Specificity of the formation of modern social housing in Ukraine as a consequence of the Russian invasion

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Abstract.
The Soviet Union, among other states, was distinguished by the construction of housing at a great pace and volume, which was included in the programs of future social development for every 5 years. It was believed that the scale of Soviet construction should testify to the advantages of the Soviet system of government (and in fact the ruling political regime was formed by a one-party system) and the socialist system of management. Housing construction was carried out for the people under conditions of equality and equal distribution by state bodies of living space per person. The liberation of Ukraine from the Russian Communist Party dictate led to a prolonged Russian invasion of Ukrainian land due to the Russian Federation's inadmissibility of such "arbitrariness" on the part of Ukraine as choosing a pro-European path and democratization. With the acquisition of Independence in Ukraine, there was a reassessment of the values previously declared by the communist authorities, when the dictatorship of the proletariat and the hegemony of the poorest sections of the population were proclaimed. Mass housing construction, as an industry that had to serve as communist propaganda, actually met the minimum needs of the people. This is especially evident when comparing the Soviet heritage and the modern construction of social housing in other countries. The state of war in our country has given us an understanding that the problem of creating social housing is growing in our difficult conditions, covers a huge number of the population that lost their homes as a result of hostilities and takes various forms that need to be identified.

Keywords:
soviet government
mass housing construction according to typical projects
social groups of the population
typology of social housing
internally displaced persons
low-mobility and low-income strata of the population
Ukraine is currently going through difficult times: as a result of the aggression of a neighboring state – the former fraternal republic of the Soviet era – the territory of our state – its South and East has been declared by the Russian Federation and legislated through the Constitution as Russian lands. They are in a state of occupation by the Russian invaders, who have established their administrations there, putting pressure on the local population and forcing them to take Russian citizenship. The rest of the territory is subjected to the striking destruction of Ukrainian cities, their countryside, service infrastructure, industrial enterprises, and the energy supply system every day for 1 year and 4 months, where they kill, rape, torture Ukrainians, destroy family life, leaving children orphans, parents without families, leaving population without homes, documents, any clothes and household items. Russian troops bring to the world endless grief, tears, an unbearably difficult psychological state, the destruction of all living things, fires and desolation. The recent terrible events of the explosion of the Kakhovka hydroelectric plant and the constant blackmail and danger of liquidation of the Zaporizhia nuclear plant will lead to a huge ecological disaster not only in Ukraine, but also in many other countries of Europe, the Middle East, the Black Sea basin, etc. 

As a result of the aggression of the Russian Federation and its threat to the existence of the peoples of the world, population migrations are taking place in Ukraine to the Western regions of the country, where the stay is also dangerous due to constant Russian shelling and bombing. According to statistics, at the end of September 2022, there were already 6.2 million internally displaced persons (IDPs) in Ukraine [1]. Ukrainians fled to European countries and the American continent – as far as possible from the risks of death – because of the desire to protect children. Families lose their homes, family members die, people suffer physical damage, injuries, and ugliness. Therefore, as a result of the Russian invasion and the criminal activity of Russians in the occupied territories, the percentage of people who can be classified as low-income and low-mobility population, which needs the protection of the state and social types of housing,
is increasing significantly. In general, the concept of social housing, unfamiliar to us during the Soviet times in the republics of the former USSR, with the change in the political and economic situation in our country during the establishment of Independence, became a recognized problem that needed a solution, and which has now grown to enormous proportions during the Russian-Ukrainian war, interfering in the life of other countries.

The purpose of the study is to determine the types of social housing that need to be built in Ukraine, based on the identification of population groups that, as a result of the Russian invasion, became materially insecure, acquired physical disabilities, lost housing and other material goods, the opportunity to live in their hometown, etc.

The object of research is types of social housing for modern construction.

The subject of scientific research is to clarify the peculiarities of the formation of social housing for certain categories of the population.

Research methods – cause-and-effect relationship between the causal sources that contributed to population migrations during the war, physical health defects and directions in the formation of living space that will be adapted to people’s needs; as well as a comparative analysis of different population groups and the types of social housing they need.

The degree of study of the problem. Our state has been concerned with the creation of social housing for the population since the end of the 1990s, when Ukraine was overcoming an economic and political crisis on the way to democratization. Construction programs were developed for individual cities - Kyiv, Dnipro (Dnipropetrovsk) and others, the TV program "Kyiv Forum" put the problem of housing for low-income families on public discussion. But the greatest contribution to the promotion of the decision to resettle large families, orphans, pensioners - low-income sections of the population - was made during the presidency of V. Yushchenko and his team [2].

