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PREFABRICATED HOUSING ESTATES IN CENTRAL AND EASTERN EUROPEAN COUNTRIES ON THE VERGE OF SYSTEMIC AND POLITICAL TRANSITION

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Abstract: The issue of large-panel housing estates in socialist countries remains significant due to their scale, their long-term impact on urban structures, and their role in shaping housing systems still in use today. This study examines the development of

post-war housing construction in selected Eastern Bloc countries, with particular focus on Estonia and Ukraine (as representatives of the former Soviet republics) and Poland, Czechoslovakia, and Bulgaria, taking into account differences in ownership structures, management systems, and the implementation of industrialised building technologies.

The research addresses several key questions: how large-panel housing systems were organised under socialist regimes; how their development differed across countries; to what extent industrialised construction methods contributed to the provision of housing provision; and how effective these systems were in meeting housing needs.

The findings show that large-panel housing estates were a central tool of state policy, combining ideological objectives with economic pragmatism. Although all countries pursued the same goal of mass, affordable housing provision, they differed significantly in management and ownership models, with Czechoslovakia exhibiting the most diversified and effective system. The development of housing construction peaked at different times across countries, reflecting varied implementation of industrial technologies. While large-scale prefabrication enabled a substantial increase in housing supply and improved living conditions, its effects were uneven and often accompanied by limitations in quality and user satisfaction. These results provide a valuable basis for understanding the post-1990 transformation and marketisation of housing systems in the region.

Keywords: large-panel housing estates; socialist housing systems; Eastern Bloc; housing policy; Central and Eastern Europe; postwar housing

INTRODUCTION

Large-panel housing estates are one of the most recognisable symbols of the socialist economy. From the late 1960s onwards, mass housing construction expanded rapidly in the Soviet republics and across the socialist bloc (including the German Democratic Republic, Poland, Hungary, Czechoslovakia, and Bulgaria). These estates represented key ideological objectives of communist governments: building an egalitarian society and promoting a collectivist mindset among the population. The goal was the same: to provide affordable housing on a large scale (Rozanov, 1982: 43; Szafrańska, 2016: 37).

Regardless of the ideological premises and the manner in which they were constructed, large-panel housing estates remain part of the landscape of Central and Eastern Europe's cities to this day. Examples of such neighbourhoods include Strogino in Moscow, the Left Bank in Kyiv, Petržalka in Bratislava, Titan in Bucharest (Kovács and Herfert, 2012; Motak, 2012), Grunwald in Poznań or Ursynów in Warsaw.

Despite shared ideological foundations across socialist states, the development, management, and social role of prefabricated housing estates differed significantly between countries. Yet comparative international studies examining these differences at the threshold of the post-socialist transition remain limited. Understanding these pre-1990 institutional and housing conditions is essential for analysing the subsequent transformation and marketisation of housing systems in Central and Eastern Europe, since the trajectories of post-socialist change were strongly shaped by the inherited structures of the late socialist period.

In the Baltic countries, large socialist housing estates became the dominant form of urban housing development during the late socialist period and continue to constitute a major segment of the housing stock in larger cities. Their long-term importance derives not only from their physical scale, but also from their continuing role in shaping socio-spatial inequalities, neighbourhood trajectories, and urban governance in the post-socialist period (Hess and Tammaru, 2019).

Research on socialist housing construction first emerged during the second half of the twentieth century. However, much of this literature relied heavily on nationally produced statistical data and was shaped by the ideological frameworks and political narratives of the period. Consequently, reassessing the scale and significance of housing construction in the late socialist era requires a contemporary comparative perspective that combines critical analysis of historical data with multidimensional and cross-national approaches. This is precisely the main motivation behind the present study.

This article analyses and compares the development trajectories of late socialist housing estates in selected Eastern Bloc countries and former Soviet republics in the post-war period, with particular attention to their institutional organisation, housing policies, and systems of housing provision. The analysis focuses on Poland, Czechoslovakia, and Bulgaria as representatives of the former Eastern Bloc, together with Estonia and Ukraine as representatives of the former Soviet republics. The research period ends in 1990.

To distinguish this specific type of housing in the analysis, the terms late socialist housing estates or late socialist block of flats will be used (Nowak and Siatkowski, 2022; Pluciński, Nowak and Błażejczyk-Majka, 2022). This designation highlights both the temporal and political-economic context of their construction. The adjective late socialist situates these estates within the final decades of state-socialist regimes, when

large-scale prefabrication was the main response to urban housing shortages. At the same time, it differentiates them from earlier phases of socialist housing policy, such as post-war reconstruction in the 1950s or experimental prefabrication of the 1960s. The phrase "block of flats" refers directly to their characteristic architectural and technical form: standardised, multi-family residential buildings made of large concrete panels. Taken together, the terms late socialist housing estates or late socialist block of flats capture both the historical specificity and the material legacy of these estates, making them a useful analytical category for comparative studies across Eastern Bloc countries.

This article seeks to answer the following research questions:

1. What were the principles of building prefabricated housing estates in selected Eastern Bloc countries?
2. How were prefabricated housing estates managed in Eastern Bloc countries?
3. What was the significance of prefabricated housing estates in the overall housing stock at the threshold of economic and political transformation?

The article argues that, despite shared ideological assumptions among Eastern Bloc countries and their economic cooperation, both the construction processes and the social significance of prefabricated housing estates differed across these countries in the late 1980s.

This study is based on statistical sources provided by the national statistical offices of the countries included in the analysis, complemented by findings from country-specific research and research published before and after the research period. Furthermore, it draws on a body of scholarly literature that addresses interrelated aspects of the historical origins and development of prefabricated housing estates.

The research design determines the structure of the study. Following the literature review, the next chapter presents the key concepts underpinning the development of large-panel housing estates. This is followed by a discussion of the principles underlying the functioning of late socialist housing estates in countries under Soviet domination. The subsequent part of the study examines the methods of management and ownership structures of large-panel housing estates. The next chapter analyses statistics within national housing systems, focusing on the scale and dynamics of construction. The final chapter provides answers to the research questions and indicates directions for further research.

LITERATURE REVIEW

Most late socialist housing estates were built in the late 1970s and early 1980s, with construction continuing into the early 1990s. Some authors refer to them as "socialist-era residential neighbourhoods" (Zarecor, 2012). The term "late socialist block of flats" is also used in the literature (Nowak and Siatkowski, 2022).

Today, despite widespread criticism, these housing estates also possess several notable advantages. First, late socialist housing estates remain in satisfactory technical condition (Foryś, 2017: 35). The literature also includes studies of post-socialist large-panel housing estates examining specific urban contexts (Pirveli, 2000), housing policy in Central and Eastern European countries (Hess, Tammaru and van Ham, 2018; Hess and Tammaru, 2019; Drozda, 2024; Skotarczak, 2025), the threat of "slumification" (Rykiel, 2000; Szafrańska, 2015), revitalisation challenges (Matlovič et al., 2001; Zabielaitė-Skirmantė, Burinskienė and Maliene, 2023), and endogenous and exogenous changes affecting prefabricated housing estates (Kovács and Herfert, 2012; Rowlands, Musterd and Kempen, 2019; Benkő, 2021).

