

STRUCTURAL AND SPATIAL CHARACTERISTICS OF PANEL HOUSING ESTATES IN BRNO

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Introduction

According to the Czech Statistical Office (2021), Brno has 209,587 flats, with 163,438 located in apartment buildings, over a third of which are prefabricated (1). These units have a significant impact on the population due to their prevalence. Data from these structures can be used for various urban, sociological, economic, and environmental analyses. This information is essential for urban planning, assessing housing quality, studying social and economic trends, and making strategic decisions regarding infrastructure and the environment. It also helps guide the development or revitalization of existing housing. The text aims to clarify available data on prefabricated housing in Brno, focusing on construction systems and spatial characteristics. Structural systems are a central theme, with differing views on the number within the Czech Republic. For example in Brno, the B60 system is unique, based on the original G57 design. The most common systems in Brno include G40, G57, G58, G59, T01B, T02B, T03B, T06B, T08B, VVÚ-ETA, B70, OP, and a few experimental structures.

The name of the housing estate	Prevailing structural system	Year of construction	Current capacity of panel apartments
Fučíkova čtvrť	B60 (regional variant G57)	1960 - 1963	446
Staré Brno - sever	B60 (regional variant G57)	1961 - 1963	220
Staré Brno-jih	B60 (regional variant G57), T08B	1962 - 1965	1410
Černá Pole	B60 (regional variant G57)	1962 - 1965	1258
Lesná	B60 (regional variant G57), T06B	1962 - 1970	5466
Žabovřesky	T06B	1966 - 1972	3777
Královo Pole	T06B	1968 - 1975	2202
Komin	T06B, B70	1969 - 1975	2110
Kohoutovice	T06B	1970 - 1981	4640
Řečkovice	T06B	1970 - 1977	2055
Jundrov	T06B	1970 - 1974	846
Bystrc	T06B, B70	1971 - 1984	3607
Bohunice	T06B, B70	1972 - 1983	6020
Starý Lískovec	B70	1972 - 1981	3377
Jabloňová	T06B	1974 - 1976	296
Stará osada	T06B	1973 - 1979	688
Slatina	T06B	1977 - 1980	1588
Lišeň	B70	1975 - 1985	6998
Nový Lískovec	T06B, B70	1980 - 1995	3932
Vinohrady	B70	1981 - 1989	5295
Bystrc	T06B, B70	1984 - 1991	5809
Komárov	T06B	1985 - 1987	1056

Material and Methods

The study focuses on mapping and analyzing prefabricated housing estates in Brno, specifically Lesná, Kohoutovice, Starý Lískovec, Nový Lískovec, Vinohrady, and Komárov. To determine the construction systems used in these estates, a combination of historical documentation, online discussion forums, and the author's classification based on available photographic evidence was employed. The method involved comparing the various sources to identify discrepancies and establish a consistent categorization of construction systems. The output of this research consists of detailed maps depicting the spatial distribution and construction characteristics of the selected housing estates, providing a foundation for further urban planning and analysis.

Results

The selection was made based on the maximum possible variety of urban structure and constellation systems - the settlements Kohoutovice, Lesná, Starý and Nový Lískovec, Vinohrady and Komárov are described. The individual construction systems are shown on the maps.

The ownership structure is also described as houses and public spaces, where the owner can be either a private owner (residents, co-owners, or investors) or public ownership (the city or the municipal district). The maps below show public ownership - land and buildings owned by the City of Brno (excluding share ownership).

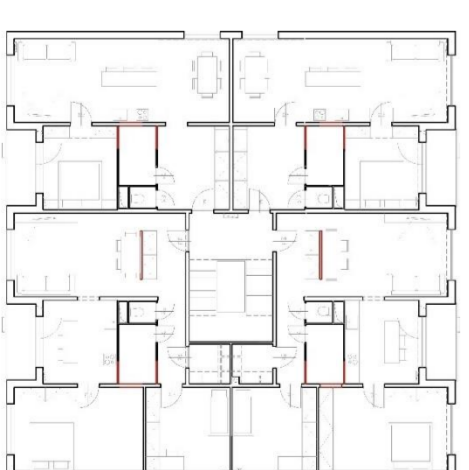
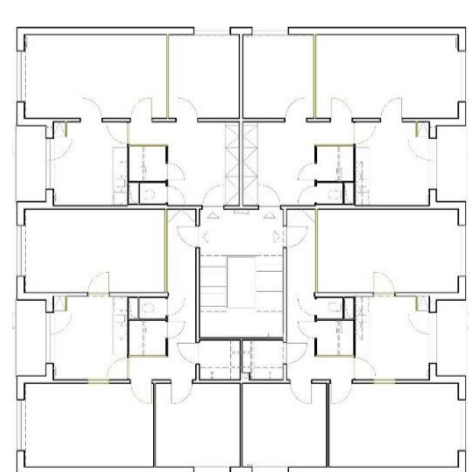


Discussions & Conclusions

As outlined in the introduction, about one-third of Brno's population lives in prefabricated houses. Data on these housing estates have potential applications in various fields. The article focuses on the structural systems of prefabricated houses in Brno and their spatial characteristics. It provides a clear data summary in graphical form, using maps of structural systems along with ownership of public and private areas, showing the Brno city's predominant land ownership and numerous urban dwellings in these estates.

The relationship between structural systems and public space was also examined, revealing that the structural system does not significantly impact public space or its adaptation. Instead, key factors include terrain morphology, location, traffic, and other variables. However, structural systems significantly affect the adaptability of apartment buildings, particularly individual apartments, which depend directly on the structural system.

The T08B construction system, found in the Old Brno South estate (Václavská Street), is probably the most adaptable in terms of floor plan, with larger wall spans (6m) allowing for bigger open spaces. In contrast, the B70 system, with its segmented floor plan, offers fewer layout options and is harder to modify.



Example of modification of flats in structural system T06B

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