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THE 'SOCIALIST APARTMENT' IN YUGOSLAVIA: PARADIGM OR TENDENCY?

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The development of residential architecture in Yugoslavia during the period of socialism had its peak in the 1960s and 1970s. Significant progress in construction was accompanied by housing research directed towards finding the optimal urbanistic solutions for the newly formed lifestyle of the socialist society. The tendency was to "pack" as many residential units as possible into each building, almost up to the limits of the functional minimum, at the same time with the aim of setting a more humane pattern of living. Innovative theoretical ideas were developed at leading housing research centers and then spread at conferences, consultations, expositions and architectural contests. Top quality design concepts were mostly obtained through architectural contests, which, among other things, also served the purpose of testing theoretical principles and new concepts of residential patterns on actual examples. Although the term "socialist apartment" seems to be accepted in practice, in the scientific sense, it has not been sufficiently explored or examined. The aim of this paper is to explore whether there was a certain architectural pattern as a form of response to the specific socio-economic conditions in Yugoslavia, in terms of a functional scheme that architects followed and which could be defined by the term "socialist apartment".

Key words: Yugoslavia, residential buildings, socialism, housing research, design concepts.

INTRODUCTION

Post-war housing architecture in Yugoslavia was the product of the socialist self-management, non-alignment policy in foreign affairs and decentralization in internal affairs, as well as the economic strength of the state and society as a consequence of these factors. Numerous problems, such as wide-spread poverty, the lack of construction materials on the free market, and the attitude expressed by the communist authorities that "a wish for private house or apartment reflected the expression of the petty bourgeois mentality" (Dobrivojević, 2012) all contributed to the fact that in the first post-war decade the state itself was the only constructor of new apartments (Dragutinović *et al.*, 2017). The tendency to reduce the surface area of apartments, along with short construction deadlines and inexperienced designers resulted in apartments, even those built in Belgrade, being mostly uncomfortable and cramped (Dobrivojević, 2012). On the other hand, uncomfortable and cramped living quarters found compensation in communal public space, which was the reflection of the ideological concept (Milašinović Marić, 2017). Taking into consideration that the concept of "communal apartments" did not accomplish the desired results (Prosen, 2007), and

by the end of 1955 the "Law on apartment construction contributions" was passed, introducing a contribution of 10% towards the construction of the apartments paid by state companies, marking the beginning of a new stage in the development of the Yugoslav society.

Post-war reconstruction of the existing and the construction of a new residential fund in Yugoslavia was at its peak during the sixties and seventies of the twentieth century, when several hundred thousand apartments were built across the country.² The period of so-called "directed apartment construction", with an imperative of establishing the limits to the existential minimum in communal apartments, maximal space "packing" and optimal functionality of the apartments is the most significant period in the development of residential architecture in Yugoslavia. After an ideological break with the Soviet Union (1948) and the Consultation of Yugoslav Architects in Dubrovnik (1950), architects focused their interests with regard to residential buildings primarily on three points: (a) the concept and application of new systems of prefabrication, (b) the innovative use of modernistic patterns in the aestheticization of architecture

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² According to an estimate by the authorities in 1955, at least 200,000 apartments were expected to be built in towns and 800,000 apartments in villages, in order to achieve a tolerable standard of housing (Dobrivojević, 2012). In the period between 1961 and 1971, an average of 120,000 apartments were built annually (Vujnović, 1972).

and (c) experimenting with spatial organization (Alfirević and Simonović Alfirević, 2015). Successful design concepts were obtained mostly through architectural contests, which among other things served the purpose of testing theoretical principles and new concepts of residential patterns on actual examples (Aleksić, 1975). In practice, this was hard to achieve due to stringent residential regulations which limited both the surface area and the structure of the apartments in multiple-family housing units. Experimenting with new ideas was not always the guarantee of success in competitions, but it did enable the public presentation of these ideas, which is why architectural contests were the main scene for promoting innovative practices (Mecanov, 2009; Šišović, 2016).

Housing architecture emerging during socialism in Yugoslavia did not necessarily have socialist intentions, confirmed by examples designed to include more comfort and more space for individuals at the top of the ruling class and for high ranking officials in the Yugoslav Army, which by all means was not in accordance with the ideology promoting social equality (Dobrivojević, 2012; Nikolić, 2015). On the other hand, it seems that architectural practice had already embraced, the term "socialist apartment" (Perkec, 2016; Jansen, 2014; Turcu, 2017; Boumová, Zdráhalová, 2016), which in the scientific sense has not yet been explored or examined. A step forward in the exploration of this topic is an essay entitled "Influence of the socialist ideology on the conception of multi-family housing: new Urban landscape and typological models of housing units", which analyzes this term from the viewpoint of the emerging socialist culture of housing (Ristić Trajković *et al.*, 2015). Unlike much current research that focuses on housing architecture and apartments from the socialist period in Yugoslavia (Aleksić, 1975; Alfirević and Simonović Alfirević, 2015; Bajlon, 1975; Blagojević, 2004; Ćirović, 2012; Dobrivojević, 2012, 2016; Domljan, 1969; Ifko, 2013; Jovanović Nenadović, 2011; Korov, 2011; Kulić, 2009, 2012; Marojević, 1987; Mecanov, 2008, 2009, 2015a; Milašinović Marić, 2011, 2017; Mokranjac, 2016; Petelin, 2017; Prosen, 2007; Teržan, 2011; Šišović, 2016; etc.), this paper goes a step further in the research direction, trying to answer the question of whether specific socio-economic conditions in Yugoslavia resulted in a specific design pattern, in terms of specific functional scheme that the architects followed and which could be described by the term "socialist apartment".

