



ZHYTOMYR

PROJECT ORGANIZERS:

- Housing Association of Estonia (Eesti Korteriuhistute Liit, EKÜL)

SUPPORTED BY:

- Estonian Center for International Development (ESTDEV)

IN COOPERATION WITH:

- Ukrainian non-governmental organization Housing Ukraine
- The UN European Economic Commission (UNECE)

Apartment building at 7 Novy Boulevard

ZHYTOMYR 2023 - 2024

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1. EXTERIOR OF THE BUILDING (existing condition)



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3. EXTERIOR OF THE BUILDING AFTER RENOVATION



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4. GENERAL CHARACTERISTICS OF THE OBJECT

Technical characteristics of the object

Year of construction – 1969

Number of floors – 5

Building area – 1254 m²

Volume of the building – 17 562 m³

Total area – 5730 m²

Total area of the apartments – 3897,3 m²

Living area – 2607,2 m²

Area of common areas – 651,4 m²

Number of apartments – 86

Number of 1-room apartments – 9

Number of 2-room apartments – 60

Number of 3-room apartments – 17

Total area of 1-room apartments – 276,4 m²

Total area of 2-room apartments – 2681,6 m²

Total area of 3-room apartments – 939,3 m²

Living area of 1-room apartments – 151,2 m²

Living area of 2-room apartments – 1805,8 m²

Living area of 3-room apartments – 650,2 m²

Area of the basement – 950 m²

Current energy efficiency class – G

4. GENERAL CHARACTERISTICS OF THE OBJECT

Structural characteristics of the object

Foundation – strip, prefabricated, reinforced concrete blocks

Walls – ceramic bricks

Partitions – cinder block, brick

Flooring – reinforced concrete slabs

Floor – cement screed, ceramic tile, linoleum

Roof – flat, rolled, bitumen

Windows - 91% metal-plastic, 9% - wood

Doors - metal, metal-plastic, wood

Stairs - reinforced concrete

Engineering characteristics of the object

Plumbing

Sewerage

Heating

Electricity supply

Gasification

Telephone communication









TV

5. ANALYSIS OF NEEDS AND PROJECT POSSIBILITIES

Existing technical problems

- Water supply (engineering networks in poor condition, outdated)
- There is no facade insulation
- Large energy losses during heating
- The area around the house needs improvement
- Lack of a centralized air conditioning system
- Groundwater flooding of the basement (requires insulation, drainage)

Technological solutions

-  Ventilated facade (clinker and aluminum composite panels)
-  Solar batteries as an alternative source of energy
-  Internal centralized air conditioning system
-  Energy-saving means of internal and external lighting
-  Internal drainage system of rainwater from the roof
-  Insulation, drainage of the basement
-  Secure entrance group
-  Improvement and landscaping of the territory

6. DESCRIPTION OF ENERGY EFFICIENCY POTENTIAL



Desired energy efficiency class



Current energy efficiency class

The energy efficiency of a residential building is influenced by the availability of energy-saving solutions, such as facade insulation, energy-efficient windows and doors, individual communication systems, and alternative energy sources that separate the building from centralized networks. These solutions allow the buildings to produce energy independently, not only supplying it to the residence but also contributing a portion to the centralized grid.

The ultimate goal is to move closer to creating a "passive" energy-efficient building.

6.1. DESCRIPTION OF ENERGY EFFICIENCY POTENTIAL

In an apartment residential building at 7 Novy Boulevard, Zhytomyr:

- **Heating:** centralized heat supply. In 2019, an individual heating unit (IHU) was installed, allowing for regulation of heat energy consumption depending on weather conditions, along with balancers for risers.

- **Cooling, air conditioning, ventilation system:** there is no cooling system in the building. The premises are ventilated naturally, with air removed through ventilation ducts located in bathrooms and kitchens.

- **Hot water supply system:** individual gas water heaters. Consumption of hot water is measured using apartment meters for natural gas and cold water.

- **Lighting:** common areas are lit by 36 LED lamps, each with a power of 5 W. The electrical network was overhauled in 2017.

General data on the house

- Specific energy consumption for heating, hot water supply, and cooling of the building: **182 kWh/m²**

- Specific primary energy consumption per year: **274 kWh/m²**

- Specific greenhouse gas emissions per year: **54 kg/m²**

- Average volume of heat energy consumption by houses with meters: **0,024197 Gcal/m²**

- Average area of houses with metering devices: **4 535,37 m²**

6.1. DESCRIPTION OF ENERGY EFFICIENCY POTENTIAL

Consumption and cost of communal services in January 2024

1- room apartment, area - 31,3 m², number of residents - 2

Name of service	Volume/Consumed per month	Tariff, UAH	To be paid, UAH.	To be paid, EUR*
Heat energy supply			1020,96	24,67
Heat energy	0,471916 Gcal.	1811,360	990,68	23,94
General household heating needs	0,075010 Gcal.			
Subscription fee	-	30,28	30,28	0,73
Electricity supply	110 kW/h	2,640	290,4	7,02
Gas supply	62 m3	7,95689	493,33	11,92
Gas distribution	30,92 m3	2,040	63,07	1,52
Water supply and drainage			456,70	11,03
from centralized water supply	11,54 m3	18,264	210,77	5,09
with subscription water supply service	-	12,72	12,72	0,31
for centralised sewage disposal	11,54 m3	19,272	222,40	5,37
for subscriber services for sewage disposal	-	10,810	10,81	0,26
Contributions and other payments (condominium)	31,3 m2	7,0	223,72	5,41
Household waste management			71,62	1,73
Waste disposal (collection and transportation)	2 people	32,33	64,66	1,56
Subscription fee	-	6,96	6,96	0,17
IN TOTAL			2619,80	63,30

*Official NBU exchange rate on January 15, 2024: 1 euro – 41.3879 UAH.

