



KHARKIV

PROJECT ORGANISERS:

- Estonian Housing Association (Eesti Korteriuhistute Liit, EKÜL)

SUPPORTED BY:

- Estonian Centre for International Development (ESTDEV)

IN COOPERATION WITH:

- Ukrainian non-governmental organisation Housing Ukraine
- The United Nations Economic Commission for Europe (UNECE)

Apartment building at 24 Derevyanka Street

KHARKIV 2023 – 2024

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1. EXTERIOR OF THE BUILDING (existing condition)



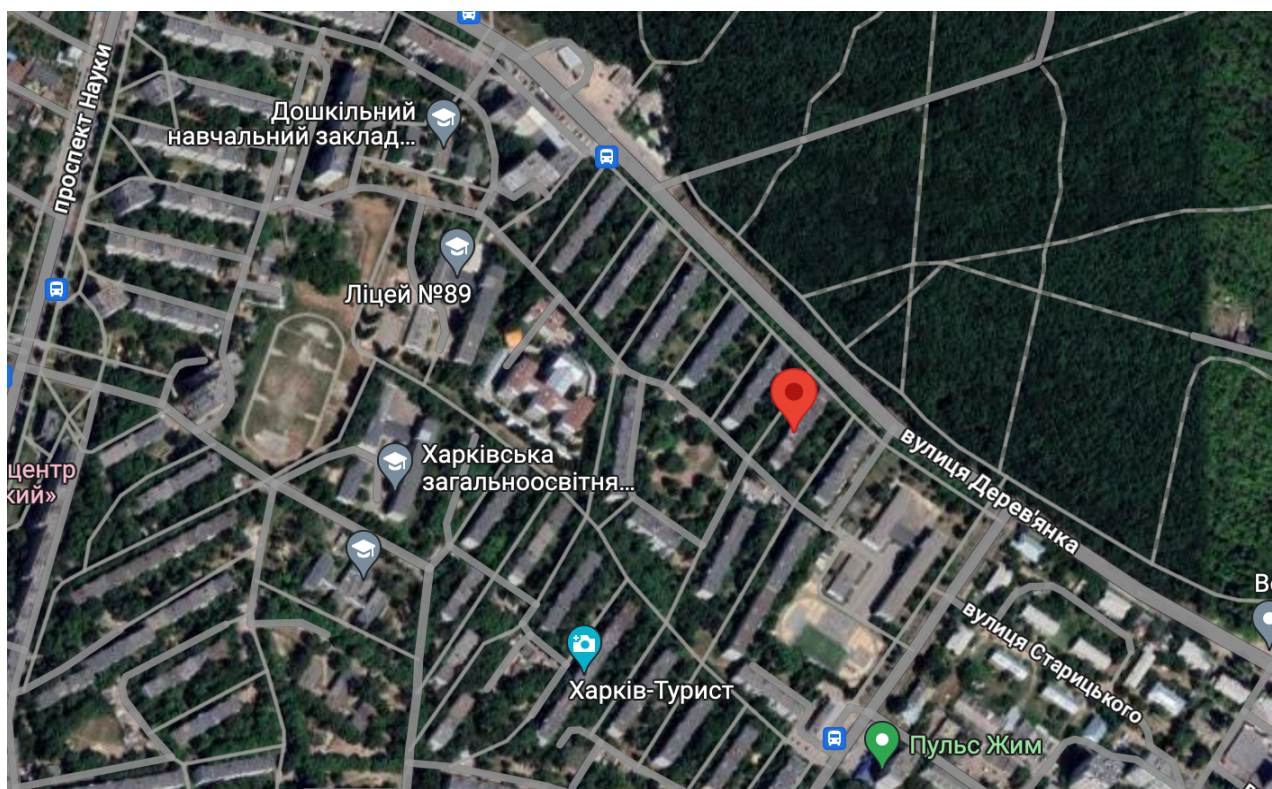
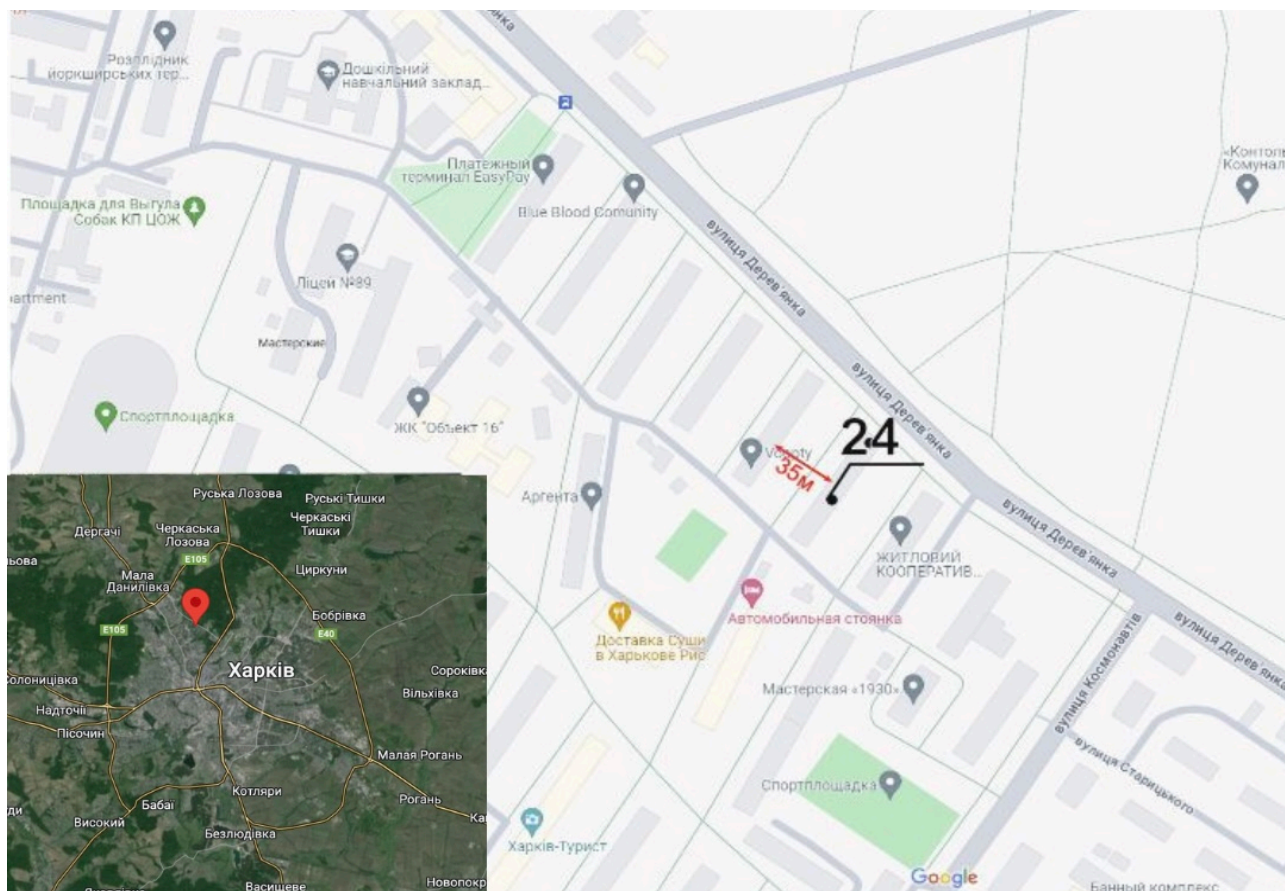
1. EXTERIOR OF THE BUILDING (existing condition)



