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PROBLEMS of the MODERNIZATION of RESIDENTIAL BUILDINGS of the 50s-70s in UKRAINE

***Summary.** The article identifies the features of the "Khrushchyovkas", it indicates the shortcomings in the construction of a panel-type housing that do not meet modern standards, it lists the main types of unification of houses of this type, which led to the deterioration of the facades and the destruction of the "face" of the city, it lists the problems that residents face, which include lack of elementary means of transportation for elderly people and people with limited mobility. Examples of reconstruction of panel houses and town planning plans of East Germany with a description of all construction actions are indicated, as well as materials used in the reconstruction of "Khrushchyovkas", which include a complete reconstruction of the facades, solutions are given with the presence of "Khrushchevs" in the historical part of the city, to create a single harmonious architecture of the streets.*

***Key words:** "Khrushchyovkas", problems of prefabricated buildings, features of "Khrushchyovkas", ways of reconstruction and modernization of "Khrushchyovkas", apartment design, reconstruction of "Khrushchyovkas", German architectural bureaus.*

The housing shortage after World War II caused a rapid development of new construction in The Soviet Union. The architectural policy of the 1950s-70s was the ZOA for the construction of highly populated areas with typical five-story buildings - "Khrushchyovkas". The new technology of panel construction

made it possible to quickly build housing according to the principle of functionality.

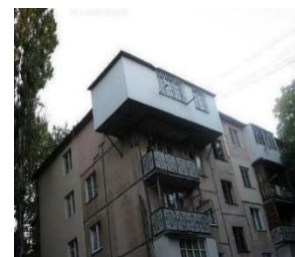
After the unification of Germany, the question arose of what to do with the "Khrushchyovkas". They decided not to demolish the houses, but the process of their transformation was launched. Old panel five-story buildings were transformed beyond recognition. The use of new technologies in construction has made it possible to create modern buildings in old quarters.

With the state housing program of 1972, which aimed to eliminate the housing shortage by 1990, the prefabricated building became the most important type of new building. New districts or entire cities with up to 100,000 inhabitants, such as Halle-Neustadt, were mostly built entirely using prefabricated panels. As part of the housing construction program, a total of around three million new apartments were built or refurbished, 1.8 to 1.9 million prefabricated apartments were built. The housing program was an ambitious program for which a significant part of the state budget was used. However, the older buildings in the historic city center were not promoted in the same way. These houses - often privately owned or managed by municipal housing administrations (KWV) - were usually unable to generate the financial resources necessary to maintain them with fixed low rents. Thus, the partial decline of the historic inner cities was a downside of the GDR housing program.

In the modern context, the Soviet residential development needs to be updated, given the significant age of the buildings, the negative attitude of residents, and the outdated improvement of residential areas. However, apartments in

"Khrushchyovkas" are in high demand in the secondary real estate market, due to their low cost and savings on utilities. This actualizes the problem of their modernization - improvement of the appearance, reconstruction of communications and engineering networks, redevelopment and modern interior design of apartments. Complete unification of the exterior and planning units of

the " Khrushchyovkas " produced their typical features: five (rarely four) floors; panel or brick houses without plaster; maximum simplification of the facade and roof; the roof is integrated with the ceiling of the fifth floor; three to four apartments per floor; dominated by one- and two-room small-area apartments; ceiling height 2.48 - 2.6 m. Features of the layout of apartments: in two- and three-room apartments, the living room is a walk-through; an extremely small kitchen with an area of 4.6 - 6 sq. combined bathroom with an area of about 2 sq.m. Significant negative factors are: lack of an elevator and balconies on the first floors, insufficient insolation and sound insulation of apartments. Today, the facades of "Khrushchyovkas" are additionally distorted by chaotic insulation, unauthorized extensions and individual ones are not ordered by the glazing of the balconies (Pic. 1, Pic. 2, Pic. 3).



Pic. 1. Arbitrary insulation of the facade Pic. 2. Balconies connecting Pic. 3. Dangerous outhouse

Based on the experience of modernizing the housing stock in Germany, the first step was technical re-equipment, replacement of windows and individual parts, and later on, the planning of apartments was changed, which no longer corresponded to the modern needs of residents. In particular, it is a small living room area, outdated kitchen and bathroom equipment. One example is the complete reconstruction of houses in the city of Rostok on the street. Theodor-Loos-Weg with the development of a new facade design. The entrances to the porches were redesigned, the windows were built into the insulating layer, the decoration of the loggias was replaced, an interesting color scheme was selected (Pic. 4, Pic. 5, Pic. 6) Solar panels are installed on the houses, the facades are insulated. Changes were also taking place at the urban planning level -

comfortable green areas for walking residents, play areas for children were created (Pic. 7, Pic. 8).