HOUSING ARCHITECTURE AND RESEARCH IN YUGOSLAVIA

After the Second World War, housing architecture in Yugoslavia developed rapidly, achieving significant results during the 1970s, both in scientific and practical fields.

Numerous constructions and newly built city areas were accompanied by parallel theoretical and other housing research, which questioned the limits of the existential minimum in collective housing, the possibility of maximal space "packing" and the aspects of optimal functionality, all required by the state as the biggest investor (Group of authors, 1978; Group of authors, 1979). The leading housing research centers in Yugoslavia were the Faculties of Architecture in Belgrade, Zagreb, Ljubljana, Sarajevo and

Skopje as talent pools of new ideas and new architecture representatives. The same is true of design and research organizations such as: the Yugoslav Institute of Urban Planning and Housing, Institute of Architecture and Urban Planning of Serbia, IMS Center for Housing, Slovenian Construction Center, etc. (Bajlon, 1975). One of the most important roles of these centers was that, by organizing and participating in different conferences, consultations and congresses, their representatives spread new ideas and influenced the development of housing architecture and research in Yugoslavia.

The activities of the "Zagreb" and "Belgrade School of Housing" were of particular importance, as it was within these schools that the systematic development of the functional approach to organizing living spaces occurred. Although these schools supported modernistic principles, each school also found its inspiration in the local tradition of urban culture and its forms, and had certain role models abroad (Korov, 2012). Generally speaking, the Zagreb School was characterized by its consistent application of the modernist idea of dominant function in architecture, whereby shaping occurs as a consequence of function, without any unnecessary or excessive details or emphasis on anything other than the main architectural expression (Marojević, 1992). As opposed to the functional line, which is unofficially referred to as the Zagreb School as it continues the tradition of carefully nurtured architectural form characteristic for pre-war Zagreb architecture (Domljan, 1969), the period between 1960 and 1970 saw a powerful breakthrough in expressionism in Croatian architecture, and emphasis was put on certain authors' approaches, which in itself was a complete negation of the basic functionalistic norms that the Zagreb School traditionally stood for (Marojević, 1987).

Unlike the Zagreb School, which had functional organization as its starting point, i.e. the obvious principle, striving at the same time to reach high aesthetic role models of world modernism (Domljan, 1969), the Belgrade School was dedicated to researching different functional aspects and worked permanently on improving and searching for new concepts of how to organize an apartment, aiming to achieve more humane living conditions. According to Dijana Milašinović Marić, the Belgrade School did not have stylistic unity, neither did it accept original functionalism and international style, as the architects aspired to express their personal interpretations (Milašinović Marić, 2017). By stating the basic principles forming the concept of the so-called "Belgrade apartment of late modernism", Darko Marušić, among other things, mentions that the concept of the apartment was the consequence of socialist "equality" in society, which indicates that the ideology of socialism, in a certain sense, existed as the starting point of apartment design (Marušić, 2010).

The relationship between architecture and ideology was evident on many levels within the architectural discourse in socialist Yugoslavia: from the debate on an "official" architectural style that matches the development of the new society, to attempts to connect traditional architectural heritage and modern architecture. Over a short period, modernism was widely accepted in architectural circles, so

modernism and socialism turned into colloquial synonyms. However, the point is that this is a very complex phenomenon, showing the overlapping of the internal connection between architecture and ideology and the international domination of modernism. Owing to the creativity of the architects, unique experiments were created in this field (Kulić, 2012).

In Slovenia, during the first two post-war decades, a large number of new apartments were built, as was the case in other parts of Yugoslavia. Completely new parts of towns were formed, like Nova Gorica, Velenje and Kidričevo. During the 1960s and 1970s, Slovenian architecture was mainly oriented towards the articulation of the so-called "Slovenian regionalism", which was in a way the search for identity, formed between radical modernism and traditional Slovenian architecture (Ifko, 2013). The introduction of post-modernism marked the end of the progressive period, characterized by experimenting with modern construction techniques and innovation within the frames of given design standards (Petelin, 2017; Teržan, 2011).

