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The Functional Structure of Bialystok, Opportunities and Threats in the Consolidation of the City

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The Functional Structure of Bialystok, Opportunities and Threats in the Consolidation of the City

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Specialists in designing search new spatial language in designing urban structures and architecture projects in contemporary cities. Nowadays the “sustainability “ is present in law system and after 20 years it is possible to observe the results of this idea in space of the city. Still there are the challenges which designers need to solve. The process especially in urban planning will be long and the results will appear more or less after ten or twenty years. Author would like to present the condition of urban structure of Bialystok, as example of city functionally programmed, analyze it’s structure and show challenges and threats in consolidation of city.

Bialystok – the city has been rebuilding and functionally programmed after 2nd war world in modern functional model. Restricted rules and economical restrictions determined intensive land use and compact structure of the city. Planners who designed the functional program of city had understand the value of ecological and landscape aspects in their projects and finally has been realizing in existing urban structures. Nowadays this heritage is disappearing in neoliberal policy, even the sustainability rules don’t stop this process. The impact of the process will redefined the spatial program, which aspects are inadvisable and which acceptable in process of consolidation of city is main question.

KEYWORDS: urban planning, the functional city, spatial planning, history of urban development of Bialystok.

Introduction

Bialystok is one of many cities in Europe rebuilt and transformed in the spirit of functional thinking (modernist). The idea of the socialist bloc countries remained longer than in Western countries. After the fall of communism, new urban ideas influenced the development of the cities in our part of Europe, including such as: sustainable development and suburbanization. Now, with the ongoing process of urbanization, changes in technology, economic and social new challenges have emerged. European cities with its long history and stratification of historic structures are facing this challenge. The following article is devoted to the issue of the possibility of adapting new needs of urban spatial structure rebuilt or newly designed in the spirit of modernist thought. Author of the article would like to draw attention to the perceived opportunities and threats educated at the time of the spatial structure of the functional city.

Bialystok is almost three hundred thousand inhabitants and the regional capital of Podlasie Province in north-eastern Poland. As a town center is fairly short history dating back to the seventeenth century. In the eighteenth century, Bialystok was a private town and seat of the aristocratic



family of Branicki becoming a cultural center. Key factors in the development of the city in the nineteenth century was the geopolitical and construction of the railway line connecting Warsaw and St. Petersburg, both contributed to the development of industry and uncontrolled spatial development of the city at that time. In the twentieth century, the biggest change brought about the Second World War as a result of which more than half the population died (before World War II, the city had

a population - 107, 000), and the proportion of the population was forced to left their homes. The city as a result of military operations is significantly damaged, especially industry and public buildings, but also entire areas previously held by Jews or the area of ghetto. Bialystok before the war and after the war are two different cities (Dolistowska, 2009).

After World War II the location of city was considered even moving, but ultimately the technical infrastructure and costs associated with construction of the new facility led to the decision to rebuild it. Actually, we can talk about consistently carried out the reconstruction of the city. The first plan of perspective development of the city was designed by Professor Ignacy Felicjan Tłoczek in 1948. The designer, who worked on the plan buildings of the city in 1938-39. Student of prof. Tadeusz Tolwinski and the Warsaw school in teaching urban design that combined a lot of different directions across Europe, including Germany. Of course, on the late thirties plan already created on the basis of functional promoted by lecturers but also already embedded in the Law on spatial planning. It should be noted that the idea of functional city in urban planning in the thirties was still wearing a lot of pluralism, the direction marked the demands of Congrès international d'architecture moderne (CIAM), but in different European centers geared to different priorities. The plan of I.F. Tłoczek was never officially adopted, but it was baseline to the successive designers to the end of the 50s, when the city exceeded the number of inhabitants as provided for the plan. It included development of the city in a linear arrangement (today referred to that band) on the east-west direction based on the course of a small river Biala. It was recommended the removal of industrial plants with a belt surrounding the river and transforming reclaimed areas in parks and recreational areas, including the corridors aerating the city. Along the river and the green belt led the main communication axis of the city. Out in the open planned public facilities located wherever it can be placed. Towards the west were created, in more than a swampy river valley, new housing developments area, crossed by meandering river (Figure 3). City to 70s had achieved 150 thousand inhabitants, in the first phase of reconstruction, mainly in the center of realized buildings having 3-4 floors. Therefore, the scale of the center of one side does not match the size of the city, on the other hand, it is appreciated for its intimacy.

