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HOUSING AREA REVITALIZATION – NEW DEVELOPMENTS FOR FAMILIES AS AN EXAMPLE OF A CONTEMPORARY AVANT-GARDE

REWITALIZACJA OSIEDLI MIESZKANIOWYCH – NOWE KIERUNKI ROZWOJU DLA POTRZEB RODZIN JAKO PRZYKŁAD WSPÓŁCZESNEJ AWANGARDY

Abstract

This paper focuses on the revitalization of large-panel buildings, designed to address the needs of specific social groups, such as families with many children or the elderly. The aim of the paper is to show new trends in architecture, representative of an avant-garde conception, understood as a rational use of existing resources. The study shows that in a constantly evolving urban infrastructure modernization brings various benefits in terms of social development and architectural change. Revitalization, with the support of communal and government subsidy programs specifically targeting families, offers genuine opportunities to improve their living environment and housing conditions.

Keywords: adaptation, avant-garde, large-panel buildings, modernization, needs of families and the elderly

Streszczenie

Tematem artykułu jest problematyka rewitalizacji obiektów z wielkiej płyty pod kątem potrzeb określonej grupy społecznej, jaką są rodziny wielodzietne i osoby starsze. Celem pracy jest ukazanie nowych tendencji w architekturze, które wskazują myśl awangardową, rozumianą jako racjonalne wykorzystanie istniejących zasobów. Przeprowadzone badania dowodzą, że modernizacja w stale rozwijającej się infrastrukturze miejskiej niesie za sobą dużo korzyści w zakresie rozwoju społecznego i zmian w architekturze. Rewitalizacja przy wsparciu gmin i programów rządowych, szczególnie dedykowana rodzinom, daje realne szanse poprawy środowiska zamieszkania i ich warunków mieszkaniowych.

Słowa kluczowe: awangarda, dostosowanie, modernizacja, osiedla wielkopłytowe, potrzeby rodzin i osób starszych

1. INTRODUCTION

Avant-garde, in architecture, is a broad, far-reaching and somewhat indefinite concept. Mieczysław Porębski described the avant-garde of the 20th century as follows:

The avant-garde, according to its medieval etymology, can be compared to an institution within an institution: a leading branch of an army that has special tasks, composition and equipment. The avant-garde is constantly on the move, on the offensive, pushing forward and carrying everyone else along. It skips steps, and has a spirit reminding us of old military expeditions and of the passion of the crusades. Youth has also a special place and privileged opportunities in avant-garde and in old warfare. New generational cohorts come to life, paving the way for a new age, era, civilization.¹

In 2017, an article on the avant-garde was published in the 4th issue of the magazine *Autoportret* [59]. Already in the introduction, we can read that "... the avant-garde can fascinate us like a believer fascinates an agnostic"². In this regard, it is more a concept than an aesthetic movement. In art and philosophy, it has been described as a movement "going against the tide" and that must break with tradition. Unlike decadence, the avant-garde always appears like a fresh look on contemporary works. In an article on the "new avant-garde" called "Unbearable lightness – the immaterial obsessions of materialists," the well-known architect and academic teacher Maciej Miłobędzki states that "... the avant-garde usually attributes its failures to a lack of commitment, vision and determination to fix the world." Thus, as the architect emphasizes, we can define the contemporary avant-garde in relation to architecture as the rational transformation of existing structures for the needs of the city and its inhabitants. It is hard to disagree with Miłobędzki that "the constant demolition and construction of new buildings devastate the environment"³. From this perspective, the modernization of large-panel residential buildings can be described as the "contemporary avant-garde" in housing projects for large families.

The aim of the following paper is to show new trends in architecture, showing that avant-garde thinking is not restricted to elitist activities. The avant-garde, which is informally associated with art accessible only to restricted groups, can also be understood as an activity that is beneficial to the inhabitants of large cities.

The research presented below shows that the key to the contemporary avant-garde is not innovative technology, but the rational use of existing resources. To carry out this research, an in-depth analysis of the needs of the inhabitants of large agglomerations with changing social structures was conducted. The premise of the study is to point out a new direction for the conservation of large-panel buildings that would respect the specific needs of these families, without marginalizing them as a social group or relegating them to suburban areas.

¹ M. Porębski, *Sztuka a informacja*, Wydawnictwo Literackie, Kraków 1986, p. 170.

² E. Ranocchi, *Introduction*, "Autoportret. Pismo o dobrej przestrzeni" 2017, 4(59), <https://autoportret.pl/artykuly/wstepniak-18/> (access: 7.07.2022).

