

## URBAN MATRIX CHANGES BY FORMING NEW BOULEVARDS IN NOVI SAD

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**Summary:** *Urban pattern is the stamp of social-economic development conditions in the city and its change implies a tendency towards further development, carving new directions in the morphology of the settlement. The street network of the city plots lines of uprising, set boundaries, and highlights the significant points of the city. Novi Sad, through its matrix, shows significant changes in the three historical periods of the city, which dictated the development of complex urban structure that Novi Sad has today. Changes occurred as a result of different historical contexts as the sustainability of introduced lines will be considered. This paper will analyze the dominant boulevards, whose creation of the urban tissue underwent major transformations in the twentieth and on the entry of the twenty-first century. Success of the implementation of the morphology of the city will be considered, among other things, the fact that today these directions are crucial for undisturbed functioning of the entire city traffic as well as transit traffic through Novi Sad.*

**Keywords:** *Urban pattern, sustainability, boulevards, Novi Sad*

### 1. INTRODUCTION

If " a city is the best body of memory that a man has ever created"[1], it is understandable why all changes that occurred in the long genesis as a result of territorial, social, economic, cultural and spiritual prosperity, can be observed through its physical structure. The human need to conquer the space surrounding them, to expand the city where they live and adapt it to themselves, induced morphological and physical changes in the environment, and created heterogeneous neighborhoods that are environmentally, functionally and architecturally very jarring and different. The main arbiters of significant changes in the cities are the economic demands of the community, aspirations of political leaders and city officials, and accommodation of the residents and their

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constant pursuit of comfort and safety, which is now, however, unconsciously lost as a result of permanent urban transformation, dictated by the aforementioned influential forces.

"The form of the city is, above all, an expression of spiritual, social, historical, spatial and physical continuity"[2], which has developed in every society independently of the enveloping system. In chronological terms, an urban matrix is the central representative of the changes and the best indicator of the transformations which formed the appearance of a settlement in time, and influenced the creation of collective memory in the community. Nevertheless, the city as a whole is very abstract and virtual for the inhabitants because it is impossible to experience it perceptually in totality, as a unified system. Traces of social prosperity, territorial development and social genesis, are best identified through analysis of the street network of the settlement, where the time dichotomy in overlapping of the old and new street stencils is clearly noticeable.

"Urban morphology is a tool that allows us to discover the many facets of the essence of built structures and open spaces", [3] which can be seen through the changes in the street network, through street function, development hierarchy, and the introduction of new routes that fundamentally alter the familiar image of the city. Although the city is commonly observed in a certain moment, it represents an epochal structure formed through time, changed due to social maturation of the community and transformed owing to the evolution of awareness and aspirations.

## 2. CHARACTERISTIC PERIODS IN THE DEVELOPMENT AND TRANSFORMATION OF THE STREET MATRIX IN NOVI SAD

Urban matrix of a settlement is an apparent indicator of development, which maps out all the changes, conditioned by the technological progress, political upheavals, ideological concepts and socioeconomic parameters present in the specified built environment, into the horizontal plan of the city. The analysis of the street network of Novi Sad shows a heterogeneity in the construction periods, a prominent position of the city center as an ambient, cultural and social junction, a great disharmony in a morphological sense when it comes to the basic urban elements in the areas of both the center and outskirts of the settlement. Urbanistic reading of the city indicates three characteristic periods spatially marked by the introduction of strong marginal routes that divided urban tissue in sub-units.

The most significant changes, implemented during the period of the XX and XXI century, influenced the creation of the city in the form known to its inhabitants today, thereby forming the urban identities and traffic representatives of settlements - boulevards. Built in the early twentieth century, Mihajlo Pupin Boulevard is the oldest transport route of this magnitude in the city, and it pointed out the concept that not all cities have the same attitude towards the reconstruction of the inherited street network in the central areas[4]. Expansion of car traffic in the city, caused the development of important routes that connected the urban domains, enabled the construction of representative public typology and functionally unburdened the urban tissue and formed a continuity and linearity in traffic. Introducing traffic and a dominant traffic route in the

city center, dictated the emergence of functional highlights, the formation of a gravitational field of the city and a very high frequency of users in certain areas. At that time, the positioning of this route spatially imposed many messages of collective awareness of the community. Today on the one hand, (ili jedno ili drugo) such a strong junction distinguishes this area from its immediate surroundings, , still functionally connecting urban entities.

