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FIXING UP IMPEDIMENTS ON THE WAY TO SUSTAINABLE MINSK

V.A. Sysoyeva

PhD, Assoc. Prof.

Belarusian National Technical University

Abstract.

Minsk urban structure is a product of soviet urban planning paradigm based on planned economy and command management model. The new masterplan developed with the participation of the BNTU Urban Planning Dept. in 2015 deals with current urban challenges caused by market economy and limited investments.

The Paper discusses the ability of the said document to assure Minsk sustainable development and next key steps that to undertake in that aim. Urban development model of Minsk follows the main trends that are typical for post-soviet cities. Some of these trends such as urban sprawl, commercialization and authorization of public space,

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EVOLUTIONISM OF PARADIGMS OF DISTRICT PLANNING IN UKRAINE

Yatsenko V.A.

Kyiv national university of building and architecture

In this article the evolutional way of forming of district, plan theory and practice is analysed in Ukraine. The enormous deposit of architects-town-planners is marked on all the forming stages as not result of works, and toposition of change of requirements of society and strategy of development of the state. In the article given it a shooto to show the concept of the district planning as an enormous complex of activity of scientists and specialists of different professions.

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rapid automobilization are considered to be threats for sustainability. Nevertheless there are significant features of urban development that can be observed in Minsk only. Compact polycentric city model, preservation of agricultural lands, weak but noticeable people's involvement into the planning process are prosperous resources for the sustainable future.

Clear vision of the future is a necessity to shape the city. Progressive implementation of the policies, plus local initiatives and stakeholders' involvement can drive sustainable development of Minsk. Its character, particularly its soviet past, transnational identity, nature and unique urban structure can grow into a welcoming community.

Introduction

The aim of this paper is neither giving definitive solutions nor calumniating the existing master plan but triggering new directions and extending planning paradigm. Related to that we can start by listing some important questions: Could conventional master planning instruments be effective to provide Minsk sustainable development? What are the challenges and do we cope with them well? Can Minsk be promoter of sustainable development in the entire region and how to develop intelligent creative planning process in order to make it happen?

Soviet Background

Minsk, Belarusian capital City, was practically destroyed during the WWII therefore great plans were made to revive the city ac-

ording to soviet spirit and industrialization. The most famous ensembles of avenues and squares were created to commemorate the victory of soviet people. The spatial structure development implemented idea of green diameter creation that followed the river Svislach and filled the heart of the city with fresh air coming from the north-west. Huge plants and factories appeared to the south-east from the city centre, fig. 1, 2. Rapid industrialization attracted hundred thousands of newcomers (mainly with rural origin) to Minsk therefore the city's population grew almost 5 times in a period of 40 years (from 1939 to 1979) that has even given its name to 'Minsk phenomenon' - fast urbanization process in the Soviet Union [1].

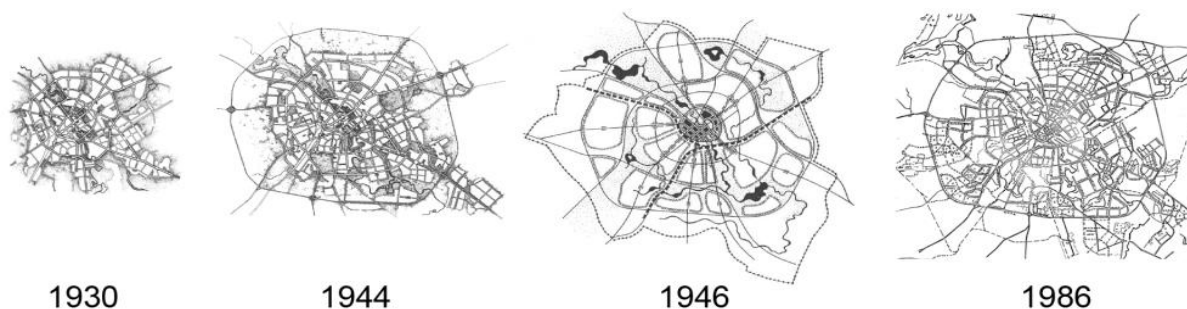


Figure 1. Evolution of Minsk planning structure in soviet period

Population growth required effective solutions due to overcrowding and housing shortages. Decision was provided within soviet urban planning paradigm based on planned economy and command management model as well as modernist design principles introduced through spatial separation of industrial territories and residential districts. Minsk was developed fast, using prefabrication and identical development patterns.

