

Fringe belts structure and transition economy: morphological patterns and present-day changes. A case study of Krasnoyarsk, Russia

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Abstract

In Russia, the early 1990s breakup of the USSR emerged plan-to-market shifts in economy and reorganization of the socio-economic system. The time of transition economy includes economic decline, new forms of ownership, insufficiency of legal mechanisms which can regulate the urban land market and proper urban planning documentation. In urban planning, a disconnection between urban management and urban planning has caused spontaneous development.

This research aims to study how this period has impacted the functional-spatial structure of Krasnoyarsk's fringe belts. Certain fragments of inner, middle, and outer fringe belts are analysed through their morphology; and the processes that influence these belts are also described.

The outer fringe belt, which appeared in the transition period, in the city periphery, alongside the main transport artery, is still suffering spontaneous dense development. The lack of long-term development plans and a unified system of accounting and land inventory has triggered inconsistency in land matters and land plots ownership identification. All this has depressed the territories of inner and middle fringe belts. Despite their value, their historical parameters and established rights to the land plots obstruct an integrated reconstruction.

Keyword: fringe-belt, Siberia, urban morphology, transition economy

Introduction

The idea of urban fringe belts, which allows reading the urban structure of settlements, plays a significant role in the theory of urban morphology. There are current examples of fringe belts formed both in the market economy – in Europe, New Zealand, and Latin America – and in the planned economy (China), as well. The influence of plan-to-market transition period and its character on the fringe belts' appearance and evolution is a brand-new research focus. The transition period is an intermediate state of economy, and processes that lead to socio-economic transformations and change the social structure.

Regarding this, through the case of inner, middle, and outer fringe belts of Krasnoyarsk, the study assesses how the transition period in the Russian economy of the 1990s – early 2000s transformed the fringe belts and their current morphological patterns, while an insight into the relationship between economic processes and fringe belts development will clarify their present structure.

Background

The transition period is a time from the USSR breakup and the 1991 collapse of the centrally planned economy till the market economy established by 2004. The end of transition period and the market economy appearance could be signed by completed privatization and certain autonomy of the state-owned enterprises, as well as introduction of private medium-sized enterprises and small business (diversification), which pushed the market, and different types of land use. Moreover, there were changes in the urban planning legislation, the total state land ownership was terminated, and the national cadastre for the real estate registration appeared.

The research focuses on the transition period given the effect of its nature – the crisis and recession in construction industry, lack of proper legislation to control the urban land market and urgent urban planning documentation, emergence of new forms of ownership and urban land surveying – made on the functional and spatial structure of fringe belts.

In new circumstances, transferring the settlements development management from the centralized public system to the local authorities, and poor urban regulation mechanisms provoked a crisis in the urban planning and damaged the target land-use monitoring. During the privatization process, a shift from the public property (urban land, production facilities) to collective and private ones was a priority. Thus, several forms of ownership appeared that time: federal, municipal, and private; the land sites acquired monetary value and, thus, an urban land market occurred. In the 1990s, the lack of general layouts and detailed legal mechanisms for the urban planning regulation caused spontaneity in cities' planning and development, as well as non-ordered land relations.

The study attempts to analyse how far the transferring of land surveyed sites from the state to another main form of ownership has determined the structure and functions of the fringe belts.

Methodology

Research area

By the early 1990s Krasnoyarsk had a segregated planning structure located on the banks of the Yenisei. By this time, the inner, middle, and outer fringe belts were already clear, judging by the natural and anthropogenic border lines.

A part of the inner fringe belt was formed in the late 17th and early 18th centuries, along the slope of Karaulnaya Mountain and the Kacha River. The land use mainly included private house building and warehouse facilities, which were spontaneously emerging in the 18th – 19th centuries (Figure 1).

A fragment of the middle fringe belt appeared in the early 20th century owing to a military settlement outside Krasnoyarsk's administrative border. In the first half of the 20th century, its territory and building area, alongside with the adjacent private housing and facilities, were expanding.

A fragment of Krasnoyarsk's outer fringe belt is along a transport artery, which a priori connects the city with the neighbourhood, and – with the city airport. By the early 1990s, on the southern part, there was a construction of communal and warehouse buildings.

Measurements, analysis, and sources

By using the historical-geographical method proposed by M.P.G Conzen, J. Whitehand this research examines transformations and changes in the inner, middle, and outer fringe belts of Krasnoyarsk during the economic transition.

