



ARCHITECTURAL STRATEGIES FOR INCREASING APARTMENT ROOM COUNT: A COMPARATIVE ANALYSIS OF ADAPTABILITY IN SOCIALIST AND CONTEMPORARY HOUSING IN SERBIA

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Abstract

This paper examines architectural strategies for increasing the number of functional rooms within a dwelling through internal spatial adaptation, with a particular focus on the formation of a dedicated child's room. The initial hypothesis posits that contemporary apartments in Serbia, unlike those designed during the period of socialist housing development, exhibit limited adaptive potential due to spatial rigidity and current regulatory constraints. The primary aim of the research is a comparative analysis of the adaptability of apartments from these two periods in relation to the potential for increasing room provision without expanding the building footprint. The study is based on qualitative and typological analysis of representative floor plan solutions, through which the following strategies are identified and categorised: division of larger rooms, functional reorganisation of interior spaces, temporal separation of zones, repurposing of auxiliary areas, introduction of mezzanine levels, and merging of adjacent units. Particular emphasis is placed on the willingness of users to compromise spatial comfort in order to achieve adequate room provision, which is interpreted as a reflection of the value systems and priorities of contemporary households. The findings indicate that apartments from the socialist period were designed with a higher degree of flexibility, whereas contemporary housing requires significant spatial and functional sacrifices. The study concludes that spatial adaptability is a key prerequisite for the long-term sustainability of housing, especially in the context of changing family needs.

Key words: *Room count, adaptability, spatial flexibility, housing typology, architectural strategies, Serbia.*

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Introduction

Changes in household structures and everyday life patterns have led to increased demands for spatial individualisation within residential units. One of the most significant needs of contemporary households is to provide a functionally defined, self-contained space for a child, an increasingly recognised dimension of family comfort and emotional security. At the same time, increasing the number of rooms within an existing apartment footprint, namely, creating an additional room, has become a growing challenge for both designers and residents.

Although technically straightforward, the concept of "room count" carries complex spatial and social implications. Within the framework of housing regulations in Serbia, room count is primarily defined in quantitative terms, as the number of rooms that can be used for living and sleeping purposes, yet the interpretation of the concept has varied across different historical periods. In the Serbian housing context, "room count" refers to the number of rooms used for sleeping, daily living, or other primary domestic functions, excluding kitchens, bathrooms, and auxiliary spaces. A "half-room" is considered to be any room smaller than 8 square metres²²⁸ [1]. The 1983 *Regulations and Technical Norms for the Design of Residential Buildings and Flats*²²⁹ [2], developed in the context of socialist Yugoslavia, placed emphasis on spatial flexibility, including the possibility of dividing a room designed for two persons (with a minimum width of 420 cm), as a response to the anticipated dynamics of family development. In contrast, the current *Regulation on Design Conditions and Norms for Residential Buildings and Flats* in Serbia defines a "room for two persons" as an indivisible functional unit (with a minimum width of 240 cm), thereby significantly reducing the apartment's adaptive potential²³⁰ [3].

This normative shift coincides with the worsening housing crisis in Serbia, manifesting in the declining average floor area of new housing developments, rising property prices, and a general decline in the quality of spatial organisation. Under increasing socio-economic pressures, many families are compelled to reorganise their existing living spaces in order to accommodate larger households or to provide each member, especially children, with a certain degree of privacy²³¹ [4]. In this context, spatial adaptations and interventions within the existing housing stock are once again coming to the fore, not as a matter of choice, but as a necessity.

Contemporary apartments, however, often do not offer the potential for such spatial transformations. In contrast to dwellings from the socialist period, where design strategies frequently incorporated the possibility of reconfiguring spatial functions,

²²⁸ Brkanić, Ivana. (2018). Model korisničkog vrednovanja prostornih karakteristika stana, doktorska disertacija. Novi Sad: Univerzitet u Novom Sadu – Fakultet tehničkih nauka. <https://nardus.mpn.gov.rs/handle/123456789/9468>

²²⁹ ***. (1983). Uslovi i tehnički normativi za projektovanje stambenih zgrada i stanova. Službeni list Grada Beograda br. 32/IV/83, 5/88.

