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# Urban Transformation of the City Quarters Through the Example of the City Quarter J14 Rasadnik Skopje

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#### *Abstract*

Nowadays, rural-urban migration is quite pronounced, and almost half of the world's population lives in cities. Urbanization on a global level, defined as an unstoppable rising phenomenon, opens up a series of opportunities and challenges for architects and city planners in transforming existing urban environments into more efficient and self-sustaining living spaces.

The application of international design standards in correlation with the requirements and needs of the cities and their inhabitants as primary users of the space can greatly improve and advance the process of urban planning, by finding the best and highest quality solutions for citizens, land owners, and the wider social public.

For this purpose, following the requirements of the Municipality of Kisela Voda in the city of Skopje, based on a previously announced International Competition for the development of a Conceptual urban-architectural solution for the city quarter J14 - Rasadnik, municipality of Kisela Voda, Skopje, by a group of architects, including the author of the paper, an urban-architectural solution was prepared for this area, which is expected to be a relevant basis for the further preparation of urban and project documentation.

In this paper, the city quarter J14-Rasadnik, municipality of Kisela Voda, will be analyzed in its current state, and proposed solutions will be given for rethinking the settlement following the principles of sustainability for a balanced economic, social, and ecological development of the settlement and beyond.

*Keywords:* urban environments, urban planning, urban-architectural solution

## Introduction

Master planning and urban design processes follow well-established procedures envisioned in the form of a series of drawings and diagrams, representing design considerations and developing plan concept (Loumi, n.d.). The concept of development design includes a range of physical factors such as climate, ecology factors, drainage, floods, and earthquakes, usually represented in a series of maps, planning decisions, and urban policy on land use, population density, and existing infrastructure, emphasizing the potential and constraints of the site that affect development as a whole. It is precisely these factors that largely contribute to the formulation of a development planning concept for the settlements and/or cities nowadays (Loumi, n.d.).

The formation of lively and dynamic urban spaces in the heart of cities nowadays speaks loudly of the country's urban system as a whole, emphasizing the function of space in its naturalness. It is the traditional memorial spaces that are considered interconnected sets developed in a certain hierarchical system that are linked coherently, while modern design nowadays has made a mess of the old valuable urban spaces with their integrated structure and imposed an inflexible spatial framework in the political, social order of cities (Roshani, Habibi, & Zarabadi, 2017). The spatial integrity of the spatial structure of the settlements and cities today is quite limited precisely because of the limitations in the design and planning of the existing spaces, and it leads to a series of problems for the local authorities to create an ordered local metropolis. The market economy today creates a repeating urban pattern in the developed, urbanized world that speaks volumes for a so-called millennial malaise (Castello, 2021). Because of this, there is growing talk about inventing and creating new urban morphologies of cities and their settlements.

## The Tradition of Competitions for Urban Development of the City of Skopje

Skopje, the main capital of the Republic of North Macedonia, has a long-established tradition of announcing competitions for architectural and urban design of the city dating back to 1914. It is the year when the first competition was announced by the then Ministry of Construction of the Kingdom of Serbia, in which Serbian architect Dimitrija T. Leko won first place. Nine years later, in 1923, the then-current mayor of the city of Skopje and architect Josif Mihajlovic-Jurukoski created a general regulatory plan that built on Leko's plan and treated both banks of the Vardar River (Marina & Pencic, n.d.). It is the period when the most significant buildings at the

level of the city, striking in their nature, were built: the city water supply (from the source Rasche near the village of Radusha), the “Matka” hydropower plant on the river Treska, the building of the Parliament of the Republic of Macedonia, the old railway station in the center of Skopje, the Officers’ Home, the building of the National Bank of Macedonia located on the City Square, the City Park, and the Zoo. One year after the catastrophic earthquake in Skopje in 1963, the United Nations announced an international competition for the urbanization and reconstruction of Skopje, where the first prize was awarded to the Japanese architect Kenzo Tange together with the Yugoslav team of architects Radovan Misević and Fedor Wenzler from Zagreb (Architectuul, n.d.). The great Tange was the first one who proposed a structural reorganization of post-earthquake Skopje through the use of two main elements, the City Wall and the City Gate, elements for the application of which he was previously inspired by the capital of Japan -Tokyo.

