

INDETERMINACY IN ARCHITECTURE — CASE STUDY OF THE MIŠELUK PROJECT

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Abstract. *In the absence of an established city planning strategy, the initial post-war urban development of the SFRY was founded on the principles of CIAM's "Functional City", which soon proved inadequate in responding to individual user needs and in reflecting the collective interests of the young socialist state. This paper positions the search for a new spatial expression of the young socialist state within the global architectural discourse of the second half of the twentieth century, which shifted towards more variable, open and indeterminate architectural models employing various forms of user participation. The characteristics of a new approach in Yugoslav architectural and urban planning practice are examined through the case study of an unrealised project for the Mišeluk zone in Novi Sad developed in the late 1970s and early 1980s. The aim of this paper is to analyse the socialist response to a dominant theme of architectural discourse that is once again gaining traction in the theory and practice of contemporary architects, in order to establish a basis for the further development of these ideas in the contemporary post-socialist context. The research reveals a direction for urban planning practice based on user participation, which enables a higher level of versatility or multivariance of the design concept as a response to the individual and changing needs of users, but also as a way of achieving the resilience, i.e., adaptability of architecture in the face of unpredictable social trends.*

Key words: *Indeterminacy, user participation, socialist city, Novi Sad*

1. INTRODUCTION

The beginning of the twentieth century saw the rise of the modernist movement and a new preoccupation with the utilitarian qualities of architecture. The implementation of ideas developed at the International Congresses of Modern Architecture (CIAM) in post-war urban development plans throughout Europe was aimed towards improving the living

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conditions and efficiency of rapidly expanding cities. In the absence of an established city planning strategy, the initial urban development of Yugoslavia was also founded on Western modernist principles, reflected in the application of core elements of the “Functional City” in urban competitions and plans created in the first decade after World War Two [1]. However, new settlements based on the Functional City both in the West and in Yugoslavia left little room for the influence of users on the spaces they inhabited, as the design process focused on achieving maximum functionality imposed upon users a fixed solution to which they were meant to adapt. Consequently, issues arose when the intended use defined by the architect in the design stage and the actual use of spaces by the user did not align [2], leading to questions about the degree to which the architect should have control over the totality of the design. In addition, the gigantic proportions and uniform appearance of buildings as the formal expression of their economic construction, as well as the functional separation of zones that resulted in new settlements being labelled “dormitories” sparked criticism on both the global and local level [1], indicating the growing need for considering more flexible and varied architectural solutions within the complex post-war task of housing the multitude in fast-growing cities.

Potential solutions to these issues were explored in the theory and practice of a new generation of architects in the 1950s and 60s, but also within the broader field of design discourse moving in the direction of user participation in the 1970s. These decades saw a shift in the direction of modern architecture towards variable, open, indeterminate solutions that took into consideration the individual needs of users, and the undeniable and unpredictable influence of the wider social context. This shift can also be observed at the local level in the developing architectural thought of Yugoslav architects, but with the added weight of the task of materializing the new political ideology in space. With this mission of consolidating the socialist self-management policy in all spheres of social life, architects and urban planners distanced themselves from the capitalist model of the modern city, and instead sought to find an original language for the Yugoslav city.

This paper positions the search for the spatial expression of the young socialist state within the global architectural discourse of the second half of the twentieth century, which shifted towards evolutionary architectural models employing various forms of user participation. Today, in light of the growing instability of the contemporary social, political and economic context, approaches to indeterminate and participatory design developed in the sixties and seventies of the last century are once again gaining traction in the theory and practice of contemporary architects.

The aim of this paper is to delineate the characteristics of the socialist response to a dominant theme of architectural discourse in the second half of the twentieth century through a case study of the unrealised plans for the construction of Mišeluk in Novi Sad in the late 1970s and early 1980s, in order to establish a basis for the further development of these ideas in the contemporary post-socialist context. The first section of the paper presents a literature review on the development of the concept of “indeterminacy” in 20th century architectural discourse and introduces the context for citizen participation in socialist Yugoslavia. The second section presents the case study of the unrealised Mišeluk project, relying on secondary data analysis of key sources on the competition for the urban design of the Mišeluk zone and preparatory activities for the construction of this area, to identify the characteristics of a new approach in Yugoslav architectural and urban planning practice based on citizen participation and flexibility. The third section of the paper discusses the proposed and implemented modes of user participation and the

proposed methods for achieving "flexibility" of the spatial concept, before concluding with an evaluation of the case study.