At one time, considering the model of family development and its cycles, L.H. Bachynska came to the conclusion that at later stages of age, family members may become disabled, who
will require special living conditions [3, p.100-106]. In further studies, L.G. Bachynska, together with her students and colleagues, studied: the problems of reconstruction of the existing typical buildings for the residence of the less mobile population group (with I.G. Novosad in articles and dissertation [4]); the impact of resettlement of representatives of any households, which were created as a result of difficult economic conditions and do not have family and sibling relationships, on the formation of social housing (with A.V. Stognyi [5, 6]); the structure of social housing and the flexibility of its use over time (with T. Dorosevych [7]); the impact of the socio-demographic structure of the population and assessment of living conditions on forecasting directions for the formation of the housing stock (with O. Vodetska [8]).

With the onset of the intensifying phase of Russian aggression from February 24, 2022, the number of injured and displaced persons increased significantly, and the need for a variety of forms of resettlement, which at the same time had to provide psychological assistance, increased. European countries began to resettle Ukrainians, creating more or less comfortable living conditions, with their assistance camps for refugees were set up, and construction of temporary housing began (Fig. 2, d-e). The problem of settlement of displaced persons has become one of the urgent ones, which is discussed by the state leadership and in the press [9], for the solution of which scientific research is connected (in the publications and dissertations of V.I. Babyak [10]), project proposals are developed, laws and standards are adopted [11-13], study the issue of using typical housing as a social and probable return to typification in design and construction to speed up the pace of its construction is discussed [14]. "Social housing should be considered as a permanent and integral part of the housing provision system", which awaits us in the near future [1]. In the design of housing for forced migrants in the works of "KYB ARCHITECTS" LLC, architect O.Y. Kutsalo, the orientation of the structure of the residential building was aimed at creating comfortable living conditions for the community, taking into account in the functional solution the needs of improving the physical
and psychological condition of displaced persons and the use of economic technologies and materials under the conditions of rapid construction [15-16]. Abroad, social housing makes up a significant share of rental housing programs, it has become a traditional way of helping the low-income population: for example, such countries have the largest percentage — in Slovakia 87%. The Netherlands 75%, Poland 64%, most European countries — from 41% to 56%, the lowest indicators in Belgium, Estonia and Italy – 24-28% [17]. Thus, the solution to the problem of social housing was widely considered by domestic and foreign scientists and designers, but the conditions of martial law in our country contributed to the increase of the reasons that lead to the study of the origins of the emergence of new needs in social housing, the establishment of categories of its residents and the justification of the principles of structure formation, architecture and urban planning aspects of such housing, as well as its design proposals.

**Presenting main material.** So, social groups that need special types of housing in modern conditions of Ukrainian reality include:

1) immobile population groups, which are always formed in peacetime as a result of the life cycle and certain conditions — these are older people, with chronic acquired and congenital diseases, with physical disabilities and limited movement;

2) low-income families unable to purchase an apartment — families with many children, pensioners, families with a low level of income;

3) soldiers who have completely or partially lost their ability to work, have mutilations due to wounds, move around in wheelchairs, with walkers, on soap dishes, have partially or completely lost their limbs, sight or hearing;

4) IDPs left homeless as a result of hostilities in the affected area or during shelling of peaceful territory and destruction of residential buildings;

5) temporarily evacuated in connection with the beginning of hostilities and placement of apartments in the zone of combat clashes.

Comparing the needs of the listed social groups in the formation of living space and clarifying the special
conditions for each social group showed that each social group requires its own needs, which differ from others. Thus, the low-mobility group of the population, formed in connection with the aging of people, their acquisition of chronic diseases and physical disabilities, needs a permanent place of residence, but under the conditions of probable adaptation of the apartment space in case of changes in the physical condition of the residents. To solve the problem of resettlement of such a social group, it is necessary to adjust the norms and rules of the State Building Standards [12-13], which would allow to quickly adapt the premises of the apartment to the updated requirements of people with physical disabilities and to provide for additional forms of service in the structure of the residential complex, for example, social, medical, relaxation, psychological and other types needed by the specified population group.

