

Hexagonal Architecture of Slobodan Vukajlović: An Example of the City Chapel in Nikšić City, Montenegro

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ABSTRACT

For the history of architecture of the former Yugoslavia and today for the Montenegrin history of architecture, the opus of the architect Slobodan Vukajlović (1934-2006) is one of the most important. Still, a systematic study of his work has only recently begun. Vukajlović is an architect of strong individuality who designed most of his buildings in Nikšić city, where he was born, but he also designed two buildings in Italy in the city of Bari. His architecture is defined by the strong connection between the building and the environment, with respect to the context. One of the important design features of his buildings is the reference to hexagon and its variations, most often the transformation and multiplication of it. One of his most important works is the city chapel in Nikšić, built in 1969. At this object, some of his main design postulates are clearly presented: the shape of an object that originates from historical patterns found on the site, respect to the urban structure and context that will give the continuity of the built space and spatial identity and the strong poetic of the building. The city chapel in Nikšić is a building that encourages a man to think and feel. Its plastic, due to the multiplication of hexagons, elements such as the gate as a powerful symbol, the rhythm of the mass as well as the relationship between light and the shadow on the facade are a unique example of architectural reflection.

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KEYWORDS

Slobodan Vukajlović, City Chapel, Hexagon, Modernism, Nikšić

The Life and Work of Slobodan Vukajlović

Architect Slobodan Vukajlovic was born in Nikšić on 12.08.1934. He finished Real Gymnasium in 1954 and the Faculty of Architecture in Belgrade in 1961 in the class of a very important professor and architect Bogdan Bogdanović (1922-2010). The topic of his graduation work was the reconstruction and revitalization of the old town fortress in Nikšić, the so-called Bedem. By its structure, the fortress Bedem was built according to the system of Roman castrum and as such, it is quite geometric. The pure geometric structures of individual towers are noticed, which represent either a square, hexagon or octagon. It seems that the fascination with hexagon, Vukajlović began exactly on the preparation of his final, degree project, where his studious analysis of the fortress was especially focused on hexagonal towers. [Fig. 1]

It seems that graduation work for Vukajlović was a basis for forming a way to design future facilities. In the case where these objects are projected in the enclosed environment, they are always part of the context and complement it, forming a harmonious whole without losing their peculiarity. In case there is no existing built-in context, the building is in harmony with nature and never acts as a foreign body without dialogue with the environment. This suggests that building for Vukajlović is an act of continuous development of the built space, respecting its already identity. [Fig. 2]

After the completion of the studies, Vukajlović worked in the Department of Public Works of the Nikšić Municipality a year after which he served military service. He returns again in 1963, when the Institute for Urbanism opened in the city, where he will work as head of the Urban Planning Department until 1967 when he was elected as Director of the Institute for Urban Planning and Design. He remains on this duty until 1974. During this period, he was the main city urban planner and designer. In the period from January 1975 to July 1978, architect Vukajlović worked as the director of the Bureau for Design and Technological Development at the Construction Company "Crna Gora". [Fig. 3]

Vukajlović was a participant of all symposiums, consultations and congresses about urban and architectural activities in Yugoslavia. He participated to some important international meetings like the International Congress of Architects Conservators in Venice in 1964 and



FIG. 1 Slobodan Vukajlović in Bari, Italy during the opening ceremony of the Grotta Regina Motel, 1974.



FIG. 2 The 45 meters long parchment sheet, graduation work by Slobodan Vukajlović.

the XXX World Congress of International Federation for Housing and Planning in Barcelona in 1970. He was a member of the international organization IKOMOS.

As a scholar of the Polish government, Vukajlović attended the doctoral studies from 1974 to 1978 when he defended the thesis “Hexagonal Systems in Architecture” under mentorship of professor Tomasz Mankowski (1926-2012). It is interesting to note that professor Mankowski was a student of the architect Julius Żórawski and Louis Kahn. It is certain that such a significant personality of architecture, especially Kahn, left an impression on professor Mankowski, who then gave to his students understanding of architecture from the points of view of his mentors, architects Żórawski and Kahn.