2. DEVELOPMENT OF INDETERMINACY IN 20TH CENTURY ARCHITECTURAL DISCOURSE

Growing tensions between the original members of CIAM who defined the principles of the Athens Charter, and a newer generation of architects who opposed these functionalist-city-planning principles, created a divide within the modernist movement. The diverse directions in which architects were headed in search of a new language for modern architecture in the face of the modernist paradigm crisis had already become apparent by the final CIAM meeting in 1959 [3]. It was this quest to redefine modernist theory that gave rise to the idea of 'indeterminacy' in architecture, which equally found its place in the New Brutalism, Structuralism, Metabolism and other "isms" into which modern architecture had fragmented itself. During this experimental period, Aldo van Eyck's Children's Home in Amsterdam laid the foundations of structuralism, in which architecture plays a fundamental role in encouraging interaction between users, but also employs ambiguity to allow for various use scenarios as a response to the restrictive influence of functionalism on user freedom [4]. The idea of maximum user freedom was also central to Cedric Price's Fun Palace. For example, the absence of portals and foyers to the facility allows users to choose their own entrance, while elevators, ramps and escalators offer multiple paths through the space [5]. This concept—provocative at the time it was created—attributes to architecture the role of a framework or context for user participation. Similarly, Oskar and Sofia Hansen's 1959 lecture on 'Open Form' proposed an architecture that entailed resident's participation in the formation of their living environment, thus advocating for a more porous view of architecture as a framework encouraging unpredictable action [6]. This "liberating" understanding of architecture was also nurtured by architects like Herman Hertzberger, Lucien Kroll and Carlo Scarpa, who aimed to elicit creative interpretations from the user through the polyvalence of form and function [7]. Seminal to the development of user participation in design was John Habraken's book "Supports: An Alternative to Mass Housing", in which he proposes an approach in architecture based on "supports" (supports), elements of buildings that are permanent, collective and defined by the architect, and "infill" (infill) which is the variable and individual elements defined by the user. Later popularized under the term 'Open Building', Habraken's participatory approach offered a radical alternative to previous housing construction [8]. At the same time, Peter and Alison Smithson laid out the principles of the New Brutalism, which entailed the architect "*abandoning responsibility for the aesthetic result, on one hand to the materials in their natural state and on the other hand to the users in the part left to them to appropriate the built space and finalize the building*", thus laying the foundation for 'open aesthetics' in architecture [6]. The Smithsons advocated an approach in which the architect defines the basic structure and form whose raw qualities inspire connection with the user and can be interpreted and added onto in various ways, without violating the integrity of the original concept.

The abovementioned approaches represent just some of the theoretical considerations of architects during the 1950s and 1960s, but clearly place the further development of architecture and city planning in the direction of adaptable, flexible and polyvalent solutions. If the post-war task of housing a large number of residents resulted in

maximally functional and economical solutions that were in turn criticised for their impersonal formal expression and restrictive influence on user action, by the 1960s, this task transformed into the question of incorporating user individuality and creative action in collective housing projects. From these initial ideas regarding the role of future users in the design process, theoretical and practical considerations of the modes and degree of user participation have progressively developed from citizen participation as passive subjects of expert "observation" in the research phase towards more active forms of participation like decision-making during the design stage [9], and, more radically, in the use stage of buildings/objects [10][11][12]. This approach to design presupposes an understanding of architecture as an organic and evolutionary process, defined by various participants over time, and shifts the focus of designers from designing *for* users to designing for their participation in the making of space.

2.1. New Needs of the New Society—City Planning in the SFRY

In the first years after the Second World War, urban planning practices in Yugoslavia were in alignment with the principles laid out in the 1933 Athens Charter. The urban plans of this period reflected the urgent need for mass housing and improvement of living standards in light of the urbanisation of the young socialist state [13][14]. In the absence of an established city planning practice, the standardised and acontextual international model presented an "instant" solution to the consequences of rapid industrialisation [1]. However, this model did not reflect the collective interests of a socialist society, which placed the freedom of the working class to manage their own interests at the fore [15]. Thus, the task of architects and urban planners was to articulate the newly established mode of production in the urban fabric, which was to become the foundation for the further ideological construction of the self-governing society.

Therefore, it can be noted that a reconsideration of existing architectural and urban planning practices and the role of users in the design process was also a relevant topic for the development of the socialist city in the second half of the 20th century. However, in comparison to the theoretical and practical developments in Western Europe at that time, the idea of user participation in architectural and urban design in Yugoslavia evolved in different social circumstances, under the dominant influence of the political structure. As the self-governing system was the pillar upon which all other relations, phenomena and processes were built, including urban development, it provided the basis for the inclusion of citizens in the process of urban planning [16]. As Prodanović [17] points out, in a system where the user is both the creator and the subject of architecture and city planning, it cannot be the monopoly of experts, but the obligation of all residents. Although the idea of citizen involvement in spatial planning is not original to socialist self-management, but belonged to the global architectural discourse of that time, the new political circumstances created not only a favourable climate for reform, but an imperative that architects of the Socialist Federal Republic of Yugoslavia (SFRY) approached with great fervour.