³ M. Miłobędzki, *Nieznosna lekkość, Niematerialne obsesje materialistów*, *Autoportret*, 2017, 4(59), <https://autoportret.pl/artykuly/nieznosna-lekkosc/> (access: 7.07.2022).

2. LARGE-PANEL DEVELOPMENTS

It is usually assumed that prefabricated buildings appeared in the mid-1950s, and that the development of industrialized housing in Poland peaked in the 1970s; this particular type of construction continued to be built until 1994. From the very beginning of prefabrication, the social aspect was decisive. The developers of such projects were strongly driven by a will to improve the housing situation of the population, wanting to build housing estates with a social agenda. Residential surroundings had to be reshaped in the 1960s, due to changes in living standards and family patterns⁴. Housing was built for families; the standard was compliant with the 1959 norm, and later with the more detailed Technical Standard for Design, from 1974 onwards. Housing expanded, due to typification and unification of the building industry; this promoted prefabrication, and its use in experimental work and prototype housing estates. Industrialized technology offered opportunities for a swift and consistent erection of large numbers of uniformized residential dwellings, poor in technical and aesthetic quality. Today's functioning large-panel housing estates are actually a very valuable resource for housing, often offering both good location and favourable hygienic conditions. Now inhabited by a diverse community, they need to be modernized and adapted to their inhabitant's needs in order to remain competitive on the property market.

Currently, there are 60,000 large-panel buildings⁵ in Poland – about 2.5 million apartment units⁶ – which accounts for about 50% of the total available housing stock in the country⁷.

The technical condition of these accommodations is generally good, which has been confirmed by studies conducted by the Instytut Techniki Budowlanej (Building Research Institute – ITB) in Warsaw. Although the buildings were designed to last 50 years, there is currently no restriction on their use, or no identified threat to their structural safety. ITB diagnostic procedures have confirmed their durability and suitability for further use. According to the report, the large-panel buildings erected between 1960 and 1990, though, are inadequate when it comes to functionality and utility. The envelope is also *characterized by excessive thermal permeability, the condition of the facilities is usually insufficient, and the facades have poor aesthetics*. The ITB guidelines, established for further operational use, recommend targeted periodic inspections and technical condition assessments⁸, including fitness-for-use tests, and most importantly, a focus on cost optimization for existing facilities and their modernization⁹.

⁴ G. Wojtkun, *Wielorodzinne budownictwo mieszkaniowe. Wizje a rzeczywistość*, Wydawnictwo Naukowe Politechniki Szczecińskiej, Szczecin 2008, pp. 87, 94.

⁵ *Wielka płyta jest bezpieczna*, Inżynier Budownictwa, 31.01.2019, <https://inzynierbudownictwa.pl/wielka-plyta-jest-bezpieczna/> (access: 6.07.2022).

⁶ R. Geryło, *Stan wielkiej płyty w świetle raportu ITB*, Budma 2020, http://woiib.org.pl/images/news/202002/budma/Stan_wielkiej_plyty.pdf (access: 6.07.2022).

⁷ T. Taczanowska, A. Ostańska, *Dokładność realizacji a potrzeba modernizacji budynków wielkopłytowych*, Dom Wydawniczy Medium, Warszawa 2012, p. 9.

⁸ The most common operating deficiencies include scratches, leaks, damage to attic balconies, textured layers of the wall panels and installations.

⁹ J. Szulc, *Budownictwo wielkopłytowe – Raport o stanie technicznym*, Instytut Techniki Budowlanej, Warszawa 2018, <https://budowlaneabc.gov.pl/budownictwo-wielkoplytowe-raport-o-stanie-technicznym> (access: 6.07.2022).

Flats in prefabricated housing estates are still very popular, especially with new families, and they sell quick, although their number on the secondary property market¹⁰ is limited. Their popularity is due to a number of factors, such as location and accessibility to the city centre, a well-organized and clean urban layout, the availability of publicly accessible education services, and, especially for families with children, enough outdoor space, and a distribution and size of housing that meets their specific needs. A great advantage of these developments is the price of the flats; they are much more affordable than newly designed housing estates. All these aspects allow us to think that large-panel buildings will increase in value, and to regard them as welcoming and adaptable, especially in a time of significant decline in the availability of land for housing development. In this context, the pro-environmental and economic aspect is an important consideration for the younger as well as the older community in choosing where to live.

The housing problem affects most families living in large urban agglomerations. Surveys of the housing stock indicate that about 70% of the residents¹¹ currently live in so-called large-panel buildings built between 1970 and 1985. The housing structure of these objects has great architectural potential. That's why in this respect, the modernization of these buildings in order to meet the needs of larger families with particular needs can be referred to as the contemporary avant-garde.