For his work in architecture, Slobodan Vukajlović received a number of significant awards: the first prize at the Yugoslav “Stan Jugoslovena” competition at the micro-level Senjak in Osijek in 1969, then the “18th September” award given by the city of Nikšić to prominent individuals who contribute to the city by their actions. Vukajlović received this award for the buildings of the City Chapel built in 1969. Next is Borba award for the best achievement of architecture for 1971 for a kindergarten built in 1971.

It is interesting to note that Vukajlović designed most of his facilities in Nikšić and its surroundings. Some of these objects, typologically for the first time were designed in the city and thus influenced the transformation of spatial identity in a positive direction. Architect Slobodan Vukajlović died in Nikšić in 2006.

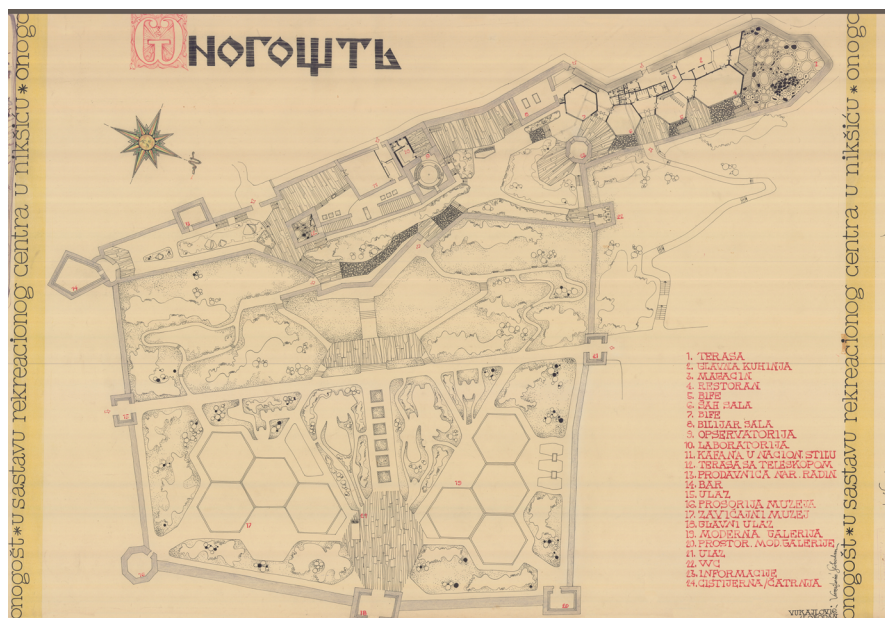


FIG. 3 Segment of graduation work, a solution for the revitalization of the fortress.

Historical and Political Context

If one wants to understand better the circumstances in which architect Vukajlović worked, it is necessary to look at the historical and political circumstances that preceded the time in which he was creating his buildings.

After the end of the Second World War, in November 1945, six republics: Slovenia, Croatia, Bosnia and Herzegovina, Serbia, Macedonia and Montenegro formed the Socialist Federal Republic of Yugoslavia.

The Communist Party of Yugoslavia, led by Marshal Tito (1892-1980), managed the country. SFR Yugoslavia, among other things, was created also because Partisans were the only pan-Yugoslav movement that fought against occupation and for the equality among all South Slav nations. At the same time, the Partisans established communist rulers in liberated territories.

Expectation was that SFR Yugoslavia will be another Eastern European country under the strong influence of the Soviet Union, but this did not happen. In June 1948, the Comintern (the Association of European Communist Parties, the pre-convened USSR) excluded Yugoslavia from this organization due to the confrontation of Marshal Tito with Stalin's plans that Yugoslavia be one of his subordinate states, although the Yugoslav peak wanted to be allies.¹

After the breakup with Stalin, the Communist Party of Yugoslavia began a series of reforms. The most significant and most revolutionary reform was the decentralization of political, economic power through the method of self-management, according to which workers are responsible for the work of the company, they are owners and they decide on the work while the state has the role of patron. This political and economic method has resulted in great economic growth, and in the period from 1957 to 1961, Yugoslavia was immediately behind Japan as the fastest growing economy in the world.²

From these brief reviews of the historical and political circumstances, it is clear that after the Second World War, although in difficult circumstances, Yugoslavia was moving through recovery, development and construction. Soon there will be a transformation of most agricultural economies to developed industrialization, which will also affect the transformation of society, from the once underdeveloped rural to developed and urbanized population. The great transformations that Yugoslav societies had taken had an impact on architecture as a profession, too.