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2. LOCATION OF THE OBJECT



3. EXTERIOR OF THE BUILDING AFTER RENOVATION



3. EXTERIOR OF THE BUILDING AFTER RENOVATION



4. GENERAL CHARACTERISTICS OF THE OBJECT

Technical characteristics of the object

Year of construction – 1956-1960

Number of floors - 5

Number of entrances - 5

Total area – 4680 m²

Total area of the apartments – 3563 m²

Living area – 2290 m²

Number of apartments - 75

Number of 1-room apartments - 10

Number of 2-rooms apartments - 55

Number of 3-rooms apartments - 10

Area of common use – 573,8 m²

Basement area – 900 m²

Existing energy efficiency class - G

Area of land plot – 5080 m²

4. GENERAL CHARACTERISTICS OF THE OBJECT

Construction characteristics of the object

Foundation - reinforced concrete slabs

Walls (external) – panels of porous concrete

Walls (internal load-bearing) are reinforced concrete

Partitions - gypsum concrete

Partitions (sanitary units) - reinforced concrete

Slabs - reinforced concrete

Flooring - cement screed, tiles, lenoleum

Roof - soft flat, roofing felt

Windows - 90% metal-plastic, 10% wooden

Doors - metal

Stairs - reinforced concrete

Engineering characteristics of the object

Water supply

Sewerage system

Heating

Electricity supply

Gasification

Telephone communication

Television

5. ANALYSIS OF NEEDS AND PROJECT OPPORTUNITIES

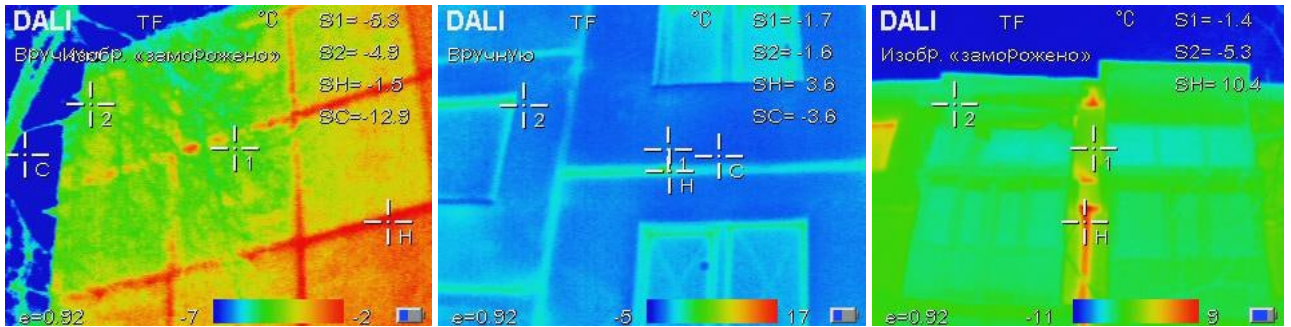
Existing technical problems

- Water supply (engineering networks in poor condition, outdated)
- There is no facade insulation
- Roofs damaged by shelling by the Russian Federation, partially repaired
- Large energy losses during heating
- Lack of landscaping around the building
- No centralised air conditioning system

Technological solutions

- Secure input group.
- Solar panels as an alternative energy source
- Ventilated facade (clinker and aluminium composite panels)
- Internal centralised heating system in the form of an individual heating point Internal centralised air conditioning system
- Energy-saving means of internal and external lighting
- Improvement and landscaping of the territory
- Exploited roof with public space
- Internal roof drainage system for rainwater drainage
- Creation of inclusive space through accommodation (agreed with the building manager) reasonable
- Secure entrance group

6. DESCRIPTION OF ENERGY EFFICIENCY POTENTIAL



Desired energy efficiency class



Current energy efficiency class

On January 7, 2024, an energy audit of the house was conducted. Measurements were taken at an average temperature of 8-10 degrees below zero.

The house is currently in unsatisfactory condition and requires insulation; there are 2-3 locations with significant heat loss (cracks at the joints of the panels).

Conclusion: Measures need to be taken to improve the energy efficiency of the building.

The energy efficiency of a residential building is influenced by the presence of energy-saving solutions, such as facade insulation and sealing of window and door openings, as well as the installation of individual communication systems and alternative energy sources. These solutions enable the building to operate independently of centralized networks and allow for the production of energy not only for the house but also to contribute a portion to the centralized grid.

The ultimate goal is to approach the creation of a "passive" energy-efficient house.

6.1. DESCRIPTION OF ENERGY EFFICIENCY POTENTIAL

- Heating: centralized heat supply system.
- Cooling, air conditioning, ventilation system: there is no cooling system in the building. The premises are ventilated naturally. Air is removed through ventilation ducts located in bathrooms and kitchens.
- Hot water supply system: centralized.
- Lighting system: lighting of common areas is represented by 30 lamps with 10-watt lamps, 25 of which are equipped with motion sensors.

7. DESCRIPTION OF THE FORM OF OWNERSHIP AND MANAGEMENT OF THE RESIDENTIAL BUILDING

A condominium (apartment building co-owners' association) is a legal entity established by the owners of apartments and/or non-residential premises in an apartment building to facilitate the management, maintenance, and use of their property and common areas (in accordance with the Law of Ukraine "On Apartment Building Co-Owners' Associations").

Condominium "SOYUZ"

USREOU - 22719654

Head – Biletskyi O.

The organizational and legal form of the "SOYUZ" condominium organization is the ASSOCIATION OF CO-OWNERS OF AN APARTMENT BUILDING. Main type of activity (KVED) – 81.10 Complex maintenance of objects.