The 1950's and 1960's were a period of the definition, conceptual and progressive development and construction of the Oslobodjenja Boulevard, the most prominent and frequent traffic route in the city. The linear length, about 3.5 km long and oriented in a north-south direction, created a sort of an urban partition: the old part of the city is established east of the Boulevard, and the new part, which had the opportunity to spatially expand, shaped by the strong influences of political ideology, positioned to the west. The importance of the introduction of this route is multifold since "boulevards are not only the necessity of a large city, but also their urban identity cards" [5] as is shown at all spatial levels of construction and conceptual ideology of the Oslobodjenja boulevard.

The beginning of the XXI century, brought the construction of three new boulevards on the outskirts of Novi Sad, Bulevar Evrope, Subotički and Somborski bulevar, the formation of which is still taking place. The wide linear direction of the Subotički bulevar, that continues on the Bulevar Evrope, is a section of a former railway, which has already been a functional and organizational divider, a strong barrier and dominant axis of development in the urban structure of the city. Defining the position and substituting an entirely unsuitable mode of transport, with another, which is in constant prosperity, transformed the existing urban matrix and divided the urban tissue in the radical degree. Parts of the blocks oriented towards the boulevards were given stronger and more defined construction plans, more floors and various typologies, while the street network in this part of the city remained almost unchanged." The space we live in, that which we enter upon coming out of ourselves, the exact one within which the erosion of our lives, our time, our history occurs"[6] is a space that we must adapt to the needs of all residents. The directions of the newly formed boulevards are areas of great potential, however, one must ask to what extent these potentials will be exploited, will be considered in the period that follows the urban genesis of Novi Sad.

### **3. CHAGES AND POTENCIALA AS A RESULT OF CONSTRUCTION OF NEW BOULEVARDS**

During the period of the creation of the Mihajlo Pupin boulevard and Oslobodjenja boulevard, the urban tissue of these parts of the city had already been formed. The primary function of streets is to "structure, connect and separate urban forms" [7] and thus become dynamic axes that influence the interrelation of the surrounding area to the traffic as a whole. Mihajlo Pupin boulevard, formerly Maršala Tita, denies the existence of the previous street system, in two visible places in the horizontal plan. The disconnection of the singular direction that leads through streets Kralja Aleksandra and Železnička, as well as the direction of the Jevrejska street throughout Pozorišni trg to trg

Slobode, is noticeable when it comes to continuity and ease of movement, visual and perceptual overview of the segment and the relation of the architectural objects on the street corners to the intersection itself. In addition to the aforementioned functional and aesthetic flaws, the problem of such spatial interventions is also reflected in the ambient, symbolic sense and the issue of disrupted identities of the edifice that have lost their significance as entities which used to belong to a different concept. This point of view can be supported by simply observing Menratova palata, a representative of both business and residential building at the corner of Kralja Aleksandra street and Mihajla Pupina boulevard, that have remained oriented with a blind facade towards a frequent and dominant traffic direction after the transformation and building of the boulevard. The new route brought a number of identities, recognized today as the benchmarks of the city, but it also took away a portion of physically shaped memories of the former collective consciousness and historical facts.

The demolition of the buildings that were positioned in the space determined for the formation of the new boulevard, also occurred during the construction of the Oslobođenja boulevard. A large number of functionally justified, architecturally adapted and morphologically interesting objects had to be physically removed due to ideological reasons. "One of the functions of architecture, as well as one of the measures of its artistic values, is the attitude towards the ambience" [8]; this is also the issue of the relation towards the existing and yet the justification of the desire and need for change. In two places along this boulevard, the existing street network has been discontinued, thereby the relation to the current had to be completely annulled. The biggest drawback in this area is the complete inferiority to the significant linear sections of the Železnička and Lasla Gala streets, as well as the direction made by the Avgusta Cesarca and Danila Kiša streets. The problem with this kind of relation is the disturbance of the identity the streets once had, and the disregard of the collective memory and the significance the aforementioned hubs used to have on the mental map of the city.