It is important to note that, after the end of the Second World War, nationalizations of all economic branches and activities, including private architectural practices, came about. Architectural offices work under state control. Federal and regional ministries and institutes for buildings and universities are formed. Already in 1947, 60% of Yugoslav architects and engineers worked in such institutions.³

Self-Management also referred to architectural practice. This system allowed architects to freely organize and make decisions, in accordance with the priorities and requirements of the state at that time. It is important to note that Self-Management favored collective coordination, so professional criteria determined architectural production. As a result, there was high quality architecture, despite the fact that there were negative phenomena such as wild construction in suburban areas.

1. Sabrina P. Ramet, *The Three Yugoslavias, State Building and Legitimation, 1918-2005* (Washington, D.C.: Woodrow Wilson Center Press and Bloomington and Indianapolis: Indiana University Press, 2006).

2. P.H. Liotta, "Paradigm Lost: Yugoslav Self-Management and the Economics of Disasters", *Balkanologie V*, No.1-2 (2001).

3. Vladimir Kulić, *Land of In-Between: Modern Architecture and the State in Socialist Yugoslavia 1945-65* (Austin: University of Texas, Austin, Doctoral Dissertation, 2009).

At the beginning of the 1950s, architecture in Yugoslavia recorded very high quality results, better than in other Eastern European countries.⁴

Thanks to the numerous bilateral agreements between Yugoslavia and the Western countries and the good political position and reputation of Yugoslavia, it was possible for architects to travel and gain experience and knowledge across Europe and the world. Many talented architects were trained in the studies of Lous Kahn, Alvar Aalto, Paul Rudolph, Jaap Bakema, I.M.Pei.⁵

The architecture of Yugoslavia has accepted the principles of functionalism and rationalist architecture that are in line with the tasks and needs of socialism in relation to society and the economic potential.⁶

In this context, Vukajlović's architecture is a response to the demands of a small city that were in line with political, social and economic developments in Yugoslavia at that time. In addition, Vukajlović's architecture is a personal interpretation and response to architectural events and trends in Yugoslavia of that time.

Charles Jencks gives the definition of modern as a universal international style based on the facts of new constructive means, suited to a new industrial society that aims to change society, both in its taste or perception, and in social ordering.⁷

4. Udo Kulterman, *Savremena arhitektura* (Novi Sad: Izdavačko preduzeće Bratstvo i jedinstvo, 1971), 200.

5. Vladimir Kulić, Maroje Mrduljaš, *Modernism In-Between, The Mediatory Architectures of Socialist Yugoslavia* (Berlin: Jovis Verlag GmbH, 2012), 29.

6. Bogdan N. Nestorović, *Arhitektura novog veka* (Beograd: Naučna knjiga, 1964), 316.

7. Charles Jencks, *Modern Movements in Architecture* (Belgrade: Građevinska knjiga, 2003), 449.

Characteristics of Vukajlović's Architecture

The architectural characteristics of the objects designed by Slobodan Vukajlović can be discussed with several starting points. One of the essential characteristics of his work is the diversity that relates both to the typology of the projected objects, the number of objects and to the different style approach to solutions, even within the same typology groups.

The typology of projects made by Slobodan Vukajlović is quite large. In general, we can divide it into urban solutions, reconstructions of objects, memorial-monumental architecture and architectural solutions. Urbanistic solutions mostly refer to Detailed Urban Plans, individual parts of Nikšić. The urbanistic solution of the promenade and beaches on Lake Krupac is an interesting example of interweaving urbanism, architecture and landscaping, and as such, it is rarely among the first examples in the area of Montenegro. The



FIG. 4 Plan for the beach of Krupac Lake.

competitive solutions of the squares in Nikšić and Podgorica are valuable evidence of the relationship of the architect Vukajlović with the inherited urban designs where his solutions contribute to the continuity of the urban morphology. Even at the first impression, almost all urban projects and competitions that Vukajlović worked on show respect for the context. However, the interpretation of the solution in addition to the harmonious and logical upgrades of the founders also speaks of the author's impressive, unique style. [Fig. 4]

Architect Vukajlović worked on reconstruction solutions, mostly of old city houses and some important public buildings. In particular, the reconstruction of the King Nikola Castle, which is beside the reconstruction of the building accompanied by an adequate landscape and urban solution, as a kind of supplement. Moreover, in these solutions, the urban and architectural patterns that have been presented are fully respected and the architect gives solutions that upgrade them.

