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## **SOCIAL CONTEXT AS A CATALYST FOR THE EVOLUTION OF REALIZED UTOPIAN MODEL OF URBAN MORPHOSTRUCTURE: THE CASE OF TOGLIATTI, RUSSIA**

**Abstract:** *The article describes the role of social context in the evolution of a realized urban utopia's morphostructure. Using the case of Togliatti, which is a typical Russian large single-industry city, the evolution of its morphostructure is investigated - from the utopian model of the industrial center, with its features of Le Corbusier's "Radiant City", to the modern pluralistic, polyfunctional city. The problems, which have been revealed in process of the functioning of this realized Soviet city utopia, are considered. Avtozavodskiy District of Togliatti is a large industrial area of the city, and its morphostructure reflects the functional workflow of the "ideal socialist city", which was proposed by N.A. Milyutin in the 20-30ies of the 20<sup>th</sup> century. Under the supervision of B.R. Rubanenko, V.A. Shkvarikov, Yu. P. Bocharov in 1967-1968, under optimal geodemographic conditions, a regular urban grid-frame was laid. The functional structure of the grid is represented only by transport, and the main frame functions are redirected to the fabric, which is characterized by self-sufficiency, homogeneity and immanent intolerance to social context. Thus, the city's layout was a system which, on the one hand, fully answered the ideal concept of a modernist city, built in accordance with the Athenian Charter principles, and on the other hand, contradicted the idea of the city as a concentrated environment. The solution which will help to overcome the critical condition of Togliatti lies in the field of generating new utopias. A team of young architects proposed a utopia, which they called "New Togliatti". It is based on the concept of a macro frame, which will integrate the structures of both the historically established urban grids and of Avtozavodskiy District. The essence of the new concept was the replacement of redundant conceptuality with contextuality, in accordance with the new paradigm formed by socio-ecological thinking model.*

**Keywords:** *social context, morphostructure, realized utopia, utopian model, Togliatti.*

### **Introduction**

Evolutionally, all new urban entities are built according to the principle of gravitation to historical cities. However, the distinctive feature of European urban planning is the continuity of historical context, when the core city gradually becomes surrounded by new areas. For the Soviet urban planning, along with the growth of historically formed cities, it is typical to spasmodically create integral complexes, based on one dominant city-forming factor (Magnitogorsk, Nizhniy Tagil, Naberezhnye Chelny and others). Low population density in the Soviet Union, compared to Europe, was the main factor determining the specifics of the Soviet urban planning. The development of industrial complex required space to allocate a large amount of productive forces. However, large distances and rather low level of the area's development were the factor of inertia preventing the mass movement of productive forces, and at the same time an obstacle to large-scale construction on new sites. As a result, the construction of new cities took place mainly on the basis of historical settlements, though not through growth of the periphery, but through isolation of the new areas, with their self-sufficient functional structure, without integration into the historical core. Thus, the proximity of the largest cities to the established industrial base was a significant factor determining the choice of location for the new city.

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Accelerated industrialization, as a forced measure in process of the country's transformation, required constructing new cities and revising current urban planning technologies. Under those conditions, ideas were implemented hastily, without proper criticism. The problems caused by such approach were discovered decades later.

Located on the left bank of the Volga, Togliatti is a typical example of a city built within the paradigm of Soviet urban planning. Being an evidence of ambitions and achievements of the USSR in the fields of industry and urban planning, Togliatti was designed as an ideal city, in full accordance with normative documents, taking into account the parameters (homogeneous, as it was believed then) of the country's social structure. However, these ambitious plans conflicted with reality – ignoring social context prevented the generation of a full-blooded urban environment (Sanders and Woodward, 2015).

Togliatti's layout is not a single morphostructure. It rather mechanically joins together autonomous districts, each with its own historical past and a different morphostructure (Fig.1).