In terms of the heterogeneous character of Yugoslav architecture, Kulić, Mrduljaš and Taler emphasize that one of the main reasons for the wide typological differences in collective housing in Yugoslavia was the uncertain and changeable standards (Kulić *et al.*, 2012).³ By adopting housing regulations on a state level, initiated by the Yugoslav People's Army, the conditions for housing military personnel and their families were raised to a higher level. However, it is particularly important that military regulations found their application in the civilian sector, too, after which they were widely accepted as public good (Damjanović Conley and Jovanović, 2012).

Taking into consideration the whole territory of Yugoslavia, in an architectural sense, the focus was on the maximal "packing" of housing units within objects, even up to the limits of acceptable living minimum for the users, but the aspiration was also to establish a more humane housing pattern (Čanak, 2014; Mecanov, 2015a). As a consequence of these aspirations, the following concepts emerged, making the core of housing research aims related to architecture in the 1960s and 1970s in Yugoslavia: (a) apartments with an extended circulation area, (b) apartments with a central sanitary core, (c) apartments with a circular connection and (d) apartments with extended perspectives ("an enfilade") (Alfirević and Simonović Alfirević, 2013; Lojanica *et al.*, 2011).

APARTMENTS WITH AN EXTENDED CIRCULATION AREA

An extended circulation area was a very important element of the Belgrade Housing School and the functional organization of the so-called "Belgrade Apartment" after the Second World War (Nestorović, 1955; Alfirević and Simonović Alfirević, 2013). A similar concept had, in some way, existed before, between the two world wars in Serbia, in the form of a central

multi-purpose room in so-called "salon" apartments and it served the purpose of dining, receiving guests and family celebrations. According to Mirko Todorović, the idea of the common zone of the apartment, where the family could gather and receive guests, represented a further evolution of the concept of the Belgrade salon apartment from the period of early modernism, and similar examples of implementing the extended circulation area with the common table characteristic for that period (even from the period between the two world wars) existed both abroad and on the territory of Yugoslavia (Todorović, 2016). After the Second World War, extended circulation areas appeared as a consequence of the intention to form two centers within the apartment structure: (a) primary – the living room and (b) secondary – the space where a family could gather around the dining room table, outside the kitchen space (Bajlon, 1979). The main supporters of this idea in Yugoslavia were professors Mate Bajlon, Branislav Milenković and Branko Aleksić, all from the Faculty of Architecture, University of Belgrade. It is considered that the term "extended circulation area" was officially used for the first time by Bajlon at the Seminar FAO, organized in Belgrade in 1957 (Bajlon, 1975; Dragutinović *et al.*, 2017). According to Bajlon, extended circulation areas were the result of an attempt to "find the form of family gathering at the table, in cases when the cramped apartment did not allow it, so it was added as an extension of the living room" (Bajlon, 1972). However, the introduction of a bed as part of the living room, according to Bajlon, was not only opposed to the concept of living space, but also to the concept of having an extended circulation area (Bajlon, 1975).

The use of an extended circulation area in scarce socio-economic conditions enabled different options, such as: (a) turning the entrance area into space where guests were received, (b) forming an everyday area where children could learn and play, (c) separating children's activities from their parents' and friends' activities, (d) the feeling of a wider space in the apartment, etc. Although in relation to the time and circumstances in which it emerged, the idea in the theoretical sense was advanced, its application in practice led to various bad interpretations, whereby the living room was replaced by an extended circulation area, which was even supported by the regulations of that time (Bajlon, 1975; Ćirović, 2012). All this, in practice, resulted in the living room being turned into space for the accommodation and sleeping arrangements of one more family members, thus worsening the general comfort of the apartment. The concept of an extended circulation area was applied to a large number of completed examples during the 1970s, as it underwent the testing phase, first in student projects carried out in the studios of professor Mate Bajlon and Branko Aleksić, followed by general public competitions in Yugoslavia. In theoretical research conducted by Bajlon and his associates, it turned out that "the common table concept in the extended circulation area could be solved in two possible ways: by placing the extended circulation area in the outer part of the apartment – with direct lighting through the balcony or loggia, if they existed, or by placing the extended circulation area in the apartment interior and its illumination through the glass surface of the kitchen or artificially" (Milošević, 2007).

³ "The instructions for construction of residential buildings to be used by Yugoslav People's Army", State Secretariat for National Defence, 1955: "The conditions and technical normatives for design and construction of residential buildings and apartments", Construction Direction for the city of Belgrade, 1973; "Temporary standard of apartments of directed construction", Construction Center of Slovenia (Ljubljana), Center for Housing IMS (Belgrade), 1973, etc.