²³⁰ ***. (2015). Pravilnik o uslovima i normativima za projektovanje stambenih zgrada i stanova. Službeni glasnik RS, br. 58/2012, 74/2015 i 82/2015.

²³¹ Stoiljković, Branislava. (2015). Primena koncepta individualizacije u stambenoj arhitekturi u kontekstu unapređenja kvaliteta višeporodičnog stanovanja u Srbiji, doktorska disertacija. Niš: Univerzitet u Nišu – Građevinsko-arhitektonski fakultet.



today's housing models are characterised by more rigid layouts. Kitchens and dining areas are commonly positioned deep within the apartment²³² [5], making it impossible to convert these spaces into rooms serving other functions. Simultaneously, contemporary regulatory constraints further diminish the flexibility of apartments, discouraging improvisational and subdivisional solutions that were once acceptable and even encouraged.

Against this backdrop, the research is guided by the following question: How can an increase in room count and the provision of a functional child's room be achieved within apartments originally designed for smaller households, and what spatial, technical, and social strategies enable such a transformation?

The paper addresses this question through a comparative analysis of socialist-era and contemporary apartments in Serbia, with particular emphasis on their architectural characteristics, adaptive capacities, and the strategies adopted by users in their efforts to reorganise space. The aim is to identify key spatial models and normative factors that could support sustainable transformations of residential units toward greater room count, as well as to highlight the importance of planning and architectural approaches that enhance everyday family life through spatial flexibility.

Based on these insights, the central hypothesis posits that contemporary apartments in Serbia, unlike those designed during the socialist era, are defined by spatial layouts and normative limitations that significantly hinder the possibility of increasing room count through adaptation. This is primarily due to the inward relocation of kitchens and dining areas, as well as the current definition of a "room for two persons" as an indivisible unit. This hypothesis is examined through a qualitative analysis of diverse spatial strategies and examples drawn from both periods of housing development.

Review of previous research

The concept of housing flexibility has been developed within various theoretical and practical frameworks throughout twentieth- and twenty-first-century architecture, particularly through the notions of adaptability, spatial variability, and open-ended planning. Research conducted within the "Open Building" approach (Habraken, Kendall) has emphasised the need for the dwelling to be understood not as a static entity but as a structure that evolves in accordance with changes within the household over time²³³²³⁴ [6], [7]. The literature also explores models of transformable dwellings, modular planning, and polyvalent use of space, especially in relation to demographic shifts and economic instability. According to Femenias and Geromel, the adaptability of housing units constitutes a key component of sustainable living, yet in practice it is

²³² Petrović et al. (2022). Spatial-Functional Organization of a Contemporary Apartment in Serbia. *Journal of Mediterranean Cities*, Vol. 2, No. 1, 84–98. https://doi.org/10.38027/mediterranean-cities_vol3no1_3

²³³ Nascimento, Denise Morado. & Habraken, John. (2012). N. J. Habraken explains the potential of the Open Building approach in architectural practice. *Open House International* 37(4), pp. 5-13. <http://dx.doi.org/10.1108/OHI-04-2012-B0001>

²³⁴ Kendall, Stephen. & Habraken, John. (2023). *Open Building for Architects: Professional Knowledge for an Architecture of Everyday Environment*. London: Routledge. <https://doi.org/10.4324/9781003243076>



rarely based on evidence related to specific spatial characteristics that enable transformation. Their research shows that a larger living room area and a fragmented original layout are positively correlated with a higher incidence of user-led spatial modifications²³⁵ [8]. Schneider and Till argue that flexible housing should allow for changes in both the social use and the physical organisation of space over time. They stress that the long-term sustainability of housing, social, economic, and environmental, depends on the capacity of dwellings to adapt to the unpredictable future needs of their occupants²³⁶ [9]. The authors define flexible housing as that which can respond to changing user requirements, including different spatial arrangements prior to occupation, as well as the potential for ongoing adaptation. In this view, flexibility is considered broader than mere adaptability, and is examined along a spectrum between determined (“hard”) and undetermined (“soft”) design, without reliance on rigid methodologies^{237,238} [10, 11]. Although housing flexibility is widely recognised as a current and relevant issue in contemporary architectural theory and practice, it is rarely analysed through the lens of increasing room count within existing apartments. Research more commonly addresses general functional variability, shared spaces, and the multi-layered use of rooms, while spatial strategies that enable the formation of an additional room, particularly a child’s room, remain underexplored.