The increase in population, which in 1946 was 56 759 persons to 195 861 people by the year 1975, and the city's development were issues which had to be measured, inter alia, Bialystok post-war planners. Between 1958 and 1974, there are three general plans of the city set new directions for development of the city continued establishment of the first plan, while amending the general scheme of the city with the band on coaxial with the maintenance of the west towards the devel-

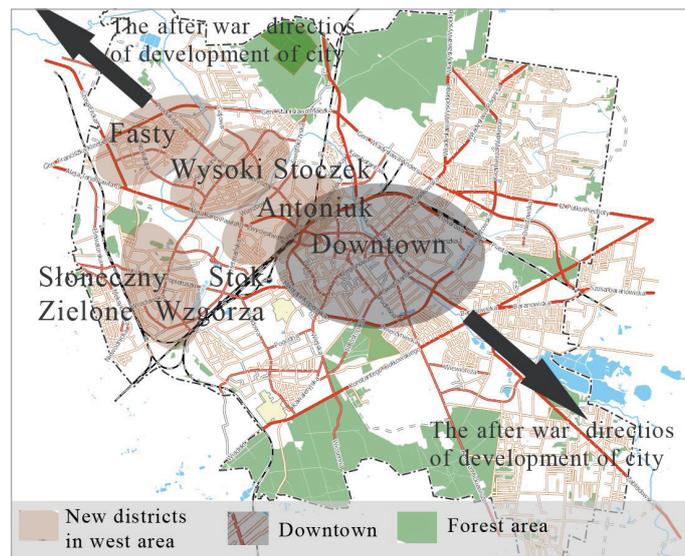
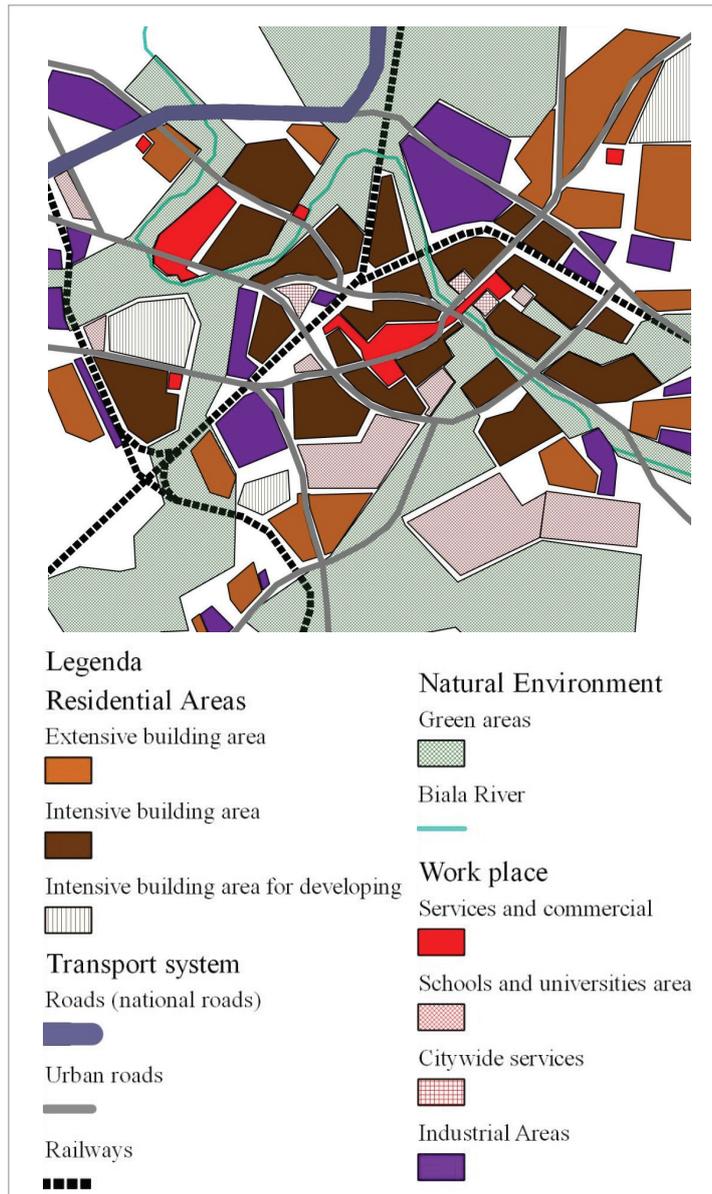