Most significant constructed examples with an applied extended circulation area concept are the following: residential buildings in apartment blocks 70 and 45 in New Belgrade (Risto Šekerinski, 1970), residential buildings in apartment block 22 in New Belgrade (Božidar Janković, Branislav Karadžić, Aleksandar Stjepanović, 1974), residential buildings in the Banjica area of Belgrade (Aleksandar Stjepanović, Branislav Karadžić, Slobodan Drinjaković, 1972-1976), the competition solution for residential buildings in the Julino Brdo area of Belgrade (Branko Aleksić, 1966), the residential complex in Bulevar Vojvode Stepe in Belgrade (Branko Aleksić, Nikola Saičić, 1973), etc. (Aleksić, 1975). The use value and the quality of the apartment change depending on where the extended circulation area was formed. Most often, it was formed as an extension of the entrance, which allows for a larger hall space (apartment blocks 45 and 70 in New Belgrade, apartment block III in Novi Sad, etc.), or as a visual extension of the living room (apartment blocks 22, 23 and 29 in New Belgrade). All of this adds to the particular quality of the apartment, including the open-plan concept (Alfirević and Simonović Alfirević, 2016a; Čanak, 2013) (Figure 1).

APARTMENTS WITH A CENTRAL SANITARY UNIT

Unlike the previously analyzed concept of an extended circulation area, which is related to a group of professor from the Faculty of Architecture, Belgrade, the concept of the apartment with a central sanitary unit was used for the first time by architects Ilija Arnautović and Milan Mihelič in 1955 in Slovenia (Teržan, 2011). This concept had already been used elsewhere in the world (Alfirević and Simonović Alfirević, 2016b), but in Yugoslavia, it was at the Yugoslav exhibition "Housing for our conditions" in Ljubljana, 1956, where representatives of all republics showed their prototypes as a response to the exhibition topic (Bajlon, 1975), that Arnautović and Mihelič first showed their drawing of an apartment with a central sanitary unit in public ("tloris stanovanja s središnjim sanitarnim vozlom") (Petelin, 2017; Ćirović, 2012). This concept emerged as an answer to the need to unite sanitary space as much as

possible for economic reasons, thus achieving cheaper construction. The second reason, as mentioned by Vladimir Kubet, was the positioning of fixed elements (installation block and dividing walls) within the technical core, which in the open space of an apartment enables a greater degree of flexibility in organizing functional processes around its edges, since a free-standing core in the central apartment zone allows access from all sides and emphasizes the circular connection in the apartment (Kubet, 2015).

Apartments with a central sanitary unit, from 1955, envisioned grouping the bathroom, lavatory and kitchen in the same block, while the first examples constructed in Slovenia showed the tendency to place together only the kitchen and the bathroom (residential buildings in the Sava area in Ljubljana (Ilija Arnautović, Milan Mihelič, 1958-1962); Residential-office building in Siska – not completed; residential buildings in the area Šišenski soseski, Ljubljana (Ilija Arnautović, 1967), etc.) (Potočnik, 2013). When the project included the lavatory, it was still treated as a separate unit. According to Vladimir Kubet, the technical core can include: "only cupboards; the bathroom and cupboards, the bathroom, cupboards and the kitchen; the bathroom, lavatory, kitchen and cupboards or; the bathroom, lavatory, kitchen, cupboards and vertical circulation. From the point of geometry, organization of the technical core and looking at the total base of a single multi-family residential object, we can differentiate the linear, dotted and grouped types" (Kubet, 2015). The concept of the apartment with a technical core enabled the option of forming different typologies, however, the majority of examples completed in Yugoslavia did not venture further than the central core, only grouping the sanitary areas. Less frequently, the cupboards were integrated on the edges of the core.

One of the first examples which included this concept was the Sava settlement in Ljubljana (Ilija Arnautović, Milan Mihelič, 1958-1962), whose construction started at the end of the 1950s according to an urban planning project by Edward Ravnikar. The settlement included multi-storey buildings, a revolutionary housing model for that time,