Moreover, to this day, late-socialist housing estates continue to accommodate a significant share of housing demand in post-Soviet countries (Kotus, 2007: 235) and are characterised by distinctive social environments (Borowik, 2003: 119). Neighbourhood social relations (Smagacz-Poziemska, 2017: 149; Blokland et al., 2022; Kabisch et al., 2022), the influence of residential duration on these relationships (Błażejczyk-Majka, Nowak and Pluciński, 2025), as well as typologies of housing estate neighbourhoods (Kalm et al., 2023), have also attracted considerable scholarly attention.

The literature reviewed above demonstrates that research on late socialist housing estates has evolved considerably over time and varies according to both disciplinary traditions and national research agendas. Studies comparing more than two countries within a single analytical framework remain uncommon; broader coverage is often organised as parallel country chapters or special issue contributions (e.g. Hess, Tammaru and van Ham, 2018; Ilchenko and Kinossian, 2025) rather than sustained comparison, though notable exceptions exist (e.g. Kovács and Herfert, 2012; Glendinning, 2019). The principal contribution of this article, therefore, lies in its broader comparative geographical perspec-

tive. Nevertheless, this broader perspective inevitably means that some issues are discussed in greater depth than others, reflecting differences in the availability of country-specific research and published evidence.

THE EMERGENCE OF THE LATE SOCIALIST HOUSING ESTATE

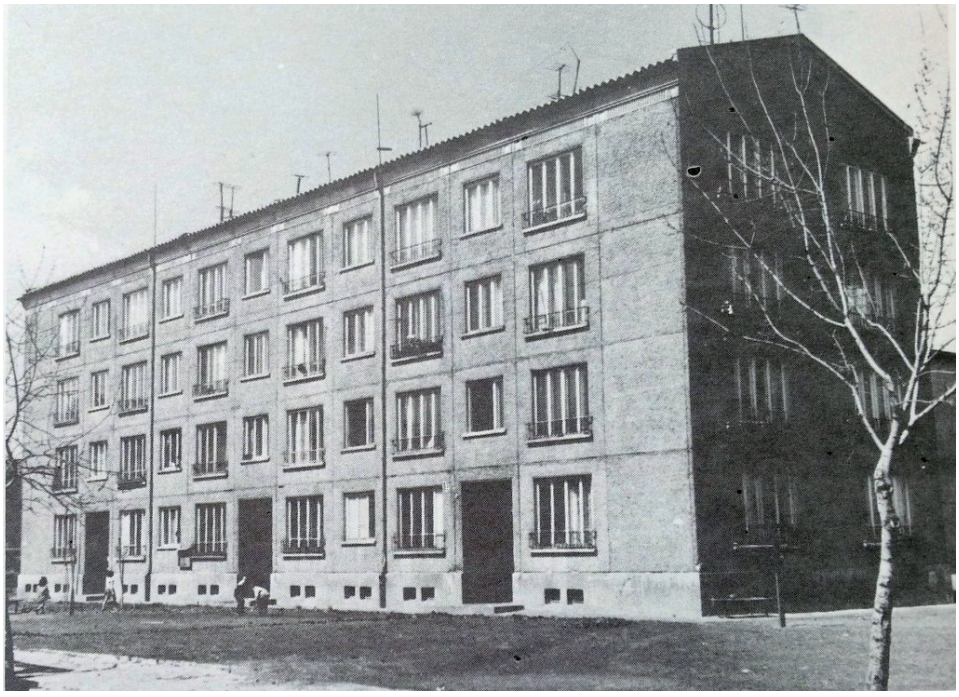
The widespread use of prefabricated building systems after World War II (discussed in detail in the next chapter) revolutionised housing construction in Central and Eastern Europe. A detailed time-series analysis of this process is presented later in the article. According to Folić, Laban and Milanko (2011), between 1945 and 1990, approximately 95% of the housing stock in countries such as East Germany, Poland, Czechoslovakia, Estonia, Latvia, Lithuania, Romania, Bulgaria, and Albania was constructed using this technology.

Socialist urbanisation combined egalitarian ambitions with the structural constraints of centrally planned economies, producing urban landscapes that simultaneously reflected ideals of social equality and the practical limitations of shortage economies and state priorities (Mezentsev, Provotar and Gnatiuk, 2024). For example, **in Czechoslovakia**, in the post-World War II period, the state took control of the housing sector (Zarecor, 2011: 69–78). In addition to the properties confiscated from expelled Germans, it nationalised most of the remaining housing stock, except for single-family detached houses. Housing development came to focus primarily on the construction of large housing estates. The first large-panel multi-family block of flats was completed in **1953** in Gottwaldov (now Zlín). This city has a long tradition of housing standardisation established by the Baťa company in the interwar period (Zarecor, 2012). Since then, numerous large-panel housing estates were subsequently built in Czech (then Czechoslovak) cities, initially smaller estates designed for several thousand inhabitants (Invalidovna in Prague or Lesná in Brno), and in later decades, large-panel housing estates (often new towns) for tens of thousands of residents (Poruba in Ostrava or Jižní Město in Prague).

In Bulgaria, the construction of panel houses was historically closely linked to the country's economic relations with the USSR (or the Soviet

Union) during the years of centralised economy and commodity deficit, which spanned the period from 1949 to 1990. This period was divided into five-year plans, during which a certain number of large panel block of flats were to be constructed. The construction system used in Bulgaria is known as large-panel housing construction (LPHC), which has a service life exceeding 40 years. The experimental stage of large-panel housing construction began in the late 1950s and early 1960s, giving impetus to the mass industrialisation of construction as a branch of the economy. In Bulgaria, the first panel houses were built in 1958 (Figure 1) and were located in the city of Sofia. This is a logical fact given the city's functions as the capital of Bulgaria. After Sofia, panel houses are being built in Varna, Burgas and Ruse.

Figure 1. The first panel block in Bulgaria (built in Sofia in 1958)



Source: 'Panel construction in Bulgaria…'(2024).

In Poland, the first large-panel housing estates began to emerge in the 1960s, when the state sought to address the acute housing shortage by introducing industrialised construction methods. In Warsaw, the first large-panel block of flats, often considered the symbolic beginning of this era, was built in 1960 at 115a Wolska Street. In Poznań, however, the first two blocks of flats were completed in the spring of **1956**: the first on March 31st, and the second a few weeks later (Łukaszewski, 2017). In Poznań, the first large-panel housing estate is generally considered to have been the Piastowskie estate, which began construction in 1966. In Warsaw, the first housing estate built entirely using large-panel technology was Stegny.