Memorial and monumental architecture takes a special place in the entire work of the architect Vukajlović. This architecture has been present since the graduation thesis in which the synthesis of the square and monuments dedicated to all those victims for freedom is also presented. In a formal sense, the monumental architecture is also diverse and it is difficult to talk about variations of some of the topics present in each of the monuments constructed. On the contrary, every architect's solution has been re-considered, taking into account the spatial but also the historical context, offering non-repetitive solutions, whether they have a strict geometric or figural character. The influence of the architect Bogdan Bogdanović is noticed, but it is only fragmented and in the notes, it is quite enough that the originality and the particular poetics of the architects of Vukajlović come to the fore. [Fig.5]



FIG. 5 Monument to Patriots, Nikšić.

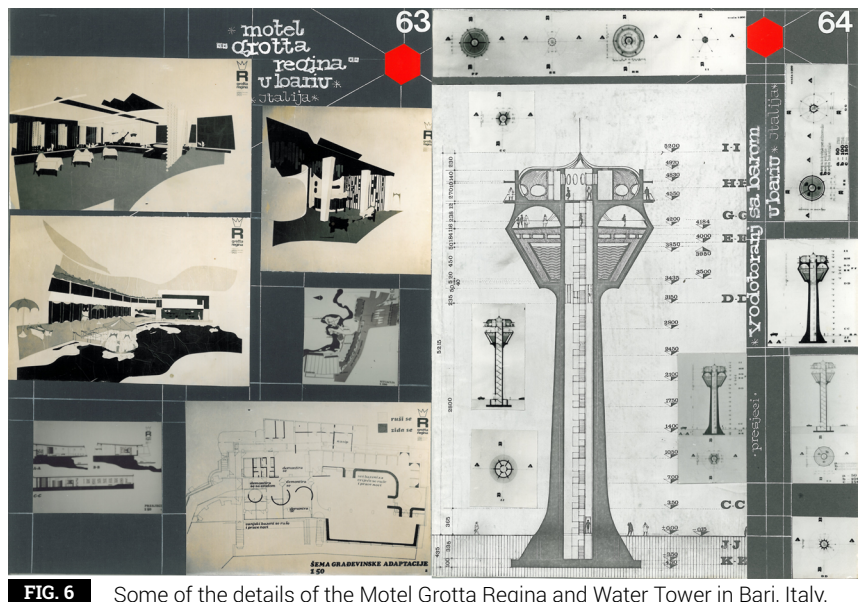


FIG. 6 Some of the details of the Motel Grotta Regina and Water Tower in Bari, Italy.

Architectural solutions are also diverse depending on the purpose of the objects. Typologically there is the architecture of houses, collective housing, architecture of hotel facilities, public, health, sports and architecture of school facilities. Slobodan Vukajlović is the only Montenegrin architect whose buildings were built in Italy, the Grotta Regina Motel in Bari and the Water Tower with a restaurant on the top, also built in Bari in 1974. [Fig. 6]

The stylistic characteristics of Vukajlović's architecture are as diverse as it is difficult to talk about just one or a few patterns and stylistic postulates that he applied. Although his work has recently been characterized as "hexagonal architecture", that is, the architecture in which the shape of object is solved by the various combinations of volumes created from the hexagon as a base, yet interpretations should not and should not be so one-sided. The work of Vukajlović is far more complex and cannot be said about the manner in which he worked. It is true that in a large number of objects hexagon is present, but its use is never without reason and it is never arbitrary. There are some similarities with Frank Lloyd Wright, who had a strong influence, primarily in philosophy and the design of objects at a given location, on Vukajlović's work.