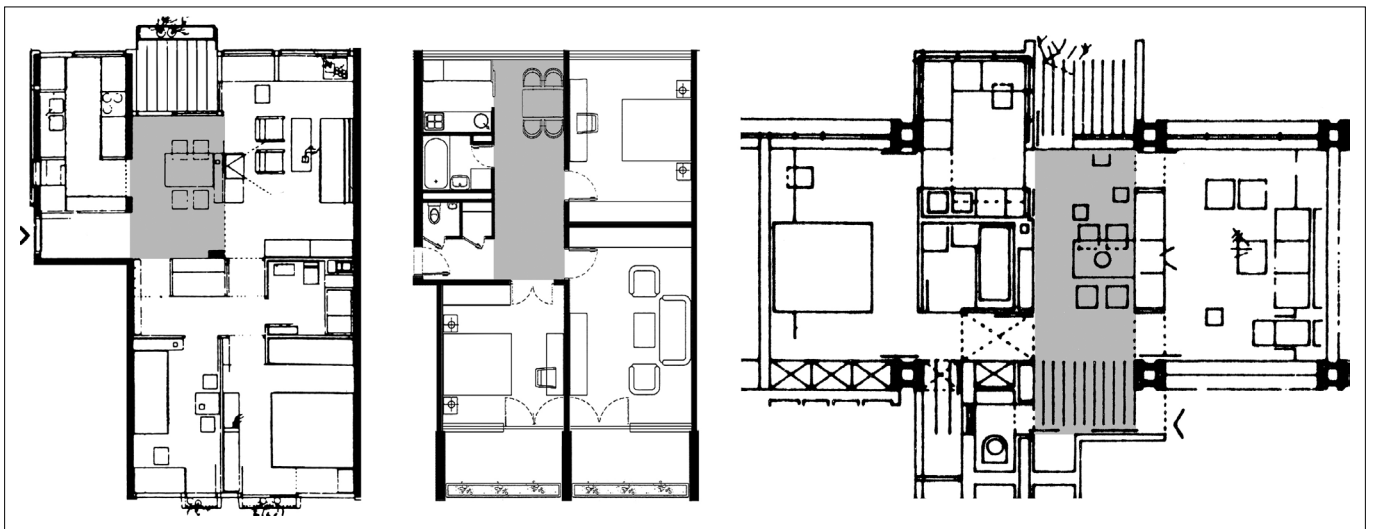


Figure 1. Apartments with an extended circulation area: a) Senjak area, Osijek (Vladimir Tvrtković, 1968-1975) (left), b) apartment blocks 45 and 70, New Belgrade (Risto Šekerinski, 1970) (middle) and c) apartment block III, Novi Sad (Milan Lojanica, Predrag Cagić, Borivoje Jovanović, 1970-1971) (right) (Source: author's private collection)

with a circular connection based around the sanitary unit (Petelin, 2017). Although the original idea of the apartment with a central sanitary core originated from Slovenia, most of its examples were built in Serbia, among which the most significant ones are: residential buildings in apartment block 28 (Ilija Arnautović, 1970-1974), residential buildings in apartment blocks 22 and 23 (Božidar Janković, Branislav Karadžić, Aleksandar Stjepanović, 1969-1974), residential buildings in apartment block 19a (Milan Lojanica, Borivoje Jovanović, Predrag Cagić, Radisav Marić, 1975), residential buildings in the south part of apartment blocks 61 and 62 in New Belgrade (Darko and Milenija Marušić, Milan Miodragović, 1971-1978), residential units in apartment blocks III and Liman III in Novi Sad (Milan Lojanica, Predrag Cagić, Borivoje Jovanović, 1970-1974), and the residential area of Đuro Đaković in Sarajevo (Dragan Dragičević, Oliver Stanković, Mirko Savčić, 1975), etc. (Figure 2).

APARTMENTS WITH A CIRCULAR CONNECTION

The concept of a circular connection was used in numerous examples even before the Second World War in Yugoslavia, as was the case in single-family houses and bourgeois apartments with a salon, where the rooms were connected in simple, cyclical rows (Alfirević and Simonović Alfirević, 2017). After the Second World War, the use of a circular connection in the organization of the housing space emerged primarily as a consequence of strictly defined housing regulations, which, during the period of directed housing construction, minimized the areas of housing space. Aiming to achieve the maximum living comfort in limited conditions, the architects resorted to innovative concepts of functional organization of the living space by using the circular connection. It is important to stress that the circular connection, among other things, contributes to: (a) raising the general quality of the apartment, (b) reducing useless communication, (c) better usability of the surface area, (d) better social integration of family members, etc. (Alfirević and Simonović Alfirević, 2018), all of which led to the frequent application of this concept in architecture throughout Yugoslavia.

At the beginning of the 1960s, under the influence of Scandinavian architecture, projects by Yugoslav architects included for the first time the so-called "Aalto's kitchen", which, according to Dragana Mecanov, was an example of the direct influence of modernism coming from European countries (Mecanov, 2015). The model of a kitchen, situated

at the back of the apartment, behind the dining room, as the source of light, was used for the first time by the Finnish architect Alvar Aalto when designing the Hansaviertel residential building in Berlin (1955-1957) (Fleig, 1994). Until the appearance of Aalto's kitchen, the dining room had, in most cases, direct light and was designed as a separate room next to the kitchen or was grouped with the kitchen and living room (Čanak, 2013). Aalto's concept gave the possibility of withdrawing the kitchen from the façade zone to the back of the apartment using indirect light from the dining room, which enabled a significant reduction in the object's length, in accordance with the generally accepted trend of that time, apartment "packing" (Todorović, 2016). Aalto's kitchen examples in most cases achieved an elementary flow of the apartment, established by connecting the entrance, the kitchen, the dining room and the living room in a cyclical line. Some of the most significant examples with simple circular connection include: the residential building in Primorska Street in Zagreb (Zlatko Neumann, 1955), the residential tower on the bank of the river Vardar in Skopje (Aleksandar Serafimovski, 1958-1959), the residential building in Laginjina Street in Zagreb (Ivan Vitić, 1958-1962), apartment block 1 in New Belgrade (Tihomir Ivanović, 1959-1963), the residential building in apartment block 21 New Belgrade (Mihailo Čanak, Milosav Mitić, Leonid Lenarčić, Ivan Petrović, 1960-1965), the residential building in Save Kovačevića Street in Belgrade (Nikola Saičić, 1960-1965), etc.