It is this international competition won by Kenzo Tange in 1964, which can be described as a bridge between humanity and the future, a combination of traditional and modern architecture of post-earthquake Skopje, that is the main inspiration for the second international competition for the architectural and urban design of the city quarter J14-Rasadnik Skopje, first published in 2022 and due to an insufficient number of participants, re-published again in March 2023.

## Urban Transformations of the City of Skopje

Skopje, the capital of North Macedonia, owes its present form to a process of stratification of differentiated layers developed as a result of urban transformations (Marina & Pencic, n.d.). The geopolitical context and the diffusion of various political and military configurations over the years have created a specific historical context for the development of Skopje. It is the rich historical context of the city of Skopje that has left various traces in its structure, starting from the localities dating from the Roman period, through the traditional Skopje bazaar from the Ottoman period, to the eclectic buildings from the end of the 19<sup>th</sup> and the beginning of the 20<sup>th</sup> century (which survived the earthquake) and the 20<sup>th</sup>-century modernist heritage.

The process of spatial and urban planning of the city intensified towards the end of the 19<sup>th</sup> and the beginning of the 20<sup>th</sup> century as a result of the modernization of the Ottoman Empire at that time, the emergence of a new geopolitical context in the region, and the influences of new concepts and models of urban form (Marina & Pencic, n.d.).

The end of the 19<sup>th</sup> century is the period in which the first situational plans for the city began to be drawn up, a process that continued in the first half of the 20<sup>th</sup> century with several general regulatory plans, and in the post-earthquake period from 1965-1985, it was expanded with making basic urban plans for the city.

Currently, the General Urban Plan of the city of Skopje, designed for the planning period 2012-2022, is in force and is expected to be replaced by the new General Urban Plan of the city, which should enter into force this year.

### **Quarter J14 - Rasadnik-A Fusion of Urbanism and Nature**

Following the quote of the American urban theorist Kevin Lynch that the City quarters are the largest element or part of the city, viewed as a two-dimensional element, in which the observer enters as in something new because he knows that urban element has a special character (Lynch, 1990), 58 years after the Kenzo Tange's awarded project for urbanization and reconstruction of Skopje, Municipality of Kisela Voda published an international competition for architectural and urban design of the city quarter J14-Rasadnik Skopje. This initiative actually represents an attempt to restore the forgotten City Quarter J14, which covers Rasadnik- an area which the residents of Kisela Voda caress to say is the last green oasis in the Municipality.

Rasadnik has a long history of existence; his beginnings date back to 1927, when the first Rasadnik of the Agrobotanical Department of the Kingdom of Yugoslavia was established on the site. The established Rasadnik for fruit plantations with a laboratory for agrochemical tests owned and operated by the Agricultural Institute of Macedonia continued to exist until the first decade of the 21<sup>st</sup> century when, in the process of denationalization, this site was returned to the ownership of its former owners. Since then, the Agricultural Institute has stopped performing its activities in this area. This international competition is not the first attempt at urbanization of this part of the city. The municipality made three recent attempts to urbanize this forgotten area in the period from 2016-2021, but unfortunately, they failed.

The location of the existing Rasadnik has its own added value in terms of preserving the memory of the citizens of Skopje, and it is one of the few parts of the city that still has lush and diverse vegetation. It can be said that Rasadnik is an inseparable part of nature, which can offer new perspectives for further urban development.