During the period of socialist Yugoslavia, housing design was guided by strict regulatory frameworks and ideologically grounded in the principles of social justice and functional rationalism. Regulations, including those from 1983, clearly defined room count while also allowing for the subdivision of spaces, particularly those intended for children and young people. Architectural practice sought to create flexible spatial arrangements that could accommodate changes in function over time. Čanak argues that the long-term functionality of residential space depends on its ability to adapt to shifts in household structure and needs, emphasising the importance of subdivisibility and flexible control over the relationships between different functional zones²³⁹ [12]. Jovanović considers flexibility in residential organisation as a response to the unknown preferences of future users and the uncertainty of the housing market. In this context, the optimal solution lies in the variability of apartment sizes and layouts within a flexible floor plan that enables personalisation and effortless adaptation to diverse requirements²⁴⁰ [13]. According to

²³⁵ Femenias, Paula., Geromel, Faustine. (2020). Adaptable housing? A quantitative study of contemporary apartment layouts that have been rearranged by end-users. *Journal of Housing and the Built Environment*, No. 35, pp. 481–505. <https://doi.org/10.1007/s10901-019-09693-9>

²³⁶ Schneider Tatjana, Till Jeremy. (2005). Flexible housing: opportunities and limits. *Architectural Research Quarterly*, Vol. 9, No. 2, pp. 157-166. <https://doi.org/10.1017/S1359135505000199>

²³⁷ Till Jeremy, Schneider Tatjana. (2005). Flexible housing: the means to the end. *Architectural Research Quarterly*. Vol. 9 No. 3/4, pp. 287-296. <https://doi.org/10.1017/S1359135505000345>

²³⁸ Till Jeremy, Schneider Tatjana. (2016). *Flexible Housing*. London: Routledge. <https://doi.org/10.4324/9781315393582>

²³⁹ Čanak, Mihailo. (2013) *Otvoren ili zatvoren stan*, *Arhitektura i urbanizam* 38, str. 66–77. <https://scindeks.ceon.rs/article.aspx?artid=0354-60551338066C>

²⁴⁰ Jovanović, Goran. (2007). Flexible organization of floor composition and flexible organization of dwelling space as a response to contemporary market demands. *Facta universitatis - series: Architecture and Civil Engineering*, Vol. 5, No. 1, pp. 33-47. <https://doi.org/10.2298/FUACE0701033J>



Stoiljković, a dwelling should meet individual and family needs by maintaining a balance between stable and variable spatial components. Adaptability thus becomes a key attribute of the apartment, allowing it to follow the developmental stages of the household and support multifunctionality, interchangeability, and spatial transformation in line with user demands²⁴¹ [14]. Biondić notes that housing flexibility can be achieved at different stages, during design, construction, and occupation. The broadest range of possibilities lies in the design phase, where flexibility can be classified as relative, absolute, or enriched relative, depending on the scope and spatial scale of change²⁴² [15]. Alfirević and Simonović Alfirević suggest that the concept of polyvalence in housing architecture entails different modes of spatial use. Through the analysis of open-plan apartments, they explore organisational principles that allow for flexible overlap of functions without substantial physical interventions²⁴³ [16]. Kubet examines contemporary housing transformations shaped by the diversity of family structures and living needs, stressing the importance of redefining spatial organisation through the division into sustainable and variable zones, as a response to unpredictable functional changes²⁴⁴ [17]. Alongside collaborators, Kubet also investigates the impact of service core clustering and structural systems on the functional flexibility of housing units, concluding that the spatial potential for transformation depends on the layout geometry, position of service zones, and number of floors within a unit²⁴⁵ [18]. Živković and colleagues have developed a method for assessing internal flexibility in multi-family housing, based on spatial criteria associated with flexibility. Their findings suggest that adaptation to contemporary social changes and market conditions requires clearly defined principles of flexible design that extend the functional lifespan of residential buildings²⁴⁶ [19]. The body of research outlined above suggests that dwellings, particularly those developed during the era of socialist housing, were designed with a pronounced potential for adaptation. In this context, the concept of room count was interpreted more flexibly than it is today, not solely in terms of the number of rooms, but also in regard to their potential for subdivision and functional transformation in accordance with changes in family structure and everyday life.

