

ILEGAL AND SEMI-LEGAL CONSTRUCTION OF THE BELGRADE METRO

A COMPREHENSIVE HOUSING SUPPLY

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GLAVNI PROBLEMI NOVEGA URBANIZMA BEOGRADA NEZAKONITA IN NA POL ZAKONITA GRADNJA BEOGRAJSKEGA METROJA

izvleček

Beograd je označeval mejo med dvema cesarstvoma, bil je na razpotju med vzhodom in zahodom kot "vrata Evrope", kakor so ga mnogi imenovali. 20. stoletje je v mestno strukturo Beograda prineslo precejšnje spremembe. Spremembe v številu prebivalstva niso dohajale strukture mesta in njegove ulične mreže: razporeditev in sestava je ostajala ista kot v časih, ko je imelo mesto daleč manj prebivalcev. Povečevanju števila prebivalcev se niso prilagajali z razvojem ulične mreže, posledica je bil neizogibni prometni kaos. Že pred 2. svetovno vojno je raziskava poudarjala nevarnost preobremenjenosti prometnega omrežja; nekaj desetletij kasneje to ni bila več napoved prihodnosti, ampak realnost. Mesto je privlačevalo vedno več prebivalcev, ki so se doseljevali v upanju na boljše življenje in priložnosti za delo, medtem ko so ulice postajale vedno ožje za rastoče število osebnih vozil, ki so se gnetla po beograjskih ulicah. Beograd je v 21. stoletje vstopil v položaju, ki je bil slabši kot bi se bil kdorkoli upal napovedati deset let poprej. Širila se je nezakonita gradnja, tako da je Beograd končal v urbanističnem brezpravju. Danes Beograd doživlja prometni zlom, četudi so nanj strokovnjaki opozarjali že v prvi polovici 20. stoletja.

ključne besede:

zgodovina arhitekture, beograjski urbani razvoj, metrojski sistem, nezakoniti objekti

abstract

Belgrade marked a boundary between two empires, it was a crossroads between the East and the West, standing as a "gate of Europe", as many called it. The 20th century introduced major changes in Belgrade urban structure. The changes in the population numbers did not go hand in hand with the changes in the urban structure and street network: their position and composition was the same as it had been in the times in which the city had by far fewer residents. The increase in the population was not accorded with the development of street networks, so that the traffic chaos in the streets was an inevitable result. Before World War II already, research had stressed the danger of traffic network overload, and a few decades later, this was no longer the prediction for the future of Belgrade, but rather its reality. The city was attracting more and more population, who immigrated in order to find a better life and more opportunities for work, while the streets were becoming ever narrower for growing numbers of individual motor vehicles which jammed the traffic in Belgrade streets. Belgrade entered the 21st century in a condition that was worse than anyone would dare to predict ten years before. Illegal construction was spreading, so that Belgrade ended up with urban sacrilege. Today, Belgrade is experiencing a traffic collapse, even though experts pointed out there were a danger from this as early as in the first half of the 20th century.

key words:

history of architecture, Belgrade urban development, metro system, illegal structures

One clearly sees from the table that changes in Belgrade population have been substantial. The city was long a borderline post between the Austrian and the Ottoman Empires. As such, it has been attacked and burnt to the ground many times. The population varied as different conquerors replaced one another. The favorable geographic position influenced that Belgrade should become a major crossroads even at that time. When Belgrade finally became a Serbian city, the resolution of those in power made it the capital of this young state, which resulted in the immigration of new population from within the country. The tendency of population increase continued, so that in the course of 20th century the city became a couple of times larger. However, the changes in the population numbers did not go hand in hand with the changes in the urban structure and street network: their position and composition was the same as it had been in the times in which the city had by far fewer residents. The increase in the population was not accorded with the development of street networks, so that the traffic chaos in the streets was an inevitable result.