In Estonia, the planning and construction of large-panel housing estates began in the late 1950s and early 1960s as part of a broader Soviet industrialisation programme and in response to severe housing shortages in rapidly growing cities, particularly in Tallinn. The earliest large-scale housing programmes relied primarily on brick construction (khrushchevki), with buildings constructed either as isolated infill developments or small groups on vacant plots near city centres, for example in the Pelguranna district in Tallinn (Leetmaa et al., 2018). From the 1960s onwards, industrialised prefabricated panel construction became dominant. The first large-panel blocks in Tallinn appeared around 1962, when construction began on Mustamäe, the first major mikrorayon-based housing estate in Estonia (Hess and Metspalu, 2019). This was followed by Väike-Õismäe in the 1970s and Lasnamäe from the late 1970s onwards, which together became emblematic of late Soviet urban development in Estonia (Kährik, Kangur and Leetmaa, 2019).

The first large-panel housing estates **in Ukraine** began to appear in the **late 1950s** (Hyrych, 2007: 75; 2008a: 146; 2008b: 18; Iankovska, 2015: 219), and their development accelerated in the 1960s, when in Kyiv and other major cities mass construction of the so-called "Khrushchovkas", inexpensive four- or five-storey blocks based on standard designs, was launched. These housing estates were constructed in standard series that differed only marginally from one another. The principal objective of the designers was to provide housing for as many people as possible at the lowest possible cost. The most popular series of the first large-panel block of flats in the Ukrainian SSR were I-438, I-464 and I-480.

CONSTRUCTION OF LARGE-PANEL HOUSING ESTATES IN CENTRAL AND EASTERN EUROPEAN COUNTRIES

The concept of constructing standardised blocks of flats is closely associated with the modernist movement. Modernism in architecture emerged in the early decades of the twentieth century as a response to the social and housing problems caused by industrialisation and the rapid transformation of urban environments that followed (Motak, 2003). The term "serial housing" is believed to have been introduced in 1915 by one of the leading figures of the movement, Le Corbusier (Charles-Édouard Jeanneret-Gris). He outlined the principles of this architectural approach in his book *Vers une architecture* (Corbusier-Saugnier, 1924). His ambition was to rid cities of disease while offering a comprehensive solution to the urban challenges of his time.

Modernist architects designed entire housing estates that incorporated communal facilities such as terraces, laundries, and gyms. These estates came to be described as "machines for living" (Millais, 2017: 57–69). The core principles of modernist urbanism were later codified in the so-called Athens Charter, the resolution of the 4th International Congress of Modern Architecture held in 1933, and published in 1943 ('Athens Charter', 2026).

Although modernist ideas were already applied in the interwar period, they gained far wider practical application during the reconstruction of European cities after World War II. In Britain, they shaped the development of the *new towns*, while in France, they underpinned the creation of the *villes nouvelles*. In Western Europe, however, such projects quickly attracted criticism. In contrast, the principles embodied in the Athens Charter aligned closely with communist ideology, particularly with the centrally planned economy, and thus found wide application in Eastern Bloc countries, where the demand for new housing was immense (Komar, 2014: 34; Navarro and Sobecka, 2019).

The large-scale implementation of modernist estates was made possible by the adoption of prefabricated large-panel technology, which enabled the construction of multi-storey, multi-entrance blocks of flats from standardised elements. These blocks were usually built in clusters, arranged either in linear patterns or more organically arranged layouts. Across Eastern Europe, the rise of these characteristic, uniform housing estates is typically associated with the 1960s through the 1980s (cf. Navarro and Sobecka, 2019).

It is important to note that in Ukraine, the Soviet state, experimental construction of large-panel blocks of flats began even before World War II. In the early 1930s, Kharkiv became the site of the first residential buildings constructed from large blocks, marking the beginning of an era of industrial housing construction using prefabricated elements. In 1933, the USSR's first large-panel building was built in this city (Shvydenko, 2025).

However, at that time, such experimental construction did not become widespread. In the early post-war years, despite active state intervention, the housing problem remained unresolved (Danylenko, 2011: 11; Iankovska, 2015: 214), and in the mid-1950s the Soviet leadership returned to the idea of promoting large-panel construction. The Soviet leadership's plans to build faster and cheaper housing were influenced, among other factors, by Khrushchev's familiarity with Plattenbau and American industrialised construction methods during his foreign trips in the second half of the 1950s.

This resulted in the emergence of Soviet versions of social housing (Iankovska, 2015: 215). Republican organisations, including the Kyiv Zonal Scientific Research and Design Institute of Experimental Design [Київський зональний науково-дослідний і проектний інститут експериментального проектування] and the Ukrainian State Research Institute for Urban Design [Український державний науково-дослідний інститут проєктування міст], adapted standard projects developed in Moscow to Ukrainian conditions (Rozanov, 1982: 42; Iankovska, 2015: 220–221; Hryhorovskyi and Murasova, 2018: 30–32; Agieieva, Kafiev and Krivelov, 2021: 35–36).

Since the mid-1960s, efforts were made to improve living conditions in large-panel blocks of flats (Rozanov, 1982: 47–48, 52, 58–59; Kovpak, 2003: 61). After 1975, uniform catalogues of standardised building products were introduced into urban planning practice, forming the basis for the design and planning of residential buildings (Chepurna and Zhidkova, 2021: 76). Buildings constructed between 1976 and 1984 are examples of the further development of large panel housing construction, which took place through minor improvements in the design of buildings made of large-panel elements and an increase in their number of storeys (Hryhorovskyi and Murasova, 2018: 32; Chepurna and Zhidkova, 2021: 78). Housing construction in the second half of the 1980s was based on the Housing-2000 programme, which aimed to provide every family with a home. At that time, the construction of large-panel buildings continued to be improved (Bardashevska, 2013: 105–106; Kovpak, 2016: 62–67).

Figure. 2. The first panel block in Ukraine (built in Kharkiv in 1933)

Source: Shvydenko, 2025.

Similarly, **in Bulgaria**, the buildings were designed centrally by the Urban Planning and Design Institute "Sofproekt" or the Research and Design Institute for Standard and Experimental Construction "Glavproekt" (*National Programme…*, 2005). Another important feature of Bulgarian large-panel housing policy concerns the country's seismic activity. A widely known fact is the devastating earthquake of March 4, 1977, with its epicentre in the Romanian region of Vrancea and a magnitude of 7.2 on the Richter scale, which severely affected northern Bulgaria, particularly the area around the city of Svishtov. This earthquake caused damage to 800 buildings, including two large-panel block of flats that were destroyed. This event highlighted the importance of seismic resistance in Bulgarian prefabricated residential construction. All prefabricated houses in Bulgaria after 1987 were designed to withstand up to level 9 (on the 12-point European Macroseismic Scale, also known as the Medvedev–Sponheuer–Karnik scale). Given Bulgaria's seismic charac-

teristics, the country is divided into 3 zones. In the least active zone, buildings are designed to withstand up to level 7. In the second zone, they are designed to withstand up to level 8. In areas such as the capital, the Plovdiv area, and other more seismically active regions, buildings are designed to withstand up to level 9.

