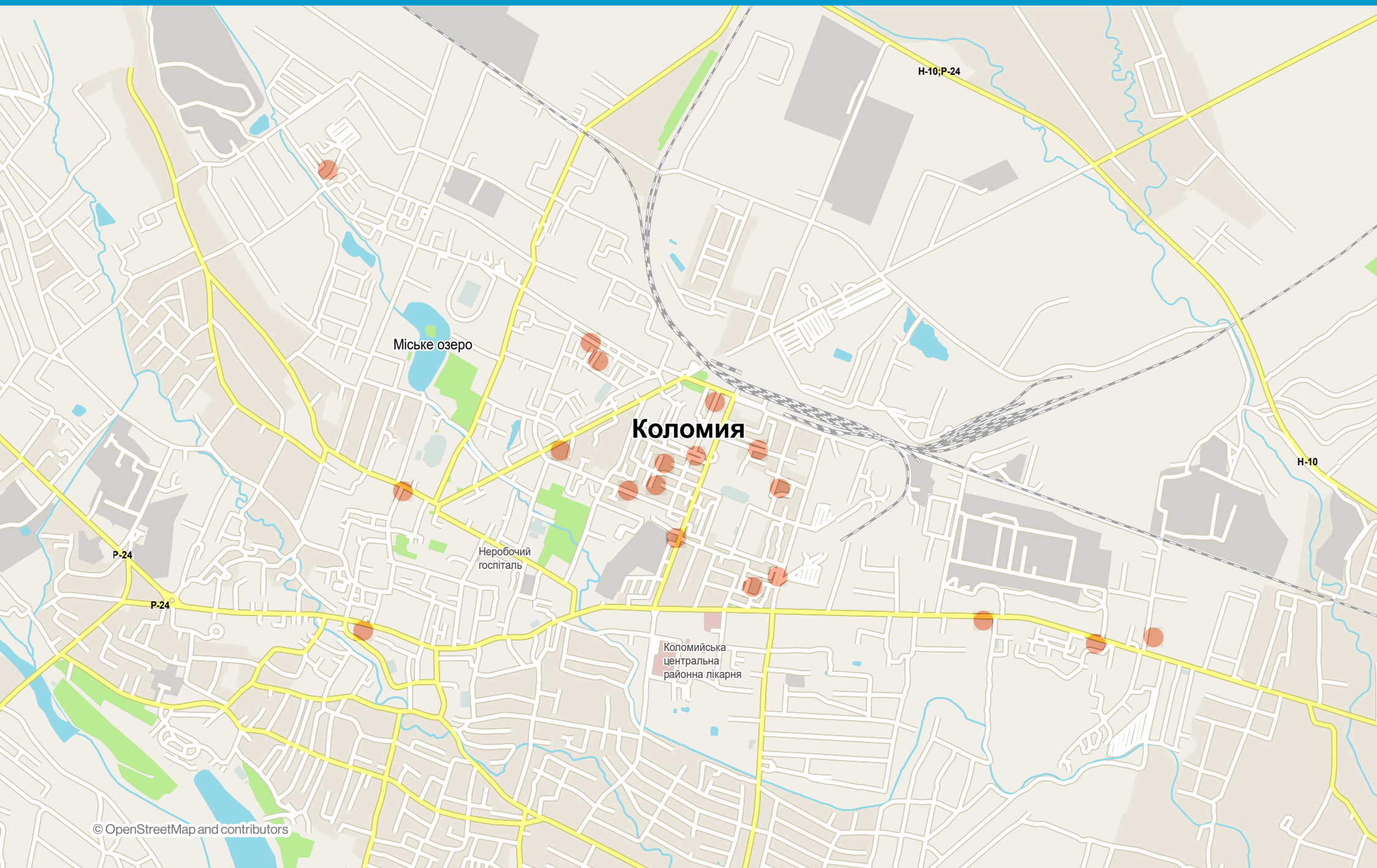


Figure 6. Spatial distribution of the assessed buildings in Kolomyia.

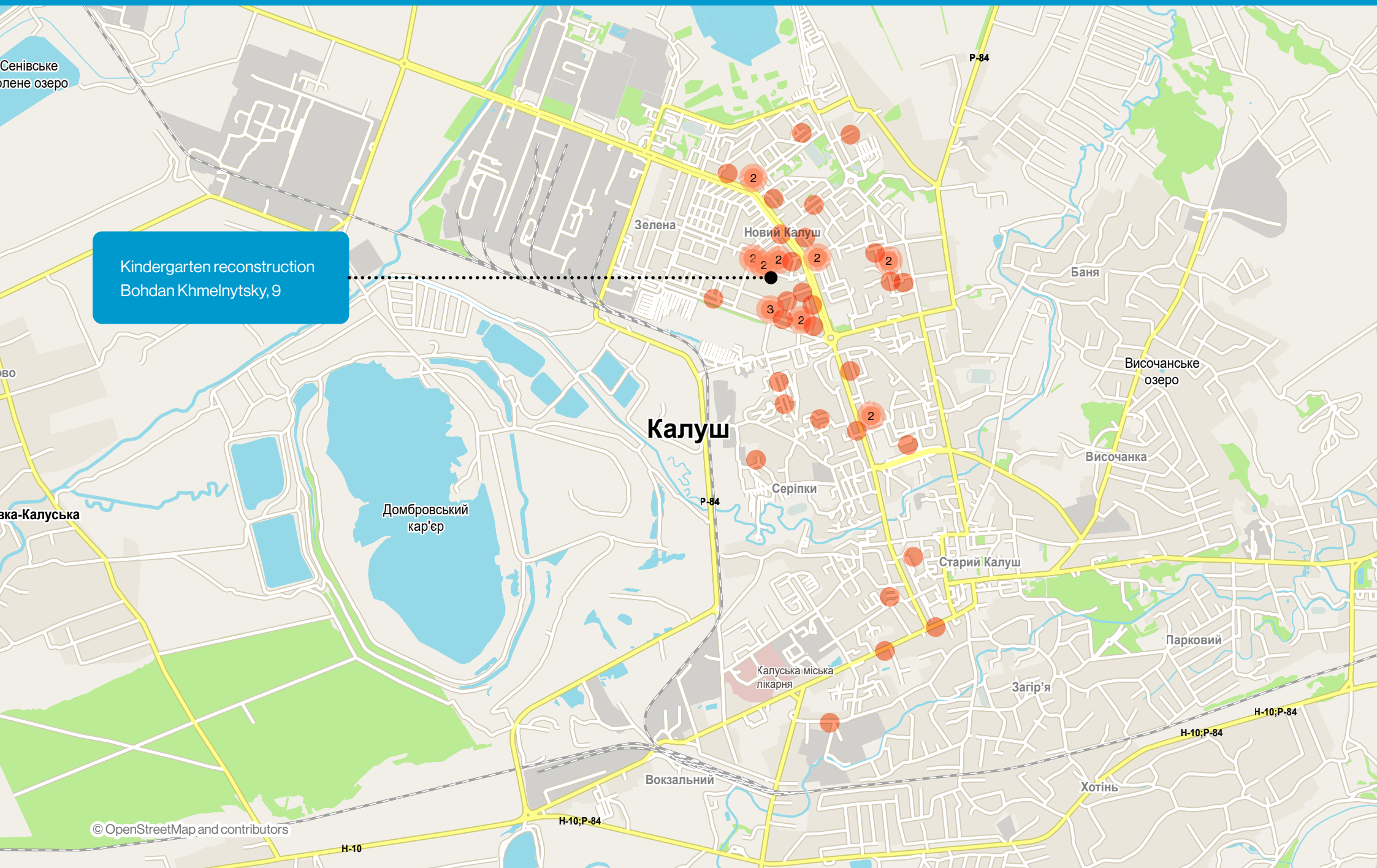


Figure 7. Spatial distribution of the assessed buildings in Kalush. Reconstruction project for IDP housing supported by HFHI is marked.

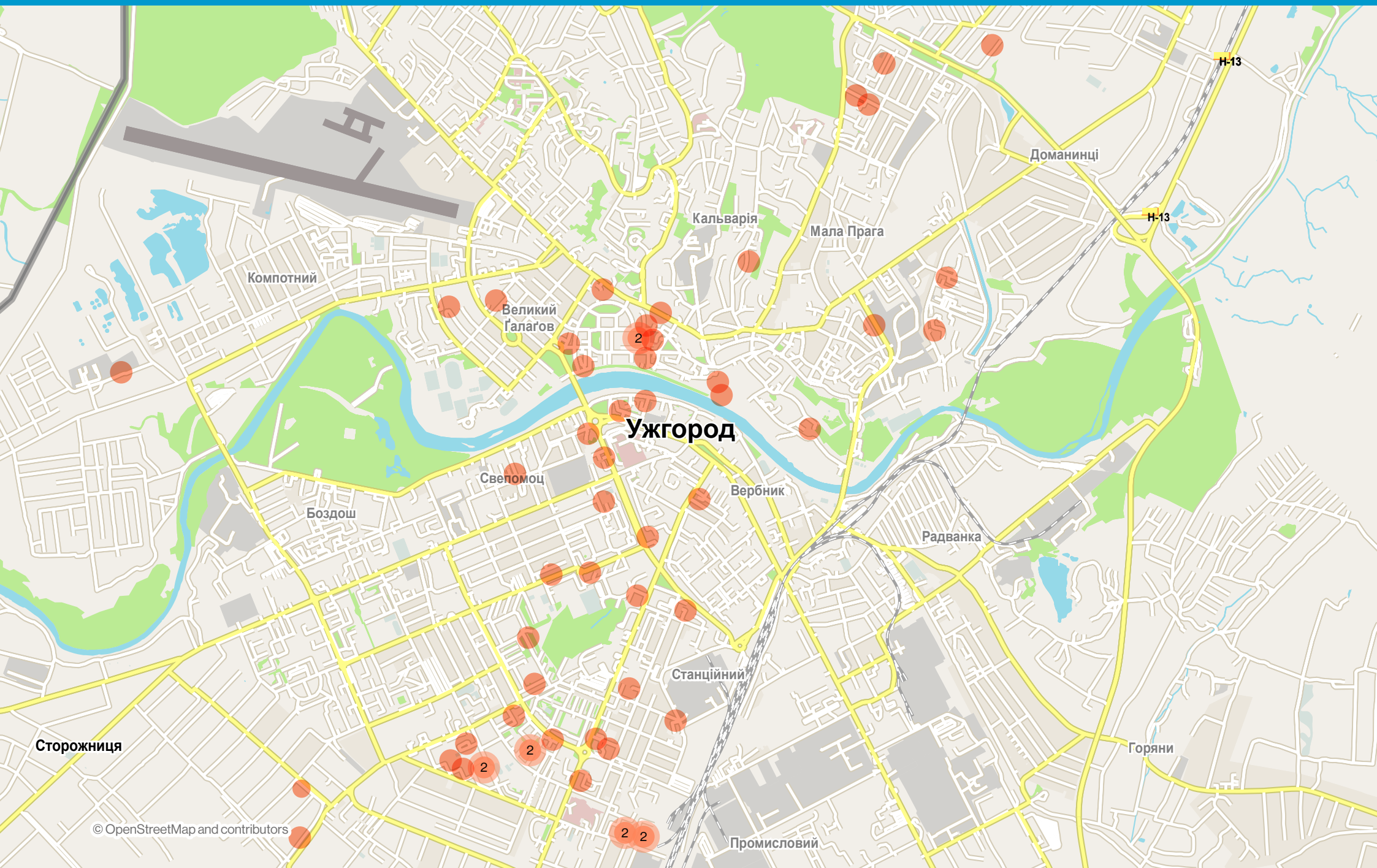


Figure 8. Spatial distribution of the assessed buildings in Uzhhorod.