6.1. DESCRIPTION OF ENERGY EFFICIENCY POTENTIAL

Consumption and cost of communal services in January 2024

2- room apartment, area - 43,7 m², number of residents - 1

Name of service	Volume/Consumed per month	Tariff, UAH	To be paid, UAH.	To be paid, EUR*
Heat energy supply			1413,43	34,15
Heat energy	0,658873 Gcal.	1811,360	1383,15	33,42
General household heating needs	0,104726 Gcal.			
Subscription fee	-	30,28	30,28	0,73
Electricity supply	51,00 kW/h	2,640	134,64	3,25
Gas supply	15 m3	7,95689	119,35	2,88
Gas distribution	10,5 m3	2,040	21,42	0,52
Water supply and drainage			91,10	2,20
from centralized water supply	1,80 m3	18,264	32,88	0,79
with subscription water supply service	-	12,72	12,72	0,31
for centralised sewage disposal	1,80 m3	19,272	34,69	0,84
for subscriber services for sewage disposal	-	10,810	10,81	0,26
Contributions and other payments (condominium)	43,7 m2	7,0	310,52	7,50
Household waste management			39,29	0,95
Waste disposal (collection and transportation)	1 person	32,33	32,33	0,78
Subscription fee	-	6,96	6,96	0,17
IN TOTAL			2129,75	51,46

*Official NBU exchange rate on January 15, 2024: 1 euro – 41.3879 UAH.

6.1. DESCRIPTION OF ENERGY EFFICIENCY POTENTIAL

Consumption and cost of communal services in January 2024

3- room apartment, area – 59,1 m², number of residents - 1

Name of service	Volume/Consumed per month	Tariff, UAH	To be paid, UAH	To be paid, EUR*
Heat energy supply			1900,86	45,93
Heat energy	0,891061 Gcal.	1811,360	1870,58	45,20
General household heating needs	0,141632 Gcal.			
Subscription fee	-	30,28	30,28	0,73
Electricity supply	134 kW/h	2,640	353,76	8,55
Gas supply	21 m3	7,95689	167,09	4,04
Gas distribution	17,25 m3	2,040	35,19	0,85
Water supply and drainage			466,46	11,27
from centralized water supply	11,80 m3	18,264	215,52	5,21
with subscription water supply service	-	12,72	12,72	0,31
for centralised sewage disposal	11,80 m3	19,272	227,41	5,49
for subscriber services for sewage disposal	-	10,810	10,81	0,26
Contributions and other payments (condominium)	59,1 m2	7,0	413,70	10,0
Household waste management			39,29	0,95
Waste disposal (collection and transportation)	1 person	32,33	32,33	0,78
Subscription fee	-	6,96	6,96	0,17
IN TOTAL			3376,35	81,58

*Official NBU exchange rate on January 15, 2024: 1 euro – 41.3879 UAH.

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 "NOVY BULVAR 7"

USREOU - 40590343,

The head of the board is Oksana Petrivna Rafalska.

The date of establishment of the condominium "NOVY BULVAR 7" — 22.06.2016.

Association of co-owners of an apartment building at 7 Novy Boulevard has 130 members.

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.



A letter from the board of the building regarding consent to participate in the project and carry out further repair works

8. LIST OF REPAIR WORKS

Building Repair Works

- Dismantling old flooring and installing new flooring in common areas
- Dismantling and installing new windows and doors
- Dismantling damaged and installing new water supply systems
- Preparatory work and installation of a ventilated facade
- Installation of an internal air conditioning system
- Dismantling the old rainwater drainage system and installing a new one on the building's roof
- Preparatory work and installation of interior wall decoration in common areas
- Arrangement of roofing and installation of solar panels
- Thermal insulation of pipelines and shut-off fittings of the heating system
- Installing thermostatic regulators and heat energy distributors on heating devices
- Dismantling old and installing new balcony elements
- Installation of elements of the new entryways

Repair Works to Improve the Adjacent Territory

- Earthworks
- Dismantling of old and installation of new landscaping covers
- New landscaping of the territory

9. PRELIMINARY CALCULATION OF THE COST OF REPAIR WORKS

The estimated preliminary calculation is presented in euro.

Description of repair works	Price in euros
1. Development of project documentation	275 000
2. Development of heating systems	290 000
3. Development of air conditioning systems	260 000
4. Development of house insulation	660 000
5. Works to reduce energy losses	648 000
6. Landscaping of the home territory	120 000

IN TOTAL:

2 253 700

10. INFORMATION ABOUT THE CITY AND ITS REPRESENTATIVES

Zhytomyr is a city in northern of Ukraine, located on the Teteriv River. It is one of the oldest historical and cultural cities in Ukraine and serves as the administrative center of the Zhytomyr region.

The housing stock of the city includes more than 1,500 apartment buildings, of which: 505 buildings are managed by associations of co-owners of apartment buildings, 835 buildings are managed by apartment buildings managers, and 237 houses are managed by co-owners individually (without creating a legal entity).

Despite the war and challenging conditions, the residents of our community continue to unite to create new condominiums, taking the initiative and responsibility for the management of their own homes.





TEAM



OLGA BRONSTEIN

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