3. HOUSING SITUATION OF FAMILIES WITH CHILDREN

Owning a home is one of the basic needs that guarantees personal and familial security. When approaching housing from the perspective of Polish families, challenges related to their economic conditions appear very clearly. Their financial situation significantly decreases with the birth of a new child¹². Educating many children is time-consuming, and involves significant costs. The uniqueness of the challenges that families taking on the responsibility of raising three or more children are facing is a motivation for creating systemic solutions that would support families in raising and protecting children. This includes their housing situation. Such recognition of the specific needs of families with many children is stated by the legislator in the Constitution of the Republic of Poland in Article 71 called "The principle of the good of the family"¹³.

Larger families act like a magnifying glass, demonstrating the problems of the Polish housing system. The main issues reported by large families in the anonymous survey carried out by the Union of Large Families "Three Plus" in April 2021 on a representative sample of 1,500 large families in Poland, point to challenges in the economic and spatial area. As many as 44% of these families reported various problems with their flats or houses, including deficiencies in the infrastructure of the apartments – for instance lack of electricity, water,

¹⁰ In the Warsaw real estate market, only 10% of the flats located in large-panel developments are for sale. The data is based on a study from HRE Investment.

¹¹ A. Ostańska, *Badania struktury zasobów mieszkaniowych w Polsce na przykładzie budynków wznoszonych w technologii prefabrykowanej*, "Przegląd Budowlany" 2017, nr 12, pp. 24–29.

¹² M. Siergiejuk, *Ubóstwo i wykluczenie społeczne w Polsce i innych krajach Unii Europejskiej w latach 2008–2016*, Departament Analiz Ekonomicznych i Prognoz Ministerstwo Rodziny, Warszawa 2018.

¹³ Konstytucja Rzeczypospolitej Polskiej, Dz.U.1997.78.483, Warszawa 1997.

or individual bathrooms. More significantly, as the families grew poorer, the problems accumulate even more. In the survey, families highlighted the challenges related to the functional aspects of their housing as they were having more children. Scarcity of floor space, which particularly affects large families with many children, contributes to the phenomenon of overcrowded housing. In Poland, the overcrowding rate is one of the highest in Europe. For households with two children, it is of 39.4%, and for households with three and more children, it is as high as 66.1%¹⁴. Housing problems are also illustrated by the European index of housing deprivation. In a Eurostat study, we can read that this indicator increases in two-plus-three families from 1.0 to 8.4 in two-person households¹⁵.

The dynamics of family development assume a transition from a two-person household to a three-, four-, five-person and more households. In the evolutionary perspective of the family, a variety of needs can be observed at successive stages of its activities. Families need housing solutions that are flexible and that can adapt quickly to their own changing needs over time¹⁶. "The legal status of properties owned by large families clearly shows a preference for ownership, including for families living in a rented space (when such options are available) and families with mortgages, with or without loans"¹⁷.

4. THE STANDARD OF LARGE-PLATE HOUSING DEVELOPMENTS IN POLAND

The housing standard currently provided by prefabricated – large-plate housing estates needs to be improved. Indeed, similarly to the technological and technical aspects, it derives from global standards as well as from the design and modernization trends in housing construction. One of the definitions of the housing standard is *the genuine housing conditions in the country*; it includes the size of the accommodation, the furnishings and finishes of the flats and buildings, as well as the technical solutions, quality and aesthetics. In addition, the standard takes into account urban planning solutions, the way in which housing is planned, the development of residential areas, isolation from external disturbances, access to basic services and recreational facilities. A housing standard may also be understood like a norm used for determining the level of satisfaction of *housing needs that are considered socially appropriate*¹⁸. The constant evolution of the housing standards is a result of emerging needs and the financial capacity of investors. This is why it is so important to upgrade the living conditions of technologically older buildings.

When assessing the housing standard of large-panel housing estates and the needs of their current residents, several actions appear to be necessary to improve the standard of living and housing conditions. During analyses undertaken over the past three years by students of the Faculty of Architecture at the Warsaw University of Technology taking part

¹⁴ B. Socha, *Strategia Demograficzna 2040*, Ministerstwo Rodziny i Polityki Społecznej (Ministry of Family and Social Policy), Pełnomocnik Rządu ds. Polityki Demograficznej, Warsaw 2021, p. 35.

¹⁵ A. Culora, B. Janta, *Understanding the housing conditions experienced by children in the EU*, Publications Office of the European Union, Luxembourg 2020.

¹⁶ M. Wydra, *Sytuacja mieszkaniowa dużych rodzin, Raport Linii 3 Plus, Wybrana problematyka życia dużych rodzin w Polsce – 2021, Związek Dużych Rodzin "Trzy Plus"*, Warszawa 2021, p. 28.