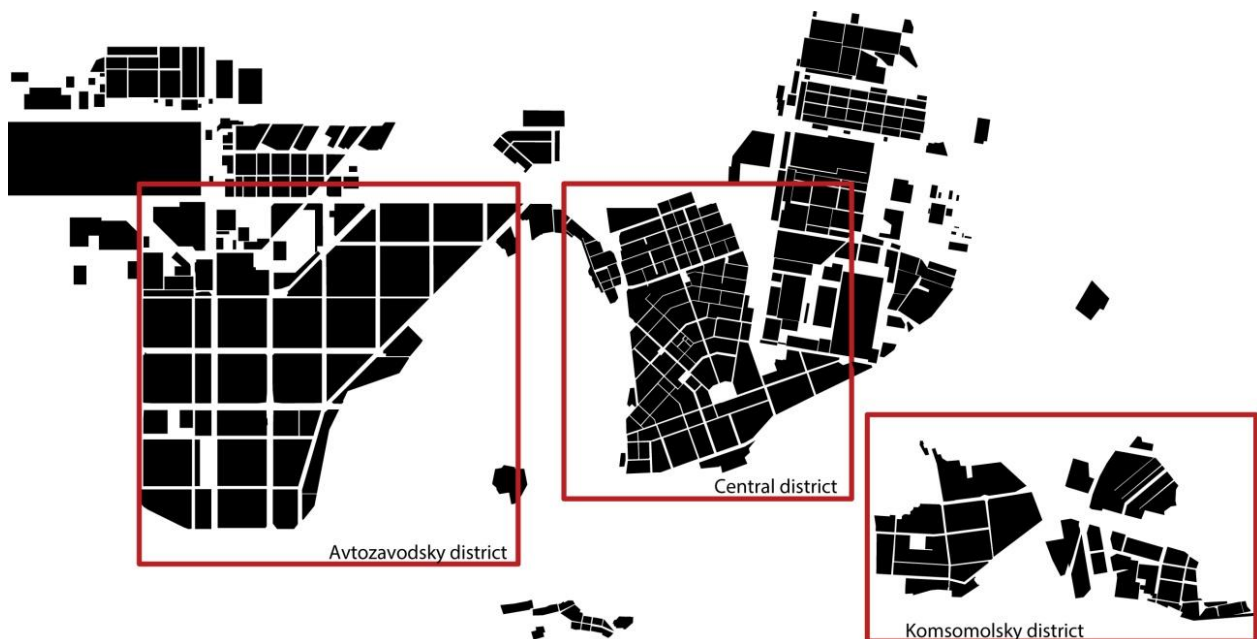


Figure 1. Morphostructure of Togliatti

The historical city was founded in 1737 by Vasiliy Tatishchev and was called Stavropol-on-the-Volga (Stavropol is translated from Greek as “the City of the Holy Cross”). The city's morphostructure was formed by its streets, arranged in chessboard order, in accordance with the traditions of building military fortresses. After 1945, from the ideological viewpoint, Stavropol-on-the-Volga was considered to be a relic of the past. According to the Government's Decree dated August 21<sup>st</sup>, 1951, the city was sacrificed and flooded, with the aim to construct a hydraulic engineering unit and to create a water reservoir. The liquidation of the historical settlement led to the acute problem of city residents' rehousing, as well of new arrivals' accommodation.

The next stage of Stavropol-on-the-Volga's development was connected with the construction of Kuibyshev Hydroelectric Power Station, which caused the creation of intermediate link in the chain of industrial cities. At the initial stage, the construction of the city was taking place under the jurisdiction of the Ministry of Internal Affairs, which built the first residential blocks consisting of temporary barracks. The follow-through of the layout and the construction of the city in a new place were commissioned to the workshop headed by Mikhail Sorokin. As a result, the layout became a system of separate development areas located several kilometers from each other. Komsomolskiy District was formed along the river bank, on both sides of the locks. At a distance, on level ground, Central District was constructed, consisting of interconnected medium scale functional ensembles. The partially realized district behind the

forest was designed as a garden city, built-up with standard houses looking like double bungalows (Bella, 2014).