The history of belgrade urban development

An important period in Belgrade urban development was definitely that of oriental Belgrade. Oriental Belgrade lived for almost five full centuries and looked like a typical oriental Ottoman city. In the work of numerous travel writers, Belgrade

was then described as a Turkish city, with narrow, winding streets, numerous districts and mosques typical of oriental architecture. As it was a borderline city lying on two big rivers, it developed as a typical crossroad trading centre. Due to its position on the border between Austro-Hungary and Turkey, it was often pulled down and attacked.

The population staying in Belgrade territory for the longest period has been that of the Serbs. Originally, their young state covered areas south of Belgrade. With the decline of the Turkish Empire, Belgrade became a full-fledged Serbian city. The main goal of Serbian leaders was then to create a modern Belgrade would become the new state capital.

year	number of citizens
1834	7.033
1866	24.768
1910	89.876
1921	131.846
1931	268.721
1948	363.766
1953	437.641
1961	585.234
1971	746.105
1981	1.087.915
1991	1.168.454

Table 1: Belgrade population.
Tabela 1: Prebivalci Beograda.

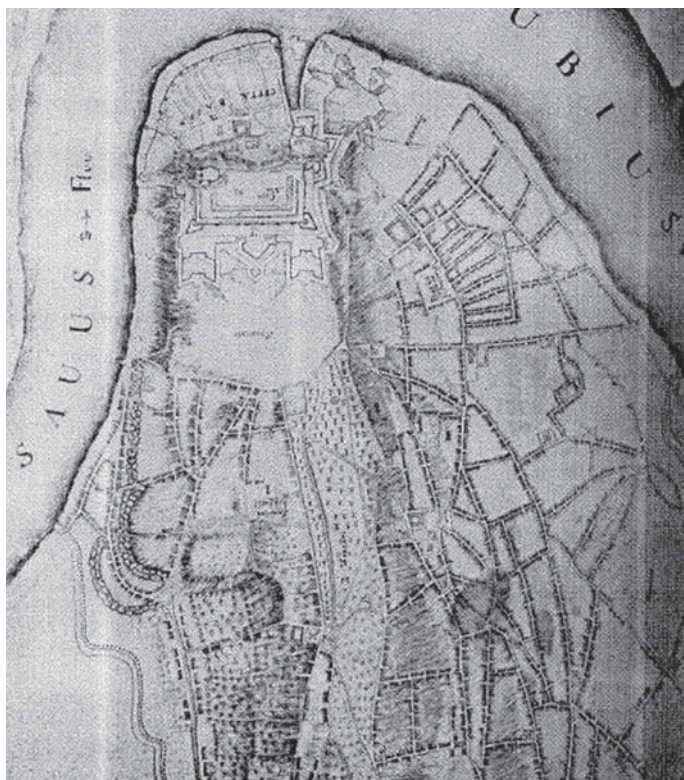


Figure 1: The Italian plan of Belgrade from 1669; Djuric-Zamolo, Divna: Beograd kao orijentalna Varos pod Turcima 1521-1867, Muzej grada Beograda, 1977.

Slika 1: Italijanski načrt Beograda iz leta 1669. Vir: Mestni muzej v Beogradu.



Figure 2: The 1863 Turkish plan of Belgrade; Djuric-Zamolo, Divna: Beograd kao orijentalna Varos pod Turcima 1521-1867, Muzej grada Beograda, 1977.

Slika 2: Načrt Beograda iz leta 1863, ki so ga izdelali Turki. Vir: Mestni muzej v Beogradu.

A city that has always been on the border between the East and the West, typically oriental in essence for a few centuries, Belgrade started changing its looks and development dramatically after it was taken over by the Serbian authorities. The young Serbian state was looking up to the western civilization. A new chapter in Belgrade's life started, where everything related to the oriental Belgrade was deleted, and thus, the city was totally reconstructed. Proving this fact, one finds records of numerous western engineers and architects being brought over by the Serbian authorities to use their expertise and help reconstruct the city.