¹⁷ *Ibidem*, p. 28.

¹⁸ M. Bryx, *Finasowanie inwestycji mieszkaniowych*, Poltext, Warszawa 2012, p. 27.

in the design seminar *Urban Revitalisation* under the direction of Anita Orchowska, BEng, PhD, arch., an assessment of eight prefabricated housing estates, built using various technologies was conducted: Stegny, Służew, Sadyba, Chomiczówna, Przyczółek Grochowski, Ursynów Północny, Jelonki and Wrzeciono. It was estimated that the greatest changes – apart from the development of strategies and programmes for the development of the sites considering their uniqueness and local conditions are improvements of transportation facilities, including parking space, the accessibility and location of facilities, improving the attractiveness of green and recreational areas, and upgrading the functionality and aesthetics of the developments. In addition, safety and accessibility for several social groups needs to be improved. There is also an absolute need to rethink the spatial orientation of the often-anonymous surroundings, and to recreate proximity interactions based on public participation. More specifically, it is apparent that the public areas – inside the residential district itself – do not meet expectations when it comes to leisure activities for the residents, or attractiveness and ethics of collective facilities. Transportation infrastructure is overcrowded and obsolete, not meeting current needs. The housing developments do not meet the accessibility standards for families with children or for the elderly. The entrance areas are insufficiently functional. As the voices of the tenants grow louder, the lack of a space that would integrate the local community, offering them a communal place, is becoming more obvious than ever.

The study shows that changes aiming at improving living conditions should include the entrance area halls, ensuring the expansion of facilities such as pram and bicycle storage rooms. Staircase areas also need to be improved, and elevators added. The changes should also include more functional flats, with added or bigger balconies. Aesthetics needs to be refined, and impractical, neglected places that only contribute to antisocial phenomena, need to disappear. What was regarded as the most important was an upgrade of the technical condition of buildings: soundproofing, the replacement of defective installations, securing of the three-layer walls in their connection to the internal load-bearing and structure layers (using steel hangers and pins), preventively reinforcing the anchoring, and thermo-modernization. On the functional side, priorities were the adaptation of the facilities for a more efficient use of space, and enhancement of the buildings with new functional elements and technical solutions, that promote energy efficiency and environmental protection.

Thus, new and avant-garde design and construction procedures must be considered for the transformation of the building fabric of these housing estates, to conform to contemporary housing standards, especially in technical, functional-spatial, aesthetic and social terms. The sustainable fulfilment of needs for the community is very important when it comes to one's relationship with their surroundings, which influences in return the psychological and social stability of the residents.

After an initial analysis by the Architecture Department of the Warsaw University of Technology (ADWUT), funding was obtained to develop standards and good practices for the modernization of large-panel buildings to meet the needs of large families, entitled “Modernization of large-panel buildings for families.” Anna Maria Wierzbicka, ADWUT, Anita Orchowska, ADWUT – Urban and Architectural Design Division, and Judyta Kruk from the Large Families 3+ Association, are actively participating in the project. The project team incorporates the guidelines of the new European Bauhaus into their studies, a concept that promotes circularity and the rational use of existing urban resources.

5. ACTIONS CARRIED OUT IN EUROPE FOR THE RESIDENTS OF PREFABRICATED DEVELOPMENTS

The situation in Poland is quite different from that in other European countries with a large number of large-panel residential buildings, such as Germany, Sweden, France and the Netherlands. Besides differences in the ownership and management of the real estate, and in the number of vacant buildings, these countries are constantly revitalizing their housing developments, i.e., bringing housing areas out of crisis, as part of systemic repair measures, with adaptations for specific groups of users. Many activities of a very different nature have been observed, which can be generalized to selected patterns¹⁹. First, modifications related to the maintenance of housing stock and its daily upkeep (such a model is the only activity that can also be observed in Poland). The second model is the transformation of the residential environment and the renewal of buildings, in accordance with the residents' decision to eliminate unused space and technical problems, renovate facades, entrance halls and common spaces. In this case, the structure of the constructions and the shape of the development remain unchanged. It is very common to use changes called *turn-around*, which usually means internal redevelopment of the blocks, combined with a reorganization of management methods²⁰. These are characterized by a transformation, bringing a new look to neighbouring units, and more attractive shared spaces, including areas dedicated to families with children. These changes also improve the aesthetics of the buildings, and include new facade finishes. An important part of the transformation aims at strengthening social policy elements and supporting the economic sustainability of families. It is also common to observe major demolition programs, dismantling of blocks of flats, the addition of new storeys, changes in the building envelope and its geometry or reallocation of space, to create new functions²¹. This includes combining units vertically and horizontally, and changing the functionality of the building's internal spaces. Complete and extensive demolition, or deliberate change in the spatial functions are becoming more and more frequent. Since the late 1980s, emerging trends such as re-use of lands and buildings, for instance, constructing new building using demolished structures, have now developed a new aspect, allowing recycling both land and building substance. The avant-garde approach to the issue of revitalization is to break particular patterns and fears, and to open the way for the adaptation of these buildings to the needs of families, using new, formal and legal instruments.