Despite its geographic fragmentation, the city planned by Mikhail Sorokin was characterized by hierarchical articulation of space with the help of classical urban planning tools – half-open areas, residential blocks, ramified wide streets, visual surprises appearing as the result of axes shift. According to Mikhail Sorokin's idea, the city immortalized the triumph of Stalinist urban planning classicism, while preserving low indicator of population density and co-scale to man. Nevertheless, on the way of the city's development, a number of problems arose: the proximity of its industrial zone to Central District led to environmental pollution. The city's layout did not allow possible further expansion, as it was too formal and rigid. In connection with the future construction of a new industrial complex, this drawback had to be overcome in accordance with the new urban paradigm (Bellat, 2017).

As the industrial complex of the USSR was a part of centralized national economic system, industrial links were established with the aim to minimize logistics. Specific feature of the national economic complex was centralization of production and unified products manufacture of different nomenclature, supplied to different branches of machine-building industry, which made it possible not only to quickly develop assembly complexes, but also to unify enterprises into a single complex.

In connection with the construction of a large dam on the Volga, the task arose to build a city for the operation of industrial megastructure and for the industrial base development. The solution of this problem was connected with the transformation of Stavropol into the city of strategic importance.

### **Methodology**

The final stage of Togliatti's formation was characterized by the construction of a new large district and realization of another ambitious project – an automobile plant. Since the planning of the new district was taking place during the period of Soviet urban planning improvement, inspired by foreign examples of constructing new modernist cities – Brasilia, Chandigarh, Creteil and Islamabad – the evolution of Togliatti's morphostructure reflects the history of Soviet architecture and urban planning in progress.

Despite the size of existing automobile plants, automotive industry in the USSR was experiencing great difficulties. In 1965 the Ministry of Automotive Industry was established, and it faced the priority task – to organize mass production of cars. The criteria for choosing the place for the future automobile capital of the Soviet Union were pragmatic: established construction organizations, convenient transport network, possibility of attracting labor force in-demand on site or within easy reach, cost of creating manufacturing and housing infrastructure, depending on the plant's location, energy costs and cost of building materials' transportation (Siegelbaum, 2008).

Free areas with specific geomorphology were required to accommodate technological process of assembly operation. The presence of the neighboring industrial center – Kuibyshev and of the labor resources required for the automobile plant, favorable geographic location in the Central European part of Russia, suitable geomorphology of the area, favorable climate have ultimately determined the location of the future Avtozavodskiy District.

Following the Soviet tradition to give the names of well-known communists to big or major cities of the Soviet Union, the historical name Stavropol-on-the-Volga was replaced by Togliatti (in honor of one of the founders of Italian Communist Party). This renaming heralded the final change in the city's status, and it was warranted by the current situation, as the developer of the future automobile plant's project was Fiat Company.

In 1969 the first passenger car, manufactured under Fiat license, came off the assembly line. Thus, in the view of the Soviet automobile empire's start-up, there was an urgent need to big up the city's status.

Since the project was of strategic importance, both from the political and industrial viewpoints, the development of the city's layout was entrusted to a credible team (architects B. R.

Rubanenko, V.A. Shkvarikov (supervisors), A. M. Bazilevich, Yu.P. Bocharov, E.L. Iokheles, K.K. Kartashova, E.I. Kutyrev and others).

Having thoroughly studied the problems of Togliatti, the existing city and the potential of the surrounding area, Boris Rubanenko rejected submitted projects on the layout, since, in his opinion, none of them allowed solving the fundamental problems of the city structure's development. The decision was taken to proceed unhindered to the construction of a new district, in accordance with the population's heightened needs. So, the construction of Avtozavodskiy District, which started in 1967 and was meant for 370 000 residents, became a symbol of the state's timely response to the problem of housing shortage. The new district was supposed to be built within accelerated timeframe, and this led to the use of new urban planning techniques (Rubanenko, Shkvarikov, Bocharov, Kutyrev, 1968).