The year 1867 represented a turning point in the history of modern urban development of Belgrade. This year is related to the completion of an urban plan of modern European Belgrade made by the founder of modern Serbian urban planning, Emilijan Josimovic. Thanks to Emilijan Josimovic and his efforts, Belgrade was fully transformed from an oriental town into a European city. Due to his efforts, we now have a record from that period. The new Serbian Government had a great desire to make Belgrade a modern European city, where features of an oriental town would be lost. Due to the activities of this person, today we know exactly what the position of important public and residential facilities was, what the street network looked like, and how big the blocks were. Moreover, we see the position of the old mosques in the city and the exact location of

the Moat that once surrounded the old town. At the time of this reconstruction, the city had only 25,000 inhabitants.

The city was given all the trademarks of a modern town: electricity, sewerage system, water supply system, tramway lines, modern parks, streets covered with asphalt instead of Turkish cobble-paved roads. City grew, and new population was attracted to it. Thus, Belgrade increased, and there was also a multifold increase in the number of inhabitants.

In the 20th century Belgrade was pulled down twice in the two world wars, which certainly hindered the development of the city. The period between the two wars was the golden age of Belgrade growth. Belgrade suffered massive devastation during the WWII – around 40% of all the building capacities were either destroyed or damaged in the bombings of 1941 and 1944.

After World War Two the development continued. At that time, Belgrade had the highest population influx in its history. In only a few decades, it became a city with the population of almost two million. The construction of New Belgrade and also numerous new districts constantly attracted new residents coming from within Serbia. Economic development of the old communist Yugoslavia turned Belgrade into a new administrative centre, with new, remarkable, modern buildings following global architectonic trends. There were ambitious projects everywhere, the city was expanding and developing, new layers of population were arriving.

Novi Beograd (New Belgrade) played an important role in city life, where many important business centers, sport centers and big malls were built. New Belgrade was a modern city built in the second half of the 20th century in the sand filled flood plain of Bezanijsko Polje on the left bank of the Sava and right bank of the Danube, between the historical cities of Belgrade and Zemun. This part of the city is no longer just "a big dormitory", as people used to call it. Many important future projects are planned to be built in New Belgrade, as this location offers a lot of convenience to future investors. The idea is to develop New Belgrade as modern and attractive. It is important to emphasize that it would be dangerous if those new plans for modern New Belgrade should be too ambitious, as the similar situation happened already in the past when the ambitious project for a new big administrative center was made. The result of the first ambitious project was a disaster and we could only hope that it will not happen again. In 1971, Belgrade had 1.200.000 inhabitants, and according to the census of 1991, it had 1.600.000 inhabitants. This means that Belgrade grew for around 400.000 denizens in 20 years, which meant that in 20 years, a veritable new city should have been constructed, with all the housing and public utilities elements, new jobs made, and other ancillary structures built.

Period since 1960 to 1976 is the period of most intensive, most productive and most comprehensive development of Belgrade in two hundred years. The basic concept of development was realized on a massive scale on the mostly empty land. Primarily the buildings for collective dwelling were built, while the individual housing structures were significantly rarer. New

settlements have been built with almost no inhabitants till those days.

The second golden age of modern Belgrade development was interrupted in the final decades of the 20th century with the advent of the big economic and political crisis in Yugoslavia. This was the moment which marked the end of development and the beginning of the crisis period. Numerous flamboyant buildings from the communist age remained empty and unused, the previously announced traffic reconstruction, namely the building of the ambitious subway, did not happen.

Today, in the 21st century, Belgrade is experiencing new urban age. The territory of New Belgrade is building site for emerging Business Districts as international corporations are investing in Belgrade. Belgrade has been seen for future as business center of the whole region. Territory of the New Belgrade offers great possibilities for this purpose, just in the middle of future Corridor 10 with access to E-75 European highway and direct approach to river Danube, the biggest European river. It is also important to mention that the Belgrade airport is just 15 km from New Belgrade. Belgrade could be compared with Berlin in 90s with his huge building potential and also with Manhattan as New Belgrade is called now "Serbian Manhattan" cause of the emerging Business Districts.