In Poland, several large-panel systems existed, including closed systems (a single method of assembling large-panel elements) and open systems (the ability to create various configurations in a limited number of

Figure 3. Construction of the Wichrowe Wzgórze estate in Poznań, 1976. At the time, the Soviet Land Estate was under construction. Author of the photo: Henryk Kamza

Source: Szkiłądź (2024: Fot. 8).

building types within any urban complex). What is more, several large-panel building systems were developed in the country (PBU, Domino, ŁSM…) or based on licences purchased from the GDR (Wk-70, T/FT/MG). The use of closed systems often had a limited territorial scope: for example, the "Fadom" system was used primarily in Upper Silesia, the "Dąbrowa" system in Łódź, and the "Winogrady" system in Poznań (Dębowski, 2026).

The open Wk-70 system, in turn, was based on solutions used in the GDR. Initial work on solutions implemented in the W-70 system was undertaken by the Design Department of the Construction Union in Warsaw and the Institute of Building Technology between 1967 and 1970. The proposed solutions were dedicated not only to residential construction but also to public buildings (e.g., hotels, student residences, administrative buildings, healthcare facilities, and schools) (Dębowski, 2026). Among the large panel housing estates built by housing cooperatives in Poland, social, educational, cultural, commercial, and healthcare facilities were built somewhat later than the blocks of flats. In exchange, housing cooperatives were also criticised (Stankiewicz and Walkowiak, 1987).

In Estonia, the main construction system used was the Soviet 1-464 standard, based on the Camus system purchased for the Soviet Union in the late 1950s. To enable local production, the Tallinn building company was established in 1961 to produce precast panels in accordance with this standard (Kalm, 2002a: 342). General plans and detailed plans for mikrorayons were prepared by the State Planning Institute Eesti Projekt, which adapted standard designs from Moscow to local conditions (Hess and Metspalu, 2019). A notable feature of Estonian housing construction was the relatively strong influence of Finnish and Scandinavian planning ideas, which shaped the site design of housing estates, encouraging a closer relationship with the natural landscape and avoiding the rigid and monotonous layouts typical of Soviet housing estates elsewhere (Kalm, 2002a: 326, 346; Hess and Metspalu, 2019). Research on Tallinn's socialist residential districts demonstrates that Soviet-wide regulations played a less deterministic role than often assumed, while architects and planners in Estonia retained considerable influence over neighbourhood design and spatial organisation (Hess and Metspalu, 2019).

In Czechoslovakia, construction systems evolved from early post-war experiments into a centralized, mass-produced industry that sought flexibility through "open systems" in its final decades (Janečková, 2017).

Panel construction was standardised into a range of basic systems and regional variants. The dominant lines were the T-series (T01B–T08B, with T06B and T08B), the Gottwaldov-derived G-series (notably the G57), Bratislava BA system, and New Construction Systems of the 1970s and 1980s (VVÚ ETA, Larsen Nielsen, OP1.11, and OP1.31 (Novotná 2013, 2021; Janečková, 2017). This ambition even crossed Cold War lines: unable to generate sufficient diversity domestically, Czechoslovakia turned to the West, licensing the Danish Larsen-Nielsen system in 1975 (Janečková, 2017).

Housing construction was governed through a strictly hierarchical, pyramidal structure of state planning, building, and research bodies, characterised by full state control over investment and the disposition of land and urban space. The State Planning Commission (Státní plánovací komise) set housing targets and allocated construction sites at the regional level, the Ministry of Building (Ministerstvo stavebnictví) oversaw the production, and the Research Institute for Construction and Architecture (VÚVA) supplied the multidisciplinary research on housing standards, and planning that guided policy. Design itself was concentrated in Stavoprojekt — the state system of regional architecture and engineering offices established in 1948 and later reorganised into regional State Design Institutes (Státní projektové ústavy) (Zarecor, 2010; 2011: 72–74, 287–288).

Regardless of the country and the construction system adopted, it should be emphasised that residential construction technology based on large concrete panels was not cheap, even if state propaganda often promoted this argument (see for example Kovpak, 2003: 31–32, 37; Hyrych, 2008a: 144; 2008b: 16–17; Iankovska, 2008: 117; Lukyanets, 2010: 160). The production of elements in factories was energy-intensive, as the process of accelerating the setting and hardening of concrete in the moulds required elevated temperatures (Dębowski, 2026).

Finished elements were delivered to the construction site by expensive means of transport, using vehicles designed to handle heavy, bulky elements. To facilitate transport, polygon factories (temporary prefabrication plants) were typically built within the development's neighbourhoods. This minimized the need to transport prefabricated elements through congested urban roads networks. In the Polish case, prefabrication plants were indeed initially located within or in the immediate vicinity of newly constructed housing estates. However, this situation began to change in the 1970s, when prefabrication plants operating within

large state-owned construction combines were increasingly situated on the outskirts of cities, often at a considerable distance from housing projects under construction. Loading, unloading, and assembly required the use of cranes. Each of these operations increased overall construction costs. The assembly of prefabricated buildings on construction sites proceeded at a relatively rapid pace. However, before the dwellings were ready for occupation, the finishing work phase slowed down somewhat, further hampered by irregular deliveries of necessary materials (Dębowski, 2026).

IDEOLOGICAL PRINCIPLES OF LATE SOCIALIST HOUSING ESTATES IN COUNTRIES UNDER SOVIET DOMINATION

As discussed earlier, large-panel housing estates represented key ideological objectives of communist governments: building an egalitarian society and promoting a collectivist mindset among the population. The goal in each Eastern Bloc country was the same: to provide affordable housing on a large scale (Rozanov, 1982: 43; Szafrańska, 2016: 37). More specifically, the functioning of housing estates in countries under Soviet domination in the late period of socialism was based on several basic principles.

First, **residential development was driven by ideological and political doctrines aimed at transforming the old capitalist society into a new, classless socialist one**. This entailed profound socioeconomic restructuring, industrialisation, and forced migration to urban areas (Georgiev, 2017: 3–16). Housing construction served explicit ideological goals, such as building an egalitarian society and cultivating a "collectivist spirit" among the population. Urban development was strictly state-controlled, with little room for private initiative. The distribution of flats was determined not by market forces, but by government policy and employment status (Hirt and Stanilov, 2009: 34–40).

Second, urban development followed a **highly centralized and deterministic planning model** typical of socialist regimes. Economic and demographic planning was conducted top-down, with little or no market input, often disregarding local needs and economic efficiency (Hirt and Stanilov, 2009: 28–33).

The centrally planned system relied heavily on **industrialised construction techniques**, particularly prefabricated panel technologies, to deliver large numbers of standardised dwellings rapidly. Housing was conceived as an industrial product, enabling cost-efficient mass production. Residential buildings followed highly standardised architectural designs that reinforced socialist ideals of equality and collective identity. At the same time, housing was intended for populations with relatively similar socio-economic characteristics, while allocation was centrally administered according to employment status or political eligibility rather than market demand (Hirt and Stanilov, 2009: 29–34).

Although the socialist system explicitly rejected market-driven mechanisms, its approach to housing—through standardisation and mass production—paradoxically mirrored certain features of capitalist economies. Housing provision relied on industrialised methods such as the use of factory-produced concrete panels and uniform designs aimed at **reducing costs** (Georgiev, 2017: 8–9).