Fig. 1

The plan of Bialystok with location of mentioned in article districts. Based on maps from Municipal Spatial Information System

Fig. 2

Scheme of plan made in 1974. M. Chodorowski



opment of the largest urban settlements. In the diagram above (Fig. 2) shows a large green belts intersecting structure of the city, reserved the land for three large housing complexes, well connected to the city center. They dealt with the construction of tram lines that would connect the western districts with center of city, but in the end it was decided that this solution is uneconomical. Public transport is based on buses and makes from Białystok one exception in such large scale city. The system, however, and last improvements proved to be efficient. The project of the general plan in 1974 was awarded the ministerial and the person supervising the work on it was a long-time employee and manager of the Municipal Urban Planning Bureau prof. Helena Sawczuk-Nowara. 70s in Poland were characterized by strong movements in favor of modernization, industrialization and projects characterized by rescaling urban solutions. Despite this, the

general plan of Białystok one of the main factors shaping was the protection of the environment. The principles of environmental protection: parks, forests, water and air. This highlights particularly that environmental issues were only place in the public consciousness at a later date (World Commission on Environmental and Development - WCED 1987, LeGates and Stout 2007). Buildings concentrated in bands settlements surrounded by open green areas. Jobs were mainly in the industrial zones located at a distance from residential zones (Fig. 2). A novelty in the plan was the introduction of local service centers, which would lead to their greater autonomy from the central site.

Methods

In order to show the spatial changes in the structure of the city illustrating the issues mentioned above will be presented in an article analyzes of land use layer of urban structure of west districts of Białystok:

- _ structure of west districts of town;
- _ present density of population;

- _ green structure (state of the 1974, present state);
- _ past and present land use of land;
- _ transport system - project of cycling routes compared with land use;

On the basis of experience gained in working in the Department of Urban Planning introduced limitation of issues and limited them.

The article noted the positive legacy thinking in terms of functional compact city on selected solutions to the spatial structure of Białystok, which should be maintained as a value in itself. In summary, while indicating the elements which, in the opinion of the author are positive and which are negative. The article is not exhaustive, but is the result of observation of person involved in the project work. Although the modernist city planning was criticized, even by Jane Jacobs, on the one hand, the functional idea is one of the cornerstones of modern planning. On the other hand, rational and focused on social needs and social development, even in urban planning, among others, has brought good results in Scandinavian countries, which was due to many factors, among others, political. Generalization in the case of urban issues is an art difficult and to seek solutions to the problems should be looked carefully.

Structure of west districts of town. Cities in our part of the continent have to deal with the legacy of functional space with big structure of socmodernist settlements. For the purposes of this article, the author focuses on the area of the city adjacent to the downtown, which firstly is on the post-war composition axis of the city east-west, adjacent to the green areas of the valley of river Biala and are located in the three residential complexes - housing districts: Antoniuk, Wysoki Stoczek, Fasty (Figure 3). Later has been realized settlement Słoneczny Stok and Zielone Wzgórze on former industrial sites since 1974.