3. CONSTRUCTION OF MIŠELUK

The reasons for choosing the unrealised Mišeluk project as a case study for analysing the characteristics of the socialist perspective on the wider architectural discourse on user participation and indeterminacy are manifold. The first is that the plan for the expansion of Novi Sad onto the other side of the Danube was a momentous and long-awaited venture that brought together a large number of stakeholders in developing a proposal to such a complex task (Fig. 1).

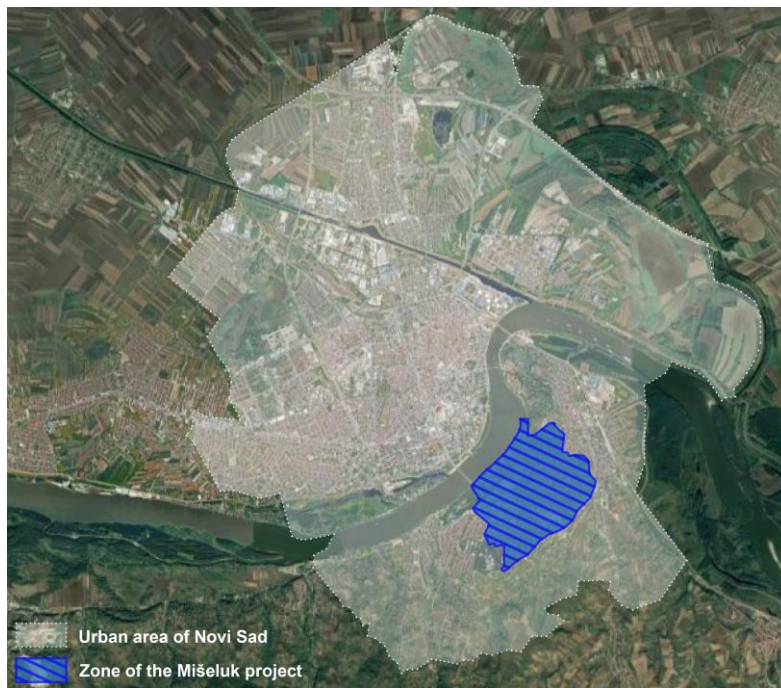


Fig. 1 Map depicting the location and scale of the Mišeluk project within the wider urban context
(Source: Google Maps, edited by authors)

On that account, it can be considered an exemplary project that synthesised the dominant ideas of the greatest experts at the time [18]. The second is that the approach to the construction of the new settlement showed significant differences in relation to previous urban development projects in the region, specifically New Belgrade or New Zagreb [19]. The Yugoslav competition for the urban design of the Mišeluk zone, launched in 1979, sought to address numerous problems of the modernist city, from the functional separation of zones, the absence of the social dimension in city planning, new settlements that were overly defined and uniform, the dominance of architects over urban planning issues, and the non-participation of citizens in urban politics [18]. Central to the scope of this research are questions regarding the means of establishing transformative citizen participation as the primary feature of a self-governing socialist society aimed towards the humanisation of all spheres of life, as well as the planned application of the strategy of indeterminacy in design, in alignment with the basic ideas of the global

architectural discourse in the second half of the twentieth century. Therefore, through an analysis of documents of the Historical Archives of Novi Sad and media coverage of the Yugoslav competition for the urban design of the Mišeluk zone, studies conducted as part of the official Programme of activities on the preparation and realisation of the construction of Mišeluk, the implemented and planned forms of achieving citizen participation are identified. Special focus is placed on the "flexibility" of the design solution, as the strategy of indeterminacy was called by the architects and planners of Mišeluk, which would enable more direct modes of user participation.

3.1. Modes of participation in the Mišeluk project

The effort to involve citizens in the process of planning, appropriating and adapting their city through various participation mechanisms was one of the main novelties of the competition at the time. Several main forms and levels of implemented and planned citizen participation with the aim of overcoming the main shortcomings of existing spatial planning practices can be observed.