As the project's author, Boris Rubanenko wanted to develop a plan which would equal the projects of Chandigarh or the new capital of Brazil, Brasilia. Fascinated by the Soviet constructivism and foreign modernism, by the concepts of Moses Ginsburg, Le Corbusier and other architects, Boris Rubanenko used these ideas in Togliatti's layout. For example, the fact that all excavation work was minimized, clearly demonstrates the impact of Lucio Costa's planning principles. Thus, Togliatti is an example of urban syncretism, which has assimilated American and European achievements, as a result of the integration of previous Soviet experience and clever update of forms and technologies.

It was decided to locate Avtozavodskiy District next to Central District, but to separate them with a vast forest zone of several square kilometers. In such a case, the forest was turned into a kind of Central Park and was supposed to become the residents' favourite recreation place. Along the forest, it was planned to build a road, thus connecting the two city centers and preserving the environment untouched. The center of the new district was designed as a cross-shaped form, which was borrowed from the layout of the capital of Brazil. The vertical line of the cross connected the embankment with the plant, and the horizontal axis demarcated the residential areas. Large avenues were designed in view of the population's future mass motorization, and at the places of their intersection round areas were made. When designing the spatial organization of the new district, they used progressive principles of creating a flexible planning structure, which provided a possibility to transform functional zones, while preserving the stable links between them in process of the city's growth. Diagonally crossed boulevards contributed to the creation of open spaces inside residential areas.

The main area unit was an enlarged residential block – a micro-district, the size of which was 1 km x 1 km. Its dimensions were logically worked out, in order to balance pedestrian and automobile traffic. The network of cultural and consumer service institutions was built up as a staged system. All institutions were grouped according to service-area radius and were mainly located within a walking distance. However, in general, Togliatti's development plan was designed for a too large city, which was excessively dependent on automobile transport.

In Togliatti provision was made for the city's structural integrity and completeness at each main stage of its construction, which made it possible to rationally organize the processes of work, daily life and recreation for the population. The plan also allowed for further interconnected functioning of the most important districts, and provided the prospect for the city's development in western and northern directions (Rubanenko, Obraztsov, Saveliev, 1971). Nevertheless, it should be noted that the unification of the districts was largely mechanical – there was no integration of morphostructures, and the planned extensive growth of the city would add to its centrifugal development. The administratively unified city is actually three separate cities with weak transport, functional and social links, which makes it difficult to turn the city into an integral entity (Fig.2). The evolution of modern Togliatti's morphostructure is mainly achieved due to making the existing urban development denser.