Results

Fig. 3

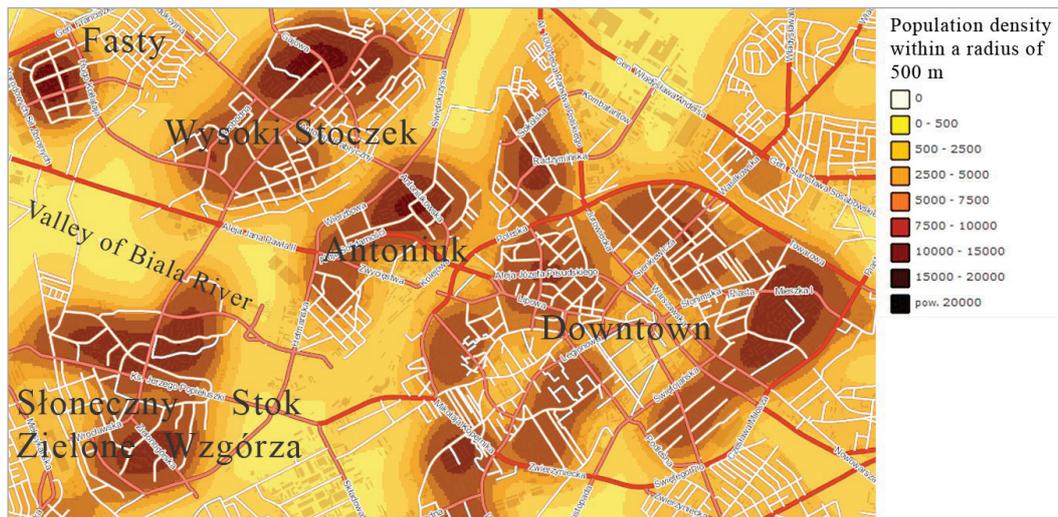
Contemporary layer of building structure and communication system compared with orthophotomap of 1974. Based on maps from Municipal Spatial Information System

Present density of population. Map (Fig. 4) shows the location of the population of Białystok and areas most densely populated. For economic reasons, but the aforementioned momentum implementation of the '70s and' 80s are some of the most intensively used areas in the city. It should be noted that these are the socmodernist settlements made in the technology of prefabrication. To acquire land expropriation owners, in some parts of the original building has been preserved (extensive use), mostly on the outskirts of the districts.

Past and present land use of land. On the map (Figure 5) marked in orange are the buildings with low density, partly it was a remnant of an earlier structures of villages located there, and the subsequent urbanization of single-family housing units from the 50's, then refilling with new buildings. According to the article's author diversion structures are positive aspect, low density structures especially on the outskirts of the district and in the right proportion to the whole area. Conflict occurs at the interface of green areas and private land. Since 1974, bands of green areas reduced. Despite the fact that in the meantime to protect the environment and the broader concept of sustainable development found a place in both the legislation and planning systems, reduction

Fig. 4

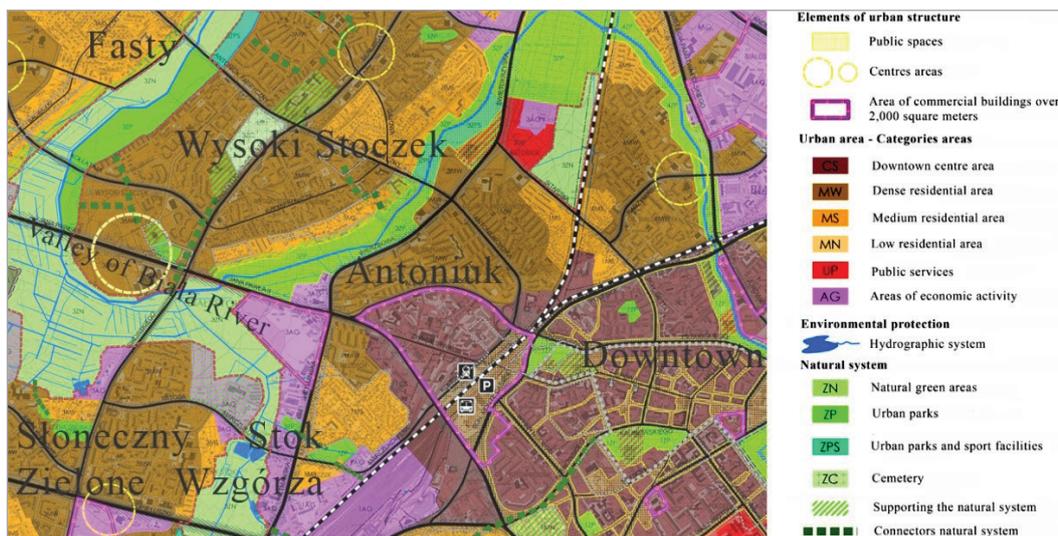
Fragment of west Białystok presents the density of population in mentioned districts. Based on maps from Municipal Spatial Information System