In the contemporary context, housing in Serbia is marked by a number of structural issues: decreasing apartment sizes, rigid spatial organisation, the retreat of service zones into the interior of the dwelling, and rising property prices. In addition, current

²⁴¹ Stoiljković, Branislava. (2004). Fleksibilnost stanova namenjenih tržištu. Zbornik radova Građevinsko-arhitektonskog fakulteta, br. 20, 31-46.

²⁴² Biondić, Ljerka. (1999). Fleksibilni stan, Prostor 7/1, pp. 69-76. <https://hrcak.srce.hr/24027>

²⁴³ Alfirević Đorđe, Simonović Alfirević Sanja. (2022). Polivalentnost stana sa otvorenim planom - karakteristike i principi prostorne organizacije / Polyvalence of an Open Plan Apartment - Characteristics and Spatial Organization Principles. Arhitektura i urbanizam, br. 54, str. 27-43. <https://doi.org/10.5937/a-u0-34066>

²⁴⁴ Kubet, Vladimir. (2009). Novi aspekti fleksibilnosti stambenih prostora, Nauka + Praksa 12.1, str. 97-100.

²⁴⁵ Kubet Vladimir, Carić Olga, Hiel Ksenija. (2010). Fleksibilnost stambene jedinice u odnosu na grupisanje instalacija, Zbornik radova Građevinsko-arhitektonskog fakulteta 25, str. 143-150.

²⁴⁶ Živković Milica, Kondić Slaviša, Tanić Milan, Stamenković Marija & Keković Aleksandar. (2022). Flexibility and Current Housing Conditions in Serbia: A Case Study of the City of Nis. Tehnički vjesnik Vol. 29, No. 2, pp. 401-407. <https://doi.org/10.17559/TV-20191220105556>



regulations impose the design of a two-person room as an indivisible spatial unit, significantly hindering its transformation into two private spaces. While there are individual works and studies that address challenges of contemporary housing, efficient floor plans, or spatial repurposing through interior interventions, the number of studies that directly investigate strategies for increasing room count within specific residential typologies and regulatory frameworks remains very limited. Petrović et al. note that contemporary residential construction in Serbia, driven by investor interests, leads to a typification of functional apartment layouts aimed at maximising the number of rooms within minimal square footage. This tendency is replicated regardless of the urban context, thus limiting spatial flexibility and the qualitative diversity of living environments²⁴⁷ [5]. Alfirević, Simonović Alfirević, and Nikolić analyse changes in spatial organisation of apartments in Serbia, pointing out that the retreat of rooms towards the interior of the dwelling, once an architectural strategy aimed at achieving flexibility and functionality, is now more often the result of investor-led models that prioritise maximum use of space over the quality of natural light²⁴⁸ [20].

An analysis of previous research reveals that the topic of housing flexibility has been explored through various theoretical approaches and historical practices. However, spatial strategies for increasing room count, particularly the formation of an additional child's room, have rarely been the subject of systematic investigation. In this regard, a study that compares the adaptability of dwellings from two different periods in Serbia, with a focus on room count, offers an original contribution to both the domestic and broader academic discourse on sustainable and functional housing.