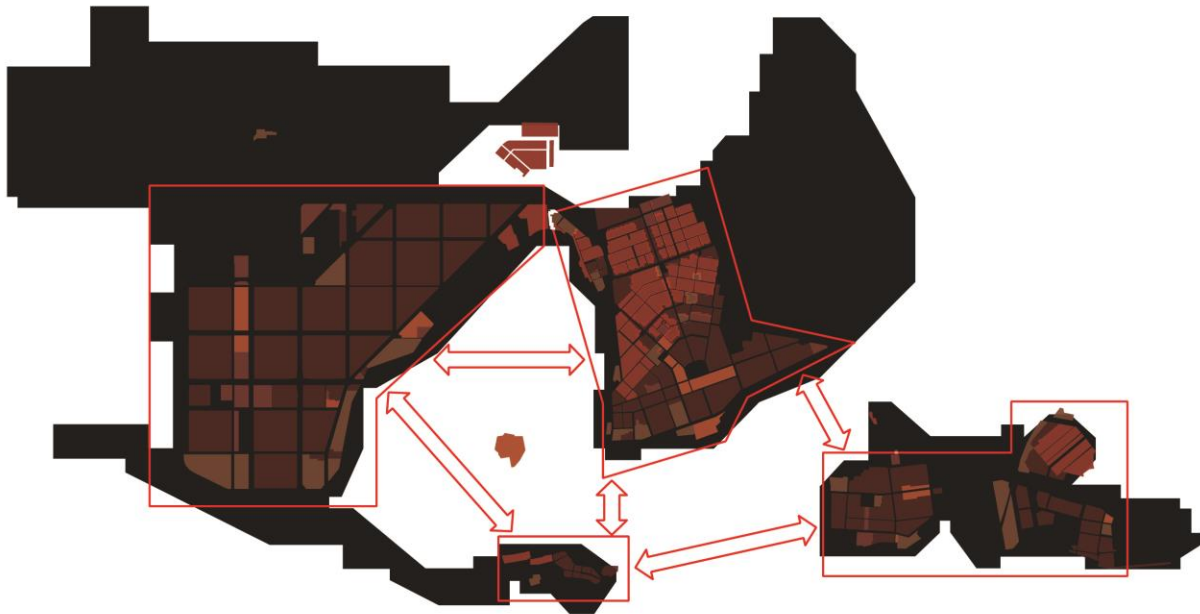


Figure 2. Problem of morphostructures interaction

Togliatti is currently undergoing a difficult stage of its development. The problems that grew worse with time were laid already at the Soviet stage of Togliatti's formation. Social stratification of the Soviet society was weakly expressed; the population was fairly homogeneous and had approximately the same level of needs; that is why there were no serious contradictions – all this coincided with the urban planning paradigm of the Soviet state.

With the change in the social structure, the levels and forms of the population's needs changed, and certain contradictions associated with social context arose. The original priority orientation of Togliatti towards the functioning and perception of the city from the viewpoint of the man at the wheel didn't allow forming a full-fledged urban structure, which would be perceived by the residents as an integral whole and entity. Since each new stage of the city's development was connected with the revision of the area for the new global task in accordance with the current urban planning paradigm, the experimental nature of Togliatti led to a systemic socioeconomic and environmental conflict (Shlienikova, 2017).

The plans of Togliatti's development during the post-Soviet period (dated 1992, 2002, 2010, 2016) were mainly limited to activities aimed at establishing communication between districts and improving the Volga embankment. And still, three autonomous districts remained connected by land, air and water, but separated mentally, as no model of the city's development took into account social context.

### Measurement and analysis

The morphostructure of Avtozavodskiy District is a symbiosis of utopian urban planning models. They have borrowed hypertrophied ideal Hippodamus system – in the form of orthogonal planning structure – *cardo* and *decumanus*. The city's flow organization has been taken from the utopia “Industrial City” by Tony Garnier, it conforms with conveyor belt principles, which later became the dogma of the Athenian Charter (Ikonnikov, 2001). In the 1920-ies, N. A. Milyutin described the distribution of all the functions of the urban organism along parallel lines, which ensures the possibility of the city's growth in two directions (Bocharov and Khan-Magomedov, 2007). Inspired by the examples of Brasilia and Chandigarh, Togliatti has embraced the ideas of the “Radiant City” by Le Corbusier and his followers. As a result, all public buildings have become isolated objects, occupying an island position within the space of vast esplanades framed by traffic routes (Ikonnikov, 2002). Thus, Togliatti is a realized urban planning utopia, a rational

model socialist city of the future (Zhilkin, Andrievskaya, Estrin, Akhmedova, Karakova, Shabanov, 2001). Like any ideal model, which cultivates the solution of separate issues, the city faces a number of problems related to ignoring social context. Contradictions have come to light between mass unified centralized industrial development, which does not take into account the dynamics of social context, and postindustrial society's demands (Yakovlev, 2008).