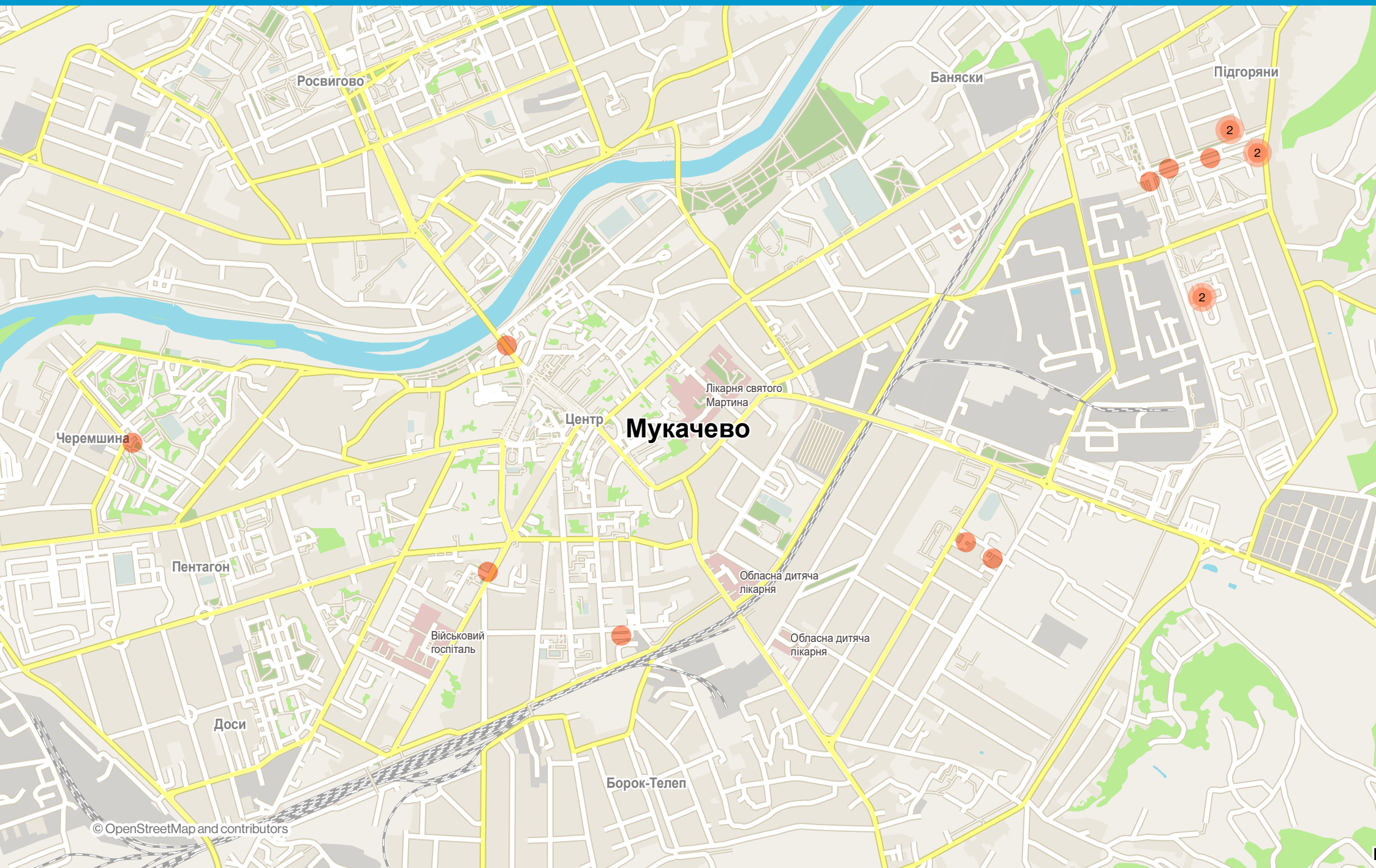


Figure 9. Spatial distribution of the assessed buildings in Mukachevo.

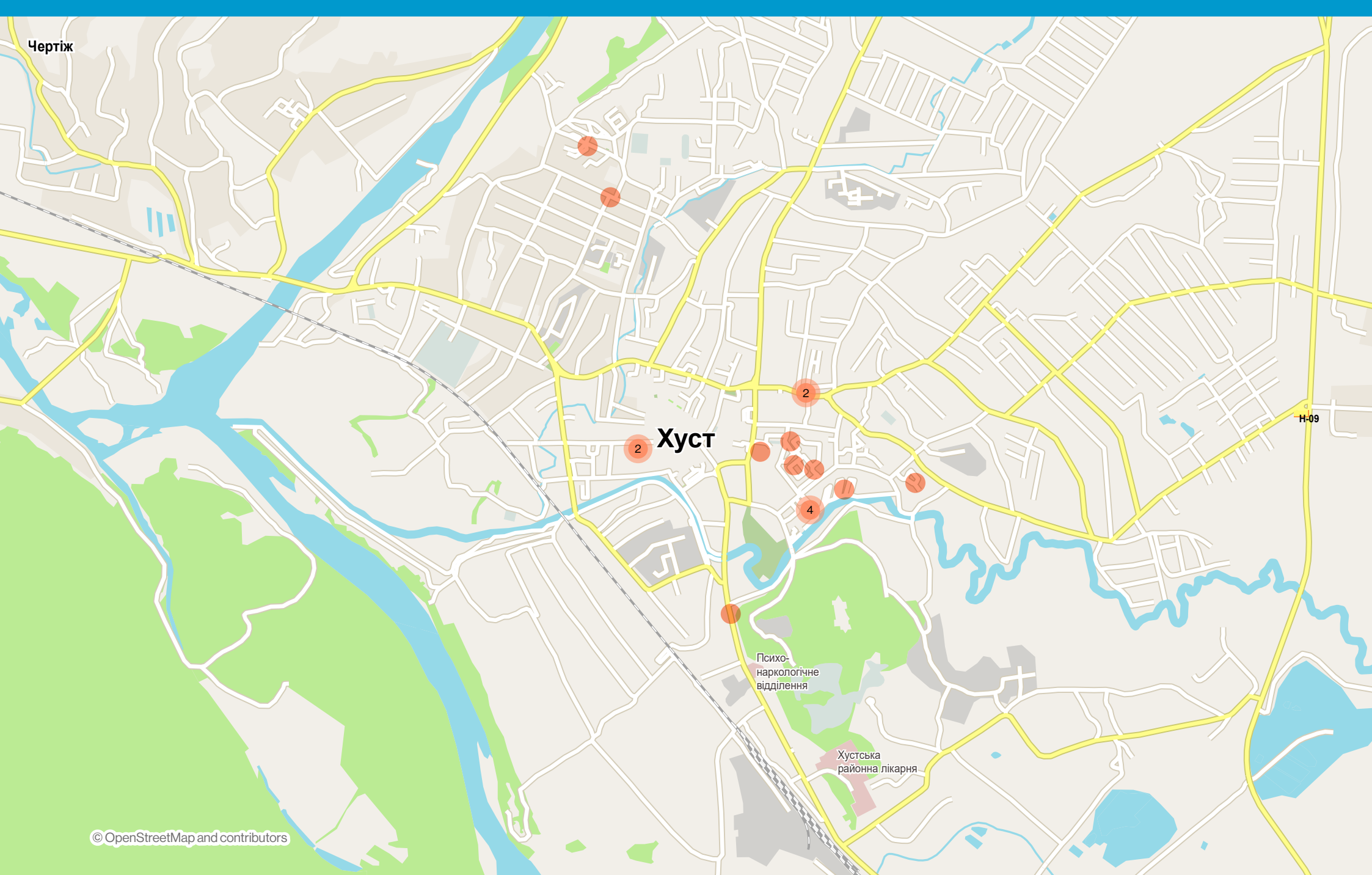


Figure 10. *Spatial distribution of the assessed buildings in Khust.*

General housing characteristics of the assessed MABs

Number of floors

Among the 300 MABs included in the survey, 5-floor buildings were the most widespread typology (identified for 165 buildings). 9-floor buildings were found to be the second most common, identified in 69 MABs. Only 9 MABs had more than 9 floors, with 10, 14, 15 or 16 floors. Low-rise buildings with 2, 3 or 4 floors were represented by 57 MABs and, in general, less common within the sample cities. This housing typology is generally representative of Ukrainian cities.

Figure 11. Distribution of MABs by number of floors.