The research idea is based on a) land use features, b) map of land surveying sites and road network, c) buildings' configuration, and d) form of ownership.

The evolution of fringe belts is analysed comparing the cartographic data, which enables identifying changes in the abovementioned parameters (a, b, c, d) in three different periods – the end of the Socialist era, the end of the transition period, and now, i.e. in the market economy. Aerial photographs of 1985, 2004, and 2020 Krasnoyarsk bring a morphological picture of the fringe belts and land use. The Public Cadastral Map contains the data on contemporary land surveying and property rights. In addition, the study introduces the analysis of project documentation and development plans for the considered fragments in 1972, 2002, 2015.

Results and Discussions

Inner fringe belt: consolidation processes

With the state land recording and surveying, some sites of private and warehouse development are registered as a private property. During commercialization, the construction density of communal, warehouse and commercial facilities is increasing. (Figure 1, 2).

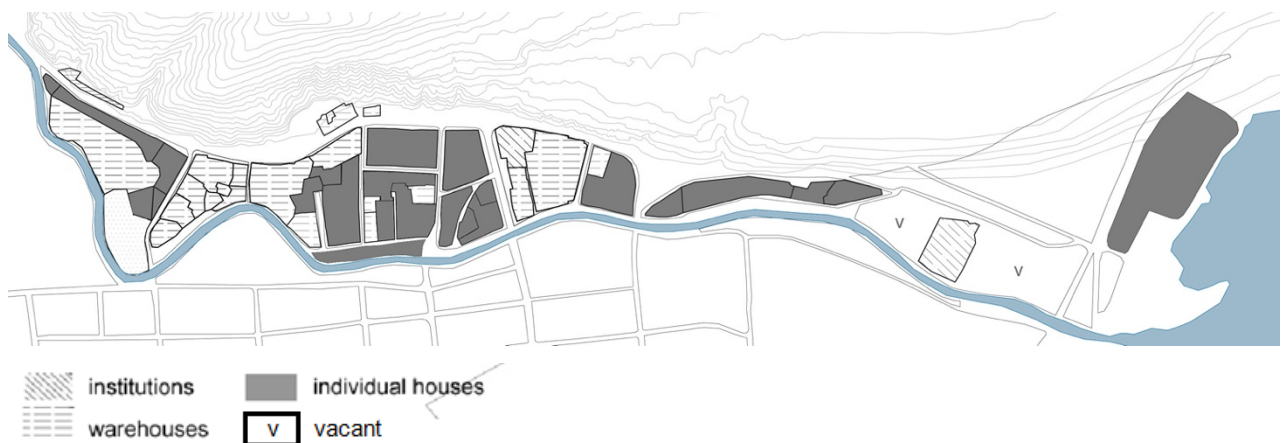


Figure 1. Inner fringe-belt land use in 1991

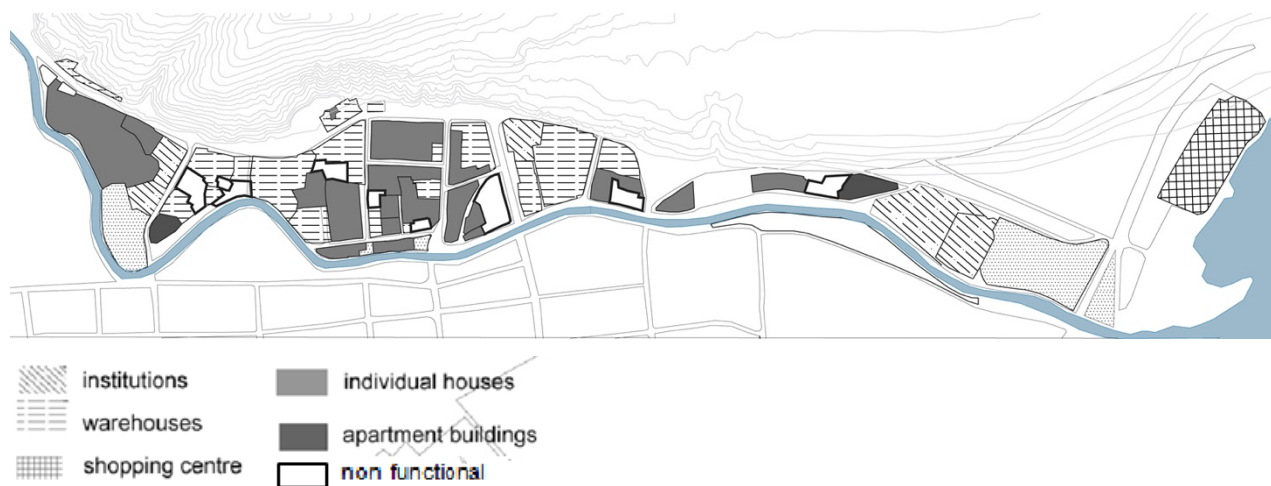


Figure 2. Inner fringe-belt land use in 2020

The general layouts of 1972, 2002 and 2015 considered the fragment of inner fringe belt surrounding the city's historical centre as a perspective for improving its structure. Following the documents, this site was supposed to accommodate public, block-of-flats buildings, and recreational spaces. However, a chaotic development remains there, and it hardly can be reconstructed relying on the plans, since it was already formed in the early 18th century. Caused by the land surveying, the property rights registration in the early 2000s retains the land use almost unchangeable.

Middle fringe belt: modification processes

By the early 1990s the middle fringe belt is occupied by almost the whole military town, divided into sections by the military departments. The surrounding areas keep preserving private and warehouse facilities, and block-of-flats buildings are occurring as well. The 1972 city development plan was expected to reorganize this site and place the city's business centre, as well as the residential housing.

The military departments continued their performance till the death of the socialist period. In the transition period, this territory was registered as a federal property belonging to the Ministry of Defence. These days, the military town has lost the biggest part of its functions as the result of military departments liquidation. Such functional uselessness accompanied by the area's legal status excluded the territory from the urban socio-economic processes. Even though the territory is in an actively developing part of the city, its administration has no rights to change or reconstruct the land.