It was assumed that Togliatti would become a city of personality, without any crowding and with enough space. However, as a result, it has turned out that the city is deprived of narrow curved lanes, small shops and other institutions, available for an ordinary passer-by. With time, the absence of spontaneous street life has given rise to a kind of sensory deprivation (Siegelbaum, 2013). Today Togliatti is beginning to realize the lack of city structure's unity. Overcoming technocratic imperatives, the desire to humanize the environment by the means of social context concerns becomes evident in the historical perspective. Difficult economic conditions provoke creating new avant-garde solutions.

In this case, it would be fair to talk about the generation of post-utopia – a new utopia that denies the previous one, based on understanding that the latter's principles are obsolete and unrealizable. It is worth noting that the realizability of the first utopia has been exhausted, and the factors of unrealizability have started working, as the social law has been violated and social context has been ignored. At the same time, the mechanism of realizability factors' detonation has turned on (the relic forest, which used to be an impassable barrier between the two districts, was partially destroyed in 2010).

The aim of the new utopia is to solve the problem of separateness and autonomy of the three districts of the city, and to form them into an identity. To solve these problems, it is necessary to organize a new morphostructure, taking into account the social context.

In this regard, the authors put forward the idea of organizing the city using a new morphological unit – a macro-frame. The macro-frame unites all the three districts of the city and turns the fragmented area into an integral urban environment. By constructing a system of discrete centers as a part of the concept of the new macro-frame of Togliatti's city structure, the inhabitants' idea of the city center as a unity forms. The project implies a tactful attitude to the original urban material – the “preserved” support planning structure's pattern reproduces itself in each unit, giving the new urban planning element that necessary morphostructural identity and residual historicity. In fact, it is a reproduction of the place's image in the new morphostructure.

In the intersections of the new macro-frame's passages, sources of social activity appear – as a reaction to social context. The units that form the city center's system constitute the structural and functional basis of the city's spatial-planning layout. The units located in places with high transport accessibility combine maximum density of public facilities' allocation with social and functional diversity – service business, transport terminals, community services, cultural institutions and public urban spaces (Fig. 3).

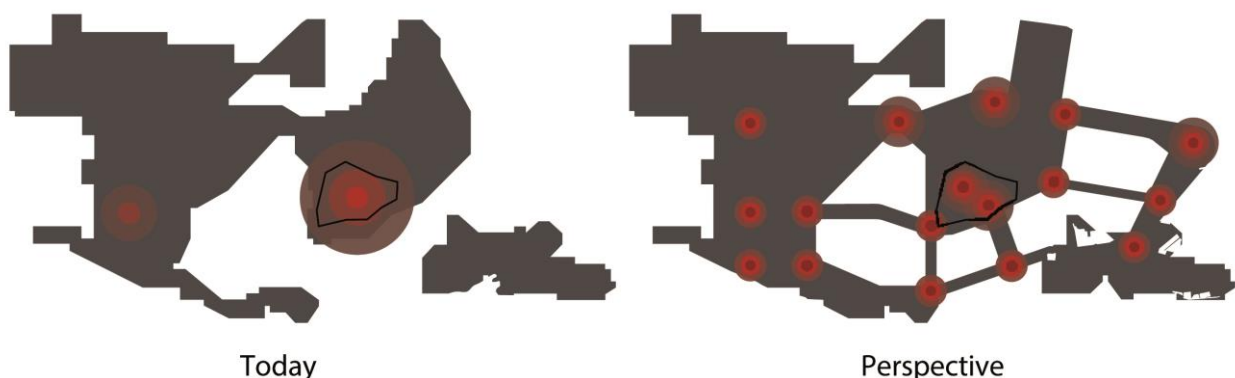


Figure 3. The system of public centers in Togliatti

The basis for subdividing the structure of traffic in accordance with the new model means the social context. In which case, the traffic is decomposed into connecting flows, regarding the scale of automobile traffic implied by the original utopia, the flows of local importance with denser structure, and the scale of the old city. Transit traffic goes on above-the-ground level, giving a priority to the social context located on the ground level.