Wright, on the one hand, used a simple orthogonal raster to organize different zones of space; he also used diagonal planning methods, especially in dramatic landscapes with uneven terrain. His project for Hanna House, in which he used the bee collar in the form of hexagon for floor motif, is a synthesis of these principles.⁸

8. Anthony Alofsin, *Frank Lloyd Wright and Modernism* (New York: The Museum of Modern Art, 1994), 32-57.

Similarly, Vukajlović uses orthogonal design systems, but in terms of the hexagons usage, he, unlike Wright, nevertheless recourse to a calmer linear method of multiplying hexagons.

Vukajlović's first architectural objects were designed in a modernist, international style, but with respect to the conceived context. Namely, the radial setting of the city, with its strict geometrical, has a clear differentiation of the city zones and the purposes of the surface and accordingly the purpose of the objects. The city urban plan of Josip Seissel (1904–1987), Dragan Boltar (1913-1988), Bruno Milić (1917-2009) and Boris Magaš (1930-2013) made in the period from 1954-58 is clearly related to the urban matrix of the First Regulatory Plan. This upgrade gave precise zoning by introducing new urban rings that radially spread from the old urban city map, where new objects were built after the Second World War. This way, as if to avoid the possibility of building new buildings besides the inherited, old ones. However, this construction was still in places that were not built in the old city center.

Alongside the growing interest in public monumental buildings, mid-to-late fifties, two aesthetic ideals emerged. One was a new humanism, and the other, less prominent was the new regionalism. Especially critical regionalism will be present in the territory of SFR Yugoslavia in the mid-sixties, precisely at the time when Vukajlović begins to build his facilities.

In the time of the definition of regionalism, it began to imply that architects should take into account the architectural heritage of a particular culture, which sometimes referred to its national construction, and sometimes to the author's artisanship.⁹

In this view, Vukajlović always conceives objects based on the local experience derived from the urban matrix of Nikšić. Strict geometry of the matrix logically requires that the objects be concise, geometrically and integral. Critical regionalism has advocated the idea that projects that take into account the particular climatic conditions will satisfy the aesthetic and ecological conditions, and thus resist the homogenizing forces of modern capitalism.¹⁰ Vukajlović's buildings could be seen in this context without any doubt.

Another important feature of Vukajlović's buildings is the meaning. His objects usually have a pronounced narrative characteristic given in the form of associativity and metaphors, even those objects made in the spirit of modernism.

Norberg-Schulz observes that one could say that the architecture of modernism ignored the dimension of meaning, and hence the fact that the common denominator of postmodern experiments is a search for communicative, content-based architecture.¹¹ However, on the example of Vukajlović's architecture, the interpretation of meaning, through the symbiosis of function, form and often detail, is always present.

Hans Hollein in the sixties concludes that architecture does not meet the needs of mediocrity. It is not the environment for the small joys of the masses; architecture is a matter of elite.¹²

If in this context we observe Vukajlović's architecture, we will see that his work is actually intended for the citizen, as a representative of the elite. Citizen as a user of the space should be conscious of the significance of the city, its morphology and all the elements that make it, in which individual architectural works make up the whole and enrich it. In this respect, Vukajlović always has in mind the urban context of his buildings.

In the architectural definition, the presence of the urban context can be diversified, from virtually no representation in typical objects, to superior architecture that is unthinkable without any special sensibility to the environment. Therefore, the architect in his approach determines which

9. Sarah Ksiazek, "Architectural Culture in the Fifties: Louis I. Kahn and the National Assembly Complex in Dhaka", *Journal of the Society of Architectural Historians*, LII, no. 4 (1993): 416-435.

10. Kate Nesbitt, *Theorizing a New Agenda for Architecture: 1965-1995* (New York: Princeton Architectural Press, 1996): 12-70.