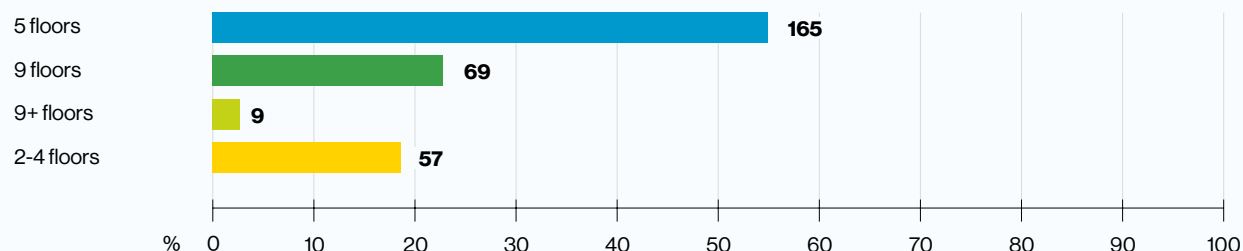
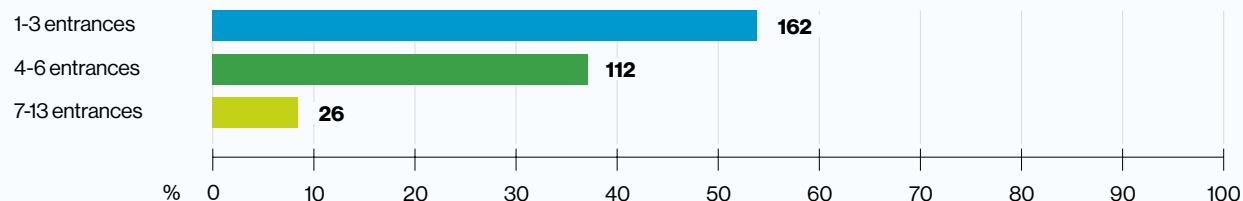


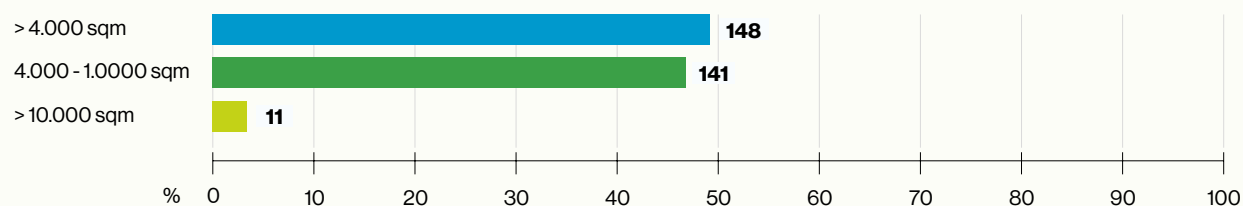
Figure 12. Distribution of MABs by number of entrances.



Total build area of the MABs (sqm)

The total build area of the surveyed buildings can be divided into 3 categories, including MABs constructed across up to 4,000sqm (49%) and those built across a total area of 4,000 to 10,000 sqm (47%). This correlates with the predominant housing typology of 5 floors.

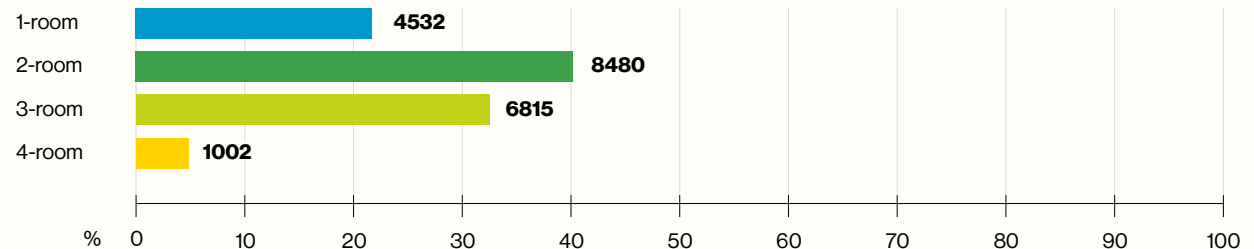
Figure 13. Distribution of MABs by total building area (sqm).



Total number of apartments and their typology

A total of 20,829 apartments were identified within the 300 sample MABs, with the following room distribution:

Figure 14. *Distribution of apartments by number of rooms.*



As the data indicates, 2-room apartments are the most widespread overall, followed by 3-room and 1-room apartments. 2-room apartments are especially dominant in the most common typology of 5- floors.

A typical spatial layout and average floor area of the apartments were identified as follows:

- **1-room apartment (30-45sqm):** 1 habitable room (bedroom/living), bathroom, kitchen
- **2-room apartment (45 - 60sqm):** 2 habitable rooms (bedroom+ living room), bathroom, kitchen
- **3-room apartment (50-90 sqm):** 3 habitable rooms (2 bedroom+ living room), bathroom, kitchen
- **4-room apartment (80- 100 sqm):** 4 habitable rooms, (2 bedroom+ living room) bathroom, kitchen (rarely 120sqm)

It is interesting to note that current Ukrainian legislation stipulates similar spatial standards for social housing: 28-40 sqm (1 habitable room); 44-53 sqm (2 habitable rooms), 56-65 sqm (3 habitable rooms).⁷ In addition, owners of apartments smaller than 60 sqm are exempt from property tax, which applies exclusively to owners of residential properties that exceed the established standards. This tax is due per sqm of living space that exceeds 60 sqm for apartments, and 120 sqm for family houses.

The four types of housing (floors) are spread out almost equally across the 9 cities. In the smaller cities – such as Mukachevo, Kalush, and Khust – MABs of up to 5- floors are more common, whereas in bigger cities, especially Lviv, a higher percentage of 9-floor MABs was identified.

A correlation between the size of the MABs, their HOA's capacity to absorb sufficient funds for repair and refurbishment and the volume of work needed was examined but none was found. The cost of repairs for large multi-floor MABs is almost proportionate to the same the cost of repairs in small MABs with fewer apartments. This is due to larger service systems and corresponding areas to be repaired. For example, the roof area of a 9-floor building with several entrances is much larger than the roof area of a 2-floor 2-entrance building.

The same principle applies to other building elements, such as the facade, stairwells, windows, utilities, etc. Thus, the financial burden on the owner of a single apartment will be the same for both large and small buildings. In conclusion, the number of floors of a MAB does not reduce the average refurbishment costs per owner (except for MABs that have an elevator system).

Structural elements of the assessed MABs and their condition

External wall typologies

The simplest way to classify MABs in cities is through their construction series. This helps determine renovation needs, as each series has specific technical features and characteristics. Such features indicate how outdated a building is and estimate its remaining lifespan. The desktop study lists MAB construction series, serving as a key reference for building details.

However, determining the number and location of a building's series proved to be a significant challenge for both the managers of the HOAs and the local authorities, who were unable to find this data in the local Bureau of Technical Inventory (BTI). The BTI lacks comprehensive technical specifications for all buildings, particularly if records were lost, never digitized, or not systematically maintained.

Old buildings or those constructed during periods of rapid urban development may have especially limited documentation. Additionally, many HOAs do not possess original building records, particularly when buildings were transferred from state or municipal ownership without detailed technical documentation.

A significant characteristic of a MAB is the type of building envelope, namely the external walls. The type of external wall construction is the decisive factor in a building's thermal performance. The required insulation measures and their scope depend on the external wall construction type and the number of floors (e.g., the kind of wall renovation that is needed and for what surface area).

Three main external wall construction types were recorded: The majority of MABs (143) have a brick external wall structure, followed by pre-cast concrete panel construction (56) and silicate brick external wall structure (27).

In addition, 24 MABs were identified in line with a specific housing series built during the Khrushchev era of 1953-1964 — hence the unofficial title Khrushchevka — while 19 MABs fall into another unofficial typology — the Czech buildings — and 9 MABs have a combined red and silicate brick wall construction, which the research team allocated to a separate category.

Picture 1. Typical Czech building 1



Picture 2. Typical Khrushchevka building 1



Table 3. *Typology of the assessed MABs according to wall construction and type of building.*

Type of wall / type of building	Number of MABs (from sample)	Percentage of total
Brick building	143	47.6%
Panel building	58	18.67% 0.67%
Silicate brick wall	27	9%
APPS serie (high-rise large-panel buildings)	3	1%
Khrushchevka building type (mostly brick wall)	24	8%
Czech building type	19	6.33%
Red brick on the inside, silicate brick on the outside (thermal performance equal to red brick)	9	3%
Former dormitory (converted and privatized), red or silicate brick	9	2.33% 0.67%

Picture 3. *Red brick on the inside, silicate 1.*



Picture 4. *Panel house building.*



Picture 5. *Silicate brick building.*



Picture 5. Reinforced concrete structures building.



The Czech series MABs have an even higher heat loss due to the inclusion of uninsulated balconies and erklers façade elements.

In conclusion, more than 90% of the buildings do not offer sufficient thermal performance, regardless of their wall construction type. External wall insulation solutions are urgently required to reduce heat loss to current building norm standards, as specified in state building norms.

External wall insulation is essential to achieve minimal modern thermal insulation standards – up to 30% heat loss. The thermal performance of the wall

Picture 6. Brick house building.



construction types assessed in the sample MABs varies only slightly. Red brick performs about 5% better than concrete panel construction and slightly better than silicate brick construction. The Czech series MABs have an even higher heat loss due to the inclusion of uninsulated balconies and erklers façade elements.

In conclusion, more than 90% of the buildings do not offer sufficient thermal performance, regardless of their wall construction type. External wall insulation solutions are urgently required to reduce heat loss to current building norm standards, as specified in state building norms.

Facade insulation and condition

This section examines the condition and thermal performance of the MABs' external envelope (i.e., the facade). Partial external wall insulation is common. This is referred to as 'patchwork insulation', where individual apartment owners partly insulate the facade that is associated with their external wall area. From experience, we have assumed the values to assess the state of thermal insulation as follows:

- **Not insulated** — less than 10% of the surface is insulated
- **Partially insulated** — 10 to 90% of the surface is insulated
- **Fully insulated** — more than 90% of the surface is insulated

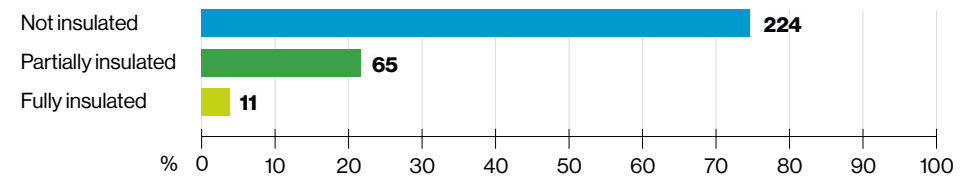
A key finding was that only 4% of the assessed MABs have been comprehensively insulated, whereas 96,6 % (289 MABs) do not comply with current thermal standards. This stands in stark contrast to the 90% of HOAs who expressed willingness to meet the need for thermal insulation. Approximately 75% of the assessed MABs have either no insulation or less than 10% patchwork insulation. Such a low level of full insulation is noteworthy and is one of key reasons for poor thermal performance of MABs in Ukraine.

A small minority of 4% of buildings have been insulated in accordance with state standards and with high efficiency. In addition, approximately 20% of the MABs are partially insulated. Types of partial insulation vary and usually are not aligned with the standard requirements.

It is important to note that patchwork insulation does not have an overall positive effect on the thermal performance of a MAB. On the contrary, partial insulation can have a negative impact on living conditions and comfort: it causes external wall temperature differences and shifts the dew point inside the wall, causing moisture accumulation and temperature decrease to neighboring apartments.

Moreover, it is typical to observe different technologies and standards of insulation for a single MAB, which differentiates the temperature even further. This means that even a 90% external wall insulation cover that was not applied and designed consistently across the whole building, must most probably be removed and redone. Consequently, patchwork insulation requires case-by-case assessment and compliance checks according to current insulation standards, adding to its cost and complexity.