For the low-income category of residents, it is most likely that the minimum area housing with universal use of the apartment space can be offered, in which the rooms, kitchen, hallway can be turned into multifunctional rooms depending on the needs - for sleep and rest, individual classes, a place for communication, changing clothes, storage of things, etc. with the help of folding furniture, podiums, mezzanines, universal transforming furniture, which will allow various combinations [15]. According to the experience of other countries, the insufficient area is compensated by the advantages in choosing a place for the construction of a social housing complex in nature (near a lake, a river, among tall trees), various types of service, the use of at least partially natural materials in the furnishing of residential buildings (stone, wood, metal, ceramics) [18].

For the soldiers-heroes of the Russian-Ukrainian war who suffered health losses, housing is necessary for permanent residence, but it is must be taken into account the specifics of the conditions of stay in the apartment of people with physical disabilities, to ensure comfortable conditions of movement in the apartment and accessibility to the apartment from the outside. In addition to social services, it is obviously necessary to provide medical and psychological services, the possibility of working at home - in the premises
of an apartment or near it in a residential complex, to provide club-type rooms – for meetings, entertainment, communication, discussion of urgent issues in the community of former soldiers [12].

Housing for displaced persons and those who have lived in enemy-occupied territories until now for various reasons, and who suffered material and housing losses as a result of the Russian invasion – these categories of the population must be provided with housing for permanent residence, which will replace the former home during peacetime, provide the necessary everyday and occasional service, probably with some additional forms, given the nervous condition of the migrants. From the point of view of the organization of space for the psychological rehabilitation of residents, it is obvious that attention should be paid to the formation of residential complexes in separate semi-closed towns, offering the population options for communication with the local population, placing them on the outskirts of the town in the midst of nature.

Housing for temporary evacuees – for those who are forced to leave their place of permanent residence due to danger to life and possible damage to health during active hostilities, capture or liberation of territories occupied by the enemy. From the first days of the active phase of the Russian invasion, the practice of accommodating displaced persons not only in Ukraine, but also in neighboring countries that accepted Ukrainian refugees was based on the use of large spaces and premises, gymnasiums, theater lobbies, temporarily created tents, etc. This made it possible to save people's lives in a short period of time and in too difficult conditions. Over time, the production of housing began, which was placed in the form of separate camps with houses, which, according to the layout, consist of apartments of minimized area and the smallest area, which are shelters during life threats. Houses of this type are built from cheap materials, provide for their transportation or the possibility of assembly and disassembly quickly and simply by technology. On the territory of the camp, to provide for children and adults, the service minimum should be children's playgrounds, sports and recreation and communication for adults, primary service facilities of a limited range.
Table 1

Requirements for different types of social housing that arose during the Russian invasion