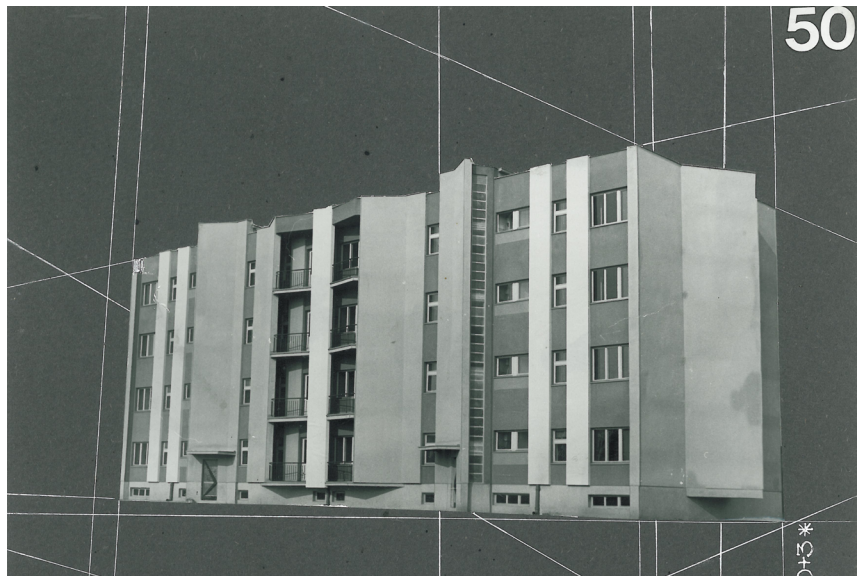


FIG. 7 The West and East façade of the collective housing building in Jola Piletić Street.