Illegal structure

The first appearance of illegal construction was at the beginning of the 20th century. One of the first typical unplanned settlements was located in Makisko Polje. Belgrade community did not possess proper instruments and possibilities to pull



Figure 3: Plan of reconstruction of Belgrade in the Ditch made by Emilijan Josimovic in 1867 Stojkov Borislav, Urbografija: razvoj ideje o obnovi gradova u Srbiji: 1967-1998, Beograd 1997.

Slika 3: Načrt rekonstrukcije Beograda. Vir: Stojkov Borislav, Urbografija: razvoj ideje o obnovi gradova u Srbiji: 1967-1998, Beograd 1997.



Figure 4: The 1912 regulation plan of Belgrade by the French architect Cambon Maksimovic, Branko: Ideje i stvarnost urbanizma Beograda: 1830-1941, Zavod za zastitu spomenika kulture grada, Beograd, 1983.

Slika 4: Načrt regulacije Beograda iz leta 1912. Vir: Zavod za zastitu spomenika kulture grada, Beograd, 1983.

down illegal settlements at the beginning of their development. This settlement progressively expanded, as there was no legal control.¹

The roots of illegal structure traced back long in the past, but the escalation of the problem is connected to Belgrade in 1990s as a result of decades of devastation and destruction of the city. One of the main reasons is certainly the culmination of anarchy that ruled in Belgrade in the post-war period, where 1990s were definitely the worst.

One legacy of the communist period was the lack of clearly defined construction lines where future mass residential buildings should be built. Plainly, it was not predefined or decided how far the land planned for construction lay and where public land began. That was a huge problem. Since ownership over the land was so unclear, whether it formally belonged to the city or even to the state, this resulted in totally arbitrary utilization. The state administration had the power to change urban plans and issue authorization permits for new residences, annexes and superstructures. Simultaneously, the authorities paid no attention to the buildings themselves and to interests of flat owners, to urban standards, and to the legal regulations which were valid during the time of the construction of those facilities. There is still no updated land registry, so a tremendous number of buildings and habitations built in the last fifty years has not yet been registered. The fact is that land registry could not be systematically made before the terrain lines are well defined. This is probably one of the principal reasons why nothing has been done with regard to this matter even some years after the democratic changes in Serbia, in 2000.



Figure 5: The 1923 general plan of Belgrade; Maksimovic, Branko: *Ideje i stvarnost urbanizma Beograda: 1830-1941*, Zavod za zastitu spomenika kulture grada, Beograd, 1983.1967-1998, Beograd 1997.

Slika 5: Pregledni nacrt mesta. Vir: Zavod za zastitu spomenika kulture grada, Beograd, 1983.

In the end of 1980s, 23 locations with more than 9,000 illegal residential objects were already registered in files. Habitation became the private concern of individuals after 1993 when the Public Residential Fund was discontinued, and by then this institution had been the legal owner of citizens' habitations. Along with the privatization of habitations, the process of disintegration of Yugoslavia was occurring. Those events brought to Belgrade around 166,000 refugees from all over former Yugoslavia. Some refugees started building new homes without legal permits.²

Semi-illegal construction

Semi-illegal residential construction developed as a consequence of tacit support by city administration of constructors who did not possess all building documents required. Construction works were done based on different documents, which did correspond to a part of the required documentation for getting the building permission, but the documentation was rarely complete. Essentially, probably the largest part of those illegally constructed habitations belongs to the second category. On the other hand, some users of public land sold the legitimacy for using that land illegally. Those contracts seemingly exempted the customer from acquiring the building permission, at the same time giving them some kind of assurance in front of the court of law in case of the decision to pull down the illegal facility.