3.1.1. Informing and giving opinion

The non-participation of citizens in existing urban planning practices was one of the main problems the Mišeluk project aimed to address. As Živković [16] states, the larger the city, the less opportunities there are for direct democracy, resulting in citizens being less interested and informed. One study showed that the level of citizen involvement in the urban planning process was lower than their awareness of or interest in urban issues, but also that the level of awareness was twice as low as the citizens' level of interest, which would indicate a lack of investment in informing citizens about the plans and construction of their city [16]. In a study on housing models conducted for the Mišeluk project, Seferagić noted that despite the fact that in theory there was a certain desire to fulfil the fundamental social goals by involving users in the design process, in practice, a different urban policy, which would be "inconvenienced" by the influence of end users with specific and individual needs, was implemented [20]. Given that the self-management system that enables and obliges citizens to participate in city planning issues is realised first and foremost through informing citizens in all stages of planning, in order to reform the inadequate existing practices, it was necessary to create a system for informing citizens, with the aim of encouraging greater levels citizen activity in matters of urban planning.

The roles of mass media and educational institutions in informing the population on urban topics were highlighted as some of the main channels of information [16]. Shortly after the call for entries, a panel discussion about the construction of Mišeluk was held on the local television channel "Novosadska" [21]. Numerous articles in the daily newspaper "Dnevnik" published throughout 1979 and after reported on the course of the competition and submitted entries, developments in the accompanying research, as well as the conclusions of a symposium that gathered around 300 experts to discuss the topic of modern housing and the construction of Mišeluk [22][23][24]. Interviews with members of the jury, engineers, etc., were also published, in order to familiarise the public with the opinion of experts involved in the project [21][23]. In addition, one article particularly highlighted the aspiration of the authors of the competition entries to convey the concept

of their proposals in an understandable way to the general public through explanatory texts accompanying the graphic material [23].

Some means of informing can have the additional role of involving citizens—for example, the exhibition of the competition entries organised in 1980, apart from presenting the design proposals to the citizens of Novi Sad, also had the goal of obtaining public opinion (Fig. 2). The suggestions and opinions of the citizens who visited the exhibition were collected in a guestbook, for further consideration in the development of the final design. In addition, a public debate was organised as part of the first phase of the competition, after which citizens had the opportunity to express their opinions in their delegations and the municipal council [18].



Fig. 2 Winning entry of the second phase of the competition “For Mišeluk” (*Za Mišeluk*) (left) [19]; competition entry “Process” (*Proces*) [25]

Basic forms of citizen involvement, such as participation in surveys, interviews and scientific research, were carried out in the 1960s even before the competition call for entries, as part of the preparatory activities for the Regional Spatial Plan of the Municipality of Novi Sad and the revision of the General Urban Plan (GUP). For these purposes, surveys on public opinion about the expansion of Novi Sad to this area [18] and on citizens’ ideas for the potential name of the new settlement were reported to have been conducted [23]. In a qualitative study published as part of the larger research into housing models, 30 households of the Podbara and Liman III neighbourhoods were surveyed about housing issues, by expressing their preference for one of the given choices—for example: boulevard/street, ground floor flat/attic flat, smaller finished flat/larger unfinished flat [20]. The main conclusions of the survey were largely consistent with the new tendencies in urban planning towards morphological diversity and functional integration, as residents expressed their criticism of the uniformity of newly built

settlements like Liman, and pointed towards the need for programmatic diversity within new neighbourhoods (shops, workplaces, etc.), and more social spaces (collective spaces in residential buildings, public spaces in neighbourhoods). For the purposes of the same research, another survey gathered the attitudes of Podbara and Liman residents about intracity traffic, which revealed differences between the two, with residents of Liman being significantly more reliant on cars and having longer distances to their workplaces [20]. An analysis of the dominant paths of movement and activities of citizens in the public spaces of two different neighbourhoods was also conducted using the observation method, and highlighted the need for combining the characteristics of old, central neighbourhoods (programmatic variety, pedestrian zones and public squares) and new settlements (greenery and play areas for children) in planning Mišeluk [20]. For the planning of non-residential programmes in Mišeluk, the residents of Novi Sad were questioned about their experience of the city, in order to determine which perceptual values could be incorporated into the project. Of note was the commitment and enthusiasm with which the people of Novi Sad approached this survey, resulting in a high usability of the results, which emphasised the low position of Liman (and other new neighbourhoods) in comparison to older neighbourhoods, for its lack of morphologically and programmatically distinctive landmarks [26]. The collected opinions of potential users served as the basis for seven comprehensive studies that comprised the Research Programme, which gave concrete guidelines for the development of the final urban design of the Mišeluk zone [27]. This demonstrates that careful consideration of the experiences of users and their need for greater programmatic and morphological variety on both an architectural and urban level was at the core of the Mišeluk project. As the issue of citizen participation in the design process was explored in detail in the studies “Housing models in the Mišeluk Zone” (*Modeli stanovanja u zoni Mišeluka*) and “Non-residential programmes in Mišeluk” (*Vanstambeni sadržaji na Mišeluku*) of the Research Programme, these are used as the basis for analysing the planned forms of user participation in the next segment of this research, given that the plans for Mišeluk were never realised.