Research methodology

The methodological framework of this study is based on qualitative and comparative analysis of apartment spatial organisation in Serbia, with particular focus on the potential for increasing room count through adaptation. The research encompasses two time periods: apartments designed and constructed during socialist Yugoslavia (with particular emphasis on the 1983 regulations) and contemporary units realised through investor-driven housing developments over the past two decades. The analysis was conducted in several stages:

1. Selection of Representative Examples: Typical apartments from both periods were selected, based on the following criteria: the prevalence of the typology,

²⁴⁷ Petrović Vladana, Stojković Branislava, Petković Nataša, Krstić Hristina. (2022). Spatial-Functional Organization of a Contemporary Apartment in Serbia. *Journal of Mediterranean Cities*, Vol. 2, No. 1, pp. 84–98. https://doi.org/10.38027/mediterranean-cities_vol3no1_3

²⁴⁸ Alfirević Đorđe, Simonović Alfirević Sanja, Nikolić Sanja. (2025). The Principle of Recessing Residential Spaces into the Depth of the Apartment and its Application in Apartment Organization in Serbia, *Book of Proceedings. International Conference „Synergy of Architecture & Civil Engineering - SINARG 2025”*, Niš, September 11-12, University of Niš - Faculty of Civil Engineering & Architecture, Serbian Academy of Sciences and Arts, pp. 725–739. <https://doi.org/10.62683/SINARG2025.103>



- availability of architectural documentation, and clearly defined spatial characteristics that either enable or constrain changes in room count.
2. Floor Plan Analysis: Using architectural drawings, the study analysed the positions of kitchens, dining areas, and circulation zones, as well as their potential for repurposing into functional rooms. Particular attention was paid to room dimensions, access to natural light, and the degree of structural flexibility (e.g. the presence of load-bearing walls).
 3. Comparative Assessment of Adaptability: A comparative analysis of the adaptive potential of apartments from both periods was carried out according to the following criteria: a) feasibility of room subdivision (both physical and functional), b) layout flexibility in relation to service zones, c) regulatory constraints related to surface area and daylight access, and d) presence of neutral or multifunctional spaces.
 4. Synthesis of Findings: Based on the findings, the research identifies key spatial and regulatory factors influencing the potential for increasing room count, as well as the differences between the design approaches of socialist-era housing and contemporary investor-driven models.

Architectural strategies for increasing apartment room count

Increasing the number of rooms within a limited apartment floor area—without physical extensions or changes to the building's footprint—represents one of the key challenges of contemporary housing. In this context, both architectural practice and user-led interventions have developed a range of strategies to enable the creation of an additional room, most commonly a child's bedroom, through spatial, functional, and technical transformations. These strategies range from permanent modifications to room layouts to temporary, adaptable solutions that allow for parallel or successive use of space to accommodate diverse needs.

Subdivision of an existing large room

In apartments built during the period of socialist housing development—particularly after 1970—rooms with dimensions of approximately 3.6×4.2 m or 5.4×3.6 m were common. These rooms were often designed with the potential to be subsequently subdivided into two functionally usable units. Such an architectural approach reflected an awareness of the evolving needs of households, providing users with the flexibility to reorganise space in response to changes in family structure. In contrast, contemporary apartments rarely feature rooms whose size and proportions allow for physical subdivision without significant compromises. Current regulatory and market practices prioritise the minimisation of floor area, resulting in spaces that barely meet the minimum standards for a single functional unit, leaving no room for



further subdivision. This shift highlights a broader change in design logic—from adaptability to typological rigidity—which significantly reduces the long-term flexibility of the residential environment²⁴⁹ [21].

Functional reorganisation of the interior

One of the most common strategies involves relocating the primary spatial zones within the apartment. A typical example is the repositioning of the kitchen and/or dining area into the living room, following an “open-plan” layout, thereby freeing up the previously occupied space for conversion into an additional room. Similarly, the elimination of corridors and their integration into other functional zones represents a form of spatial rationalisation that may enable the creation of a small yet functional additional room. The use of mobile partitions, rotating elements, multifunctional furniture, and wall panels allows for the redefinition of the interior spatial hierarchy without permanent construction work. These interventions enhance the apartment’s functional room count in everyday use, offering greater adaptability without compromising spatial quality.