of green areas in Białystok progresses. Comparing maps Fig. 2 and Fig. 5 (synthesis on Fig. 6) shows how the tightened are the green belts. The problem in this case occurs in claims landowners, which are included in the local spatial development plans as green areas, and in fact in court that in such cases, states the supremacy of property rights over the public interest. The result is not only the construction of individual houses, but most of all multifamily housing units with high density. The same happens with the areas with the designation AG (Fig. 5) - economic activity. To stop this process Białystok authorities decided to enact local zoning plan covering the western part of the valley of the river Biala.

Fig. 5

Fragment of west Białystok presents directions of spatial development of described area. Based on maps from The project "Study of conditions and directions of spatial development of the city of Białystok"

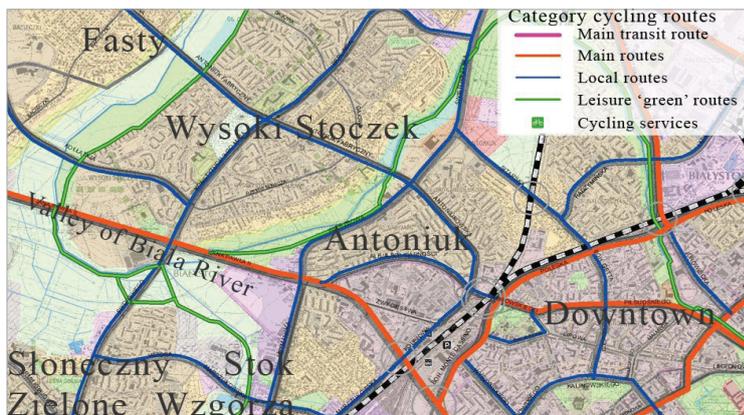


Despite these measures, while at the initiative of the city is gradually narrowed central section of the green belt, areas originally intended for sport and recreation services. Currently implemented already here shopping mall and adjacent land was allocated to a zone of multifamily housing. Thereby denying consistently pursued policy of spatial planners after the war in the name of neo-liberal economic development policy. While these activities have been accepted by the society of Białystok, the announcement of the liquidation of a small park in downtown caused so many protests that the city authorities withdrew from the idea of selling the land. Areas of green belts in the minds of the residents are border area, appreciated, although it doesn't belong to a environment that should be defended.



Fig. 6

Comparing two layers of green belts from plan made in 1974 with contemporary layer of green areas. Even taking into account both drawings detail is apparent narrowing of green areas (red layer show present conditions)



Transport system - project of cycling routes compared with land use.

With the advantages of the spatial structure of the city, especially the transportation system and landscaping author of the article can be read at the conceptual work on the system of cycle routes, which was a participant (Figure 7). The wide roads

Fig. 7

The fragment of city with system of bicycles routes

linking individual settlements from the center of quite a large cross-section allowed the design of bicycle paths. Undoubtedly enable fast communication car or in this case, what alternative is a bicycle. Popularity BIKER system launched in 2014 demonstrated the effectiveness of alternative public transport. Thanks to systems of green areas of Biala River Valley and also other ecological corridors it was possible to design recreational cycling routes. The problem in this case the paths are routed to a large part of the area belonging to the municipality is unfortunately part of the paths passes through private plots which dismisses the prospect of implementing these recreational paths.