3.1.2. Programmatic diversity and the Freedom of Choice

In line with the stance that the city should offer various possibilities, instead of the expectation that one particular space can be responsive to all the needs of a person or family throughout their entire lives [28], the Research Programme highlighted the need for morphological and programmatic diversity in urban neighbourhoods prompting the quest for a solution that supports various changes over time. The studies conducted for the Mišeluk project determined that user choice was not enabled in existing urban planning practices before the Mišeluk project [27]. In the mass production of housing units for accommodating as many residents as possible, the specific and individual needs of the users are ignored, and their adaptation to the imposed solution is implied, eventually leading to the dissatisfaction of residents [20]. Popović [28] points out that the physical structure of the city must not force people into models, no matter how urbanistically rational they are. Therefore, including user choice as a parameter in the design of residential units in Mišeluk presented an advancement in relation to the existing planning norms, and addressed the problem of the different needs of different types of households, as well as developmental changes within households over time, employing several strategies in doing so.

In “Mišeluk – Programmatic Basis” (*Mišeluk – programska osnova*), diversity in the size and spatial configuration of housing units is proposed, as well as programmatic diversity of buildings and surrounding areas, which creates the necessary conditions for housing different-sized households with different socioeconomic statuses in close proximity [27]. This also gives the users the opportunity to choose their place of living within a heterogeneous neighbourhood. With these aims in mind, a catalogue with multiple possible spatial configurations of a particular unit for the user to choose from was recommended for creation as part of the conceptual design phase [27]. Additionally, flexibility in the terms for exchanging properties was proposed, with the aim of facilitating user mobility in accordance with their needs in different stages of the family life cycle [27]. Therefore, besides enabling choice in the design and construction stage, attention is drawn to user choice in the phase of building use through housing policy. However, while various legislative measures were proposed in the literature, this research focuses on the architectural means, i.e. “flexible” elements of the architectural design of residential building and the urban plan that enable user participation in the use phase. This is discussed in more detail in the next section of the paper through an analysis of the different levels of indeterminacy proposed for the design of Mišeluk.

3.1.3. Participation in the phase of building use – “flexibility” enabling creative user action

The overdefinition of previous urban plans negated the factor of time, which is extremely important in planning—as Kara-Pešić points out, the urban planning process had stopped being a process [20]. The basic issue of determining all aspects of an architectural or urban plan lies in its inflexibility, and consequently inability to respond to unpredictable social changes [27]. In line with the global architectural thought of the time, a shift towards an architecture more open to various changes within the framework of socialist urban policy can be noticed. In light of the warning that the search for ideal, unchangeable patterns is the characteristic of many plans and the reason for their infeasibility [20], this paper highlights the “flexibility”, i.e., indeterminacy of the design solution as the most important strategy of the Mišeluk project in including user participation and the resilience of architecture in the face of change.

In Mišeluk, user choice was to be enabled during the use of a building by allowing the completion and adaptation of space by the user. An “unfinished” unit in terms of surfaces, which allows users to choose and apply finishes in accordance with their budget, practical needs and personal taste is noted as a possible solution for enabling basic spatial personalisation [27]. Enabling the adaption of the spatial configuration of a unit, as well as its expansion, were important considerations in the Mišeluk project. Two methods of expanding individual units were highlighted—by combining two units into one, or expanding the initial unit. Advantage is given to the latter, which can be achieved by enclosing “platforms/decks” envisioned as part of the original architectural concept with the idea of expansion of housing units in the future, or by adding onto the original structure using preestablished technologies, in a predetermined direction with predetermined spatial boundaries, but not a determined function [27]. For this, it is necessary to foresee “extra” space/surface area that would enable such actions in the future. The use of technology for the purposes of future adaptation was also considered in plans for the Mišeluk zone—for example, the flexibility of building services, i.e., their mobility and replaceability was proposed. In regards to the possibility of unit expansion, various types of structural systems that could safely support this type of