Public transport such as bus, tram, trolleybus and later on underground metro allowed spreading the functions further away from the city centre that became a focus of administrative, leisure and cultural functions. Therefore large and dense urban blocks were placed in the green environment served by a limited but sufficient number of daily public services.

New kind of neighborhoods got the name 'microrayon' (microdistrict) and became the basic urban planning unit in the soviet and post-soviet Minsk. The territory of microrayon was defined by major roads with the developed and sometimes confusing system of inner driveways. The standard set of public services mainly included kindergartens, schools, grocery stores and green areas within regulated distances of proximity.

Housing was introduced by mass produced buildings arranged according to the compositional idea, fig. 3. But despite the theory, the idea of mass constructed microrayon didn't work very good, not everything intended was actually implemented. Fragmented social infrastructure, monotonous architecture, lack of human scale and weak public spaces became

main characteristics for such neighborhoods.

Following socialist ideology the notion of quality of life was perceived as creation of

basic living environment for workers but it did not play a major role in urban development. Industry was the most important sector in the city which gained most investments.



Figure 2. Green diameter - the main composition axis of urban structure as well as basic eco-system of the city was founded in 1945



Figure 3. Microrayon "Vostok-1" built in 70s in the eastern suburbs

Therefore up to 1/5 of Minsk were occupied by industrial territories. By the end of 80s the spatial model of Minsk could be characterized by four major components:

- a. The city centre which agglomerated

administrative functions and non-daily services. Limited traces of the past urban structure and absence of historical core were specific for Minsk. Residential realm was represented there by several-storeys housing areas

with low building density (no more than 30 %). Some of the industrial enterprises were spread there also adjacently to the main streets and avenues.

b. The city intermediate or transient zone which represented broad communal territories along the semi-ring of railroads (so called 'rusty belt') and residential districts crossed by major roads. Some expansion of central functions occurred along the transportation lines that resulted in certain integration of functions though the problems of poor mobility and fragmented social infrastructure were specific for those areas, creating weak and inactive communities.

c. City periphery, distant from the centre, consisted of huge mono-functional units such as industrial areas and dense microrayons, their spatial separation was achieved by creation of protective greenery and regulated distances. All the units were connected via public transportation network; however delay of rapid transport means provision resulted in daily time-wasting and inconvenience. In fact, microrayons gradually became bedroom communities where there was nothing else to do, except sleeping.

d. Green areas which enriched the image of Minsk. Besides green diameter along the river side there was created a semi-circle of water channels and parks in the east side of the city. Initially it was done to provide water supply for the industry in the south, but resulted in remarkable open spaces accessible for the inhabitants of microrayons.

2. Post-soviet Urban Transformations

Researchers that describe the post-soviet transformation say: "Minsk presents a mixed model of development that combines some soviet features connected to the past with the new symbolic ones that are typical for any capital of an independent nation-state" [2, p. 41]. There exists a steady opinion that Minsk is the most well maintained and European style city from the domain of the Soviet Union with a spirit of soviet past. Indeed, many positive changes and significant improvements took place: highlighted city centre, lively urban streets and parks, mod-

ern shopping molls and sports complexes appeared during the last decades. However, there are many traces from the past common for many post-soviet cities: neglected historical monuments and cultural heritage; run down city quarters; abandoned industrial plants, research centers and holiday resorts can be found all over the former Soviet Union.