The case of locations not built but awarded

Public sites that have been awarded, but in which there

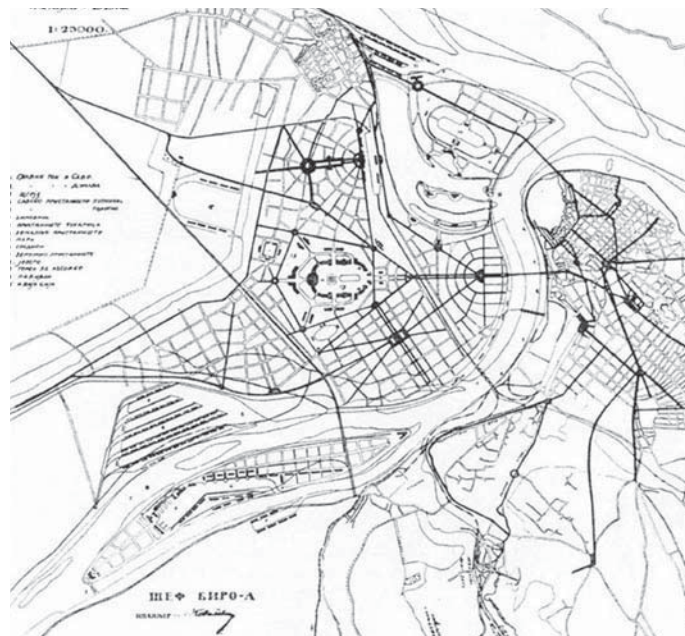


Figure 6: Appendix to the 1923 general plan as an attempt to include the left river bank into city's future development by Koljevski Maksimovic, Branko: *Ideje i stvarnost urbanizma Beograda: 1830-1941*, Zavod za zastitu spomenika kulture grada, Beograd, 1983.

Slika 6: Dodatak k preglednomu nacrtu mesta. Viden je namen vključevanja rečnega brega v mestno tkivo.

has been no construction, are a specific problem. Namely, a large number of locations allowed to various investors by the Directorate for Public Land have remained empty. In the last 5 years the Directorate vouchsafed land for building amounting to more than 4 million m² for residential and business premises. Just 18% of the expected facilities have been built, while 82% of locations have remained unconstructed. The total size of these assigned locations corresponds to 50,000 flats, which would be enough for 120,000 to 150,000 inhabitants. Knowing this information, one can only conclude that this number is enough to accept the total increase of city population predicted by General urban plan 2021³

According to some experts, Kaludjerica is the biggest illegal settlement in all Europe. At the time of the study (1986) about 6,000-7,000 illegal buildings were estimated in this settlement, while the official evidence registered just 3,711 facilities. Current assessment is that there are over 10,000 buildings. About 40-45,000 inhabitants allegedly live in this illegal settlement.⁴

A 1996 study showed there were 22 poor city districts with more than 120,000 inhabitants. Another study, from the year 2000, presented there were around 120 registered Romani colonies with about 4,000 inhabitants living in miserable conditions. Those poor districts spread from the city center towards the borderlines of Belgrade region.⁵

Problem of belgrade metro

Before World War II already, research had stressed the danger of traffic network overload, and a few decades later, this was no longer the prediction for the future of Belgrade, but rather its reality. The city was attracting more and more population from the provincial parts the country, who immigrated in order to find a better life and more opportunities for work, while the streets were becoming ever narrower for growing numbers of

individual motor vehicles which jammed the traffic in Belgrade streets. The modernization of the city, which also included the acceptance of global individual motor vehicle tendencies, resulted in the overburdening of the traffic network. There was no accord between the number of private vehicles and the traffic network.

Today, in the 21st century, Belgrade is experiencing a traffic collapse, even though experts pointed out a danger from this as early as in the first half of the 20th century. Numerous studies on the possibility of the subway dating from the 20th century, including the classical underground railway project, have unfortunately remained mere scientific studies and projects.

The first subway study was conducted in 1946 by the famous Serbian architect Nikola Dobrovic. He provided the opinion that Belgrade needed a subway. This document was later quoted a number of times and is indeed the first written record discussing the subway issue in Belgrade.