In comparison with the first post-war examples, in which circular connection is present in its reduced form, subsequent examples from the 1970s indicate the designer's skill in the functional structuring of the space allowing complex circular schemes, which in some examples border with the concept of "flowing" space (Alfirević and Simonović Alfirević, 2016a). The most important examples from this period are the following apartments: the residential building in Kralja Petra Street in Belgrade (Milorad Macura, 1954), the residential building in "Housing Department GNO Zagreb" in Zagreb (Zlatko Neumann, 1955), apartment block 21 in New Belgrade (Mihailo Čanak, Leonid Lenarčić, Milosav Mitić, Ivan Petrović, 1965), the residential object in the Senjak area of Osijek (Andrija Mutnjaković, Stanka Polić, Ivan Tomičić, 1968), Murgle residential settlement in Ljubljana (France Ivanšek, Marta Ivanšek, 1969), Senjak residential area in Osijek (Vladimir Tvrtković, 1968-1970), apartment blocks 22 and 23 in New Belgrade (Aleksandar Stjepanović, Božidar Janković, Branislav Karadžić, 1974),

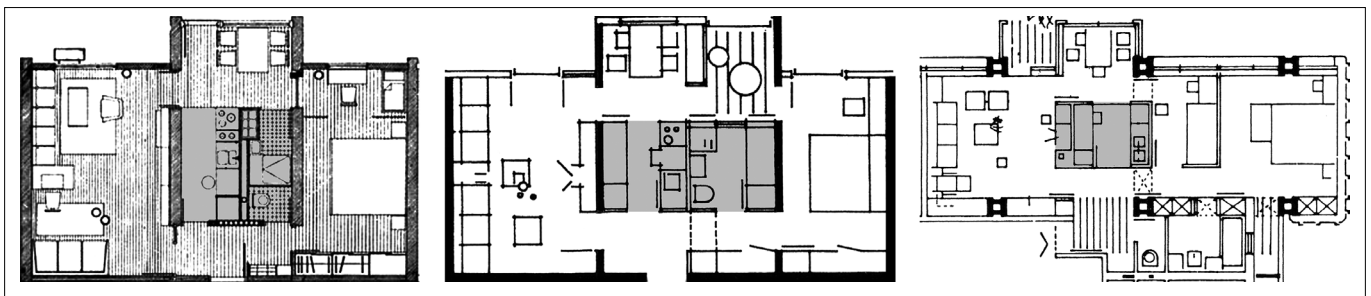


Figure 2. Apartments with a central sanitary core: a) 'Stanovanje s središnjim sanitarnim vozlom' (Ilija Arnautović, Milan Mihelić, 1955) (left), b) South part of apartment blocks 61 and 62, Belgrade (Darko Marušić, Milenija Marušić, Milan Miodragović, 1978) (middle) and c) Liman III, Novi Sad (Milan Lojanica, Predrag Cagić, Borivoje Jovanović, 1970-1974) (right)
(Source: author's private collection)

apartment block 29 in New Belgrade (Mihailo Čanak, Milosav Mitić, 1974), the southern part of apartment blocks 61 and 62 in New Belgrade (Darko Marušić, Milenija Marušić, Milan Miodragović, 1978), Split III housing settlement in Split (Vladimir Mušič, Marjan Bežan, Nives Starc, 1968-1979), etc. (Figure 3).

APARTMENTS WITH "ENFILADES"

The concept of an apartment with extended vistas ("enfilades")⁴ and its opening towards the exterior has a similar starting point as the circular connection concept, i.e. it is most often the consequence of the aspiration to create the feeling of a bigger space comfort in restricted space conditions. Unlike the circular connection concept widely present in projects made by Yugoslav architects, the concept of an apartment with an "enfilade" was much less used in practice, as it included the direction of views from the apartment towards the surroundings, along clearly stressed directions of communication. The experience of a wider apartment surface was created by forming long vistas in the apartment and extending them through the façade opening. Although the contour of the apartment remained physically unchanged, this concept changes the user's perception of its size.