Another common feature that is characteristic for the cities in the post-soviet period is the planned development indicating urban sprawl and decentralization. Since 1991 cities literally have been exploding in size, therefore they were getting more dependent on road and public transport infrastructure to move between active parts of the city. The role of mobility patterns based on private automobile came to play a dominant role in urban transformation as it did in other post-socialist cities [3]. For example, every big Belarusian city that accommodated more than 100 thousand inhabitants got the master plan that stipulated population growth in terms of 7%, territorial growth - 36% and 96% increasing of the street infrastructure!

Here comes the structural problem of the Soviet city development model as it always "...treated each development as a secluded entity connected to one arterial transport corridor. With the enormous increase of cars, a system that - unlike a network - does not have much redundancy, a lack of traffic management and long postponed upgrades of transport infrastructure all cities are suffering from severe transport problems causing epic traffic jams" [4, p. 36].

In Minsk logistics terminals, warehouses and other commercial activities started to cluster along the main roads of national and international importance. New big shopping areas were created. Car use grew in numbers. Residents moved further away to suburbia. New residential developments moved out in the region in forms of low density housing in the open countryside or more organized suburban developments and village extensions. Unfortunately, road and services provision was

postponed or even didn't appear due to the lack of financing.

Nevertheless, housing has mostly been built in the periphery of the city, fig. 4, 5. A lot of residents got affordable accommodation – since the mid-1990s residential development in Minsk has increased on 55% that allowed achieving the highest level of housing provision in Belarus (but still lower than in European capitals).

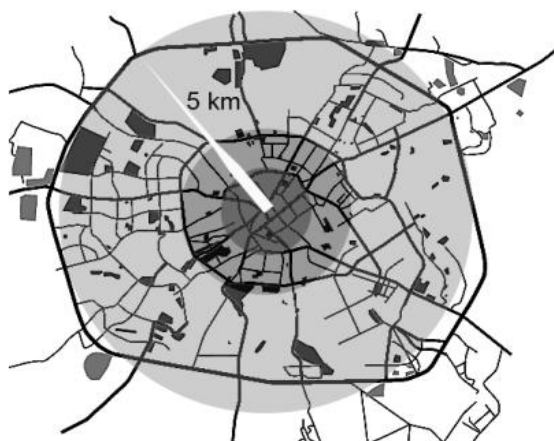


Figure 4. New housing development in Minsk in 1990–2010



Figure 5. New housing development in the city centre (left) and periphery of Minsk (right) in 1990–2010

New types of microrayons with high rise buildings represented by mass produced typical blocks were provided for about 250 thousand citizens who were in the queue to improve their housing condition.

While the model has not changed dramatically since soviet times, the quality has improved significantly. Not only the buildings offered more variety but also housing was executed at much higher quality. It was the time when idea of open-space hierarchy was revised thus leading to provision of more structured public, semi-private and private spaces. Contrary to western experience pe-

ripheral microrayons accommodated the middle class and therefore were more stable and suffered less from vandalism, crime and social deprivation than socially deprived counterparts in the western modernist estates [4].

Is Master Planning a Tool to Achieve Sustainable Development?

Liberated from the rigorous political-economical restrictions of the socialist period, the city in the post-soviet period gradually became dominated by liberal market conditions. That caused an explosion of the structure that suddenly became more spread and diverse. In many post-soviet cities the process of decentralization and commercialization directed their transformation. As I. Tosics states: “While Europe is looking towards sustainable development for future, cities in post socialist countries appear to be moving opposite direction - away from sustainability” [5, p.78]. This questions the idea of Minsk’s sustainable development itself. In terms of keeping its identity and preservation of historical features from at least previous soviet period development of the city can be marked as sustainable one. But what is about promoting compact urban model and improvement of life quality?

Since early 1991 Belarus entered the independent process of change and transformation but unlike the neighbouring countries that process was far from radical. The transition towards market economy, pluralism and democracy in terms of urban development was limited by pyramidal administration and investment schemes. As a result, in one hand there’s no such a significant income gap or social tension as in Russia and Ukraine. On the other hand, urban middle class is growing too slowly and living condition is still far from the example of Poland or Baltic countries. The process of urban development is hit by many crises Belarus has been experiencing since the late 1980’s. Though it should be admitted that despite these ups and downs during the last decade the country passed the phase of industrialization. In terms of spatial structure the situation when

1/4 of the whole industry was concentrated in Minsk transmitted into the one demonstrating escape of the enterprises from the city.