Presented above issues are only fragments of the complex reality of urban organism of Bialystok. The aim of the article's author was not also prove that we are dealing with a compact city. Random observations made in this section require clarification and additional words. Building and referring to the document published by the Organisation for Economic Co-operation and Development

Discussion

(OECD) - the Compact City Policies, Comparative Assessment should discuss these issues in the proposed text order.

Challenges and threats in consolidation of city. Building structure which evolved in Bialystok is the result of combining the idea of functionalism, centralized investment and the possibility of expropriation of owners in connection with the search for savings in the investment process at every level of the project of landscaping to the architectural details. It should be noted that the foregoing factors could occur in the undemocratic and non-capitalist system. Bialystok is the eleventh city in terms of population in Poland, but indicated as the second most densely populated areas. What is rather due to a small area of the city, but it can't be deny that the building of the city is high density, but uneven (Fig. 4) as a result of the respect in the past, natural conditions and distribution of housing estates in the valley of the Biala River by Bialystok planners. Building and green areas have clear boundaries, contemporary attempts to designating sites indirect current practice means degradation and narrowing of green zones. Previous actions aimed at introducing a smooth transition between the two zones shifting border ended urbanized area. Bialystok settlements located west of the center for reasons of natural conditions are separated from the center. During their planning each had to have local service center. Due to financial constraints the last decade they fulfill the role of a bedroom town. The construction of local shopping centers has changed the situation. Despite this, most of the residents move to remote jobs. Brown fields in Bialystok are usually changed into new residential areas or commercial. So far, only occasionally it is the place to create new jobs in services or areas of information technology (IT). It was only in 2015 completed two office buildings with modern office space tailored to the needs of companies operating in IT. Still haunted by thinking about separating industrial areas from residential zones, even though we are dealing with high-tech industry. Bialystok Science and Technology Park was created on the outskirts of the city, despite the fact that this type of buildings and associated companies locate closer to central districts.

The last issue raised in the article is the communication system. As a result of co-financing of projects from European funds for the years 2007-2014 Bialystok completed the project of improving the quality of public transport system of the city of Bialystok. As a result, among others, investments related to it failed to improve the condition of roads, traffic lanes at the same time setting for buses. The city also invests in order to close the road system, which most components have been designed in the 70s of the twentieth century. The above-mentioned actions do not translate into a decrease in the number of cars in a progressive increase in their numbers is a problem nationwide. Increasing the capacity of the main arteries reduced the traveling time from suburban areas and expanding suburbs. The purpose of the city is the situation more attractive urban spaces, reducing the distance between home and work, thus encouraging potential residents to stay within the city limits. Mono spatial differentiation of functional areas of the city that are the heritage of functionalism. The whole process will be long, planners must reckon with the fact that it won't be given to them to see the effects of their actions.

Conclusions

The demographic situation in most European countries indicates that there will arise new urban centers, in which we could apply the model solutions. The task will thus transforming existing settlement structures, cities, metropolis. Preserving the environment also poses challenges for the inhibition of its operation. In conclusion in our studies we should to:

- _ focus on the past ideas in urban planning which had the similar goals with nowadays direction in urban planning policy also like compact city;
- _ analyze individually which disadvantages of structure of our functional cities can be changed, but also which advantages in land use can be upgraded to new function;
- _ redefine the approach to heritage of functional city.

The article presented above, it have tried to show how much depends on local factors and designers often an individual approach to the issues of urban space. Even the lofty goals enshrined in the legal system will not be effective if there is no will of their application or are other priorities. Białystok from industrial city, contaminated, including a number of slums was rebuilt in a new spirit of rationalism and functional thinking, and willingness accelerated modernization. It was an answer to the problems of the city before the war. Many cities in Europe suffered a similar fate and one of the largest experiments in urban planning history. Currently, it may be assessed differently these changes, but they are a fact and people dealing with the problems of the cities have to explore the complexity of the issue. The above article is an attempt cursory analysis of the individual case, whether that proves the rule or exception which the author leaves the reader to determine.

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