In Western countries, cities such as Berlin²², Hamburg, Brno and Cottbus²³ have already implemented the practice of upgrading large-panel buildings for residents. A holistic approach to the refurbishment of large-panel buildings in western countries was possible because of the

¹⁹ Swedish patterns, with detailed explanations, were published by Thomas Hall, but similar operations can be found in other European countries.

²⁰ Such a practice was already common in the 1980s in Sweden.

²¹ T. Hall, *Rekordåren. En epok i svenskt bostadsbyggande*, Boverket, Karlskrona 1999, pp. 159–190.

²² P. Łodziński, *Wybrane problemy modernizacji budynków mieszkalnych z wielkiej płyty na przykładzie osiedla Hellersdorf w Berlinie*, <http://aeawa.pb.edu.pl/wp-content/uploads/2018/08/6-WYBRANE-PROBLEMY-MODERNIZACJI-BUDYNKOW-MIESZKALNYCH-Z-WIELKIEJ-PLYTY-NA-PRZYKLADZIE-OBSERWACJI-OSIEDLA-HELLERSDORF-W-BERLINIE.pdf> (access: 7.07.2022).

²³ B.E. Gronostajska, *Wielka płyta-architektura wciąż żywa*, "Czasopismo Techniczne. Architektura" 2011, R.108, z. 4-A/1, pp. 142–152.

structure of ownership. The buildings were often owned by the city or private companies. The aim of these measures is mostly to improve the quality of housing. An interesting example of reference buildings is the design activity of the German studio Stefan Forester GmbH. One of the most interesting examples of the modernization of housing facilities designed to meet the needs of large families is the housing estate in Frankfurt on Main. In 2018, a design effort was undertaken to expand the residential area, and to enhance the development, while adding new common functions to the estate. To this end, two storeys were added, using a prefabricated light timber construction method. The project was completed by enclosing the urbanized spaces, and common areas were added. Not only did the development gain a new architectural character, but the number of flats and functional areas, in newly attractive surroundings, increased.

Based on experiences from abroad and new legal circumstances, directions and priorities should be given for further changes to the housing areas within the framework of revitalization – the adaptation of housing blocks for social groups of families with children and the elderly.

6. SUMMARY

Progress in art, and its artistic and stylistic orientation, is closely connected with faith in the continuous advancement of civilization. It arises from the need to constantly seek new and better solutions. Modern civilization believes in everything that is contemporary, up to date and new. Such a direction can be called *avant-garde* and such thinking is superior, more intriguing than anything created in the past.

The *avant-garde*, according to its etymology, is like a designing force that searches for the new and embraces change. This novel group with its unique tasks goes against the ever-changing needs of contemporary man. In this sense, we can describe the modernization of old buildings – blocks of flats – as *avant-garde*. The *avant-garde* is thus constantly on the move, on the offensive, moving forward and pulling others along to change the world in the hope of a better new reality not obstructed by standard thinking²⁴.

The issue of modernizing large-panel buildings to meet the needs of a specific social group and in a constantly evolving urban infrastructure presents many opportunities. The modernization subject includes social, legal and architectural aspects.

In essence, it is a question of finding a balance between the technology of old buildings and new spatial solutions. These solutions need to be adapted to the existing population, using an analytical and experiential approach to the issue of old prefabricated building developments, preserving its potential. The redevelopment should address new challenges through an interdisciplinary approach, and design should serve the existing community better, and more specifically families with children and the elderly, by adapting the architecture, housing and areas of residential developments to their needs, while promoting the community of residents.

The modernization of large-panel buildings is a common practice in Europe. It involves technical, architectural, aesthetic and functional aspects. In Poland, as numerous examples show, the modernization of blocks of flats in urban and rural areas to meet the needs of large families may become a new opportunity to reduce the housing problems of Polish families.

²⁴ M. Porębski, *op. cit.*, p. 170.

Currently, the situation of middle-income households shows a lack of opportunities to relocate, which often influences the decision to parent. Strategic assistance from the state in obtaining convenient loans will have a positive effect not only on the urban area, but also on the condition of its inhabitants.

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