11. Christian Norberg-Schulz, "The Two Faces of Post-Modernism", *Architectural Design*, LVIII, no. 7/8 (1988): 11-15.

12. Hans Hollein, *Arts and Architecture* (California, 1963): 14.

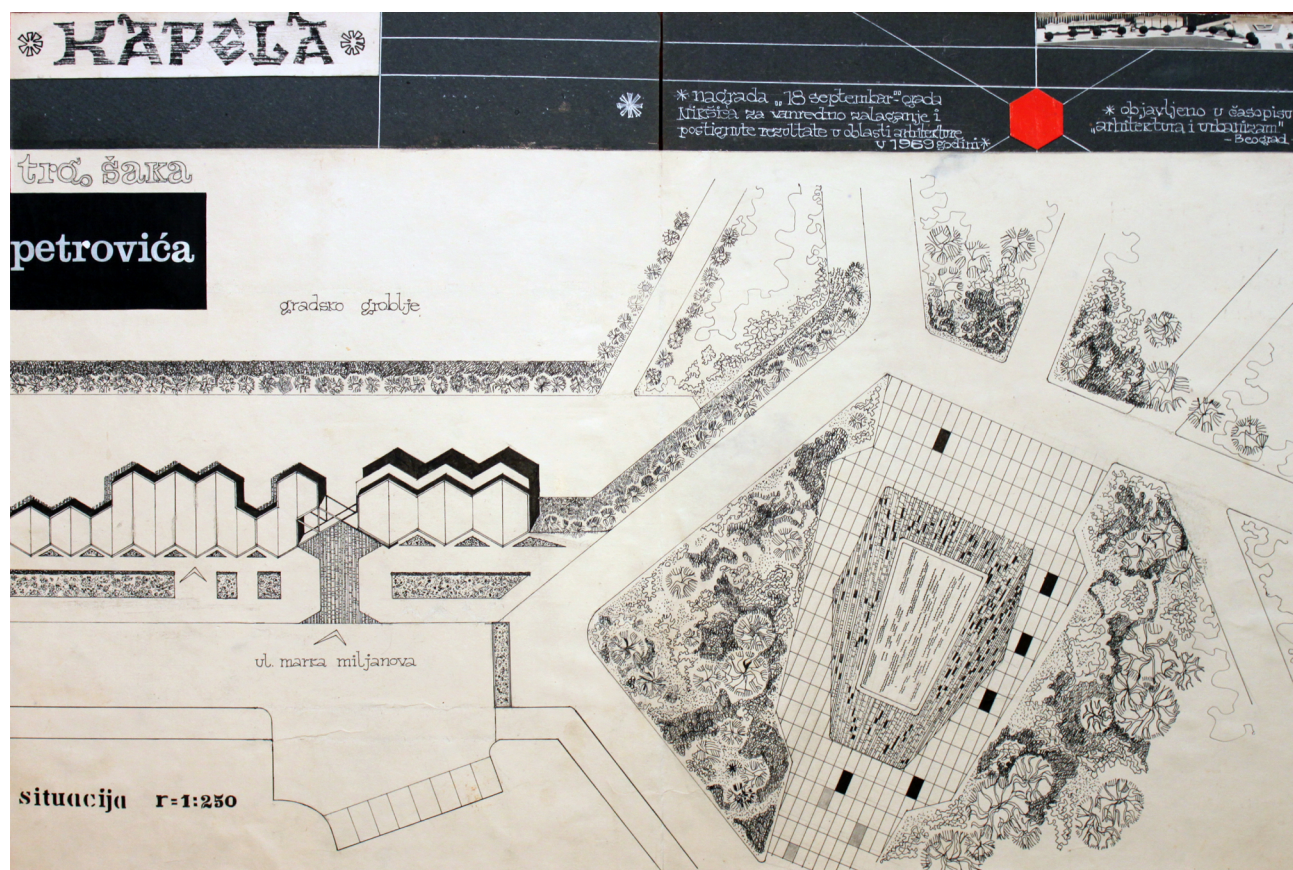


FIG. 8 Location of the City Chapel with the proposal for the Šako Petrović Square pattern design

value of the constants, that is, of the urban parameter, will be incorporated into the design process.¹³ Vukajlović's architecture always contains the thoughts about context.

Over time, started the crystallization of Vukajlović's design pattern. It seems that this crystallization came along with his improvement in terms of both profession and personal view. For a time, his work will function within the framework of postmodernism in the waves of brutalism, structuralism, and reinterpreted constructivism, which often defines the poetics of the object.

Vukajlović's work is a distinct, individual work that does not reject the universal aesthetic and ethical criteria of the profession and which the spirit of time respects, but interprets it in a unique way enriching it so. [Fig. 7]

The City Chapel Project

The idea about the construction of the City Chapel came in 1967. It is interesting to note that the citizens decided the location of the future building in the referendum. They decided to build the city chapel on the northern edge of Duke Šako Petrović Square. This location has sensitive context dominated by the baroque scheme consisting of a square, the main city church and the castle of King Nicola. Funds for the construction of the chapel were collected during 1968 and the chapel was built in mid-1969. This building represents one of the first Vukajlović objects.

13. Velimir Neidhardt, *Čovjek u prostoru- Antroposocijalna teorij projektiranja* (Zagreb: Školska knjiga, 1997), 20.

For this building, we can say that it represents a multilayered work, both by its spatial conception and by its meaning.

Vukajlović designed the City Chapel in the narrower city core within the urban matrix of the first regulation plan. The chapel's location is next to the northern edge of the spatial focal point, which consists of a main church on the top of a hill, a square and a monumental staircase with two side ramps connecting the plateau in front of the church and the square. This whole area is characterized by a strict geometric division and a baroque scheme dominated by the church as the center of the composition. [Fig. 8]

Vukajlović designed a chapel not to disturb the spacious composition that was present, but to upgrade it. The shape of the chapel was derived from the shape of the old Slavic medieval monuments *stećci*, which are still in the city cemetery today. Vukajlović, through a series of analyzes, shows how he got the shape of the chapel. [Fig. 9]

Hexagon is used as a geometric figure as a module and model for forming the base of the object by multiplying it. The volumes obtained from the hexagonal base differ in height and dimensions of the opening. [Fig. 10]

While the accompanying contents are located in thickly compact but clearly defined lower prisms, three clearly defined chapels are located in the highest altitude. In addition to their height, these three chapels with window openings located on the western facade at the site of the cross-section have a certain mysticism and spirituality that is related to the notion of death. [Fig. 11]

The lower prism openings are larger and more transparent adapted to the accompanying contents that are located in them. One of the important compositional elements on the chapel is the gate. The gate represents



FIG. 9 The concept of the idea.