In practice, this was most often avoided, even though adequate communication in the apartment in the period of directed housing construction was regarded as being excessive in terms of its usable surface (Čanak, 2011). The communication area was limited by regulations and amounted to a maximum of 14% of the total apartment surface area, which as a consequence had less differentiation of the communications as separate rooms (hall, degagement, entrance, etc.) and their integration into the functional organization of space, whenever possible. As façade openings could not be too large, since their surface area was designed to take up about 10% of the room surface

⁴ "Enfilade" is a term which in architecture stands for continuous suite of rooms aligned linearly with each other, which in the Baroque period achieved a more attractive visual impression of the spatial depth (Harris, 2006).

area (which was also defined by regulations), the intention was to allow the views from the interior of the apartment to the surrounding area as well as the passage of light, and this is why the façade openings were often positioned at the far end of extended views. This concept achieved not only better illumination of the interior, but also the experience of greater openness of the space. To support this statement we can quote architect Milenija Marušić, one of the doyens of Yugoslav architecture, who, when stating what a good apartment meant for her, said: "a good apartment is one that you can enter at noon without turning on the lights, so that you can enjoy the daylight beaming through double glass doors, which you can enter straight on, without looking for an entrance left or right in the hall" (Marušić, 2014). All this indicates the fact that although certain housing research principles in the theoretical sense were not defined, they were strictly followed in practice, as they were the result of several decades of architects' experience.

The most significant examples of this concept's application in Yugoslavia were apartments in: Julino Brdo residential area (Milan Lojanica, Predrag Cagić, Borivoje Jovanović, 1967-1971, II prize), Đuro Đaković residential area in Sarajevo (Dragana Dragičević, Oliver Stanković, Mirko Savčić, 1975, II prize), Banjica residential area in Belgrade (Ratko Karolić, Milan Pavković, Mirjana Stojanović, 1971, III prize), Cerak Vinogradi residential area in Belgrade (Darko Marušić, Milenija Marušić, Nedeljko Borovnica, 1981), Senjak residential area in Osijek (Mihailo Živadinović, Zoran Žunković, 1968), Kijevo-Kneževac residential area in Belgrade (Aleksandar Đokić, Mihailo Čanak, 1971-1972), tower blocks in Vojvode Stepe Street in Belgrade (Stana and Branko Aleksić, 1973), the residential object in Radićeva Street in Osijek (Božidar Janković, Branislav Karadžić, Aleksandar Stjepanović, 1969-1974), etc. (Figure 4).

CONCLUSION

Post-war architecture in socialist Yugoslavia was the product of broad policies and practices which included the creation of particular technological, administrative, financial and organizational capacities. Defining the limits