Figure 15. *External wall insulation*



Picture 4. *Partially insulated facade of a MAB in the city of Kalush.*



Further to assessing external wall insulation coverage, the technical condition of these walls was also examined for defects and state of deterioration. The criteria below were used for this part of the assessment:

Table 4. *Technical criteria of the facade deterioration in MABs.*

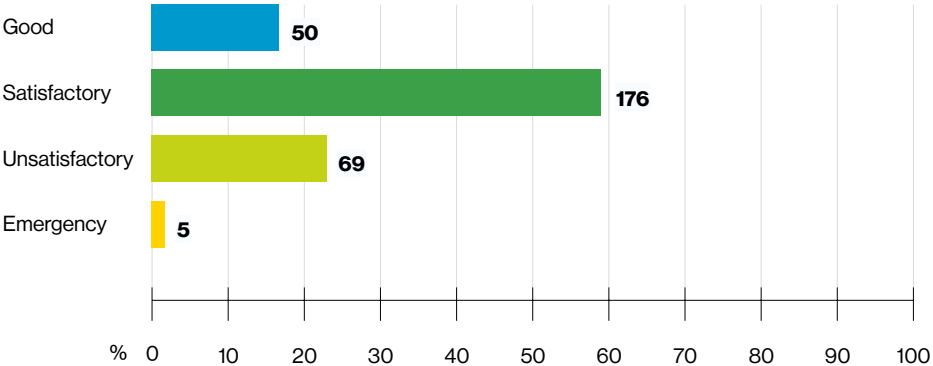
Good	Individual cracks and potholes, crack widths up to 1 mm.
Satisfactory	Peeling of the wall coating, deterioration of corners and lintels, weathering of mortar joints, superficial weakening of bricks, cracks in corners and lintels, traces of moisture on the surface of walls.
Non-satisfactory	Massive loss of wall coating or plaster; weathering of mortar joints up to 2 cm; structural weakening of bricks, cornices, lintels with the loss of individual bricks; patches of moisture in the external walls threatening the construction.
Emergency state	Cracks in lintels and under window openings (very wide and continue growing), bricks falling out, slight deviation from the vertical, bulging.

The condition of most facades (58,7% – 176 MABs) was categorized as satisfactory.

The number of facades in unsatisfactory condition was determined for 69 MABs (23%). This is the most worrying finding as each of these urgently requires facade repair in order to avoid further deterioration and reach ‘emergency’ condition.

5 MABs (1.7%) were found to already have reached the ‘emergency’ phase, while 50 MABs (16.7%) have facades in good condition.

Figure 16. *Condition of the facades of the assessed buildings.*



Despite most of the assessed buildings having a satisfactory facade condition (without cracks or crumbling plaster), almost all require insulation to improve living conditions, reduce heat loss, and decrease energy consumption and cost for the inhabitants.

It is encouraging that the majority of external facades are in a satisfactory condition, as this is a key precondition for any thermal insulation upgrading works. Good and satisfactory state means that the facade can immediately be insulated without preliminary repair works.

The 74 MABs with unsatisfactory and emergency condition facades require urgent intervention to prevent deeper deterioration of the wall.

Roof typologies and conditions

The majority of the assessed MABs (220 – 73,3%) have flat roofs with bitumen finish. Significantly fewer buildings have a pitched roof construction with slate tile covering, 39 MABs (13%) of the total number surveyed.

A small number of MABs (19 – 6,3%) have a pitched roof with a corrugated metal sheet finish.The remaining MABs (22 – 7,3%) showed a variety of other roof types.

As a flat concrete roof construction with bitumen finish is by far the most widespread type of roofing, this should be considered when developing energy efficiency and thermal insulation measures.

Renovation works to a flat roof are generally slightly cheaper than to pitched roofs, due to repair needs to their timber substructure. Ukrainian state building norms regulate methods and procedures for the renovation of all types of roof.

Flat roofs can be modernized in two ways, depending on whether there is a “service” floor under the roof, and both procedures are clear and streamlined.

Nevertheless, renovation project budgets can only ever be accurately calculated on a individual design basis.

Figure 17. Distribution of roof types.

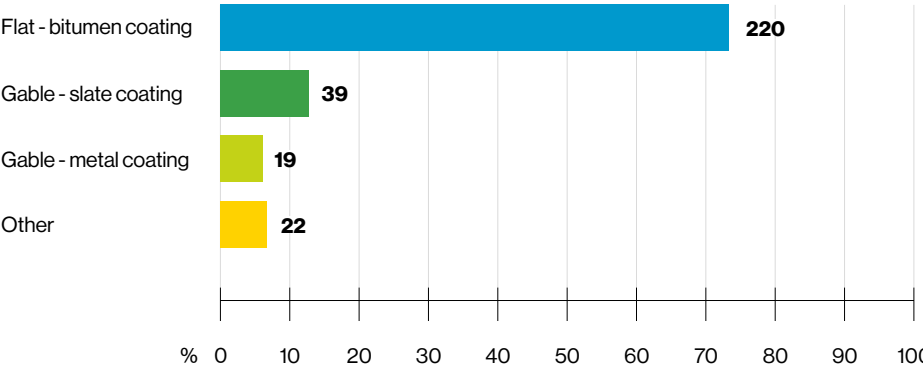
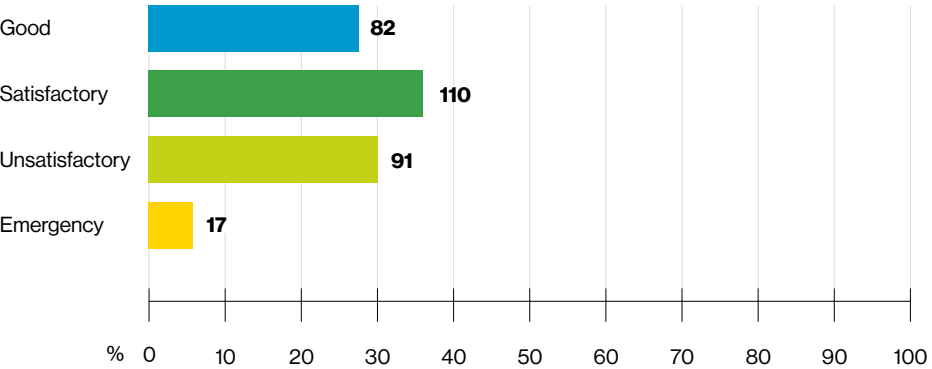


Table 5. Assessment criteria for the deterioration of the facades in MABs.

Good	Single small damages and holes in the roof and places of contact with the vertical surface
Satisfactory	Swelling of the surface, cracks, occasional tears in some places of the upper layer of the roof, which requires replacement of up to 10% of the roof.
Non-satisfactory	Roof leakages, damage to the roof up to 25% of the total area.
Emergency state	Roof structure has rotten and broken parts, and the cover has cracks and gaps of more than 3 mm. Massive leakage, detachment of the coating from the base, missing parts of the coating.

Approximately one third of the inspected buildings (82 MABs) have roof coatings in good condition. One third showed a satisfactory condition (110 MABs) and the remaining buildings fall within the unsatisfactory or emergency categories. The small percentage (5,7%) showing emergency roof conditions will require immediate repair.

Figure 16. Roof condition of the assessed buildings.



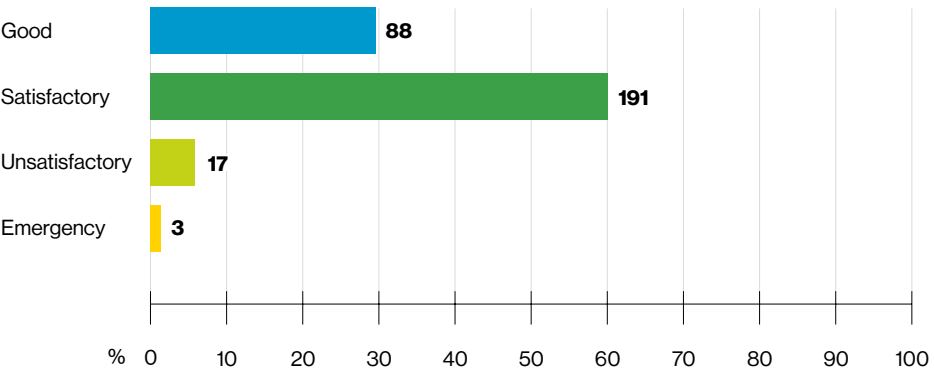
Structural foundation condition

For the assessment of the condition of the buildings' foundations, the below criteria were used:

Table 6. Assessment criteria for the foundation of MABs.

Good	Small cracks up to 2 mm wide in the basement and under the windows of the first floor.
Satisfactory	Some deep cracks up to 5 mm, traces of damp on the surface of the basement and walls, bulging of certain sections of the basement walls, uneven settlement.
Non-satisfactory	Bulging and noticeable distortion of the basement, extending to the entire height of the building, bulging of floors and basement walls.
Emergency state	Massive progressive through cracks over the entire height of the building, significant bulging of the soil and destruction of the basement walls.

Figure 19. Foundation condition of the assessed buildings.



As can be seen in Figure 19, a majority (63,7%) of the buildings' foundations was in satisfactory condition. In addition 29,3 % of inspected buildings (88 MABs) were in good condition. Overall, this is an encouraging result. Over 90% of the assessed MABs did not exhibit any serious technical problems with their foundations, indicating quality construction and engineering expertise during their construction.

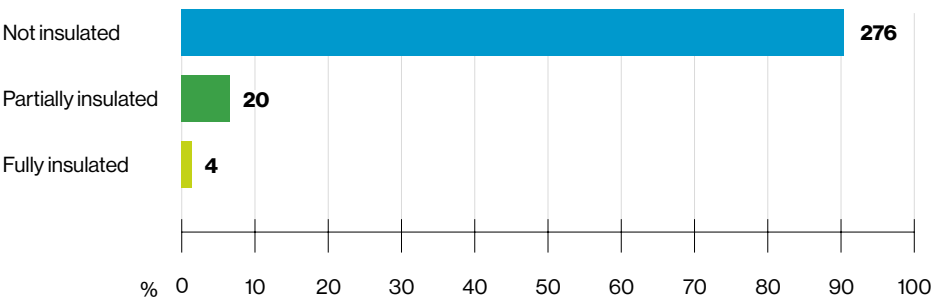
A small percentage (10 %) of the assessed MABs require urgent repairs to their structural foundations. These MABs are located in Mukachevo, Kalush, Lviv, Khust, and Kolomyia.