After 1950 the network of roads in the city of Belgrade was rapidly growing as, was the number of citizens. This situation was followed by the growth of individual motorization. However, the city growth was not followed by a city network growth. As nothing from the suggested plans from General Plan 1950 was accomplished, the problems became evidently stronger. The possible solution to the traffic problem was given to "Zavod za studije i projektovanje Zajednice Jugoslovenske zeleznice", who made a suggestion for the metro project to be led by Prof. Sava Janjic in 1968. He developed a project for the first Study of the Belgrade metro system. Work on the study took six years, from 1962 to 1968. Its goal was to stress problems in Belgrade traffic and offer a plan for three lines of the subway network in Belgrade.

The third, and biggest, subway study was completed in 1982 and contained a major, comprehensive subway project. This project was officially accepted and verified by the city government. The task of developing a project for a metro system was given to the Direction for Building and Reconstruction of Belgrade, which assumed also the obligation of gathering the expert team who will realize this project. At the end of 1972 and at the beginning of the 1973 the Direction formed the "Sector for metro and underground works" and made an agreement with Energo project (a Belgrade firm) and with the Institute for urban development to cooperate and to develop a project for a future metro. The city Assembly accepted all information and analyses made by the project team in the course of its session held on December 20 1973. On April 26 1974 the contract for the project beginning was signed between the City Government and the Direction for City Development and Reconstruction. The project for Belgrade metro was made, but, after a political decision in 1982, all further works were halted.

At the same time, major political problems piled up in former Yugoslavia and they quite certainly influenced the decisions related to Belgrade subway. Unfortunately, politics obviously once again won over professionalism, because one can hardly think of any other justification why the opinion of decision makers changed so rapidly in such a short period, where the authorities quickly revoked the decision to start the already



Figure 7: Novi Beograd building site, 2008, photo made by author.
Slika 7: Gradbišće v Novem Beogradu, 2008.

adopted subway project. It is clear that in present-day society nothing is apolitical, so one cannot expect that politicians should have a realistic view of the situation in terms of traffic problems. Today, the story of the past is repeating. The light railway project has been completed and accepted by the authorities. Once again, deadlines for the commencement of works have long gone and the whole construction is at stake. The light railway project is a part of Belgrade General Plan 2021, the same way the decision and project of the classical subway were part of a number of previous plans. As long as the building does not commence, the matter is uncertain. What can one do to change this situation, which is now decades old?

To conclude, Belgrade needs a high capacity metro system, capable of overcoming traffic loads, with $Q_{\text{max}} = 40,000$ passengers/ hour/ direction for city metro lines, and $Q_{\text{max}} = 50,000$ passengers/ hour/ direction for regional metro lines. This system could reach speeds of > 35 km/h for city metro and 50 km/h for regional routes.

In contrast to many other cities, Belgrade has the advantage that already with the integration of the first metro line into traffic many positive effects would be seen. First of all, the main aim of all important activities is planned to be within walking distance from stations. The first stage immediately

assumes the role of a basic transport system within the city. It is estimated that the travel time in public transport would decrease from nowadays' situation by 20-25%. With a few exceptions, most public transport lines are radial with their terminus in the city center. The city structure is mono-centric so that the traffic network has a radial character. At the same time, the weak traffic base of the central zone does not allow for the introduction of more diametric lines, which results in the need for passengers to change lines often.

Conclusion

Rarely can one find a city that can boast the natural wealth and climate of Belgrade – as it lies on the confluence of two major European rivers, the Danube and the Sava.

After the crisis, which left a serious negative mark on Belgrade urban structure, another renewal started, which is just beginning to develop. Big and ambitious projects are again being discussed, proposed solutions to traffic collapse are providing room for new disputes, and major changes are generally occurring. The future will be witness to further chains of events and new era in the history of Belgrade.

Today, Belgrade is a modern city which strives to become a real metropolis. No one can be indifferent to this city, a peculiar



Figure 8: Modern architecture in the city center in 2008.
Slika 8: Sodobna arhitektura v mestnem središču, 2008.



Figure 9: Modern architecture at Brankov Bridge, 2008.
Slika 9: Sodobna arhitektura ob mostu Brankov, 2008.



Figure 10: The metro plan from 1968; Studija beogradskog metroa 1968.