Temporal division of space

In cases where physical subdivision is not feasible, strategies rely on the temporal differentiation of space use. Through the implementation of sliding panels, easily removable partitions, or shelving units that act as visual barriers, space is functionally divided without creating permanent boundaries²⁵⁰ [12]. In this approach, the area does not become a room in a physical or regulatory sense but temporarily takes on the function of a room within the daily rhythm of day–night living. This strategy serves as a valuable means of spatial negotiation in situations where users are willing to compromise between privacy and spatial economy, allowing flexibility without structural alteration.

Transformation of loggias and ancillary spaces

It is not uncommon for loggias and storage areas to be enclosed and repurposed as micro-rooms, particularly in housing units where no other options exist for increasing room count. In some cases, users incorporate portions of the kitchen, storage areas, or even the width of a corridor into the composition of a new room, although such interventions often border on the limits of technical and functional viability. This strategy reflects an adaptive user practice in response to spatial constraints and highlights the need for functional expansion of the dwelling without increasing its overall floor area.

²⁴⁹ Alfirević Đorđe, Simonović Alfirević Sanja. (2023). Principi konfiguracije stambenog prostora. Posebna izdanja br. 93. Beograd: Institut za arhitekturu i urbanizam Srbije, Univerzitet u Beogradu - Arhitektonski fakultet.

²⁵⁰ Čanak, Mihailo. (2013) Otvoren ili zatvoren stan, Arhitektura i urbanizam 38, str. 66–77. <https://scindeks.ceon.rs/article.aspx?artid=0354-60551338066C>



Introduction of a mezzanine level or spatial split-leveling

In residential units with greater ceiling height, users or designers occasionally introduce mezzanine levels, most often for children's sleeping areas or workspaces. Additionally, split-levels within a single room allow for spatial hierarchy and symbolic separation of zones without full physical division, which in certain cases can serve as a temporary solution for creating a distinct functional unit.

Annexation of an adjacent apartment unit

In rarer instances, the annexation of part of an adjacent apartment – when both units are owned by the same household – enables a permanent increase in room count. Such interventions require specific conditions: structural feasibility for opening connections, as well as legal and technical approvals. Nonetheless, they are sometimes the only viable solution for meeting the needs of a growing household within an existing residential setting.

Comparison of contemporary examples in Serbia with apartments from the socialist period

To explore the spatial potential for increasing room count, this chapter analyses representative examples of apartments from the period of socialist housing construction and from contemporary investor-driven developments in Serbia. The comparison is based on spatial-functional criteria relevant to adaptability, including the dimensions and organisation of rooms, the presence of multifunctional zones, and the potential for spatial reconfiguration through division or relocation of functions (Table 1).



Table 1. Comparative overview of research results – examples from the socialist period (Source: authors' archive)

Example	Original Floor Plan	Potential for Room Count Increase	Changes / Consequences
Blocks 61 and 62 (southern section), New Belgrade (completed 1978) Darko Marušić, Milenija Marušić, Milan Miodragović			– relocation of the dining room into the living room – dining room becomes a child's bedroom – loss of connection between living room and terrace – kitchen ventilation issues
Block 23, New Belgrade (completed 1974) Božidar Janković, Branislav Karadžić, Aleksandar Stjepanović			– relocation of the dining room into the living room – dining room becomes a child's bedroom – physical partitioning – loss of proximity between kitchen and dining area – adaptation necessary
Block 19a, New Belgrade (completed 1982) Milan Lojanica, Predrag Cagić, Borivoje Jovanović			– division of a large room into two smaller bedrooms – physical partitioning – adaptation necessary – lower level of spatial comfort
Block 29, New Belgrade (completed 1974) Milosav Mitić, Mihailo Čanak			– switching parents' and child's bedrooms – dividing larger room into two smaller bedrooms – physical partitioning – façade element adjustments – adaptation necessary – lower level of spatial comfort – opening in a concrete wall
Housing Complex in Košutnjak (completed 1971) Mirko Jovanović			– switching parents' and child's bedrooms – restructuring space into three small bedrooms – physical partitioning – façade element adjustments – adaptation necessary – lower level of spatial comfort
Block 28, New Belgrade (completed 1974) Ilija Arnautović			– division of a larger room into two smaller bedrooms – physical partitioning – façade element adjustments – adaptation necessary – lower level of spatial comfort