The basis of the macro-frame is the transit network of highways, which allows combining high speed of travel with low traumatic consequences for the existing urban texture and for the natural areas; monorail lines join together the most important central units. A well-developed transport system reduces the contrast between “center and periphery”, increases transport accessibility and the cost of urban land lots, as the latter’s profitability increases. By saving the time taken up by transport communication the perception of the urban system as integrity – parts of a common structure – is starting to be formed (Fig. 4).

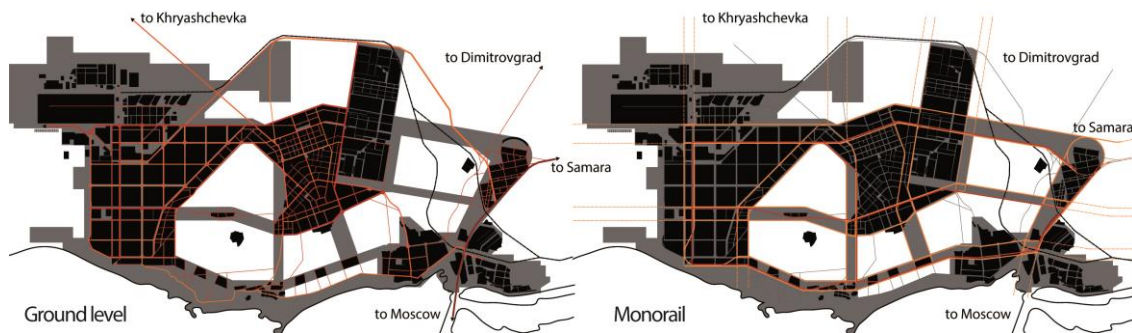


Figure 4. Perspective transport system of Togliatti

The formed network of city highways allows establishing communication between the units-centers, thus covering the whole city area. The concept of the macro-frame is based on a deep analysis of the social context and of the morphostructures of the city’s constituent parts, as well as on the search for the form-content determinism. The designed model implies subdivision of natural areas into: 1) the zone of specially protected natural areas; 2) the zone of natural landscapes; 3) the zone of parks, boulevards, embankments; 4) the zone of recreational areas (Fig. 5).

### Conclusion

To some extent Avtozavodskiy District of Togliatti is a generalized utopian character, the last attempt to realize the social utopia. It may be possible to realize such utopia only under a certain set of conditions. Enthusiasm of the postwar mood, upon the conditions of social growth, gave a rise to the urban planning experiments. Every now and again people, who generate innovative cutting-edge ideas, are appearing. Moreover, there was an atmosphere in the society that supported such moods.

As the result, Togliatti has become a combination of separate core structures, between which there is a serious obstacle in the form of a forest. From the point of view of social context, the residents have no sense of the city as a whole. It is possible to overcome this problem by reducing transport communications and forming new structural frame – realization of a new utopia – “exoskeleton”, the subject of which is architectural environment as a whole, which is capable of adapting to social and economic shifts, in order to compensate for the existing morphostructure’s imperfections. The new macro-frame model is based on the principles of Kenzo Tange and his utopia “Tokyo-1960”, which rests upon the logic of communication systems - physical and visual, forming a system, open for development (Adonina and Artemeva, 2016). While earlier Togliatti’s development was following the extensive way – translation of modernist grid, ecological model of thinking implies densification of urban development and localization, i.e.

intensification way. The morphostructure becomes dependent on the social context – on the established social links. Prevailing factors that have ensured realizability of the first utopia are no longer vital for Togliatti today. The world outlook has changed – the modernist paradigm no longer works, the imperative has changed – not the state, but private investors act as customers; the factor of unrealizability has become sharper, as the social context has changed. While, within the Soviet society's paradigm, people were viewed as indiscreet mass having the same rights and consisting of universums, the postindustrial society is a field of individuals.