Additionally, the insulation of the foundation was assessed in each case. The foundations of 276 MABs (92%) were 'not insulated' (<10% of the surface) while 20 MABS (6.7%) had only 'partially insulated' foundations (10-90% of the surface).

Only 4 of the MABs have 'fully insulated' foundations (>90% of the surface). These 4 buildings—2 in Drohobych and 2 in Uzhhorod—exhibit varying levels of good or satisfactory condition. The roof conditions are generally good, with 3 buildings rated as good and 1 as satisfactory.

All buildings have foundations in good condition. The facades of 3 buildings are also in good condition, while 1 is rated as satisfactory. The buildings differ in construction type: 2 are panel houses, 1 is a Czech house, and 1 is a brick house.

Figure 20. Insulation of the foundation of the assessed buildings.

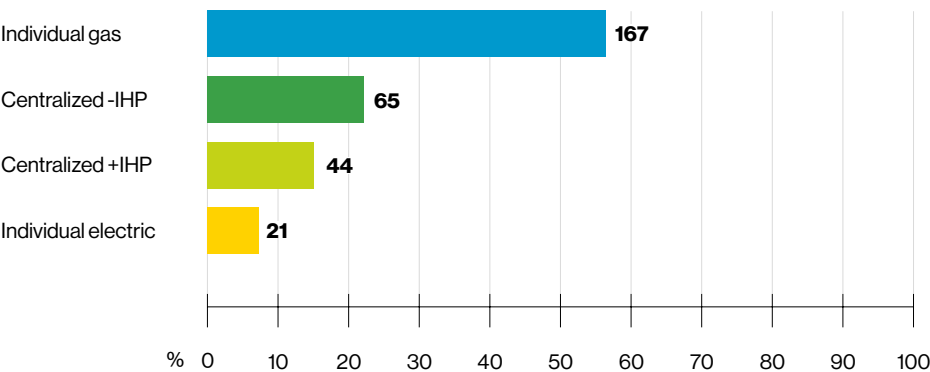


Condition of heating and water systems

Heating system typologies

As the graph below illustrates, 55,7% of assessed MABs (167) have individual gas heating and a small percentage (7%) have individual electric heating. The number of buildings with centralized heating but without individual heating points (IHP) is 65 (21,7%). The number of buildings with centralized heating with IHS is much smaller – 44 MABs (14.7%).

Figure 21. Types of heating systems of the assessed buildings.



The predominance of individual heating has developed over time. Cities in the Zakarpattia region and many cities in Prykarpattia abandoned central heating in the early 2000s, as gas tariffs were more expensive for companies than individual households. Local governments and co-owners took advantage of this, and the cost of heating with an individual boiler with shut-off valves was significantly lower. If we also take into account the huge heat losses in the heating networks, this difference in cost is significant. The gas lobby also promoted subsidies for the installation of individual gas boilers.

However, in the other sample cities, centralized heating remains the standard. In Ukraine, 71.57% of apartments in residential and non-residential buildings in urban areas rely on centralized heating. In the Lviv region, 55.53% of apartments in residential buildings have centralized heating, while in the Ivano-Frankivsk region, the share is 53.27%.

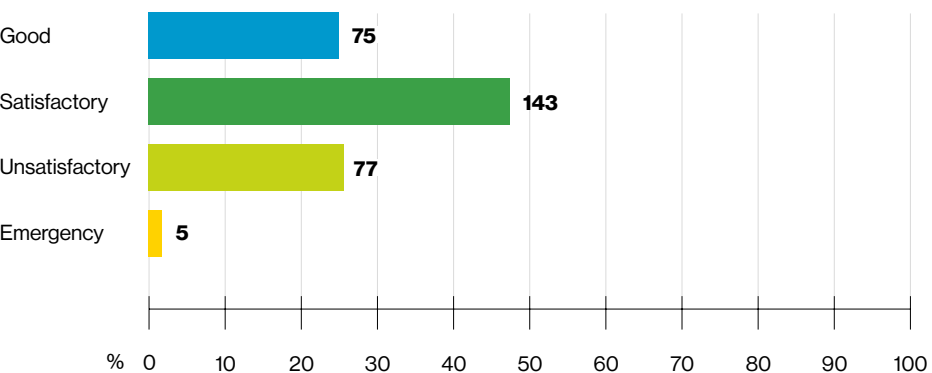
Condition of water supply systems

Table 7. Criteria of the deterioration of the water supply system in MABs.

Good	Weakening of gland packings and gaskets of taps and valves, partial deterioration of pipeline paint.
Satisfactory	Drip leakage at the tie-in points of taps and valves; some damage to pipelines (fistulas, leaks) some corrosion damage to certain sections of pipelines.
Non-satisfactory	Failure of valves and flush tanks (up to 40%).
Emergency state	Complete system failure, failure of valves, a large number of clamps, traces of partial replacement of pipelines, extensive corrosion of system elements.

The state of water supply systems in 47,7% of the surveyed buildings is satisfactory (143 MABs) and in 25% it is in good condition (75 MABs). A quarter of the MABs had unsatisfactory condition of water supply systems (77 MABs) and in 5 MABs, an emergency state was noted and urgent repairs required.

Figure 22. Condition of water supply systems in the assessed buildings.



In general, it can be concluded that water supply systems are not one of the key challenges for MABs and are generally in good working order.

The 5 MABs with emergency condition water systems are in Lviv city. The sewerage systems of 4 out of these 5 buildings were also found to be in emergency condition, while 4 out of the 5 buildings had unsatisfactory/ emergency roof conditions, and in 3 out of 5 the electrical system was also assessed as emergency and their façades are not insulated.

This highlights an urgent need for comprehensive repair of these 5 buildings. When analyzing the socio-economic data of the 5 MAB owners, we can see that out of 402 apartments, 30% are pensioners and 10% are recipients of benefits and subsidies.

Condition of the sewerage systems

Table 8. Criteria of the deterioration of the sewerage system in MABs.

Good	Weakening of the connection points of devices; minor cracks in pipelines made of polymeric materials.
Satisfactory	Leakage at the points of connection of devices up to 10% of the total amount; partial damage to cast iron pipelines; significant damage to pipelines made of polymeric materials.
Non-satisfactory	Massive leakage at the points of connection of devices; damage to cast iron pipelines; massive damage to pipelines made of polymer pipes.
Emergency state	System malfunctions; damage to devices; traces of repairs (clamps, levelling) and replacement of individual sections.

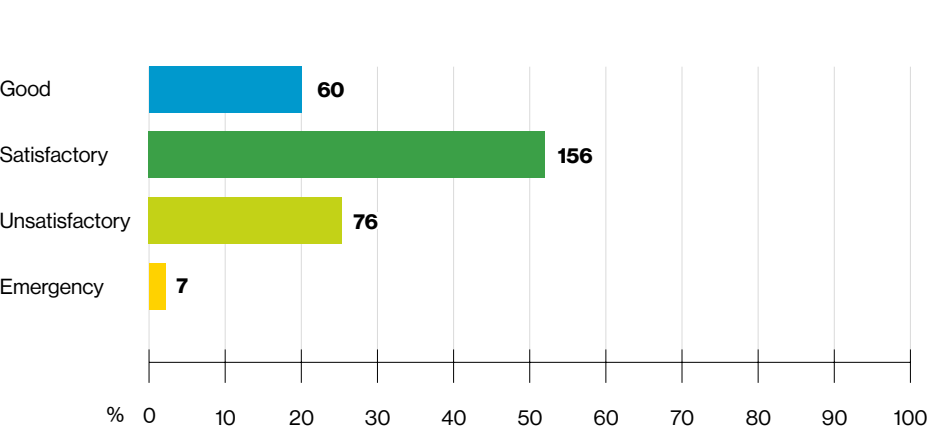
The condition of sewerage systems in 52% of the surveyed buildings is satisfactory (156 MABs) and in 20% it is good. Therefore, almost three-quarters of the buildings have adequate sewerage systems.

A concern is that a quarter of the MABs are in unsatisfactory or emergency conditions, as the graph below shows.

Sewerage system failure is one of the most dangerous problems as it threatens hygiene and sanitary conditions in the building and can have a serious impact on the health and well-being of residents.

These serious housing condition problems are usually addressed by the homeowners as a priority, and the lack of attention to this in such a high number of buildings may indicate a severe lack of funds and/or capacity of the owners.

Figure 23. Condition of sewerage systems in the assessed buildings.



As stated above, an emergency state of sewerage systems correlates with an emergency state of water systems. These buildings require urgent repair to safeguard the health and well-being of the inhabitants.

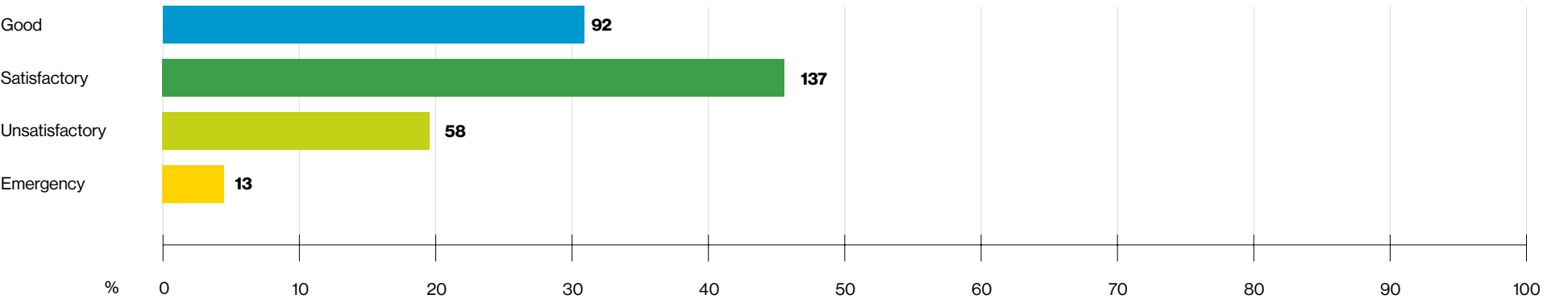
Condition of electrical systems

Table 9. Criteria of the deterioration of electrical systems in MABs.

Good	Corrosion marks on the surface of metal cabinets and partial damage to wooden covers. Malfunctions, loose fasteners and missing individual devices (sockets, plugs, cartridges, etc.).
Satisfactory	Partial damage to the insulation of the main and intra-apartment networks, loss of elasticity of wire insulation, open wiring covered with a significant layer of paint, absence of some devices and covers to them, traces of repair of input and output devices.
Non-satisfactory	Complete loss of elasticity of wire insulation, significant damage to main and intra-apartment networks and devices, signs of system repair with partial replacement of the network and devices, presence of temporary gaskets, malfunction of the switchgear.
Emergency state	Malfunctions of the wiring system, switchboards, switchgear devices; absence of some devices; exposed wires, signs of significant repairs (sagging wires, damage to cabinets, switchboards, switchgear).