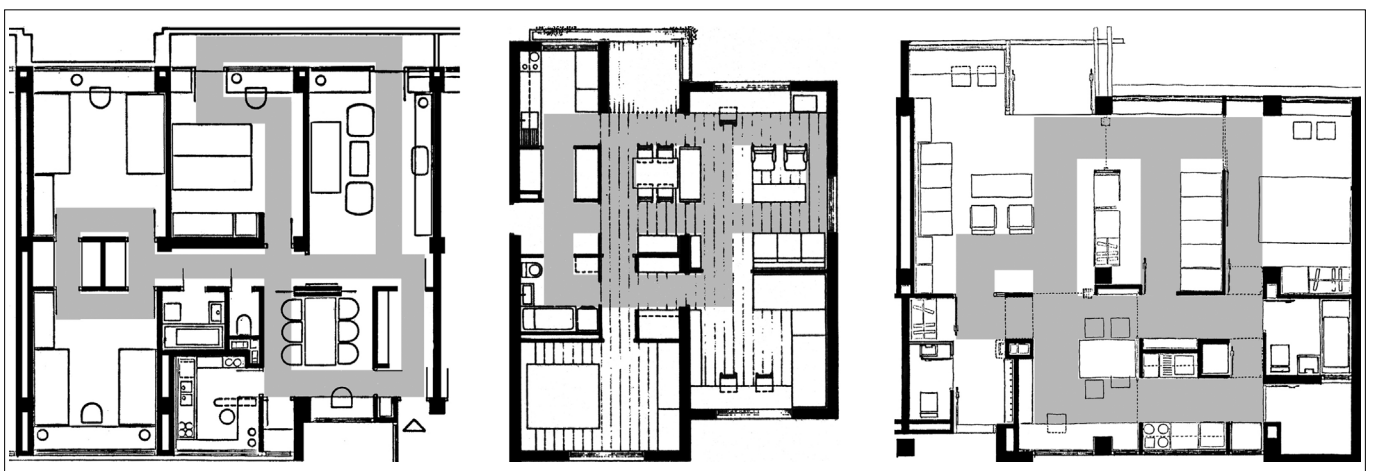


Figure 3. Apartments with circular connections: a) Apartment block 29, Belgrade (Mihailo Čanak, Milosav Mitić, 1967-1974) (left), b) Residential settlement Senjak, Osijek (Mihailo Živadinović, Zoran Žunković, 1968) (middle) and c) Apartment block 23, New Belgrade (Božidar Janković, Branislav Karadžić, Aleksandar Stjepanović, 1974) (right)
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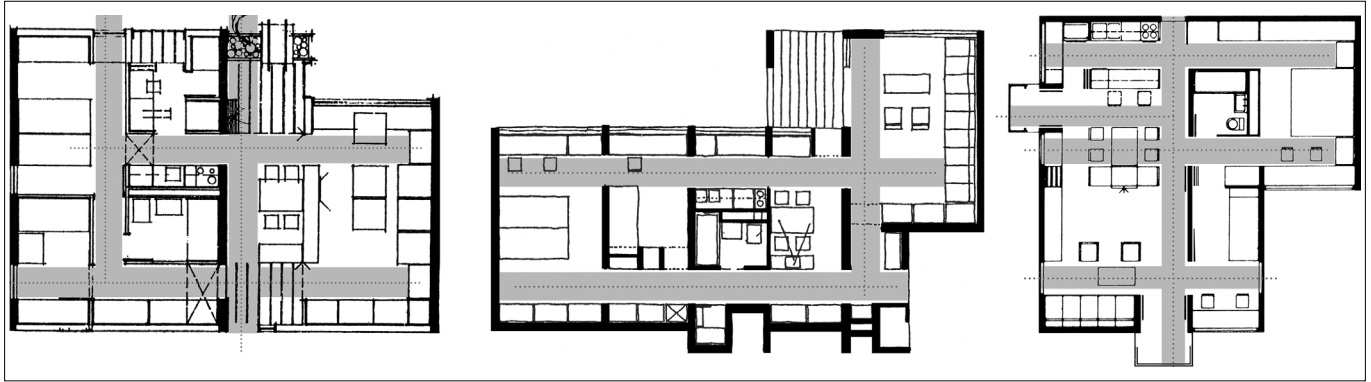


Figure 4. Apartments with extended vistas ("enfilades"): a) Đuro Đaković residential area, Sarajevo (Dragana Dragičević, Oliver Stanković, Mirko Savčić, 1975, II prize) (left), b) Julino Brdo residential area, Belgrade (Božidar Janković, Aleksandar Stjepanović, 1966, II prize) (middle) and c) Banjica residential area, Belgrade (Ratko Karolić, Milan Pavković, Mirjana Stojanović, 1971, III prize) (right)
(Source: author's private collection)

of the existential minimum in collective housing, maximal space "packing" and optimal functionality of apartments were the basic imperatives within which, in time, emerged the aspiration towards experimenting with new housing patterns, aiming to find more pragmatic and humane solutions for mass housing construction of great density. The process of humanizing housing was not characteristic only in the Yugoslav context, similar ideas also appeared in other socialist countries of that period, as in the example of pre-fabricated housing construction in the Soviet Union (*Khrushchyovka*), Czechoslovakia (*Panelák*), Hungary (*Panelház*) and East Germany (*Plattenbau*). Specific features of housing construction in Yugoslavia were the result of the socialist self-management, the policy of the Non-Alignment Movement in foreign politics and decentralization in internal politics, as well as the economic capacity of the country and the society. In the period from 1948 to 1970, housing architecture in Yugoslavia had a clearly experimental character, due to the intensive aspiration towards the research and foundation of new architectural patterns and values to mark the period of economic growth of the country.

By analyzing the above mentioned and other characteristic examples of apartment organization from the socialist period in Yugoslavia, the following can be concluded:

- That during the period of almost five decades of socialist Yugoslavia, **the architects did not have a uniform attitude** concerning the issue of what an adequate functional paradigm was as a solution for apartments in newly formed socialist system, which is why during this period there were **no specific designers' patterns** that the majority of architects could follow.
- That certain **innovative tendencies and designers' principles** existed (the concept of an extended circulation area, the circular connection concept, an apartment with a central sanitary core, an "enfilade" apartment, etc.) and **were based on socialist motives** of achieving as much usable value and spatial comfort in apartments with the minimum standard. Such tendencies were present in leading housing research centers and used in practice by numerous architects and teams.

- That these "socialist" ideas for the organization of living space had **a firm base in theoretical research** and underwent the phase of testing in architectural competitions, housing seminars and congresses, which made them spread over the whole territory of the country; and
- That experiments in the field of residential architecture and their use in practice were **supported by the communist authorities**, as long as they took into consideration the state budget and "equality" of all citizens, which is confirmed by the fact that one of the main financiers of these concepts was the Yugoslav People's Army.

Taking into consideration all of the above, it is safe to conclude that in socialist Yugoslavia there was no specific designer pattern that could be defined by the term "socialist apartment" and that this term could be used just provisionally, i.e. to describe a large number of different examples of apartment organization originating in the period between 1945 and 1991 in Yugoslavia, all of which had at least one of the housing concepts presented as their starting point – an extended circulation area, circular connection, a central sanitary core or extended vistas in the form of an enfilade. For apartments originating in the mentioned period which did not rely on any "socialist motives" as their starting point, it can merely be said that they were "apartments from the period of socialism" and not that they were "socialist apartments".

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