Another foundational principle of late socialist housing policy was the conceptualisation of **housing as a basic social right**, guaranteed by the state rather than governed by market dynamics. Housing was not treated as a commodity, but as a universal entitlement, with the goal of ensuring sufficient living standards for all citizens (Hirt and Stanilov, 2009: 28–40). However, this often resulted in limited attention to construction quality, long-term maintenance, or user satisfaction. Housing allocation was primarily needs-based, favouring specific social groups such as young families with children, industrial workers, employees of state institutions (e.g. military, police), and politically loyal administrative personnel.

In terms of spatial organisation, socialist urbanism adopted a **functional-constructivist approach** rooted in the principles of the Athens Charter. Cities were divided into distinct functional zones—residential, industrial, and recreational—often structured according to a monocentric layout with a strong urban core (Georgiev, 2017: 10–12).

Cities expanded onto peripheral agricultural land to build large-scale housing developments, often without integrating traditional urban structures or environments (Georgiev, 2017: 11–12). Moreover, residential areas, typically situated on the urban periphery, were planned according to the micro-districts model, which **integrated essential public services**—such as schools, clinics, and public transport—into the

built environment. These areas were organised hierarchically into residential units, micro-neighbourhoods, and districts, each corresponding to a specific level of service provision and infrastructure (Hirt and Stanilov, 2009: 28–40).

MANAGEMENT OF LATE SOCIALIST BLOCK OF FLATS

As previously mentioned, prefabricated panel construction was closely aligned with socialist ideology (Cendrowicz, 2023). For this reason, the production of large-panel residential buildings in the Soviet Union and other Eastern Bloc countries was placed firmly under state control. Construction projects were developed by state architectural offices, while state-owned enterprises were responsible for their implementation rather than profit generation. However, actual practice differed somewhat from these ideological principles. Initially, three principal actors participated in mass housing provision: (1) state housing construction; (2) housing cooperatives (operating in close cooperation with state institutions); and (3) enterprise housing, under which state-owned enterprises constructed dwellings for their employees.

In the first half of the 1970s, a fourth actor—agricultural production cooperatives—began constructing dwellings for their employees and their families (Meuser, 2024). The distribution of housing ownership varied considerably depending on the institutional characteristics of individual Soviet republics and Eastern Bloc countries. Table 1 presents the structure of housing stock ownership in the selected countries. A more detailed discussion of the management systems for late socialist blocks of flats in the countries analysed is presented below.

Table 1. Housing stock ownership in the selected Centrally Planned Economies

Country	Year	Housing Stock Ownership		
		State	Cooperative	Private
GDR	1971	23.0	9.0	68.0
	1980	27.7	9.8	62.6
Hungary	1970	27.0	1.0	72.0
	1980	25.6	1.8	72.6
Poland	1970	34.8	7.4	57.8
	1980	32.2	16.9	50.9
	1984	32.4	21.8	45.8
USSR	1970	56.0	n/a	44.0
	1980	65.0	3.0	32.0
Yugoslavia	1970	18.0	n/a	n/a
	1980	20.1	0.9	79.0
	1984	22.8	n/a	n/a

Source: Matras (1989: 29).

In Ukraine, the state as the principal investor and owner, financed and organised housing construction through centralised construction organisations, house-building combines, and design institutes. Republican organisations, such as the Kyiv Zonal Scientific Research and Design Institute of Experimental Design [Київський зональний науково-дослідний і проектний інститут експериментального проектування] and the Ukrainian State Research Institute for Urban Design [Український державний науково-дослідний інститут проєктування міст], adapted standard projects developed in Moscow to Ukrainian conditions (Rozanov, 1982: 42; Iankovska, 2015: 220–221; Hryhorovskyi and Murasova, 2018: 30–32; Agieieva, Kafiev and Krivelov, 2021: 35–36). As a result of the introduction of industrialised housing construction, an entirely new branch of the construction industry emerged – large-panel house building (Rozanov, 1982: 3). The first mechanized production

line for prefabricated panels and slabs in the USSR was purchased from France (Iankovska, 2015: 221). The first such plants were established in Moscow between 1952 and 1954 (Rozanov, 1982: 9).

Until Ukraine regained independence in 1991, the housing stock was managed by state bodies and local councils (executive committees), which registered and allocated dwellings according to waiting lists and strict living-space standards per person. In practice, most citizens became lifelong tenants of state-owned dwellings, paying symbolic rents and utility charges, while ownership and effective control of the buildings remained in the hands of the state (Kovtun, 2014: 282–283; Iankovska, 2015: 221–222).

Similarly**, in Estonia,** the construction of large-panel housing estates was closely linked to Soviet ideology, which promoted mass housing both as a social policy instrument and as a tool of urban development. The state was the main owner of these estates, financing and controlling their construction under the centrally planned economy (Leetmaa et al., 2018; Hess and Metspalu, 2019). Apartments in blocks of flats were allocated through a state distribution system, with local authorities managing access according to waiting lists, workplace affiliation, or social status.

This allocation mechanism contributed to the emergence of ethnic residential segregation. Russian-speaking migrants, arriving through organised enterprise and military channels, were granted priority access to newly constructed apartments, resulting in a strong concentration of Russian-speakers in modern housing estates (Leetmaa et al., 2018). The development of large housing estates in Tallinn was therefore closely linked to Soviet-era migration and housing allocation policies, which disproportionately directed Russian-speaking in-migrants into these areas and established durable patterns of ethnic segregation that persisted into the post-socialist period (Kährik, Kangur and Leetmaa, 2019).

In contrast to many Western European mass housing estates associated with social marginalisation, Soviet-era estates in Estonia historically accommodated socially mixed populations and functioned as housing for socially mixed, predominantly middle-income populations. Their attractiveness stemmed from modern amenities, subsidised rents, and higher living standards compared to older pre-war housing stock. However, studies indicate that estates with higher concentrations of ethnic minorities were more likely to experience downward socio-eco-

nomic trajectories during the post-socialist transition (Kährik, Kangur and Leetmaa, 2019).

Before 1990, housing estates in Estonia consisted predominantly of state-owned or enterprise-managed rental housing, with rents heavily subsidised and calculated proportionally to household income. Flats were allocated through administrative mechanisms based on waiting lists, workplace affiliation, and institutional priorities rather than market demand. By the end of the Soviet period, approximately 76% of housing units in Tallinn were state-subsidised rental dwellings—a higher share than elsewhere in Central and Eastern Europe—and around two-thirds of the population lived in large prefabricated housing estates (Kalm 2002b). The cooperative housing sector remained comparatively limited. As a result, Estonia entered the post-socialist transition with a predominantly state-managed urban housing stock, making the subsequent privatisation process particularly rapid and far-reaching.

In Bulgaria, during the peak period of industrialised housing construction, large-panel blocks flats were constructed primarily by state-owned enterprises, commonly referred to in Bulgaria as house-building combines. Alongside the dominant state-led housing construction, limited forms of private ownership existed, including individual, cooperative, and group housing, although their role remained marginal. As a result of housing policy, most dwellings in multi-family buildings were transferred to their occupants, leading to the widespread model of individual ownership combined with shared ownership of common areas. However, the management of these buildings was poorly regulated, as the state failed to establish an effective system for their administration and maintenance. In contrast to other Eastern Bloc countries, dwellings in Bulgaria were often transferred to residents almost immediately after construction, without appropriate legal frameworks for building management. This lack of developed management institutions and clearly defined maintenance responsibilities distinguished Bulgaria from other socialist states (Georgiev, 2017: 13–16).