The condition of the electrical systems in 45,7% of the surveyed MAB was found to be satisfactory (137 MABs) and 30,7% were declared in good condition (92 MABs). This shows an overall adequate outcome of 76.4% MABs with safe electrical installations. Unsatisfactory and emergency conditions were found for 19,3% and 4,3% respectively.

Figure 24. Condition of the electrical systems of the assessed buildings.



HOA self-assessed MAB reconstruction needs

The final set of questions in the technical part of the self-assessment questionnaire concerned the type of renovation needed for each MAB. Three options were provided in line with Ukrainian legal definitions of different renovation types: complex, partial, or light repairs. The values of each type of renovation were provided as follows:

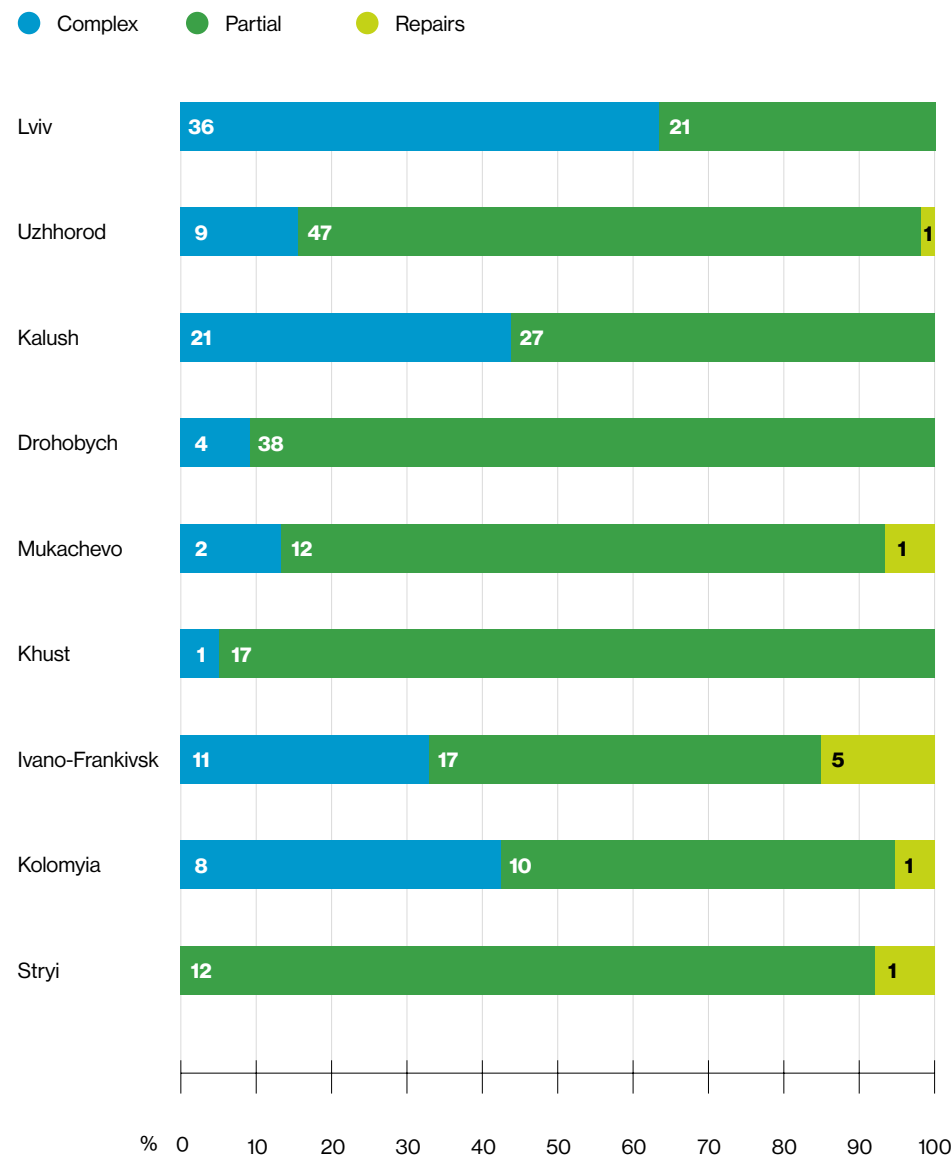
- **Complex renovation** — large-scale renovation of the main constructive elements (roof, foundation, heating, basic plumbing) or of the main building systems (sewerage, drainage and water supply, complete thermal insulation, electrical installations).
- **Partial renovation and modernization** — heating system or thermal insulation or water supply systems.
- **Light repairs** — minor details and needs of individual apartments.

The answers to the final set of questions do not reflect the overall technical state of the individual MABs. This is due to the housing managers answering these questions according to the type of renovation that is most likely to receive support and the type of works that each HOA is able to co-finance. Therefore, the results of these questions should be viewed as subjective to MAB representatives. MABs in the larger cities named the need for complex renovation more frequently (except for Uzhhorod), which can be explained by their higher capacity to co-finance renovation measures. The distribution of answers is presented in Figure 25.

The need for complex reconstruction was reported by 64 MABs (one third of all surveyed buildings), the need for partial reconstruction was reported in two thirds of the buildings (201), and the need for light repairs was reported in 9 buildings only.

Partial repairs were the most frequently reported type of renovation, which could be due to the perception that these are more likely to receive HOA support and co-financing, and it is therefore more realistic that such repairs will be carried out successfully.

Figure 25. Types of renovation needed in the assessed buildings based on the questionnaire.



For the three renovation options, the HOAs provided further details. Table 10 provides a list of the most frequently mentioned combination of renovation measures.

Table 10. *Examples of selected renovation measures per type of renovation.*

Type of renovation	Necessary measures	Frequency of answer	% of sample
Complex renovation	Complex reconstruction of facade, roof, foundation, heating system, water supply and sewerage system, complete thermal insulation of the facade/basement, electrical wiring in the M&A, installation of entrance and vestibule doors in entrances and basements.	11	3.67
	Complex reconstruction of the facade, roof, heating system, water supply and sewerage system, complete thermal insulation of the facade/basement. Heating system: installation of IHS, installation of automatic balancing valves on risers, replacement of heating pipes, thermal insulation of heating pipes. Repair or replacement of water supply and sewerage pipes, installation of entrance and basement doors.	3	1
	Complex reconstruction of the roof	3	1
	Complex reconstruction of facade, roof, foundation, heating system, water supply and sewerage system, complete thermal insulation of the facade/basement, electrical wiring in the M&A, installation of entrance and vestibule doors in entrances and basements.	2	0.67
	Complex reconstruction of the facade, roof, foundation, heating system, water supply and sewerage system, complete thermal insulation of the facade/basement, electrical wiring in the M&A	2	0.67
Partial renovation	Replacement of windows in apartments and common areas	6	2
	Reconstruction of the water supply and sewerage system	6	1.33
	Renovation of the facade	4	1.33
	Reconstruction of the roof	3	1

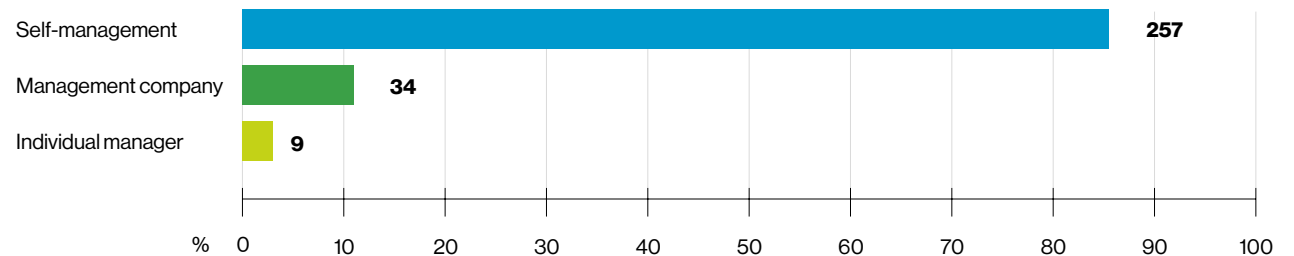
Type of renovation	Necessary measures	Frequency of answer	% of sample
Partial renovation	Partial reconstruction and modernization of heating system: installation of IHS, installation of automatic balancing valves on risers, replacement of heating pipes, thermal insulation of heating pipes; OR water supply system: repair or replacement of water supply and sewerage pipes, installation of entrance and vestibule doors in entrances and basements	3	1
	Renovation of electrical wiring	2	0.67
	Repair of the elevator and replacement of the elevator cabin	4	0.67
	Repair of electric system in the common areas of the building	3	1
	Repairs of the roof, water supply and sewerage system	1	0.35
	Partial overhaul with the replacement of the facade coating in some places, with the removal of rainwater pipes along the facade of the building.	1	0.35

HOA management and capacity

Types of management

Almost all of the surveyed MABs (257 buildings – 85,7%) are managed by statutory bodies or by HOAs themselves. 34 buildings are serviced by management companies (11,3%) and 3% of HOAs engage an individual manager.

Figure 26. Distribution of HOA management types.



The below table describes the housing management arrangements for each of the sample cities. Overall, self-management appears to dominate, with most cities reporting this form of management only. Ivano-Frankivsk, Drohobych, Mukachevo, Khust and Stryi have self-managed HOAs only. By contrast, Kalush stands out for having the most management companies (29) alongside 19 self-managed buildings. A few cities, such as Lviv (7) and Kolomyia and Uzhhorod (1 each), report buildings managed by an individual manager.

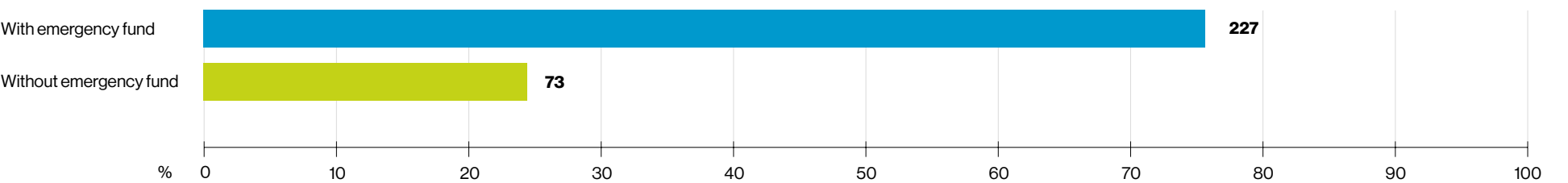
Table 11. Housing management arrangements in sample cities.