Table 2. Comparative overview of research findings –



contemporary examples (Source: author's archive)

Example	Original Floor Plan	Potential for Room Count Increase	Changes / Consequences
Block 67 – Belville, New Belgrade (Mašinoprojekt Koprings ad, 2009)			– relocation of the dining area into the living room – dining room becomes a child's bedroom – room becomes a passageway, lack of privacy – limited use of kitchen – kitchen ventilation issues
Block 67a – Savada 1, New Belgrade (NeimarV, 2015)			– relocation of the dining area into the living room – dining room becomes a child's bedroom – loss of connection between terrace and living room – kitchen ventilation issues – low level of spatial comfort
The One, New Belgrade (Lotus architecti, 2022)			– parents' room is given to the child – living room used flexibly for parents' sleeping – lack of privacy – low level of spatial comfort
Ex Ing Home 65, New Belgrade (Potka doo, 2020)			– parents' room is given to the child – living room used flexibly for parents' sleeping – lack of privacy – low level of spatial comfort
Paunov Breg, Belgrade (CEP doo, 2014)			– parents' room is given to the child – living room used flexibly for parents' sleeping – new room created along the façade – lack of privacy – low level of spatial comfort – reduced level of natural light
Central Garden – IKL, Belgrade (Mašinoprojekt Koprings ad, 2015)			– parents' room is given to the child – living room used flexibly for parents' sleeping – lack of privacy – low level of spatial comfort



In all analysed examples from the socialist period, it is evident that an increase in room count through internal spatial reorganisation was physically feasible. The most commonly employed strategies included relocating the dining area into the living room, physically subdividing larger rooms, and interchanging the functions of the parents' and children's rooms²⁵¹ [22]. In the majority of cases, the new rooms (highlighted in yellow) were created through the introduction of physical partitions in spaces that originally had sufficient surface area and suitable proportions to accommodate such interventions. These adaptations often required certain functional and comfort-related compromises, such as the loss of natural ventilation, weakened connectivity between kitchen and dining areas, or the need to modify façade elements. Nevertheless, the spatial potential of these apartments demonstrates that they were designed with a higher degree of flexibility, marked by the evident neutrality and subdivisibility of key zones, features that are considerably less present in contemporary housing.

Based on the table presenting contemporary apartment examples, several important conclusions can be drawn that confirm the limited potential of modern flats to increase room count, particularly in the context of creating an additional child's room. In all analysed cases, the technical possibility of increasing room count does exist; however, in nearly every example it is conditioned by significant functional compromises. The most frequently employed strategies involve surrendering the parents' bedroom to the child and using the living room as a multifunctional space that also serves as a sleeping area for adult household members. The new room is most often created within the dining area or kitchen alcove, resulting in the loss of direct connections between functional zones, reduced natural lighting, and impaired ventilation. Unlike apartments from the socialist housing era, contemporary dwellings lack spatial neutrality; zones are typically rationalised to the maximum extent, with little to no capacity for flexible reorganisation without undermining essential housing standards. The absence of privacy – particularly for parents – and the overall low level of comfort point to the reduced long-term usability of such residential units in the face of changes in family structure.

Discussion

The findings of this research indicate that strategies aimed at increasing the number of rooms in a dwelling – though functionally justified from the standpoint of user needs – generally involve significant trade-offs in terms of basic housing comfort under contemporary conditions. One of the most evident negative consequences is the loss of natural light and ventilation, particularly in cases where new rooms are created within interior zones that lack external openings. Moreover, increasing room count often entails the reduction or complete elimination of functional zones – areas for dining, working, storage, or circulation are frequently repurposed to create an additional room. This leads to the overlapping of functions and the blurring of spatial-

²⁵¹ Alfirević Đorđe, Simonović Alfirević Sanja. (2018). 'Socialist Apartment' in Yugoslavia: Paradigm or Tendency? *Spatium*, No. 40, pp. 8–17. (ISSN 1450-569X) (<https://doi.org/10.2298/SPAT1840008a>)



functional boundaries, ultimately reshaping the use of the apartment and influencing daily routines and intra-household relations.