## Division of Blocks Within Rasadnik Defined With the General Urbanistic Plan of the City of Skopje

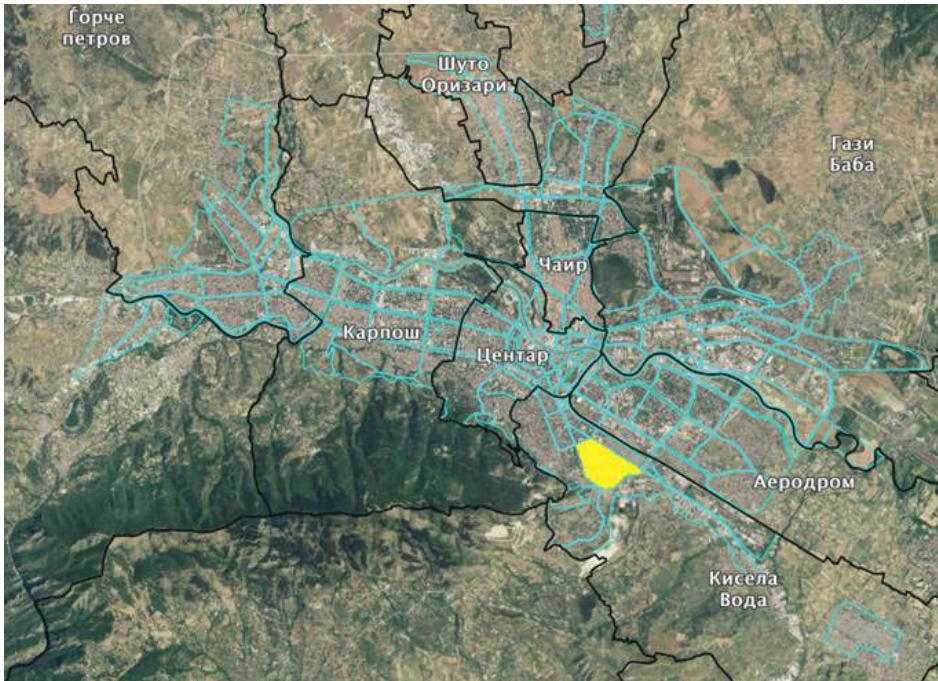
The Rasadnik site has been subject to conventional planning for years, divided into blocks with independent buildings, with a morphology similar to the surrounding existing settlements that date back to the fifties and sixties of the last century.

The boundary for the planning scope of city quarter J 14-Rasadnik is defined with the General Urban Plan of the City of Skopje - planning period 2012-2022 as an urban space formed between primary traffic corridors:

- In the northeast, the border extends along the axis of the “Boris Trajkovski” street.
- In the southeast, the border stretches along the axis of the main city street, Bulevar “Srbija”.
- In the southwest, the border stretches along the axis of the “Hristo Tatarchev” gathering street.
- In the north, the border runs along the axis of the “Narodni Heroes” street.

### Figure 1.

Location of City Quarter J14-Rasadnik, Skopje (photography available at (The City of Skopje, n.d.))



According to its borders, the total surface area of the planned scope along the axes of the primary traffic roads, according to the GUP of the city of Skopje, is 82.09 ha (The City of Skopje, n.d.).

In the City quarter J 14, the above-mentioned facilities are operating nowadays:

- In the western part, a built-up settlement with shared residential buildings with a height of eight above-ground levels, urbanized with the General Urban Plan of 2002 and the Detailed Urban Plan for the Rasadnik locality, a kindergarten and a sports hall Rasadnik, commercial facility, and gas station.
- In the northern part, the existing building of the Agricultural Institute at UKIM (University “Cyril and Methodius”) is located,
- In the central part of the locality, there is the existing Rasadnik containing various types of varietal fruit trees as a display area related to the educational activity of the Agricultural Institute, which is currently unorganized.

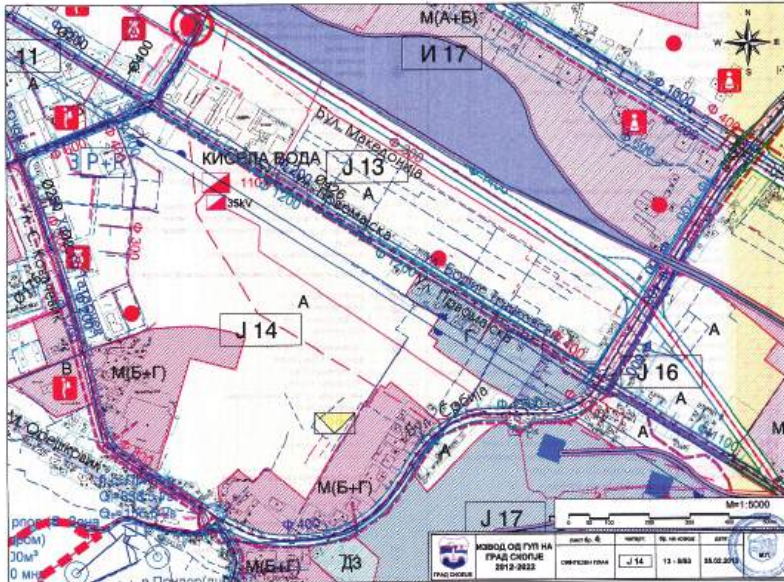
Around the surface of the Rasadnik from the north, south, and east along the primary thoroughfares, there are zones of light industry and commercial facilities, and in the interior between them, east and south of the Rasadnik, there is a settlement with individual residential buildings, formed by illegally built buildings in substandard structure, which are legalized. The site is crossed from the north-west direction to the east by a 110 kV transmission line, and in the north-west part, there is a 110 kV substation, which is of particular importance for the electricity supply of this part of the Municipality.