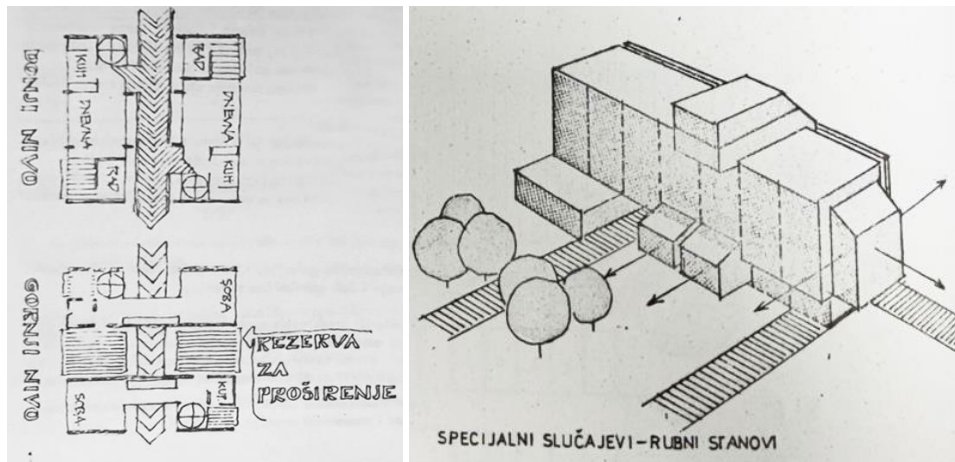


Fig. 3 Possible spatial configuration of housing units with decks enabling expansion of interior space (left); depiction of possible expansion of individual housing units beyond basic building volume (right) [20]

adaptation were explored [20]. Therefore, the question of changing needs and financial means of the household was answered through plans to incorporate the possibility of adapting and expanding the basic housing unit into the architectural concept (Fig. 3). Simultaneously, the programmatic indeterminacy of the additional space encourages freedom of use, thereby aiding the appropriation process.

Flexibility was considered not only at the architectural level, but also as a fundamental characteristic of the design at the urban level. According to the study into housing models by Projektbiro, common spaces like corridors, internal and external galleries within the building were possible areas of programmatic and aesthetic transformation by residents of the building. The potential of these “inbetween” spaces for achieving aesthetic variety of residential buildings in Mišeluk by their opening or closing, as well as furnishing by the user was also a consideration in the design process. The indeterminacy of free spaces surrounding the residential buildings was also proposed to encourage free use. This was supposed to give residents the opportunity to personalize and appropriate this space together, creating cause for gathering around a common activity, which could encourage active participation in urban issues on a higher level in future. Emphasis was placed on the importance of an incremental approach to the urban planning of the new settlement, which would enable the gradual development of a complex urban landscape, avoiding simplistic expansion in the direction of “leftover” space [20].

Regarding non-residential programmes, the approach to designing Mišeluk was based on incorporating programmatic flexibility into urban plans—so that adjustments can easily be made in accordance with the actual future dynamics of the area’s development [26]. In comparison to the previous “all or nothing” planning approach—where the aim was to establish a complete functional whole that meets all the needs of its residents at the highest level immediately upon construction—careful consideration of the influence of time on the realisation of urban plans generated a more porous, and again, incremental approach to the programmatic development of the Mišeluk zone. This included

determining only the primary programmes, and ensuring their realization simultaneously with the construction of residential buildings [27]. The establishment of a basic standard in plans prioritises the immediate provision of programmes based on financial means available at the time, leaving secondary programmes to be developed in accordance with future needs and funds. The advantage of ephemeral structures in enabling this immediacy and programmatic experimentation in the initial years of urban development without large initial investments is also highlighted. Therefore, the need to introduce flexibility into the programmatic concept of Mišeluk can be noted, as a response to the issue of “dormitory” neighbourhoods and discrepancies in the ambitiousness of previous concepts with real economic possibilities. Out of the six prize-winning competition entries, an advancement in the direction of spatial and programmatic indeterminacy was made by the authors of the submission titled "Process" (*Proces*), who provided only the basic outlines for the further development of this part of the city [29].

4. DISCUSSION

User participation envisioned for the new settlement in Mišeluk can be observed through all the main stages in its development—the participation of citizens before planning, their involvement in the design process, as well as the proposed participation of citizens in the appropriation of space upon its construction. In evaluating the form and level of participation, the types of users, as well as the specific implemented and proposed activities in the Mišeluk project throughout all the main stages are taken into account (Fig 4).