<table>
<thead>
<tr>
<th>Type of social housing</th>
<th>Design conditions</th>
<th>Accommodation</th>
<th>Urban planning</th>
<th>Service</th>
<th>Special</th>
<th>Motto</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Low-mobility group</td>
<td>Adjustment of norms and standards with an orientation towards the next reconstruction</td>
<td>Location of multi-storey complexes</td>
<td>Standard with additional medical</td>
<td>Accommodation on the lower floors</td>
<td>Convenience for different age groups</td>
<td></td>
</tr>
<tr>
<td>2) Low-income group</td>
<td>Apartments of different rooms according to the structure, convenient for different generations</td>
<td>Location of multi-storey complexes</td>
<td>Standard with additional social and for large families</td>
<td>Settlement with plots, playgrounds for children and adults</td>
<td>Comfort for the poor</td>
<td></td>
</tr>
<tr>
<td>3) Soldiers with disabilities</td>
<td>Adjustment of norms for convenience of advancement in the apartment and access to it</td>
<td>Location of low- and medium-rise complexes with approximate service</td>
<td>An expanded range of services with the addition of medical, sports, physical rehabilitation community work orientation</td>
<td>Apartment terraces, above-floor terraces and public services, ensuring working conditions at home</td>
<td>Convenience and full satisfaction of needs</td>
<td></td>
</tr>
<tr>
<td>4) Displaced persons who lost their homes</td>
<td>Adjustment of standards for settlements for displaced persons</td>
<td>Construction of a semi-closed town</td>
<td>Full service and provision of community activities</td>
<td>Settlement of communities on the outskirts of the city in nature</td>
<td>Psychological balance and satisfaction</td>
<td></td>
</tr>
</tbody>
</table>
So, each of the social groups needs specific conditions of location on the urban territory and a way of communication with the urban population in the form of the personification of the residents of the complex or the possibility of integrating them into the lives of citizens, the formation of housing complexes with a certain level of service, for some it can be a standard set, for some it needs special additional forms. Let's consider options for the possible unification or isolation of complexes for different social groups. For example, the first social group - with the acquisition of elder age or the presence of congenital reduced mobility - is an ordinary urban housing stock, during the construction of which the authorities did not think about the processes of changing the health of the elderly population. Today, attention to this problem prompts the planning of further reconstruction of apartments, and in order to prevent similar mistakes in the future, it is necessary to adjust the norms. At the same time, it is possible to assume the accommodation of residents of the second social group - the low-income - along with the addition of the forms of service they need (see Table 1). The third and fourth social groups are united by the single cause of a difficult psychological state, physical and material losses, which are the consequences of the adventurous plans of the Russian authorities and the destructive actions of the military on our land. Soldiers with disabilities need medical and psychological help, rehabilitation and involvement in social life at the same time as the formation of their own community, associations as a community living by common interests on the principles of mutual support and assistance. IDPs who have lost their homes,
perhaps relatives, and found a new shelter in another place, are united by a common problem, a desire to overcome its consequences together, as a community, to create normal conditions for their stay. Since caring for the weak, those who need help, heals a person's soul, makes him forget his own pain, it can be predicted that the close territorial placement of towns for soldiers and displaced persons will promote positive contacts of both social groups. Temporarily evacuees from cities and settlements where there are active military actions and the unwanted presence of the local population are in camps and shelters for displaced people, where they should be provided with all the necessary primary services, as for a single team with a difficult psychological state while waiting to return, arrange a movie viewing, food in the canteen, joint work to help the military, supervision of children, etc. The world experience of building social housing for permanent residence and temporary stay provides a variety of examples based on the location of complexes, urban planning, the structure of complexes and their architectural form, constructions and materials, types of apartments and their area (Fig. 1). Complexes built as camps, as separate towns for immigrants with typical layouts of individual low-rise houses for family accommodation, are formed according to the principles of pedestrian streets with long rows of monotonous blocked buildings. The disadvantage of such an approach can be considered the monotony of the ways of forming space and architecture, where the functional-volumetric solution itself testifies to the temporary nature of the stay in such a complex (Fig. 1, a–d). In fact, the world practice of building social housing demonstrates extremely interesting and diverse examples of the use of the landscape, urban planning techniques, unique solutions in terms of form, structure, applied constructions and materials, color, ways of connecting housing with nature [18]. Each complex has an original architectural and planning solution, which makes its construction more expensive. But the customers agree to this consciously, so that the low-income population does not feel deprived, ignored in public life (Fig. 1, e–z).
GLOBAL EXPERIENCE OF CREATING SOCIAL HOUSING

A. Housing for displaced persons

Examples of social housing: a-c – Street Monkey Architects, Sweden, 2016 [15]; d-e – Villa Verde, Elemental Architects, Chile, 2010 [15]; f-g – 35 Social Housing Units / Mobile architectural office, Nicolas Grosmond [18]; h-i – Social housing in Paris / Bigon Mortemar, FULTON – A5 A1 / Agence Bernard Bühler, Sergio Grazia [18]
"Today, social housing is a traditional way for many countries to meet the housing needs of people with low incomes. It is simultaneously aimed at solving various social problems: from combating homelessness to reducing property inequality," - write O. Ogorodnyk and B. Balyuk [17].

The Soviet Union, starting from the mid-1950s and borrowing the experience of European states in post-war construction, formed a program of transition to industrial methods of housing construction, according to which it was necessary to get rid of manual methods of construction of buildings with pronounced decoration, rich in Soviet symbolism, which performed the task of ideological propaganda, and start design and construction based on the typification of architectural and structural solutions. The totalitarian Communist Party regime, which governed the life of the Soviet people and concentrated all funds in a single treasury, created programs and plans for future economic and political development, purposefully financed them and, through party bodies, exercised control over their implementation.

The country, which aimed to build socialism, and since 1961 - communism, tried to prove to the world the superiority of the socialist system of the state with the declared dictatorship of the proletariat. Workers in the countries of the world were on the lower rungs of the social structure of the population, in the USSR, until the very end of the existence of this state, the hegemony of this stratum was established at the same time as the equality of the masses. That is, from the beginning (since the 1920s in constructivist projects) [3, pp. 18-31] and until the end of the existence of the Soviet country (until the 1990s), it was officially recognized that all housing was built for the people (mainly workers), who, according to their property status and level of social requirements, belonged to the poor population.