Even though this locality offers excellent conditions for life and work and its long-term planning and shaping should strive to accommodate contents that will bring a specific quality to the locality itself and its future residents and users, the unresolved property rights and the continuous changes in the legal regulations led to the failure to implement a series of urban plans that were previously proposed by the competent authorities.

Precisely because of this, following the instructions of the competent authority Kisela Voda municipality in the published competition for architectural-urban design of the city quarter J14-Rasadnik, a team of architects, including the author of the paper, as active participants in the competition, tried to offer a new planning solution for this area that largely aims for well-conceived and quality urban living.

**Figure 2.**

*The general urban plan of the city of Skopje, planning period 2012-2022 (photography available at [7])*



### Division of Urban Blocks Within the City Quarter J14 - Rasadnik

The planning scope of city quarter J14-Rasadnik in its current state is divided into 4 zones: Zone 1, Zone 2, Zone 3, and Zone 4, according to the state of the intended land use.

The primary goal of the announced competition was to define a new division of blocks within the city quarter J14, with which the boundaries of the above-mentioned zones would be respected as much as possible.

The subject and focus of detailed elaboration within the project was the area of Zone 1 (numbered 14.1, 14.2, 14.5, and 14.6 in Figure 3) which is 25.38 ha and it differs significantly from the other zones in terms of the level of complexity and the required degree of detail in response to specific program and spatial requirements by the Municipality of Kisela Voda as a client.

It is for this zone that a representative solution has been proposed, which aims to emphasize the new identity image of the wider spatial entity.

About the planned classes of purposes in Zone 1, the following are implemented: a significant percentage of park and landscape greenery, housing, sports and recreational facilities, educational facilities, and other facilities that aim to contribute to the highest quality urban-architectural solution for this part of the city.

In Zone 2 (numbered 14.7, 14.9 in Figure 3), the existing purpose buildings that dominate within the zone are commercial buildings, light non-polluting industries, services, and warehouses. For this area, it is proposed that part of the buildings be saved from the industrial complexes and used as an initiative to create memory places through the revitalization and reuse of the existing industrial buildings in quality multifunctional spaces for commercial purposes.

Zone 3 (numbered with 14.3, 14.4, 14.6, 14.8, 14.10, 14.11 at Figure 3), as requested by the competition concept, is spatially and visually integrated with the other zones (especially with Zone 1) and the immediate surroundings.

In Zone 3, there are currently buildings that exist in substandard conditions, and this situation is proposed to be overcome with new forms of individual housing, such as detached houses and terraced houses, that would greatly increase the aesthetic, visual, and urbomorphological features of the area.

Zone 4 (colored with grey in Figure 3) is a zone dispersed in several locations in which buildings have been built by previous planning documentation and which are kept in their realized purpose and dimensions, as well as traffic infrastructure.

### Figure 3.

*New zoning of city quarter J14-Rasadnik Skopje*





## Rethinking Urban Planning for the City Quarter Through a New Architectural-Urban Proposal

In developing an architectural-urban solution for the city Quarter J14-Rasadnik Skopje, there are 10 elements defined as the main objective of the proposed project (visually and graphically presented in Figure 4):