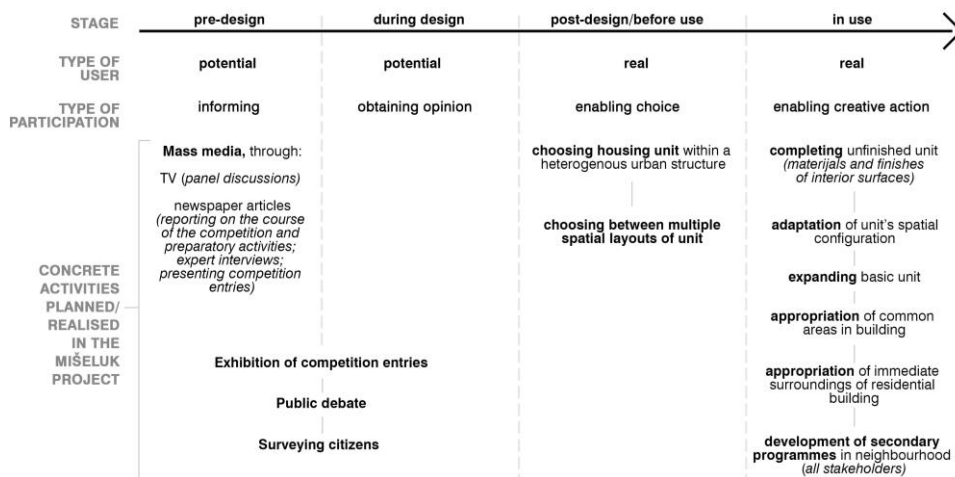


Fig. 4 Diagram of the level and types of participation identified in the Mišeluk project (Source: authors)

Informing citizens is considered the lowest level of participation realised in the Mišeluk project, as it does not require the active engagement of citizens, and implies one-way communication. However, it presents an essential precondition for achieving higher levels of participation. The most basic level of active participation, which has the least

direct influence on the urban fabric, can be realised through surveys or interviews, by citizens giving their opinion on a specific topic of interest. This form of participation usually involves a wider group of citizens who are recognized as potential future users of the space, and takes into account the opinion of the majority. At the same time, whether public opinion is taken into consideration depends on numerous other factors that influence the course of the project, e.g., the professional assessment of the architects, technical and financial means, as well as various political interests. Considering the above, this type of participation can be useful as a starting point for a design, but cannot be considered particularly influential on the sustainability and adaptability of architecture over time, or on the process of user appropriation. The more direct types of participation that were foreseen in the Mišeluk project involve the real future users of the space, who would have had the opportunity to decide on a specific design within a wider choice, or whose opinions and needs would have potentially influenced the final design in the later stages of the project. In considering the form of the new socialist settlement, user choice is highlighted as a priority, which also reflects the alignment of the goals of the Mišeluk project with the global architectural discourse of that time.

The most direct form of participation is considered to be the creative action of users in the use phase of the buildings in the new neighbourhood, made possible through the flexibility, i.e., indeterminacy of the spatial concept on several levels. Research shows that the direct influence of users in this phase can significantly aid the process of appropriation [30][31], which is one of the prerequisites for maintaining the life of architecture over time. The indeterminacy of the design was to be predominantly articulated in the Mišeluk project through:

- Deliberate incompleteness or ambivalence of certain elements of the solution (e.g., the immediate surroundings of the building as an extension of the housing units, or the programmatic indeterminacy of the space provisioned for the "expansion" of units), which requires the active creative participation of users in completing the structure or providing a function for the space.
- the adaptability of the concept, reflected in enabling the possibility of changing the spatial configuration of housing units, the expansion of buildings, and the incremental approach to the realisation of the project.

This urban design concept creates the conditions for the organic growth of a settlement over time, which is considered more influential for aiding the process of appropriation and achieving gradual social diversity than the consideration of user opinion or offering choice in the design stage. Therefore, instead of designing an aesthetically diverse architecture intended to illustrate the social diversity of the settlement, we argue for the realisation of a basic structure that is developed and changed over time, i.e., for the indeterminacy of the design, which requires the active and direct participation of citizens in shaping the settlement that reflects its real dynamics. Integrating the possibility of the development of different scenarios into the basic concept of the project, from the level of individual housing units to the level of the entire settlement, can also make the space more resilient in the light of unpredictable changes in the future.

This is in line with a growing current in contemporary design discourse that is critical of the conventional process of designing *for* the needs of users, and is instead in favour of designing for the *participation* of users in the use stage of spaces, made possible by the indeterminacy of certain elements of the concept [10][11][12][31]. Additionally, in light of the growing instability of the current socioeconomic context, approaches based on the

understanding of architecture as an evolutionary process defined by various stakeholders over time, which were initially considered in the 1950s and 1960s, are growing in importance once again. Apart from the consequences of the 2008 global financial crisis that left many projects unrealised, the consequences of the recent pandemic and the increasing political tensions of this decade suggest an even more unstable context for the further development of architecture that requires the creative attention of designers in responding to change [32]. In this regard, the theme of indeterminacy in architecture is acquiring a new meaning in the unstable context of the 21st century, and can therefore be considered a valuable starting point for the identification of concrete design measures for application in contemporary practice.