There are some local changes in this fragment – along the town's perimeter – caused by a gradual transfer of small sites from the federal property to the municipality; there are also cases of commercialization and shopping malls appearance.

The study also reveals distinctive features of the street-road network and land-surveying areas in this fragment, if to compare with the nearby residential areas. The originally formed street-road network, due to the territorial patterns, has remained unchanged.

Specific military functioning in this territory made it possible to preserve the architectural heritage in its structure. The buildings of 1905, 1917, 1919, 1937 – barracks and houses for officers – are “brick-like” made, which is so much typical for the Russian architecture of the turn of the 19th and 20th centuries; now they are used as residential housing.

Outer fringe belt: accretion processes

By the end of the socialist period, the outer fringe belt records the main types of land use, such as agriculture, private, and warehouse development.

In the late 1990s, before the land use legislation entered the force, unauthorized greenhouse farms appeared, the layout of which repeated the existing pattern of agricultural fields. By 2004, the density and number of greenhouses increased; there was also a shopping mall, as well as a dense communal and warehouse development (Figure 3).

In 2010, the territory changed its purposes: the nearby transport artery and the land free sale enabled an active uncontrolled exploration of the territory by commercial and warehouse actors, resulting in the development of agricultural land, and, thus, the greenhouse facilities were replaced by private housing (Figure 4).



Figure 2. Outer fringe-belt land use in 2004

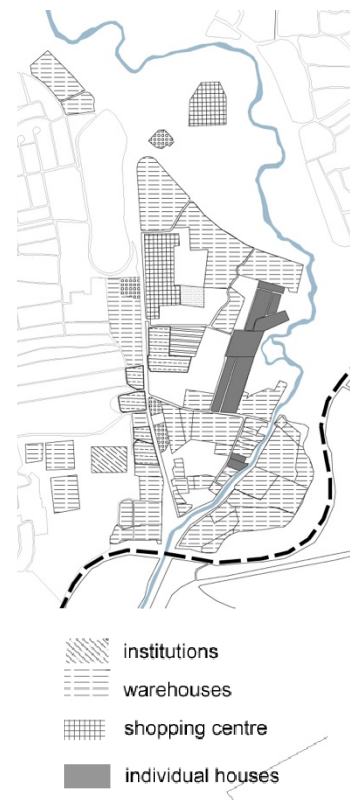


Figure 2. Present-day land use in the outer fringe belt

Conclusions

The study has analysed how the transition economy has transformed the functional-spatial structure of fringe belts. In the modern urban structure, the land site ownership has become a key factor in the consolidation of inner and middle fringe belts, despite the lost functions. The recognition of a land site as a real estate unit, commercialization, lack of legislation over the urban land market, and lower price for the fringe-belt land have provoked a chaotic development and consolidation of the outer fringe belt. A trend to build large shopping malls on free territories, which began in the transition period, has continued even in the early market economy.

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