In Poland, housing cooperatives played a central role in implementing state housing policy during the communist era. Alongside housing cooperatives in Poland, blocks of flats were owned by: local state administration authorities, state agricultural farms, other socialised (state-affiliated) entities, the church and religious institutions (*Narodowy spis powszechny…*, 1982: VIII).

The difficult demographic situation in the 1950s prompted the Polish authorities to allow housing cooperatives to invest private funds collected from citizens through so-called "housing saving books". The housing cooperative movement, unlike many other sectors, survived nationalisation after World War II and remained the dominant form of urban housing provision until the early 1990s. However, as a result of political decisions in 1948–1949, housing cooperatives lost their institutional autonomy and became completely subordinated to state housing policy. The state played a decisive role, embedding cooperative housing into national socio-economic plans, financing infrastructure, and securing land and materials for construction (Komar, 2014: 34; Kujawa, 2025).

Housing cooperatives' activities were included in subsequent national socio-economic plans. This led to the introduction of a series of measures in the financing of construction investments carried out by cooperatives, including: through the availability and affordability of credit, the provision of land for investment, state participation in infrastructure financing, securing allocations of raw materials for construction, and the introduction of affordable rental dwellings for the most vulnerable socially and economically (Drozd-Jaśniewicz, 2011: 62). In return, housing cooperatives were forced to cooperate closely with state-owned enterprises (Stankiewicz and Walkowiak, 1987). Dwellings were distributed through state-controlled cooperatives, often tied to workplaces, and waiting times for allocation could stretch for decades, especially during the 1970s and 1980s (Cesarski, 2011: 29). Until the political transformation of 1989, management of large-panel estates remained under the cooperative system, heavily supervised and subsidised by the state, with residents holding tenancy rights rather than full ownership. In 1990, housing cooperatives owned 2,743,000 dwellings, which constituted 25% of Poland's total housing stock. However, in 1990, they were responsible for the construction of over 50% of the dwellings in Poland (*Rocznik Statystyczny…*, 1995: Tabl. 21[276] and Tabl. 24[279]).

Czechoslovakia developed the most sophisticated system for managing large-panel housing estates among the countries examined. In this country during the socialist period, three main forms of housing construction and tenure gradually evolved in the housing estates: (1) state housing, fully funded by state subsidies, in which residents paid low, regulated rents; (2) enterprise housing (1959–1981), partly financed by state subsi-

dies and partly by enterprises, where dwellings were allocated primarily to attract labor to preferred regions and industries; and (3) cooperative housing, introduced in 1958, funded through a combination of state subsidies, bank loans, and contributions from cooperative members. Over time, cooperative housing became the dominant form of tenure (Musil, 1987; Sýkora, 1996).

State flats were allocated through a "decree to a flat", primarily to young families with children and to members of preferred professions. Tenants' attachment to their dwellings was strong—sometimes referred to as "quasi-ownership" (Šmídová, 1996). The decree granted lifelong occupancy rights, low rents, and the possibility of transferring the flat to one's children or exchanging it for another dwelling. Cooperative housing functioned differently: it entailed membership in a housing cooperative and a tenancy contract granting the right to use the dwellings. Accordingly, the management systems differed: the estates were managed by three parallel actors—national committees (with their OPBH maintenance enterprises) for state flats, industrial enterprises for enterprise housing, and housing cooperatives for cooperative dwellings. This layered tenure structure—combining state rental, enterprise, and cooperative housing within the same estates—meant that there was no single ownership actor or management system to drive transformation after 1989, a complexity that would come to define the Czech path of marketization.

STATISTICAL SIGNIFICANCE OF LARGE-PANEL BLOCKS OF FLATS

Due to the diversity of ownership and management structures in post-war housing construction, it is difficult to identify and compare accurately the number of dwellings built using large-panel construction technologies across the countries included in this study. It is worth recalling that several official construction methods were recognized during the post-war period, including improved traditional construction, in which the load-bearing structure consisted of walls made of bricks, blocks, or hollow units small enough to be installed manually; large--panel (prefabricated) construction, characterized by load-bearing wall

structures assembled on-site from large-format prefabricated concrete or reinforced concrete elements, with wall panels corresponding to the full height of a storey and at least 2.40 metres in width; large-block construction, similarly based on prefabricated concrete or reinforced concrete elements of full storey height but with widths of less than 2.40 metres wide; monolithic construction, involving wall or frame structures cast *in situ* using reusable or disposable formwork; and Canadian (timber-frame) construction, based on a timber frame erected on a concrete foundation (*Budownictwo…*, 1999: 18). Reliable statistics distinguishing these construction methods were compiled only in later decades. For example, systematic national statistics on construction methods began to appear only subsequently (see: *Budownictwo…*, 1999: 33).

Accordingly, this section begins by presenting the total number of dwellings completed in each of the countries under study. It then examines, national statistics and other evidence relating specifically to large-panel housing construction.

Table 2 presents the absolute number of dwellings completed in the studied countries between 1950 and 1989. Table 3, in turn, shows the efficiency of housing construction in relative terms (Number of dwellings completed per year per 1,000 inhabitants). The data presented in Tables 2 and 3 indicate that the highest number of dwellings in the USRR, in both absolute and relative terms, was completed in the 1960s. During the period of the centrally planned economy in the Soviet Union, housing construction became a key priority of state policy, particularly in response to the acute housing shortages caused by wartime destruction and rapid industrialization and urbanisation. The large-scale migration of people from rural areas to cities significantly increased demand for urban housing, necessitating the implementation of large-scale housing programmes. A decisive turning point occurred in the mid-1950s with the housing reforms introduced under Nikita Khrushchev, which emphasised the rapid and cost-efficient provision of housing through industrialised building methods. The widespread adoption of prefabrication technologies enabled the standardisation and acceleration of construction processes, allowing the state to produce housing on an unprecedented scale. This period saw the emergence of khrushchyovkas—low-rise, large-panel blocks of flats designed for mass production and intended to provide self-contained flats for individual households. The emphasis on simplicity, functionality, and uniformity reflected both economic constraints and the ideological commitment to social equali-

ty. As a result of these combined factors, the 1960s became the peak period of housing construction in the Soviet Union, resulting in the highest annual housing output recorded during the socialist period.

Table 2. Total number of dwellings completed (thousands)

Country	1950	1955	1960	1965	1970	1975	1980	1985	1989
Bulgaria		43.0	49.8	45.2	45.7	57.2	74.3	64.9	40.5
Czechoslovakia	38.2	50.6	76.3	85.9	122.6	152.0	134.2	104.4	95.9
Poland	68.0	85.0	137.6	168.9	194.2	264.0	217.1	189.6	150.2
USSR		906	**2912.0**	2197.0	2266.0	2200.0	2004.0	1991.0	2119.0

Source: Based on data from Gorczyca (1991: 28; 1996: 66) and Annual Bulletin of Housing and Building Statistics for Europe (relevant years). New York, United Nations.