- **Pedestrian and bicycle connectivity** from our location of the project to the center of the town using new independent infrastructure that enables to reach the center of the city without directly crossing the majority of the internal street network of the planned quarter and boulevard “Boris Trajkovski” as well. Therefore, the newly planned pedestrian bridge that surrounds the boulevard “Boris Trajkovski” is positioned in the northern part of the quarter, between a swimming pool and a mini ZOO from the Rasadnik Quarter from one part, and on the second part connection continues to the existing pedestrian track that follows the railway towards the center of Skopje. The safety of its residents is also enhanced by the introduction of the underground street that will enable direct pedestrian and bike connections between the school and the kindergarten and Central Park without directly crossing any street.
- **Creation of a new canal and lake with two fruit islands.** One island is planted with domestic fruit trees, and the other represents wild fruit trees. Both islands are the places where the user can taste the fresh fruits directly from the trees or have a variety of fresh smoothies. The two islands are part of the story that begins with renting a small boat at the Landmark “Observing Twister” situated at the northeastern corner of the location, where the user can buy a daily ticket for renting the boat and use the same ticket for visiting the two fruit islands and finishing the visit at the new planned Botanical Garden and the Mini Zoo. The clients for this boat trip could be not only the locals and tourists, but it could be frequently used by the students (with reduced price tickets or free entrance) from the newly designed primary school and kindergarten for educational purposes.
- **New life for Agricultural Institute.** The new botanic garden is connected with the Institute, which has a public part and part closed to the public, which is planned to be the annex of the current institute for research purposes. Mini Zoo Garden will have outdoor and indoor areas offering new quality for the new and existing residents.

- **Care of existing trees.** Our care for the existing trees at the Rasadnik quarter is represented by the proposal of diagnosis for all trees in the project area by competent biologists to recognize which trees can be replanted in the newly designed places of the planned landscape in our project. Also, in the southern area in Zone 3, we are keeping all the existing wood that will be incorporated with the new Green Mall of open character, new tennis bar, and tennis fields, enabling an open public space directly surrounded by nature. The percentage of the greenery (greenery, recreation, and memorial spaces) is 45% of the total area of the quarter, or 37 hectares.
- **Promoting sports activities.** The sport, as one of the most important elements in modern life, is reflected in many ways in our project: The New Swimming pool, kayaking in the new lake and canal (1500 meters in one way), running around the lake, two open sports field areas (between the school and kindergarten and the tennis courts), biking in the selected and organized infrastructure in the quarter and the surrounding areas.
- **A low percentage of newly built space.** The new building space is practically represented by the proposal for dwellings and public buildings. Mainly, the public buildings are planned in Zone 1, which is basically situated around the artificial lake in Central Park. The new low-rising free-standing houses and row houses are situated in the current substandard dwelling area in Zone 3. The total percentage of build space is 7.34% of the total surface of the quarter.
- **Replacing the substandard houses and infrastructure** with new architectural proposals of a new residential area in Zone 3 (eastern part of the location) with a series of row houses, free-standing houses, and residential multi-level buildings. This Zone 3 will practically resolve the issue for the residents of this part of the quarter, and at the same time, it will improve the overall quality of Rasadnik.
- **New commercial areas:** The Green Market, Green Mall (shopping mall + cinema + performance area), small and exclusive shops represented on the ground floors of multi-level residential buildings.
- **Outpatient Clinic** in the southern part (in Zone 3). This proposed facility will reduce the lack of health facilities in Kisela Voda. The proposed clinic will serve not only the residents of Rasadnik but also the larger surrounding neighborhoods.
- **New public square with open free-form amphitheater.** This open amphitheater has a multi-functional purpose situated in the heart of this quarter.



**Figure 4.**

*A new proposed architectural-urban solution for the city quarter J14-Rasadnik*

The elements mentioned above, which define the proposed architectural-urban solution for the city quarter J14-Rasadnik, represent new ideas of the authors of the competition solution for higher quality, sustainable, humane living, taking into account that all the necessary accompanying contents adequately incorporate the urban city quarter which is the subject of development.

## Discussion

Urban planning, as a multi-disciplinary discipline, involves the study of the development, structure, and life of citizens and their habits in the past, present, and future. The healthy urban planning of cities and settlements precisely implies the creation of urban structures that strive for the humanization of space and the protection of the environment and nature.

For this purpose, through an innovative approach of a group of architects, this paper presents an extremely complex urban-architectural project for the reconstruction of the partially abandoned city quarter J14 Rasadnik, Skopje, where by using the spatial and memory qualities of the location, a solution is proposed that follows the established architectural-urbanistic principles from the domestic and international scene, which tries to revive the seemingly forgotten principles for healthy and quality living.

It is projects of this type, in their broadest sense, that can change the awareness of citizens, decision-makers, and specialists from different profiles increasing the responsibility for designing healthy neighborhoods because only a healthy city can be defined as a good and desirable place for living, attractive for its residents and users.

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