Fig. 5 Satellite view of the Mišeluk zone today (left) (*source*: Google Earth, edited by authors); typical residential street in Tatarsko brdo, an unplanned residential neighbourhood constructed on the site of the former Mišeluk project zone (right) (*source*: <https://wordpress.org/openverse/image/c3f6a234-64ef-4e47-8191-31ed3a05d2d2>)

Given that the plans for Mišeluk were not realised, and that the further development of the settlement in the direction of the illegal construction of elite villas since the 1990s (Fig. 5) indicates a low probability of their realisation in the future [33], it is not possible to evaluate the qualities of the spatial concept of Mišeluk in relation to other socialist settlements in Novi Sad built during the second half of the twentieth century, which represents the basic limitation of this study. Nevertheless, as the Mišeluk project arose as the socialist response to the dominant theme of architectural discourse of the time—one that continues to this day—and synthesises all the ambitions of its society towards the improvement of architectural and urban practice in the direction of increasing citizens' quality of life in a sustainable spatial framework, this research considers it an exemplary theoretical starting point for the further research of these and related ideas in the contemporary post-socialist context.

5. CONCLUSION

In alignment with the global shift in the direction of modern architecture towards variable, open, indeterminate solutions that took into consideration the individual needs of users, and the unpredictable influence of the wider social context, Yugoslav architects

were tasked with developing a new architectural and urban planning approach under the auspices of socialism. Born in the midst of global and local criticism of prevalent urban practice, the Mišeluk project helped establish a new direction in the urban development of the socialist self-governing urbanized society. In analysing this example, this paper examined the characteristics of the socialist response to the dominant themes of user participation and indeterminacy developed in the second half of the twentieth century, that are once again gaining traction in the theory and practice of contemporary architects, in order to establish a theoretical basis for the further development of these ideas in the contemporary post-socialist context. In reviewing the plans for the construction of Mišeluk through the implemented and planned forms of achieving citizen participation, this paper highlighted the planned "flexibility" of the design solution on several levels as the most important strategy of the Mišeluk project in answering the call for a reformation of modern architecture and urban planning, realising user participation and the resilience of architecture over time. Thus, the research reveals a possible direction for urban planning practice based on user participation that can be achieved through the indeterminacy of the design concept, whose significance is twofold—as a response to the individual and changing needs of users, but also as a way of achieving the resilience, i.e., adaptability of architecture in the face of unpredictable social trends.

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INDETERMINACIJA U ARHITEKTURI – PRIMER NASELJA NA MIŠELUKU

U nedostatku utvrđene strategije urbanog planiranja, počeci posleratnog urbanog razvoja Jugoslavije su bili zasnovani na principima CIAM-ovog „funkcionalnog grada“, koji se ubrzo pokazao neadekvatnim u odgovaranju na individualne potrebe različitih tipova korisnika i u odražavanju kolektivnih interesa novog društva. Ovaj rad pozicionira potragu za novim prostornim izrazom mlađe socijalističke države u okvir globalnog arhitektonskog diskursa druge polovine dvadesetog veka, koji se kretao ka promenljivim, otvorenim i indeterminantnim arhitektonskim modelima koji su podrazumevali razne oblike korisničke participacije. Karakteristike novog pristupa u jugoslovenskoj arhitektonsko-urbanističkoj praksi sagledavaju se kroz studiju slučaja nerealizovanog projekta za zonu Mišeluk u Novom Sadu krajem 1970-ih i početkom 1980-ih godina. Cilj ovog rada je analiziranje socijalističkog odgovora na dominantnu temu arhitektonskog diskursa koja ponovo dobija na snazi u teoriji i praksi savremenih arhitekata, kako bi se uspostavila osnova za dalji razvoj ovih ideja u savremenom postsocijalističkom kontekstu. Istraživanje otkriva novi pravac u urbanističkom planiranju zasnovan na participaciji korisnika koja se ostvaruje kroz indeterminantnost arhitektonsko-urbanističkog koncepta, kao odgovor na promenljive potrebe korisnika, ali i kao način postizanja fleksibilnosti, odnosno prilagodljivosti arhitekture u promenljivom društveno-ekonomskom kontekstu.

Ključne reči: *Indeterminacija, participativni dizajn, socijalistički grad, Novi Sad*