Table 3. Number of dwellings completed during one year per 1,000 inhabitants

Country	1950	1955	1960	1965	1970	1975	1980	1985	1989
Bulgaria			6.3	6.5	5.4	6.4	8.4	7.2	4.5
Czechoslovakia	3.1	4.2	6.1	6.2	8.6	17.3	8.8	7.3	5.2
Poland	2.7	3.3	4.8	5.4	6.0	7.8	6.1	5.1	4.0
USSR		7.7	**12.1**	9.7	9.3	8.8	7.5	7.2	7.4

Source: Based on data from Gorczyca (1991: 28; 1996: 67) and Annual Bulletin of Housing and Building Statistics for Europe (relevant years). New York, United Nations.

In contrast, in Czechoslovakia and Poland the highest number of dwellings was completed in the mid-1970s. The scale of housing construction in Czechoslovakia during this period is particularly noteworthy, reaching an exceptionally high level of 17.3 dwellings completed per 1,000 inhabitants. In Bulgaria, the peak occurred later, in 1980, indicating a temporal shift in the dynamics of housing development across socialist countries.

These findings broadly support the periodization proposed by Flekačová (2014) generally holds true, although the pace and timing of development differed across these countries. According to this framework, distinct stages of housing development can be identified based on architectural and urban quality as well as broader historical and societal con-

ditions. The early "**wooden era**" was rooted in the traditions of interwar functionalism. It was followed by the socialist realism of the 1950s, characterised by monumental architecture and a focus on industrial cities. The subsequent "**Pioneer Era**" marked the introduction of new construction technologies and the emergence of the first panel buildings. The humanistic period of the 1960s, often referred to as the "**Golden Sixties**", was associated with greater architectural freedom and relative social and political openness. For example, during this period, housing policy in Poland was dominated by efforts to maximise the number of dwellings completed and to reduce the housing shortage, while issues related to housing quality and improvements in living standards remained of secondary importance. In contrast, the technocratic era of the 1970s was shaped by political normalisation and increasing pressure for mass housing production, often at the expense of quality. Finally, the post-technocratic period of the 1980s was characterised by a slowdown in construction activity due to economic stagnation, accompanied by growing criticism of functionalist urbanism and established socialist planning principles.

Detailed data **for the Soviet Republics** are presented in Table 4. In this case, the figures are expressed in square meters. The figures presented in Table 4 indicate that the total floor area of dwellings completed during the studied period either increased consistently or fluctuated only slightly. This suggests that, over time, the average size of dwellings put into use in the USSR's republics gradually increased.

Table 4. Dynamics of dwellings completed in the republic of the USSR by five-year periods, 1955–1990 (thousand m² of dwellings)

	1956–1960 (VI)	1961–1965 (VII)	1966–1970 (VIII)	1971–1975 (IX)	1976–1980 (X)	1981–1985 (XI)	1986–1990 (XII)
Ukrainian SSR	87 429	94 994	96 090	97 706	90 818	92 240	99 552
Estonian SSR	2 051	2 845	3 179	3 633	3 803	3 902	3 363
USSR	474 100	490 713	518 254	544 315	526 785	549 790	627 980

Source: Pilipenko, 2023: 13.

As discussed earlier, the significant destruction of the housing stock and urbanisation in the USSR forced the party leadership to seek solutions that would enable rapid, inexpensive housing construction for cit-

izens. From the mid-1950s to the late 1980s, state architectural organisations mainly constructed high-rise buildings according to standard designs. After 1957, a new stage in the development of Soviet cities began. Instead of building settlements near industrial enterprises, state architectural organisations began to design large housing estates and to form fully developed urban districts and microdistricts (Kovpak, 2003: 47; Hyrych, 2008a: 146). This approach made it possible to increase the pace of housing construction in the USSR (table 4). Housing construction cooperatives were responsible primarily for constructing prefabricated housing estates. For example, in 1979, their share in urban construction reached 75% (Rozanov, 1982: 4).

Despite this progress, Ukraine trailed some other Soviet republics by the late 1980s. Its housing indicators were lower than those in the Baltic states, Belarus, and Georgia. Compared with leading countries worldwide, the disparity was even greater. Average living space per person amounted to about 24 m² in Spain, 23 m² in Italy, 22 m² in Czechoslovakia, 32 m² in Germany, and 45 m² in the United States (Kovpak, 2016: 66–67).

Over time, housing cooperatives **in Ukraine** contributed to the construction of newer and higher-quality dwellings. The number of newly built units in the Ukrainian SSR fluctuated across decades: 1,987 in 1956–1960, 2,114 in 1961–1965, 1,987 in 1966–1970, 1,912 in 1971–1975, 1,718 in 1976–1980, 1,688 in 1981–1985, and 1,711 in 1986–1990 (*The National Economy…*, 1987: 300; 1991: 135).

In turn, **in Estonia,** large-panel housing estates during the Soviet period were state-owned rental housing with rents computed proportionally to income and large state subsidies. By the end of the Soviet period, approximately 76% of housing units in Tallinn were state-subsidised rental units, a higher share than elsewhere in Central and Eastern Europe, and about two-thirds of the population lived in large prefabricated housing estates (Kalm 2002b).

In the next stage of the analysis, Table 5 presents information on the total number of dwellings **in Bulgaria, Czechoslovakia, and Poland**. The data clearly indicate Czechoslovakia's leading position throughout the entire period under study. In the 1970s, Poland and Bulgaria still had relatively similar numbers of dwellings available to their populations. However, in the 1970s and 1980s, Bulgaria became the leading country within this group, surpassing Poland in terms of total housing stock.

Table 5. Total number of dwellings in the census year

Decade	Indicators	Bulgaria	Czechoslovakia	Poland
1950s	Census year	1956	1950	1950
	Number of dwellings (thousands)	1733	3613	5850
	Dwellings per 1,000 inhabitants	228	293	–
1960	Census year	1965	1961	1960
	Number of dwellings (thousands)	2019	3883	7026
	Dwellings per 1,000 inhabitants	248	281	245
1970s	Census year	1972	1970	1970
	Number of dwellings (thousands)	2639	4520	8353
	Dwellings per 1,000 inhabitants	275	315	256
1980s	Census year	1980	1980	1980
	Number of dwellings (thousands)	2839	5286	9794
	Dwellings per 1,000 inhabitants	317	345	275
Late 1980s	Census year	1988	1988	1988
	Number of dwellings (thousands)	3326	5869	10789
	Dwellings per 1,000 inhabitants	370	376	286

Source: Based on data from Gorczyca (1996: 75) and Annual Bulletin of Housing and Building Statistics for Europe (relevant years). New York, United Nations.