In numerous examples, a recurring narrative of “parental sacrifice” is observed, wherein parents relinquish their bedroom to the child and move into the living room, thereby forfeiting both privacy and functional autonomy. The living room, in such cases, becomes a multifunctional space characterised by a pronounced compromise between individual and collective needs. These spatial decisions are not determined solely by architectural constraints, but also reflect societal values in which providing a child with a dedicated room is perceived as a core parental responsibility and an investment in the future.

The differences observed between contemporary and socialist-era apartments point to a profound transformation in the spatial and normative approaches to residential design. In socialist housing, spatial organisation incorporated a greater degree of neutrality and flexibility, zones were interchangeable, dining rooms and kitchens were positioned in ways that allowed for relocation, and bedrooms were dimensioned to permit physical subdivision. The 1983 Regulations on the Design of Residential Buildings explicitly anticipated the possibility of dividing a room intended for two persons—particularly in the case of children—with clear guidelines concerning lighting, floor area, and accessibility.

In contrast, contemporary flats are designed according to principles of maximum efficiency with minimal surface area, leaving no room for flexibility. Single-sided orientation, deeply recessed kitchens and dining rooms, and limited room dimensions (often narrower than 2.4 metres) effectively preclude functional reorganisation without radical compromises.²⁵² User strategies, often improvised, adaptive, and grounded in sacrifice, become the only available mechanism for spatial adjustment, albeit at the expense of comfort and the long-term sustainability of the dwelling.

Conclusion

This research has confirmed the initial hypothesis that contemporary apartments in Serbia—unlike those designed during the period of socialist housing development—possess significantly lower adaptive potential for increasing room count through internal reorganisation. Dwellings from the earlier era were conceived with consideration for future transformations in line with household evolution. This was made possible by the generous dimensions of rooms, the presence of “neutral” spaces, and a more flexible spatial logic. In contrast, contemporary investor-driven housing relies on minimal floor areas, rigid functional matrices, and normative frameworks that often prevent transformation without compromising basic living standards.

In practice, users adopt an active yet defensive role—improvising and relinquishing comfort, privacy, and natural light—in order to create an additional room, most often for a child. This practice highlights not only the spatial rigidity of modern apartments but also the absence of systemic support through architectural regulations and

²⁵² Živković Milica, Kondić Slaviša, Tanić Milan, Stamenković Marija & Keković Aleksandar. (2022). Flexibility and Current Housing Conditions in Serbia: A Case Study of the City of Nis. *Tehnički vjesnik* Vol. 29, No. 2, pp. 401-407. <https://doi.org/10.17559/TV-20191220105556>



typological design. In this context, room count should not be understood as a fixed number of rooms but rather as the spatial capacity to evolve, expand, and respond to family needs over time. Increasing room count without expanding the apartment footprint represents both a spatial and a social challenge, yet also constitutes a meaningful contribution to a sustainable approach to housing, as it implies more efficient use of the existing housing stock without additional resource expenditure. The difference between dwellings that enable long-term transformation and those that do not is, in essence, the difference between architecture that supports social sustainability and architecture shaped by short-term market logic.

This study suggests that contemporary regulations—particularly those governing minimum room dimensions and energy efficiency—can limit the adaptability of residential spaces, thereby compromising their longevity and flexibility. Accordingly, there is a clear need for critical reassessment and improvement of current regulatory frameworks, in order to facilitate design approaches that value adaptability, emotional security, and the human dimension of housing.

Using the “child’s room” as a focal point of analysis, the research sheds light on deeper social patterns and spatial tensions, offering architecture an opportunity to reclaim its role as a mediator between user needs and systemic constraints. On this basis, the paper may contribute to: the development of new models for apartment adaptation in urban environments; the advancement of architectural practice through concrete design guidelines; and the formulation of housing policies that affirm spatial flexibility and long-term quality of life.

Ultimately, the question that remains open—and extends beyond the scope of this study—is as follows: are we, as a society, prepared to design dwellings that can grow, change, and adapt, or will we continue to produce homes that cannot change, expecting users to adapt to space rather than space adapting to users?

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