Programs for the future development of typical construction were aimed at reducing the cost, increasing the volume, speeding up the pace, and simplifying technological processes, the result of which was the mass construction of cities with the same layouts of apartments, houses and urban planning methods, with uniform facades of indistinct
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architecture [19, 20]. The concept of social housing was unknown to the Soviet people. All construction according to typical projects was considered the acquisition of party power and the socialist economic system, in fact it was housing for the poor Soviet population, except for the party elite [21]. Such a historical fact is known, which was mentioned many times, as soon as the question of typical construction came up. When Russian specialists met with Oscar Niemeyer, he, in response to praise for the new capital of Brazil, the authors of the project of which, in addition to O. Niemeyer, also included L. Costa, remarked, as Lyudmila Kryvomazova testified: "You have solved a colossal social task with the help of these (typical) houses. When I was building the city of Brasilia, I dreamed that people from the favelas would move there. You have solved this task, but we have not. Yes, I built a beautiful city in which the elite settled, and the favelas remained as they were" [22]. The Soviet Union built industrial housing for residents of favelas.

Time has passed. The USSR as a country that implemented the social experiment described in the works of communist artists no longer exists. But the ambitious Russian authorities continue to impose fairy tales about the advantages of communist ideology on their gullible people and call for the destruction of Ukrainians for their independent choice of future life. Our realities today, "gifted" to us by the "elder brother", in whose role the Russian powerful have appointed themselves, see Fig. 2, c. European countries, Canadians, and Americans extend a friendly helping hand to our people during times of trouble (Fig. 2, d-e). Our specialists are looking for directions on how to build housing and settlements that would fully satisfy internally displaced persons both in terms of living, and in terms of physical and psychological recovery (Fig. 2, f-i) [15-16]. We are thinking about how to restore our Soviet-planned cities destroyed by the Russian invaders [23], and what guidelines to choose in the renewed development [24]. Now we are working to win! After the end of this extremely unjust and devastating war, we will face huge tasks of rebuilding Nenka!
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SOCIAL HOUSING IN UKRAINE

A. Soviet housing according to typical projects

B. Social housing in Ukraine under the conditions of the Russian invasion

Figure 2
Solving the problem of social housing in Ukraine: a-b - residential buildings of series 134, Obolon, Kyiv, 1969; c - a building destroyed by the Russians, Mariupol, 1922; d - temporary storage for refugees from Ukraine, Przemyśl, Poland, 2022; e-g - houses for quickly built towns for immigrants, Rauta group, 2022; h-i - the project of a two-story residential building for internally displaced persons "Oselya", LLC KYB ARCHITECTS, 2022
Conclusions. 1. Taking into account the plight of the population, which has experienced occupation, migration, loss and destruction of housing, as well as the low purchasing power of people, it can be noted that the share of social housing in our country will increase significantly, which will require the state to take targeted actions to solve a very important problem for our country.

2. In view of our long experience of designing and building housing using industrial methods in accordance with state norms and standards, it is necessary to consider the housing that is being designed in the dynamics of subsequent changes and adjust the regulatory documents accordingly, taking into account the further needs of the aging population, which may gradually move to a low-mobility groups, and changes in the social status of families - the appearance of large families, their members with disabilities, etc.

3. When clarifying directions for the restoration of the housing stock for different social groups of the population, it is advisable to rely on the achievements of the school of typical design and construction, which was created in our country for the formation of industrial housing, while at the same time correcting the following mistakes: limit the use of large-panel structures that are not strong and reliable in the conditions of military events; to develop new, stronger structural schemes and systems, to use not only prefabricated structures, but also monolithic, three-dimensional block structures; to study the experience of typification of project solutions and construction technologies of other countries with a focus on intra-construction typification, rather than general typification by series of projects; to return to building regulations the calculations of the distance between buildings in accordance with the norm for the probable collapse of the structure; work on new types of structure of residential buildings, in addition to sectional, with apartments of different rooms and with the possibility of transforming the space according to the needs of the population; to work out various techniques in design in order to avoid the monotony of buildings.

4. During the war, the establishment of camps for
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internally displaced persons remains relevant, the construction of residential complexes for permanent residence is advisable to design separate towns in good natural conditions with an appropriate level of service for each specified social group.

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