	Self-management	Management company	Individual manager
Lviv	49	1	7
Uzhhorod	55	0	1
Kalush	19	29	0
Drohobych	42	0	0
Mukachevo	15	0	0
Khust	17	0	0
Ivano-Frankivsk	33	0	0
Kolomyia	14	4	1
Stryi	13	0	0

Repair funds of MABs

Over two thirds of the surveyed MABs (227) have established repair funds while one third (73) does not. It is noteworthy that a significant number of buildings still have no common fund to address emergency repairs if necessary. Closer analysis of the individual housing data does not show a correlation between lack of housing funds and an emergency state of repair of the housing systems. MABs showing emergency conditions do collect maintenance contributions, suggesting that other factors create a barrier to essential repair works being executed.

Figure 27. Presence of emergency repair funds in surveyed buildings.



The annual funding estimates for management and maintenance in the assessed buildings vary significantly, from 20 thousand to 2 million UAH. The fund size depends on the number of units and the contribution amount for maintenance and servicing of MABs per sqm. As a result, HOAs can create different repair funds. MABs within the same cities have a wide range of repair fund amounts. The table below shows the average repair funds in the sample cities.

188 MABs have accumulated more than UAH 100 thousand and 39 MABs have less than UAH 100 thousand. However, a clear correlation between the size of the repair fund and the condition of the buildings could not be established within the sample buildings. For example, 2 MABs in Lviv have a repair fund exceeding 100,000 UAH, yet their sewerage and water supply systems remain in emergency condition. This finding points towards barriers other than financial that hinder the owners' ability to maintain their housing conditions.

Figure 28. Accumulated amounts in established repair funds.

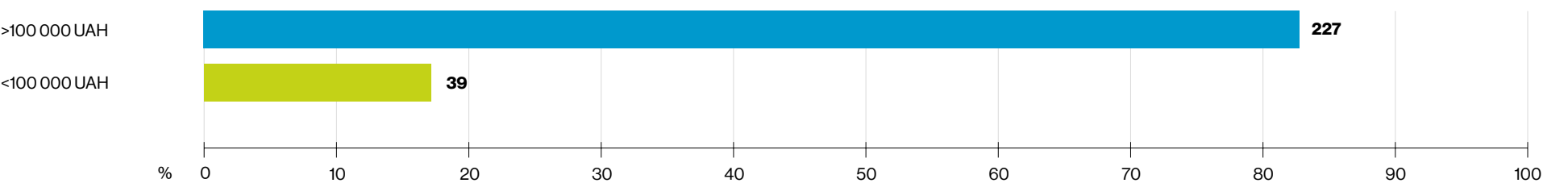


Table 12 indicates that MABs in Lviv have the largest reserve funds. However, as stated above, buildings in Lviv also demonstrate emergency conditions. This could be related to the higher salaries in Lviv than smaller sample cities. On the other hand, Ivano-Frankivsk – a capital city – shows a low level of repair funds compared to the other cities. The analysis was not able to determine the reasons for the small repair funds and further investigation would be needed to establish root causes.

Table 12. Average repair funds in relation to the size of the MABs.

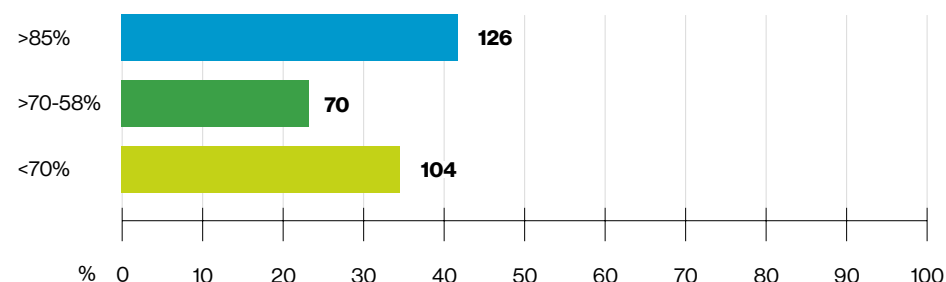
	Apartments/building	Average repair fund (thousand UAH)
Lviv	0-40	44.6
	41-70	50.1
	71-100	66.0
	101-130	67.5
Uzhhorod	0-40	20.6
	41-70	32.2
	71-100	44.0
	101-130	34.3
Kalush	0-40	15.1
	41-70	26.1
	71-100	31.1
	101-130	42.0
Drohobych	0-40	22.7
	41-70	56.3
	71-100	26.7
	101-130	37.3
Ivano-Frankivsk	0-40	4.8
	41-70	16.1
	71-100	12.3
	101-130	16.7

Payment discipline in the assessed MABs

The level of payments for communal services in most HOAs (126) is more than 85%. This means that the payment discipline for these buildings is at a good level.

Buildings with a lower level of payments (from 70% to 85%) make up a much smaller part of the surveyed buildings (70). It is important to highlight that a significant number of MABs (104 – 34 %) show an unsatisfactory payment discipline.

Figure 29. *Payment discipline levels in surveyed HOAs.*



Total number of pensioners

The total number of pensioners living in the surveyed buildings is 10,795, but no statistical study of the total number of people living in these buildings has been conducted. Generally, it can be said that the percentage of pensioners in the social structure of the assessed MABs is high.

The distribution by city is as follows:

Table 13. *Distribution of pensioners in surveyed cities.*

	Apartments	Pensioners	~ Pensioners / Apartments
Lviv	4426	2214	0,50
Uzhhorod	3607	2202	0,61
Kalush	4118	1848	0,45
Drohobych	2993	1619	0,54
Mukachevo	944	373	0,40
Khust	807	362	0,45
Ivano-Frankivsk	2127	1376	0,65
Kolomyia	1104	399	0,36
Stryi	715	402	0,56

Total number of recipients of benefits and subsidies

The total number of recipients of benefits and subsidies living in the surveyed buildings is 3,657. In most of the cities this ranges between 12 – 17 % recipients per apartment, except for the cities of Ivano-Frankivsk and Drohobych, where the percentage is significant higher.

Table 14. *Distribution of benefits and subsidy recipients in surveyed cities.*

	Apartments	Recipients	~ Recipients / Apartments
Lviv	4426	541	0,12
Uzhhorod	3607	479	0,13
Kalush	4118	588	0,14
Drohobych	2993	933	0,31
Mukachevo	944	122	0,13
Khust	807	138	0,17
Ivano-Frankivsk	2127	598	0,28
Kolomyia	1104	141	0,13
Stryi	715	117	0,16

Total number of IDPs

The HOAs of the surveyed MABs reported that 2,422 IDPs have been accommodated in these buildings since the beginning of the war in 2022. It is important to note that approximately half of these live in the surveyed buildings of Drohobych.

Table 15. *Distribution of IDPs in surveyed cities.*

	Apartments	IDPs	~ IDPs/ Apartments
Lviv	4426	125	0,03
Uzhhorod	3607	455	0,12
Kalush	4118	302	0,07
Drohobych	2993	1016	0,34
Mukachevo	944	30	0,03
Khust	807	122	0,15
Ivano-Frankivsk	2127	228	0,11
Kolomyia	1104	136	0,12
Stryi	715	8	0,01

Total number of vacant apartments (if available)

There are 349 vacant apartments in the surveyed buildings. Overall this is a small percentage (1.7%) of the total surveyed apartments. The largest number of vacant units is in Drohobych, which also houses the largest amount of IDPs.

Table 16. *Distribution of benefits and subsidy recipients in surveyed cities.*

City	Vacant apartments
Majority of vacant apartments	
Drohobych	103
Khust	77
Ivano-Frankivsk	68
Kolomyia	42
Small number of vacant apartments	
Kalush	21
Mukachevo	17
Uzhhorod	11
Lviv	10
Stryi	0

The reasons for apartment vacancies vary. Most owners of empty apartments have moved abroad (41) or are serving in the Armed Forces (13). Other reasons include: the owners are in Russia, have died, or are unknown. HOAs reported that the condition of the vacant apartments is mostly poor and/or in a state of disrepair and ensuring these vacant apartments become available for inhabitation would require different levels of renovation. In addition to renovating vacant apartments, legal authorization is required to occupy them. For example, if the owner is still alive and continues to pay utility bills but does not reside in the apartment, the property cannot be occupied or used without their explicit consent or legal permission.

Women and HOA leadership

In general, women are actively involved in the management of HOAs and are members of HOA boards. 46% of the HOAs (139) have 2 or 3 women on their board, while 31% (93) have 4-5 women on their board. 9% (29) have more than 5 women as part of their management team and only 3% (10 HOAs) do not include women on their board.

According to the submitted questionnaires, the number of board members in Zakarpattia region ranges from 2 to 11, in Lviv region from 3 to 9, and in Ivano-Frankivsk region from 3 to 14.

Women chairpersons of HOAs are common in all sample cities: 55.4% in Uzhhorod, 31.2% in Mukachevo, 23.5% in Khust, 50.8% in Lviv, 65% in Drohobych, 76.9% in Stryi, 36.4% in Ivano-Frankivsk, 18.6% in Kalush, and 52.4% in Kolomyia.

In most cases, women prevail in terms of the number of members of HOA boards in which the heads are women. For example in Kalush, where the heads of the board are men, the number of women board members ranges from 0% to 50%, and where the heads of HOAs are women, the number of women board members in HOAs ranges from 50% to 100%. In management committees, the number of women is 50%.