As many post-industrial cities Minsk is striving for becoming more sustainable place to live and work. This aim could be ideally achieved by improving the well-being of the residents, by raising their income while improving their quality of life through accessible social services and environmental amenities. But spatial fragmentation, lack of functional integrity, incoherent spatial transformations, commercialization and authorization of public space, rapid automobilization are still challenges for Minsk urban development. Here we reach the next question: Do we possess the urban planning instrument to facilitate and manage changes?

The planning paradigm hasn't changed in Belarus since soviet time though it is declared that the system is in transition from the socialist regime to a new, yet not fully defined model. Current planning system in respect to the city planning consists of three types of planning documents, which correspond to two different levels. 'General Plans' (masterplans) define land use patterns and 'Special Plans' are usually prepared on the scale of the city while 'Detailed Plans' are prepared on the very local levels of the neighbourhood. The planning process is organized in a strictly hierarchical manner with the top leader deciding on most issues - big questions and small details. Planning is rather iterative and ad hoc and decision making is not always consistent and based on knowledge but on authority of the leader. Planning is very technically driven and focusing on target numbers. Quality objectives are underrepresented in the planning system. The same is true for the scene of professionals [4]. People participation in planning is declared by law, but in fact public discussions of the projects are fictions or don't have any influence on the result. This leads delays, contradictions and failures that a more horizontal and democratic system probably could avoid. Ultimately, every 3–5

years we face revision and correction of the main legislative planning document – Masterplan.

The latest Minsk masterplan was developed in 2010. Before that there were numerous editions in 2003 and 2007. One might argue that it was a testimony of system's flexibility and quick reaction. Unfortunately, we observe that the authorities yet were not able to guide developments, services and infrastructure in a strategic way. Shortcomings of the socialist urban development model, urban sprawl, deindustrialization, transport breakdowns, are still on the Minsk agenda. Plus dilapidated housing stock makes it impossible to promote sustainable development without improving living conditions in the existing residential microrayons.

The above situation is addressed by the government by adopting, promoting solid densification, consolidation of investments and minor territorial expansion. Minsk masterplan (edition 2003) promoted the main prevailing principles of growth:

Expansion of the city territory by means of the suburban area from 266 to 418 km². The territorial growth is to be restrained by means of the inferior buildings breaking in the central and intermediate parts of the city, fig. 6.

Concentric expansion, densification and development of public service centers, institutions of political representation.

Rise of a normative of the total living space per one person from 15 m² to 20 m² and achieving 62 millions square meters housing stock in 2030 by means of building 1,2 millions square meters per year.

Development of transport infrastructure instead of industries, moving out industrial enterprises and attracting foreign and private investment to build on vacant territories.

Year 2004 was famous for adoption of Strategic Plan of Minsk Sustainable Development for the Period to 2020.

There was suggested a sustainable development of Minsk concept which was reflected by a '5 cities in one' formula [6, p. 122]:

1. Minsk is a city of healthy people and high social standards.

2. Minsk is a knowledge and high technologies based city.

3. Minsk is a centre for international communications.

4. Minsk is a city attractive for business and investments.

5. Minsk is a city of developing democracy with citizens' wide participation.

In our opinion, it gave a good idea of the principal strategies of Minsk development. Unfortunately by the current moment we observe poor implementation of the concept due to lack of necessary content.