Slika 10: Načrt mreže linij podzemne železnice iz leta 1968.

Figure 11: Building plan for the first metro stage; the Belgrade metro project 1982.

Slika 11: Predvidena območja izgradnje linij podzemne železnice iz leta 1982.

Figure 12: The metro network scheme; the Belgrade metro project 1982.

Slika 12: Predvidena območja izgradnje linij podzemne železnice iz leta 1982.

mixture of the old and the new, the East and the West, the modern and the ultra-modern, the rich and the poor, the culture and the lack of culture, the glamour and the misery. There is something irresistibly attractive to Belgrade, something leaving no one indifferent, something calling the visitor to always come back. The unusual landscape, with successions of hills and valleys, rivers and streams, smaller and bigger islands, parks and strolling sites, provide a particular flavor to Belgrade. It is exactly those natural resources which Belgrade abounds in that pose an obligation to the citizens to do their best as to make this city a true metropolis. Numerous past mistakes in urban structure result in the fact that any further mistakes may hinder the development of this unusual city. If there is criticism, and it is necessary for progress, it would be useful to consider the positive suggestions it brings along, for it is man who can harm, and also help, his city the most.

Belgrade entered the 21st century with many problems, struggling with transition and willing to finally enter the EU. Geographically, Belgrade has always been part of Europe, sometimes too far away and sometimes very near. Without any doubts, the strong desire for it to be a part of Europe has always been there, but, unfortunately, due to its cross-road geographical position, Belgrade used to be and still is an attractive destination for conquerors. Depending on the period, their names have changed but not their aims. If anything is sure, it is the fact that Belgrade still has a great potential.

It is a fact that Belgrade is late, but the question is why it is so late and what happened with the grand subway project which was allowed in the eighties. The project was completed, then accepted by the city government upon a positive assessment, only to be stopped with the justification that the city of Belgrade did not need a subway system, but that the problem would be solved by the light city railway, i.e., as it was called at the time by the experts supporting this latter option, a tramway for the 21st century.

The solution to Belgrade street chaos is to be found only in the construction of an underground railway system, which would take on itself the bulk of passengers, thus reducing the traffic crowds and allowing the city to start breathing. The classical metro system would make Belgrade one of the global metropolises. A city with such a good geographic position cannot and must not allow that bad assessment of those responsible should further worsen the present situation.

Therefore, we are witnesses to the time in which the fate of this city is decided. Without functional traffic, there is no functional city. Something should indeed be learned from the mistakes of the past.

- ¹ In 1937 there were already 700 habitations. The newcomers were poor families. In the year 1937/8 about 80% of Belgrade inhabitants were poor. Eradication of this or other illegal settlements would harm the poor city population and would cause huge social problems in the community. That was the reason why the Ministry of Construction of the Kingdom of Yugoslavia suggested that Belgrade Community should delay pulling down illegal houses in Belgrade suburbs from 1937 to 1941. Djordje Piljevic, Beograd u XX veku, Levica 1, Beograd, 2001
- ² Around 35,000-40,000 illegal buildings were built in Belgrade in 1994, which corresponded to about 100,000 inhabitants. One year later, in 1995, the "Legalization Act" was passed, but there were no practical results. Some estimate that now there are more than 22,000 illegal facilities on the territory of 10 Belgrade municipalities. Urbanisticki zavod Beograda, Generalni plan Beograda 2021, Beograd, 2003
- ³ One analysis of this kind of questionable documentation shows that 73% of illegal objects built in the settlement Orlovo in Mirijevo possess some kind of "permit". Generalni plan Beograda 2021
- ⁴ Ksenija Petovar, Planiranje urbanistickog i socijalnog razvoja Beograda; Socioloski pregled, br. 3/4(1986); Ksenija Petovar, Nasi gradovi izmedju drzave i gradjanina: urbana sociologija, Institut za arhitekturu i urbanizam Srbije, 2003;
- ⁵ Urbanisticki zavod Beograda, Generalni plan Beograda 2021, Beograd, 2003

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