The decision shall be made by a roll-call vote and shall be deemed adopted if the co-owners whose total number of votes exceeds 50% of the total votes of all co-owners vote in favor of it.

During the vote, each co-owner (or their representative) has a number of votes proportional to the share of the area of the apartment or non-residential premises they own relative to the total area of all apartments and non-residential premises in the building.

8. RENOVATION COMPONENTS

Repair works on the building:

- Dismantling of old floors and installation of new floors in common areas.
- Dismantling and installation of new windows and doors.
- Dismantling of damaged and installation of new water supply communications.
- Preparatory work and installation of a ventilated facade.
- Installation of an internal air conditioning system.
- Dismantling of the old and installation of a new rainwater drainage system from the roof of the building.
- Preparatory work and installation of interior wall decoration in common areas.
- Preparatory work and installation of an individual heating point, its connection. Dismantling the attic floor
- Installation of reinforced concrete attic floor (roof)
- Installation of roof covering.
- Installation of a "green" roof (with vertical landscaping).
- Dismantling and installation of new energy-saving lamps in the common areas of the building.
- Dismantling of old and installation of new balcony equipment.
- Installation of elements of the new input group together with means of inclusiveness.
- Restoration of protective aprons of parapets of external walls;
- Defecting and restoration of the places of installation of drainage funnels in the case of internal organized water drainage;
- Restoration of eaves areas and arrangement of places for installation of drainage funnels for external organized water drainage;
- Defecting and restoration of places where the waterproofing coating adjoins the parapets, ventilation ducts, and the walls of exits to the roof;
- Restoration of damaged areas of the waterproofing coating;
- Restoration of ventilation channels;
- Restoration of protective aprons of ventilation channels.

Repair works related to the improvement of the adjacent territory:

- Earthworks.
- Dismantling of old and installation of new landscaping covers.

9. PRELIMINARY CALCULATION OF THE COST OF REPAIR WORKS

Estimated preliminary calculation is given in euro

Description of repair works	Price in euro
1. Development of project documentation	100 000
2. Replacement and repair of the heating system	380 000
3. Replacement and repair of electrical networks. Installation of solar panels and batteries	140 000
4. Installation of an external insulation system for the roof, plinth and facades	220 000
5. Development of home insulation	400 000
6. Dismantling the roof	18 000
7. Installation of the sixth floor and roof	280 000
8. Repair of public buildings	30 000
9. Drainage	15 000
10. Installation of elevators and their equipment	300 000
11. Landscaping of the surrounding area	480 000
12. Preparation of documents for putting the house into operation	5 000
IN TOTAL:	2 368 000

10. INFORMATION ABOUT THE CITY AND ITS REPRESENTATIVES

Kharkiv is the second most populous city in Ukraine with a population of more than 1,400,000 people.

The main housing stock in Kharkiv consists of multi-apartment, multi-story brick buildings (up to 9 floors, with some 14-story buildings) constructed in various districts according to both individual and typical projects. Large-panel 5–9- and 12–16-story mass-produced buildings, designed and constructed in the 1950s–1990s, make up a significant portion of the total urban housing stock.

In Kharkiv Oblast, nearly 10,000 residential buildings were damaged or completely destroyed as a result of Russian aggression. According to the Institute of the Kyiv School of Economics (KSE Institute), the region ranks second in terms of direct losses from the destruction of the housing stock. As a result of the Russian aggression, Kharkiv suffered destruction and losses amounting to approximately 10 billion euros.

The history of Kharkiv spans three and a half centuries, marked by both beautiful and tragic events. The city has been admitted to the International League of Historic Cities. Its development has been, and will continue to be, a key aspect of the life of the entire nation of independent Ukraine.



10. INFORMATION ABOUT THE CITY AND ITS REPRESENTATIVES

TEAM



KOSTYANTYN KRITSKY

Architect and head of the private enterprise "Kritsky Workshop." The firm's primary focus areas include the design of master plans, residential buildings, and interiors. A member of the initiative group of Kharkiv architects collaborating with Lord Norman Foster on Kharkiv's post-war reconstruction plan.

In February 2023, received personal thanks from Norman Foster for supporting and assisting in the development of the new city master plan.



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LARISA ZAIKINA

Head of a company specializing in technical consulting and expert assessments for the restoration of residential buildings of various forms of ownership, including condominiums, damaged due to the Russian Federation's military aggression against Ukraine.



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