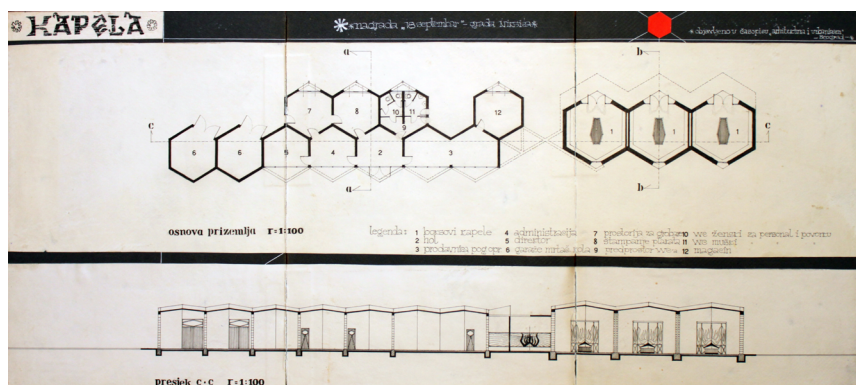


FIG. 10 Ground floor and section of the chapel.

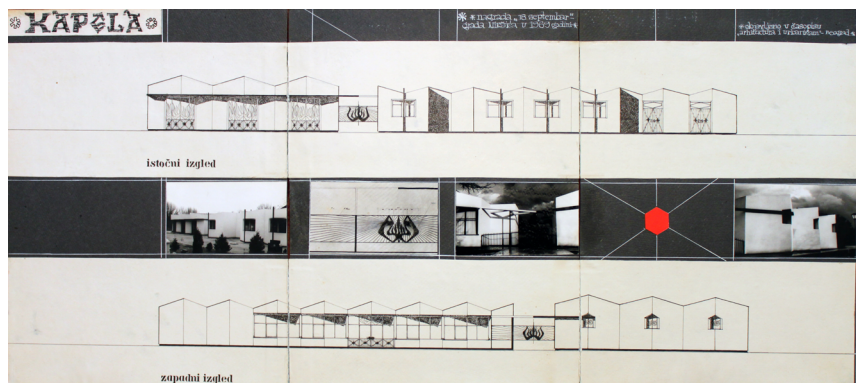


FIG. 11 Eastern and Western façade.

and marks a precise place, a point in the space where a person passes from the outside into the inner space from the known to the unknown.¹⁴

This gateway is a passage to the plateau that lies in front of the inner, east facade of the building. The western facade is in this regard like a wall that separates the silence of the city cemetery from street noise on the other. The gate is made of iron with a stylized omega letter, taken from the medieval name Nikšić, when the name of town was Onogošt. This letter is styled to represent eternal fire and life. The combination of black and white beams above the gate further emphasizes its symbolism and mysticism. The author seems to want to present in this way a meeting of life and death. [Fig. 12]



FIG. 12 The principal gate/entrance, meeting the white and black beams, a symbol of the life cycle.

14. Milan P. Rakočević, *24 časa arhitekture* (Beograd: Orion Art, 2010), 95.

The pronounced form of the building, its individual elements but the whole has clearly defined shadows as an integral element of narrative. It has certain parallels and similarities, especially in the way of forming the atmosphere with the Cemetery of San Cataldo from Modena architects Aldo Rossi and Gianni Braghieri built between 1971 and 1984. Shadows mark the flow of time and the shift of seasons. However, the shadows on the empty window niches of the cemetery also evoke the melancholy of De Chirico's works; silence rules where dead is.¹⁵ [Fig. 13]

15. Peter Gesel and Gabriele Lojthozer, *Arhitektura u 20.veku* (Beograd: Taschen-IPS, 2007), 441.

Conclusion:

Today, if we look at Vukajlović's architecture, built in Nikšić city, we will see that it has become an inseparable part of the spatial identity of individual urban blocks as well as the city as a whole.

Vukajlović's buildings for Nikšić architecture have multiple significance.



FIG. 13 City Chapel, Nikšić.

First, many of the buildings that he designed typologically were built for the first time in the city and most of them are public buildings. This provides a key framework for the observation and analysis of buildings. As public buildings of importance for the optimal functioning and life of citizens, these objects became generators of gathering and social interaction.

In this way, the buildings eventually became part of the collective memory. Subtle reference to the past, transformation and contemporary interpretation of already present topics and motifs in the city architecture of Nikšić, are contained in Vukajlović's architecture. His opus is an example of a positive transformation of the urban and architectural identity of the city. His buildings to this day have already become part of a collective memory and identity.

This paper for the first time presents one of the numerous buildings of the architect Vukajlović with the hope that the research of his rich opus will yet to begin.