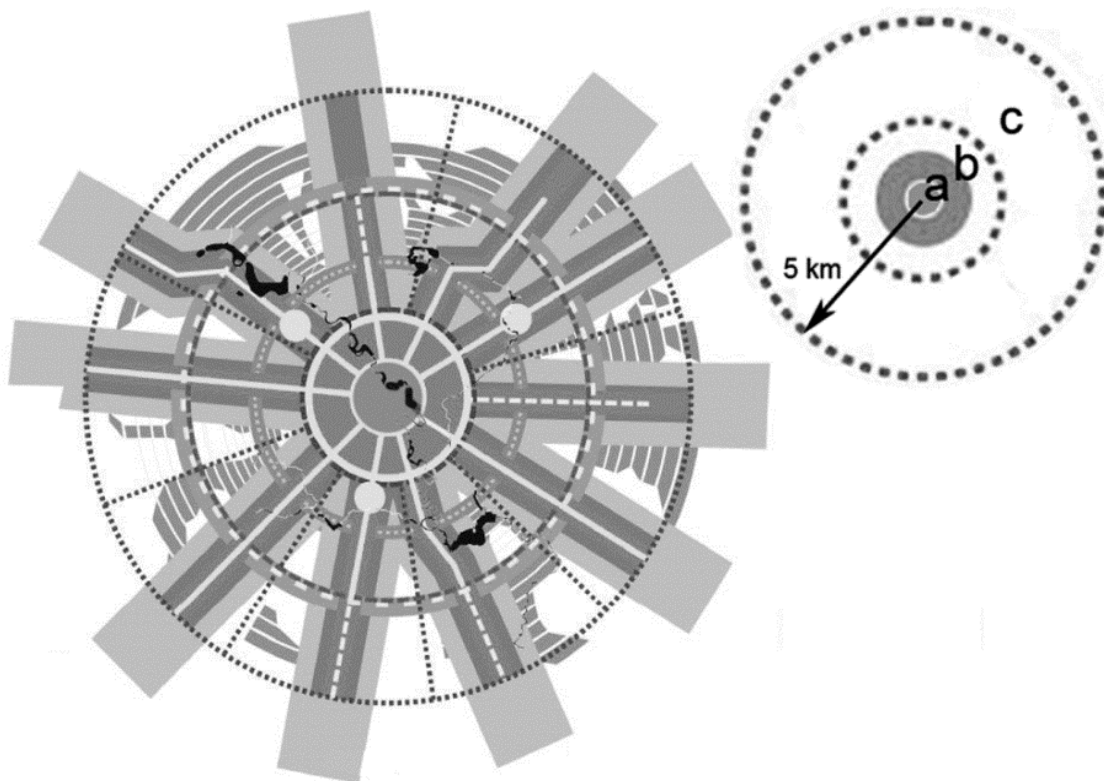


Figure 6. Major directions of Minsk development according to masterplan, 2003:
a – agglomerated city centre, b – transient zone, c – periphery

Following corrections of the masterplan in 2007 and 2010 mainly reproduced the same principles: provision of 4 ring roads, densification and intensification of the central zone and main corridors of development. Expansion of the city territory was limited by 1 hour proximity by public transport [7]. Masterplan have set directions for development of Minsk agglomeration on the basis of 9 satellites cities, fig. 7. It was believed that this decision would reduce population of Minsk that had reached almost 2 million people by that time. We can't analyse the impact of this idea as it was not realized yet because of economic crisis that had hit the region. Selected satellite cities got masterplans and generated certain development ac-

commodating Minsk industrial enterprises. Although in terms of providing housing for Minsk residents it was supposed that satellites would propose cosy, human sized districts in natural environment that didn't come true by now. Several multi-storey buildings built by the same company that produced generic housing in Minsk didn't attract Minsk to leave the capital.

In fact, compaction and intensification of the inner city would be a positive trend for Minsk. As it could be seen from the residential density map, there are large areas of low density morphology patterns in the central and intermediate zones of the city. On the contrary, the highest densities could be found in the modernistic housing estates in

the periphery of the city. However, densification plans caused unusual activity and protest of local central residents. Endeavours to limit Minsk sprawl were based on command decisions that were not supported by the

community and resources. At the same time, this could be interpreted as a certain potential for people's introduction into design process.



Figure 7. Minsk agglomeration development according to masterplan, 2010

Furthermore, things got even more complicated because of economic crisis and President's decree that limited development activity on agricultural territories.