In contrast to those previously described, the boulevard Evrope, as the youngest representative of changes in the urban matrix of Novi Sad, was created in a manner that did not require demolition of the former, compactly-built space. Constructing the borders of traffic areas and closing the street fronts that still takes place, is proving to be a time consuming process, that should involve the planned construction of adequate facilities.

Changes in the city, created by the penetration of the boulevard have, at each stage, introduced further changes in the appearance of the city and affected the perception and experience of the various urban units. Today, these directions divide the city into areas; streets flow into them and depart from them; the morphology of the blocks is changing and typologies and functions are shaped to accommodate the needs and potentials of the boulevard area. On the other hand, the boulevards connected the different areas of the city, enabled the efficient movement and improved the traffic communication. Regrouping of the functional areas of the city has been stimulated, and the opportunities provided by connecting them leaves space to the potential decentralization of the city. At each stage of development, boulevards have contributed to the regrouping of the importance of certain areas, thus allowing the highlighting and exploitation of the potentials of previously less accessible areas.

The importance of the boulevards as links between different units of the city and the need for their existence and dominant cross-section in order to meet the needs of the

increasing number of users is undeniable. The grid lines of public transport, are an eminent proof of the importance of boulevard routes built during the twentieth century. Two of the boulevard from this period today represent the routes of the most lines of public transport. Through them, all parts of Novi Sad, central and peripheral, are connected to each other, and they are the most important points of intersection and junction of all transport routes of the city

#### 4. CONCLUSION

The three described stages in the development of Novi Sad, reflected through the significant changes in the urban matrix, are among the most important influences that formed the city as we know it today. Mihailo Pupin and Oslobodjenja boulevards destroyed the physical structure of the city, in order to create the now well-known and functionally important areas of Novi Sad. Identities were demolished, to enable the building of new landmark of collective memory. With all the criticism and controversy among experts and the acceptance or condemnation of the population, these prominent urban elements are direct factors of undisturbed functioning of the entire city life. Analysis of the public transport system shows apparent importance of these boulevards, through which it is possible to connect and network the city. At the same time, they represent the nodes, boundaries and connections in the physical structure, integrating significant functions and various typologies that shape the lives of the citizens of Novi Sad.

The changes that the street network suffered in the phase that formed three new boulevards, did not degrade the built environment and had no destructive character as the previous two phases, indicating a tendency to expand the city in non-urbanized areas and to preserve the existing built structure in the form established in the past. Upon entering the XXI century, the negative segments of the previous penetrations of boulevard routes and the interventions in the street network, have been superseded by the construction of new ones. Time will tell whether the newly formed dominants can achieve the positive features and utilize the proven potential of these line elements of the urban tissue.

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## ПРОМЕНА УРБАНЕ МАТРИЦЕ НАСТАЛА ФОРМИРАЊЕМ НОВИХ БУЛЕВАРА У НОВОМ САДУ

**Резиме:** Урбана матрица представља печат друштвено-економских услова развоја града и свака њена промена имплицира тежњу ка даљем развоју, урезујући нове правце у морфологију насеља. Уличној мрежом града исцртавају се линије развоја, постављају границе и наглашавају се значајне тачке градске структуре. Нови Сад, кроз своју матрицу, указује на значајне промене, у три историјска периода града, који су диктирали развој комплексне физичке структуре коју Нови Сад данас има. Сагледавањем промена, насталих као резултат историјског контекста, сагледаће се одрживост уведених праваца. У раду ће се анализирати доминантни булевари, чијим је стварањем урбано ткиво доживело најзначајније трансформације у XX и на уласку у XXI век. Успешност имплементације у морфологију града сагледаће се, између осталог, и кроз осврт на питање да ли су данас управо ти правци од пресудног значаја за несметано функционисање целокупног градског као и транзитног саобраћаја.

**Кључне речи:** Урбана матрица, одрживост, булевари, Нови Сад