According to the Decree of the President of the Russian Federation (within the Frames of the Spatial Development Strategy of Russia for the Period Until 2030), large cities are to become the drivers of the country's development. Special responsibility in this regard lies with the largest non-capital Samara-Togliatti agglomeration (Akhmedova, 2011). In the near future, the state plans to create a high-speed railway line between Samara and Togliatti, which will provide an efficient impetus to the macroeconomic development of the region, and will ensure availability of employment. However, so far there is no real unity in the form of a cluster of urban settlements. Cities are not joined together into a dynamic system by industrial, transport and cultural links. This requires the entire economic infrastructure development, as well as innovative projects and solutions improvement (Fig. 6).

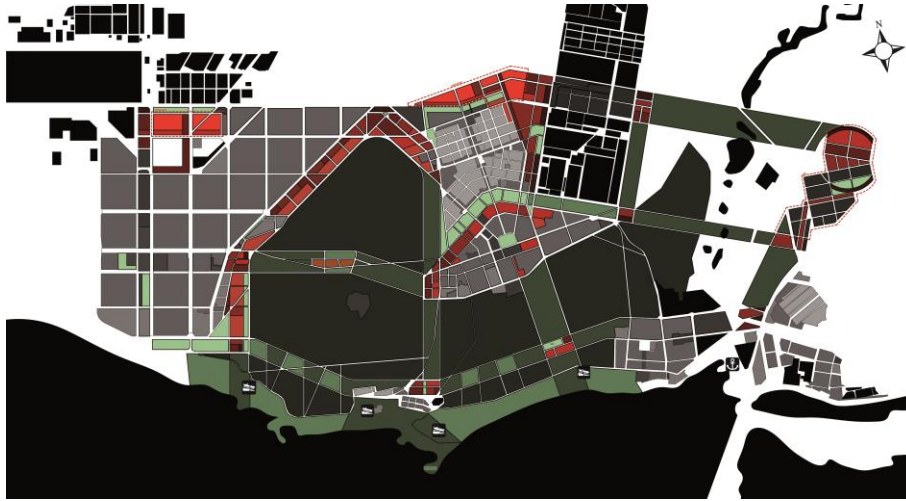


Figure 5. The concept of New Togliatti

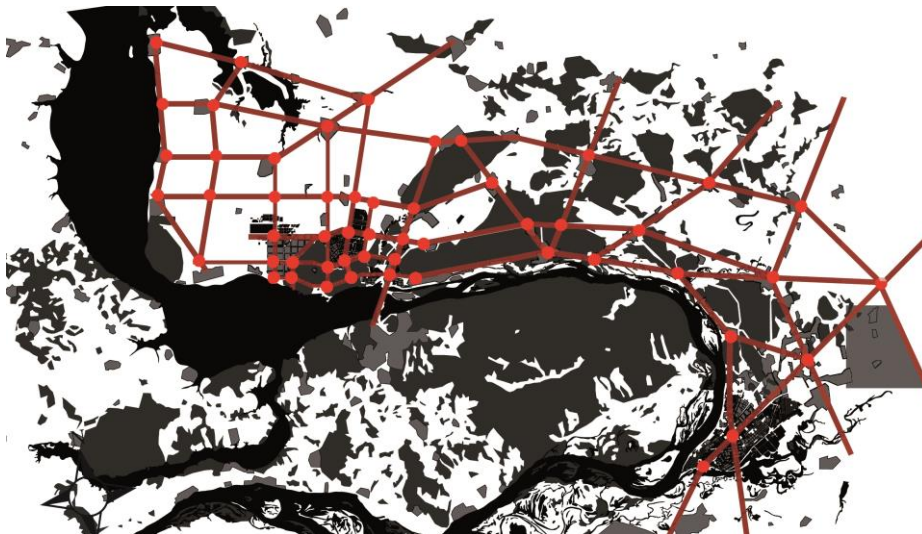


Figure 6. Perspective model for the development of the Samara-Togliatti agglomeration



The creation of new macro-frame will accelerate the social and economic development of Togliatti; unification of the city's morphostructure will lead to the formation of an identity, and, consequently, concentration of social resource.

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