Conversion of the agricultural land to urban uses has got reinforced legal restraints and in 2015 another corrections of Minsk masterplan has been produced to meet current challenges. In particular, development

of satellite cities was limited from 9 to 6 sites, building of new housing in Minsk was planned to reduce by 2019 till 0,6 millions square meters per year, agricultural territories within city boundary were left unbuilt.

Developers of the masterplan draw special attention to preservation and development of Minsk eco-system, fig. 8. Green diameter along Svislach River together with

semicircles of parks and water channels should get legislative status and protection. In general, a compact polycentric city model was proposed emphasized on the developments within the city (urban restructuring and regeneration), development of sub-centres, and improvements in public trans-

portation system. Therefore, there is a huge need for redevelopment and quality improvements of existing districts as well as working out a sustainable framework of new mixed-use districts and open spaces with a special emphasis on diversity, flexibility and quality of life.



Figure 8. Development of Minsk eco-system by corrections of masterplan, 2015

Summarising the characteristics of the masterplan that could drive Minsk urban structure to sustainability we would name as follows: compactness in form and density, defined boundaries of the city, orientation to high usage of public transportation, sufficient residential density to support public facilities and infrastructures, developed spacious open spaces (parks, squares and streets), large share of land under public ownership.

Clear vision of the future is a necessity to shape Minsk development. As a center of metropolis it has potential to take a more important role in the whole region. We be-

lieve that progressive implementation of the policies, plus local initiatives and stakeholders' involvement can drive sustainable development of the city.

Conclusion

Recognizing Minsk's urban development from perspective of sustainable development allows understanding transformation trends. Minsk follows the line of the socialist tradition, just adjusted to regulated market principles. It could be also noticed that demand for sustainability influences shaping future of the city. Therefore there is no better time than now to be critical about planning principles and tools and to bring new ideas for a

sustainable alternative. The current challenge is to identify and find ways to employ the potential legacy of the post-soviet city to the future vision of a sustainable city. Minsk's character, particularly its soviet past, transnational identity, nature and unique urban structure can grow into a welcoming community.

In this way it is needed to facilitate key steps that should be undertaken to provide Minsk sustainable development. First step is development of national level strategy aimed to establish ways of favorable transformation leading to the more sustainable urban structure. It is necessary to create workplaces and raise life quality in the settlements besides Minsk. Having awareness of sustainability as a complex concept encompassing social, economical and environmental spheres the strategy is expected to bring particular focus on social and environmental sustainability. So, the second step is to decrease threats of socio-spatial fragmentation on the city scale and promote modernization of the housing estates. And it is vitally needed to introduce participatory planning techniques. Third step is in terms of environmental sustainability - improvement of regional mobility and updating transport infrastructure.

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УСТРАНЯЯ ПРЕПЯТСТВИЯ НА ПУТИ К УСТОЙЧИВОМУ МИНСКУ

В.А. Сысоева

**кандидат архитектуры, доцент Белорусского
национального технического университета**

Пространственная организация Минска является продуктом советской парадигмы планирования, основанной на плановой экономике и командной административной модели. Корректировка генерального плана города, разработанная с участием научных специалистов кафедры «Градостроительство» БНТУ, нацелена на совершенствование Минска с учетом современных требований в условиях рыночной экономики и ограниченных инвестиций.

В статье рассматривается проблема обеспечения устойчивого развития Минска, насколько она решается в новом генеральном плане и какие дополнительные шаги требуется предпринять для устранения препятствий на пути к достижению поставленных целей.

Градостроительное развитие Минска во многом соответствует тенденциям, характерным для постсоветских городов: разрастание городских территорий, коммерциализация общественных пространств, рост автомобилизации считаются угрозами для устойчивого развития города. Минск имеет ряд планировочных особенностей: компактная полицентричная модель, сохранение сельскохозяйственных земель в городской черте, что наряду с высоким социальным потенциалом и уникальной национальной идентичностью города является потенциалом для обеспечения устойчивого развития Минска в будущем.

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