It should be noted here that such a reconstruction in the cities of the former GDR became possible largely due to the fact that the old Soviet houses began to empty. Many East Germans have moved to the western part of the country or simply to new homes, someone has already died, and the population of the panel neighborhoods has declined. Therefore, the architects were free to experiment with a radical reduction in the number of apartments, the demolition of the upper floors, and so on [8].

In 2010, the project for the renovation of old panel houses in Halle (Halle) by Stefan Forster Architekten won an award at an international exhibition as the best example of urban renewal in Saxony-Anhalt. The concept of the project is based on the idea of “walking on a tightrope” between two different parts of the city - the historic center and the area built in the 1960s.

The renovation of two L-shaped panel buildings marked the beginning of a massive renovation of the Soviet legacy in the small town of Leinefelde in East Germany. The key element in the design was the masonry on the first level, which serves several functions: it provides the foundation for the building, allowing the creation of elevated private gardens on the ground floor level, and also establishes a kind of barrier, a buffer zone between the building and the street [8].



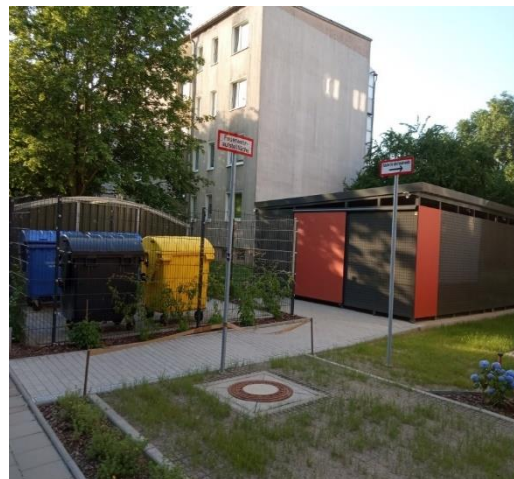
Pic. 4. Normalized balcony glazing

Pic. 5. Entrance at sidewalk level

Pic. 6. Attached lift



Pic. 7. Hidden trash blocks



Pic. 8. Bicycle garage

The architectural bureau Forster + Schnorr developed the principles of differentiation between private and public space nearby. Updates of general plans and urban development concepts, made in the early 1990s, formed two main trends in the reconstruction of "Khrushchyovkas" - one of the solutions is the deterioration of Soviet residential buildings for construction modern types of housing in central areas, an alternative is also a significant renovation of the housing stock. Accordingly, it is necessary to formulate a program for the complex renovation of city quarters, taking into account financial costs [5; 7].

Let's define the main ways of modernization of "Khrushchev":

- 1) reconstruction of facades
 - plaster replaces old concrete slabs;
 - new windows built into the insulating layer;
 - renovation and regulation of glazing of balconies;
- 2) complete reconstruction of entrances
 - lowering the entrance level to the level of the sidewalk;
 - entrance doors must be transparent and have a vestibule;
 - completion of elevators;
 - reconstruction of the staircase and its additional lighting;
- 3) arrangement of adjoining territories
 - a separate place for landfills;

- garage for bicycles;
- closed yard from cars;
- children's and sports maidans whenever possible;
- gardening and landscaping.

Conclusion. The typicality of the "Khrushchyovka" projects led to a distortion of the urban environment, the concept of "originality" and "creativity" began to be absent, and in a totalitarian country, housing architecture became as unified and typified as possible. At this stage, the modernization of housing will incur considerable costs and the creation of a renovation program, and the new master plan of the city will provide an opportunity for the construction of modern buildings in the center, due to the demolition of Soviet buildings unsuitable for living. If the democratic tendencies in the development of society are preserved, the processes of democratization of housing architecture will deepen. Architectural firms have developed many proposals for redevelopment of apartments and the design of individual zones. Ideas of a studio apartment with a combination of kitchen and living room areas, kitchen-dining room arrangement, etc. prevail. The architecture always reflects the current economic and socio-political situation in the state. Residential buildings of the 1950s-70s had the most simplified functional organization, the cheapest materials, which ensured the rapid pace of construction. Comprehensive modernization of housing makes it possible to improve the appearance of buildings, update engineering networks, and ensure the improvement of adjacent territories.

References

1. Soziologische Untersuchung einer Berliner Großsiedlung, Stuttgart. 1977.
2. Büro des Stadtarchitekten: Städtebauliche Leitplanung zur Umgestaltung des südlichen Stadtzentrums. 31.12.1980.
3. URL: <https://www.limbacher-farbe-design.de/index.php?cut=leistungen-referenzen>

4. URL: <https://varlamov.ru/2359727.html>
5. URL: <https://newizv.ru/news/city/21-04-2017/opyt-germanii-rekonstruktsiya-hrushevok-v-dva-tri-raza-vygodnee-novostroek>
6. URL: <https://www.archplus.net/home/arc>
7. Degewo (Hrsg): Gropiusstadt Aktuell, Ausgabe 08/2013, Berlin 2013.
8. URL: <https://realty.rbc.ru/news/58f8b0cc9a794710d3c81038>