In Poland, as discussed in the previous section, the peak period for the construction of prefabricated housing estates in Poland was the end of 1970s and 1980s. However, on the threshold of transition in 1990, the housing cooperatives managing prefabricated housing estates had 2,743,000 dwellings, which constituted 25% of Poland's entire housing stock (*Rocznik Statystyczny…*, 1995: Tabl. 21[276] and Tabl. 24[279]). The data on the total number of dwellings and those in urban areas, including ownership types, are presented in Table 6. They show, on the one hand, an increase in the housing stock during the period under study, and on the other hand, a growing importance of housing cooperatives, particularly in urban ar-

eas. Notably in 1990, housing cooperatives—primarily using large-panel construction technology—were responsible for the construction of over 50% of dwellings in Poland (*Rocznik Statystyczny…*, 1995: Tabl. 21[276] and Tabl. 24[279]).

Tabela 6. Total number of dwellings in Poland in the two census years

Year	Category	Number of dwellings (thousands)	Forms of ownership				
			Local state administration authorities	Housing cooperatives	Other socialized entities	Private	Church and religious institutions
1978	Total	8928970	22.3%	17.7%	11.5%	48.3%	0.2%
	Urban area	5670428	33.2%	27.7%	10.6%	28.3%	0.1%
1990	Total	10716758	19.4%	24.3%	12.6%	43.5%	0.2%
	Urban area	7039802	27.7%	36.7%	11.8%	23.6%	0.1%

Source: *Narodowy spis powszechny…*, 1982: 58, Tabl. 2(14); *Narodowy spis powszechny…*, 1990: 55–63, Tabl. 2(12).

The most dynamic period in the development of large prefabricated housing estates **in Bulgaria** occurred during the 1970s and 1980s. The widespread application of industrialized construction technologies was driven both by the country's trade and economic relations with the then Soviet Union, and by intensive processes of urbanization and the growing need to provide housing for the expanding urban population.

By the end of the 1980s, on the eve of Bulgaria's economic transition in 1990, prefabricated residential buildings accounted for a substantial share of the national housing stock. Their role was particularly prominent in newly developed urban multi-family housing and in large-scale residential complexes. For example, by 1985, the number of prefabricated dwellings had reached 528,784 units, representing nearly 17% of all dwellings in the country. These dwellings were home to 1,572,181 inhabitants, or approximately 18% of the total population ('Residential building stock…', 2006).

These figures confirm the significant, albeit not predominant, role of large panel construction within the structure of Bulgaria's national hous-

ing stock, with a clearly pronounced concentration in large cities and major housing estates (*Housing Building Stock…*, 2006). A leading role in housing construction, and consequently in the provision of the majority of newly built dwellings in Bulgaria, was played by state-owned and co-operative construction enterprises.

In turn, **Czechoslovak** housing construction differed significantly from that of the former Soviet republics and other countries of the Eastern Bloc. Former Czechoslovakia represented a rare exception (alongside the German Democratic Republic) among communist countries, as its housing standard differed only slightly—albeit negatively—from that of moderately developed Western European countries. Within the federation, however, there was a significant disparity in housing conditions to the disadvantage of the less developed Slovakia; this gap gradually, although slowly, diminished over more than forty years of coexistence.

Between 1945 and 1990, almost 3.6 million dwellings were completed in Czechoslovakia. The scale of construction increased steadily until mid-1970, rising from 38,000 units in 1949 to 152,000 in 1975, before declining to 95,000 in 1990. Housing investments accounted for a significant share, approximately 10–15%, of total investment outlays. In the 1980s, up to about five dwellings were constructed annually per 1,000 inhabitants, including slightly fewer than five in the Czech lands and more than six in Slovakia, compared to a peak of 10.3 dwellings per 1,000 inhabitants recorded in 1975 (Gorczyca, 1996).

Dwellings were characterized by a high, almost fully developed level of utilities and a steadily increasing floor area. According to the last housing census conducted in former Czechoslovakia on 3 March 1991, the federation had 5,845,000 dwellings, of which 5,320,000 were occupied. This corresponded to 341 occupied dwellings per 1,000 inhabitants. The average dwelling size was 47.0 m² of living space. The housing stock was of relatively high standard: over 90% of dwellings were equipped with bathrooms and flush toilets, and more than three-quarters had central heating. The growth of the housing stock, which significantly outpaced population growth, led to a marked improvement in housing conditions (Kučera 1991, see also Gorczyca 1996: 89). At the same time, the ratio of average monthly wages to the price of 1 m² of usable floor space meant that, by the late 1980s, purchasing power corresponded to approximately 1.2–1.3 m² (Gorczyca 1996).

CONCLUSION

The system of large-panel housing estates in socialist countries served as a key instrument of state ideology, combining central planning, mass production, and the non-market allocation of housing. Although this approach enabled the rapid provision of dwellings for growing urban and industrial populations and promoted the ideological objective of social equality, it also involved considerable economic costs, including the operation of mobile prefabrication plants and the transportation of large prefabricated elements.

In the Soviet republics and across the Eastern Bloc, close cooperation existed in the design of large-panel housing estates and the development of prefabrication technologies. Although architectural designs and construction methods differed between countries—for example, the influence of Finnish and Scandinavian planning principles on Estonian housing estates—the shared objective remained the large-scale provision of affordable housing.

The findings of this study demonstrate that the distribution of dwellings, although consistently presented under the banner of social equality, did not produce uniform outcomes across the countries examined. The Estonian case, in particular, demonstrates that the allocation of newly constructed dwellings in large-panel housing estates could—and indeed did—contribute to ethnic residential segregation.

Despite their common ideological foundations, housing management and ownership models differed substantially. In the Soviet republics, housing remained predominantly state-owned; in Poland, housing cooperatives mobilised private savings through housing saving books, granting residents tenancy rights rather than full ownership; in Bulgaria, most dwellings were transferred to occupants, resulting in widespread individual ownership combined with shared ownership of common areas but relatively weak regulatory frameworks; whereas Czechoslovakia developed the most diversified housing system, integrating state, enterprise, and cooperative forms of provision.

In all the countries analysed, it is not possible to determine precisely the number of dwellings constructed using large-panel technology during the post-war period, and any estimates remain necessarily approximate. Nevertheless, large-panel housing estates contributed substantially to increasing the housing supply and improving living

conditions, although the scale and effectiveness of these developments varied considerably between countries. In the Soviet republics, including Estonia and Ukraine, the state remained the dominant provider of housing. In contrast, in Eastern Bloc countries such as Poland and Czechoslovakia, housing provision relied not only on the state institutions but also on housing cooperatives and other public-sector organisations.

Despite strong ideological support, large-scale prefabricated housing construction expanded primarily between the late 1960s and early 1990s. Its development reached different peaks across the socialist world—earliest in the Soviet Union during the 1960s and later in Czechoslovakia and Poland during the 1970s—reflecting differences in the pace and organization of industrialised housing construction.

The findings of this study provide a foundation for further comparative research into the transformation, privatization, and marketisation of large-panel housing estates after 1990. By demonstrating that socialist housing systems were institutionally diverse despite their common ideological foundations, this study also contributes to a broader understanding of post-socialist urban transformation in Central and Eastern Europe.

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