Figure 30. *Women's participation in HOA board management.*

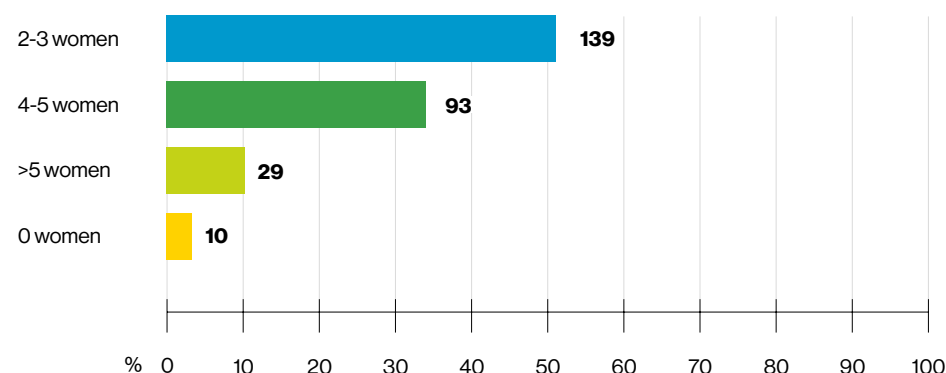


Table 17. *Distribution of women on managing boards per city.*

	2-3 women	4-5 women	5+ women	no women
Lviv	30	14	9	4
Uzhhorod	31	11	8	1
Kalush	7	33	3	1
Drohobych	25	7	2	0
Mukachevo	10	2	1	0
Khust	4	11	1	1
Ivano-Frankivsk	17	4	2	2
Kolomyia	8	9	1	0
Stryi	7	2	2	1

- **Private Ownership:** A total of 20,829 apartments was assessed within the 300 MABs and the large majority were found to be privately owned, meaning these apartments were privatized in the past. Only a small number of 187 apartments remain communal or non-privatized.
- **Lack of data:** There is no comprehensive data on the actual state of the MAB housing stock in the 9 sample cities. Only MABs categorized as dilapidated or in a state of emergency have been entered into the existing register, which therefore exclusively includes data for almost uninhabitable buildings.
- **Deteriorated housing conditions:** Generally, the assessed MABs show significant deterioration. 92 MABs (31%) reported complex reconstruction needs, 201 MABs (67%) stated partial reconstruction need and only 9 MABs (3%) reported minor repairs needs.
- **Lack of thermal insulation:** Overall, only 4% of the assessed MABs have been comprehensively insulated, and 96,6% (289 MABs) have such low energy efficiency for their main construction elements that different degrees of renovation are required (including renovation of engineering systems (heating or electrical) and constructive elements (insulation of external envelope). However, it is encouraging that 75% of assessed external facades are in good or satisfactory condition – a key precondition for any thermal insulation upgrading works.
- **Inefficient centralized heating networks** remain the main cause of high energy loss and contribute to high cost burdens for residents. In the Lviv region, 55.53% of apartments in residential buildings have centralized heating, while in the Ivano-Frankivsk region, the share is 53.27%.
- **Emergency housing conditions:** MABs with severely substandard sewerage, water and hygiene systems are most at risk of impacting the health and well-being of their residents, leading to higher levels of vulnerability for inhabitants. For this small number of MABs (5), this is compounded by the emergency condition of their roofs and electrical systems.
- **Management structure:** HOAs play a crucial role in leading upgrades and energy-efficient modernization efforts due to their capacity and vested interest. As the FGDs show, HOAs are primarily concerned with poor housing conditions and further deterioration of their MABs, which significantly increases energy costs. For instance, when individual owners undertake uncoordinated patchwork insulation projects, it often fails to improve the building's overall thermal efficiency and may even worsen living conditions or lead to disputes among neighbors. This underscores the importance of HOA coordination in these efforts.
- **Women HOA leadership:** Women actively take on leadership roles within HOAs, and there are female chairpersons in all 9 of the sample cities. When women lead, it tends to result in higher engagement from other women in the HOA overall.
- **Insufficient financial resources:** The main barrier to implementing renovations and energy-efficient upgrades is the insufficient financial resources of homeowners. Although 75% of HOAs have a maintenance and repair fund, and homeowners generally show good payment discipline, these accumulated funds are not enough to cover thermal modernization or comprehensive renovation of the buildings' structure and systems. Among the established repair funds, 188 HOAs have accumulated more than UAH 100,000, while 39 HOAs have less than that amount.

This assessment of MABs in the Western regions of Ukraine provides a detailed overview of the current condition of residential housing and the systems used to manage it. This report is based on data collected from a sample of surveyed MABs, and as such, the findings reflect the condition of those specific buildings only. The results are therefore not representative of the condition of the entire housing stock in the surveyed regions. The findings show that while many buildings retain basic structural integrity, a large share are experiencing significant technical deterioration. The most pressing issues relate to outdated heating, water, and electrical systems, as well as the widespread lack of thermal insulation. These deficiencies contribute to excessive energy consumption, elevated costs for residents, and discomfort during both winter and summer months.

The buildings studied represent the standardized Soviet-era housing stock, constructed with efficiency and speed in mind but not designed to meet modern energy standards. As a result, most of the assessed MABs fall into the lowest national energy efficiency class. Around 75% of the buildings lack meaningful facade insulation, and 36% of MABs still rely on obsolete centralized heating systems with vertical distribution and shared metering, offering no incentive for energy savings at the individual household level.

Additional factors contributing to heat loss include outdated windows and entrance doors, the absence of vestibule doors, and uninsulated basements and roofs, all of which significantly reduce energy efficiency.

The assessment found that most of the buildings are managed by HOAs, which play a critical role in building maintenance and potential renovation efforts. Approximately 75% of HOAs have established maintenance or repair funds, to which residents generally make regular contributions. However, even the most active and organized HOAs lack the financial capacity to implement the kind of complex thermal modernization projects that are urgently needed. Estimated costs for full thermal upgrades and infrastructure repairs significantly exceed the available resources.

Importantly, the research highlights a strong willingness among local authorities, residents, and HOA leaders to engage in building improvements. Many cities have introduced co-financing programs, and residents have expressed interest in contributing to renovation projects where feasible. Cities participate in the national Energodim program, which supports the thermo-modernization of MABs, particularly through HOAs.

Additionally, regional and municipal programs (such as the Warm House⁸ or Energy Efficient House programs) offer financial support, co-financing, and compensation for energy-saving measures, major repairs, and renewable energy projects. This commitment provides a foundation for collaboration with national institutions and international partners. To make meaningful progress, there is a clear need for external financial support, technical guidance, and well-structured renovation frameworks tailored to the local context.

Recommendations:

1. Modernize outdated systems:

- The study found that most residential buildings included in the survey suffer from poor energy efficiency due to outdated central heating systems and deteriorated building structures. A comprehensive approach is needed to address this, including upgrades that reduce heat-loss.
- Most MABs built before 2000 are energy-inefficient and face multiple technical issues due to outdated Soviet-era designs and maintenance practices. These buildings urgently need upgrades to meet modern energy-efficiency standards.
- Experts estimate energy use in MABs can be reduced by 50–65% through a package of upgrades. These include installing individual heating points, insulating pipes, replacing windows,. Full thermo-modernization – such as facade and roof insulation and installing heat regulators – can extend building life, increase property value, and improve living conditions.

2. Address energy poverty:

- Widespread energy poverty persists, with poorly insulated homes causing high heating costs. Low-income households cannot afford necessary renovations. Municipal energy-saving efforts should focus on reducing residents' utility bills and improving building conditions to enable long-term savings.

- With Ukraine's energy infrastructure under constant threat, reducing household consumption is urgent. National authorities must prioritize energy efficiency and leverage humanitarian aid for targeted building renovations to bolster energy resilience.
- Housing upgrades in Ukraine must be initiated by building co-owners, with OSBBs best positioned to lead them. However, full renovation costs are unaffordable without external support. Financing mechanisms are essential to enable large-scale modernization.

3. Encourage support from authorities:

- Local governments should play a proactive role in supporting OSBBs by co-financing energy projects, offering guidance, and helping access loans and grants. This support can speed up renovations, generate employment, and provide wartime energy security – particularly valued by residents during blackouts and winter months.
- All surveyed cities have launched co-financing programs to assist OSBB-led energy upgrades. These efforts should be expanded to mobilize both resident contributions and additional external resources, enabling broader implementation of energy-efficiency projects.
- Most surveyed local governments expressed willingness to create municipal programs to co-finance MAB repairs and upgrades, provided HFHI and other housing actors develop viable financial mechanisms. This readiness should be harnessed to ensure long-term reconstruction and energy efficiency.

4. Revive funding programs:

- Ukraine's Energy Efficiency Fund, which previously provided grants covering 40–70% of upgrade costs (the “Energodim” initiative), halted new applications in March 2022 due to war-related budget constraints. With no new state funding planned for 2024–2025, restoring and expanding support for the Fund is critical to continue residential energy upgrades.

5. Develop a practical framework for building renovation projects:

- The next phase of the project should focus on creating a practical legal, financial, and technical framework for cooperation between HFHI and project beneficiaries. This includes standardizing agreements, defining co-financing terms, and aligning procedures with Ukrainian regulations to guide building renovations.

6. Use vacant apartments for pilot projects:

- Smaller industrial towns like Drohobych, Khust, and Kolomyia – with high vacancy rates – offer potential for pilot projects to create affordable rental housing for IDPs.
- This requires tripartite agreements between property owners, HOA leaders or individual managers, and IDP tenants, fostering housing stability and labor market integration.

7. Empower local communities through renewable energy:

- Around 50% of Ukraine's energy infrastructure has been damaged since 2022. The centralized nature of energy generation makes it vulnerable to attacks. Local, decentralized renewable systems – especially solar with battery storage – can ensure essential power supply during outages.
- Although municipalities do not currently track private solar installations or energy cooperatives, all surveyed cities expressed interest in forming such cooperatives. These local energy systems can improve energy access and resilience, especially in emergencies.
- To create resilient local energy systems, communities need (and strongly demand) microgrids that connect residents, local authorities, and businesses. These systems require legal, technical, and financial support from municipalities, along with capacity building for long-term sustainability.
- Renewable energy systems help build local resilience, reduce emissions, and foster economic inclusion. By keeping value within the community and attracting investment, they contribute to long-term energy independence and climate goals.

1. Advantages of MABs with HOAs:
 - A community of co-owners has been formed and is able to organize itself.
 - HOA has a separate account and very often a repair fund has already been formed.
 - Most HOAs have experience of cooperating with different funds and programs.
 - The authorities of the select pilot cities support and stimulate the creation of HOAs in MABs.
 - Banks willingly provide loans to HOAs for the implementation of renovation and energy efficiency upgrades.
 - The head of a HOA can be involved as an authorized person in the implementation of a scheme for the development of affordable rental housing based on vacant apartments.
2. Experience shows that established HOAs are associated with a higher organizational capacity of the co-owners, leading to the assumption that HOA-managed MABs are in better condition than those without HOA management (although there are no comprehensive studies to prove this assumption).
3. Other cities show the following figures: 16% in Kalush, whereas in Uzhhorod, approximately 60% of MABs are under HOA management, compared to 70% in Khust and 31% in Mukachevo. In Lviv, 21% of MABs are managed by HOAs, in Drohobych 25%, and in Stryi 44%.
4. Such a form of management has many disadvantages and makes it hard to implement upgrade projects, but given no alternative, they were included in the study. Kalush city sample MABs had 50% HOAs and 50% elected managers as management types.
5. The technical survey questions were based on the Ukrainian Standard of Housing and Communal Services of Ukraine “Rules for determining the physical deterioration of residential buildings” (SOU Housing 75.11 - 35077234. 0015: 2009). This document provides an assessment scale that is tailored to structural and building systems.
6. The components for this thematic area were developed during the stakeholder engagement stage.
7. DBN V.2.2-15:2019 “Residential buildings. Basic provisions”
8. <https://city-adm.lviv.ua/portal/osbb/programi-z-energozberezhennya-yakimi-mozhna-skoristatysya/>

