Flexible Spaces in Micro Apartments: Regeneration and Transformation of Functional Zones in Contemporary Architecture

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Abstract: Contemporary housing challenges related to urban growth, housing crises and changing lifestyle patterns call for sustainable solutions, among which micro housing is increasingly prominent. However, micro apartments are often designed with a focus on quantitative spatial reduction, while qualitative aspects of living and long-term functionality are frequently overlooked. This paper analyzes the quality of micro apartments through the potential for transformation and regeneration of functional zones, living, sleeping, and service areas, with particular emphasis on the living zone as the primary space for adaptation and element substitution. The theoretical framework is based on the ideas of the Metabolist movement, especially the principles of sustainability, modularity, and regeneration, reinterpreted in contemporary architectural practice.The assumption is that micro apartments offering greater spatial flexibility, especially through the transformation of elements within the living zone, provide higher living quality and better adaptability to contemporary needs. The methodological approach is based on case studies of three carefully selected examples: a historical one (Habitat 67 – one residential module), a contemporary international one (Carmel Place, New York – nARCHITECTS) and a current local micro apartment (Apartment in Tomaša Ježa Street – 46th Salon of Architecture, authors Dejan Todorović and Milena Kordić). The analysis enables insight into various spatial design approaches and the long-term sustainability of micro housing. The aim of the paper is to contribute to the scientific and professional discourse on micro housing quality within the context of a sustainable urban future, emphasizing the importance of spatial flexibility and the architect's role in creating intelligent and adaptable solutions within limited floor areas.

Keywords: micro apartment, spatial flexibility, space transformation, regeneration of functional zones, modularity

Introduction

Contemporary housing challenges are shaped by accelerated urbanization, the global housing crisis, and increasingly pronounced changes in lifestyles. According to the UN-Habitat report (2022), more than 56% of the world's population already lives in urban areas, and this percentage is expected to rise to nearly 68% by 2050. Such intense urban growth leads to increased pressure on housing capacities, significant increases in property prices, and the need for new, sustainable models of urban planning. At the same time, the World Bank in its Global Housing Report (World Bank, 2021) notes that more than 1.8 billion people lack access to safe, affordable, and adequate housing, with the greatest problems present in large cities in Asia, Africa, and Latin America, where rising land prices and a shortage of affordable housing units further deepen the gap between supply and demand. In addition to the quantitative deficit of housing space, everyday life patterns are changing. The OECD Housing Outlook report (2023) indicates a significant increase in single-person households, an extended life expectancy of the population, and the growing presence of flexible work models, especially remote work. These changes generate a need for different apartment typologies that can respond to various life situations and requirements. In this context, micro-housing increasingly stands out as one of the possible sustainable solutions, as it allows for higher housing density and more economical use of limited urban space. However, although micro-apartments are often promoted in contemporary practice as a response to overcrowding and the lack of affordable housing, research shows that their implementation often emphasizes the quantitative reduction of space while neglecting the qualitative aspects of daily life (Das & Dash, 2020). These authors highlight that in micro-apartment design, functionality is often achieved by eliminating open and flexible spaces, which affects the sense of belonging to the space and the quality of everyday life. An analysis conducted in Finland shows that most micro-apartments do not meet basic housing quality indicators, such as natural lighting, spatial flexibility, and a sense of spaciousness, which in the long term questions their usability and sustainability (Pelsmakers, S., Saarimaa, S. & Vaattovaara, M., 2022). Micro-apartment users often consciously accept a compromise between location and apartment size, sacrificing comfort and functionality for affordability, but such a decision often results in a reduced standard of living (Alfirević & Simonović-Alfirević, 2022). In addition to these problems, contemporary lifestyles require that even minimally sized apartments can integrate multiple functions and allow dynamic use of space. Eleb (2017) emphasizes that micro-apartments today must respond to new routines that involve work, rest, recreation, and social activities within the same limited space, which increases the importance of flexibility and the potential for transforming functional zones. The living area becomes particularly important, being the

most intensively used space with the greatest potential for architectural interventions. This paper is based on the assumption that micro-apartments that allow greater spatial flexibility, especially through the possibility of transformation and regeneration of elements in the living area, provide a higher level of housing quality and greater adaptability to contemporary lifestyles. The aim is to analyze how the transformation and modular organization of space can enhance the quality of micro-housing and contribute to its long-term sustainability.

Architecture as a Living Organism: Ideas of Metabolist Architecture in a Contemporary Context

In studying micro-housing, we refer to the principles of the Metabolist movement, which emerged in Japan during the 1960s and established the idea of architecture as a dynamic, living system. Metabolists viewed the city and buildings as organisms capable of growth, change, and regeneration according to societal changes and user needs. Their fundamental concept implied a clear division between permanent and temporary elements: while the infrastructural core was considered a stable base, housing units were designed as replaceable modules that could be added, removed, or renewed (Schalk, 2014). This movement emphasizes three key principles: modularity, flexibility, and efficient use of space. In the contemporary context, these principles become especially important for micro-apartment design, as the principles of modularity, flexibility, and regeneration can be theoretically and practically reinterpreted in relation to micro-housing, which is receiving increasing attention in the literature. Modularity allows spatial units to be organized in a way that supports growth and change over time, while flexibility implies the ability of space to change its structure and functional zones to meet different needs (Schmidt III, R., & Austin, S. 2016). Spatial flexibility does not only mean adjusting furniture layout but also deeper spatial transformations that enable the redefinition of functional zones. Habrel and Piasta (2020) distinguish between flexibility and adaptability, with flexibility referring to short-term changes and immediate adaptability of space to different functions, while adaptability denotes the long-term potential for transformation and development of architectural structures. This distinction is particularly important in considering micro-housing, where flexibility involves reorganizing the living area or using multifunctional furniture, while adaptability includes the ability of space to regenerate, transform, or expand over time according to changing user needs and the broader social context. Ismail and Alaeddine (2023) emphasize that transformable architecture, which integrates the possibility of spatial regeneration and modular replacement of elements, not only extends the lifespan of space but also allows it to adapt to different usage scenarios, directly improving the quality of life in micro-apartments. Vijayalaxmi and Paniker note that a lack of space for rest and enjoyment in an apartment can negatively impact psychological health. Life in micro-apartments, if not carefully designed, can cause stress and health problems, highlighting the importance of thoughtful spatial organization. Therefore, the development of interior and spatial configuration in micro-apartments is essential for increasing functionality and comfort. Efficient use of space, optimization, multifunctional elements, and flexible spatial concepts enable small housing units to be practical, comfortable, and psychologically pleasant, indicating that effective spatial use in micro-apartments becomes a key factor for the quality of life of their residents. The principles mentioned align with the thesis of this paper that the regeneration of functional zones, especially the living area, is crucial for creating intelligent and adaptable solutions within limited square footage, which is the main idea presented in the abstract.

Adaptability and Growth of Architectural Structures

Hassler, U. & Kohler, N., (2014) point out that developing resilience in the built environment must occur on multiple levels, from policy integrating the natural and built environment, through institutional frameworks for flexible collaboration, to the development of change and resilience indicators. This approach emphasizes the importance of adaptive management, flexible timeframes, and learning from historical processes. In the context of micro-housing, this perspective highlights the need for design solutions that allow resilience through long-term functionality and the ability to adapt to unforeseen circumstances. The value of housing space typically decreases over its lifetime, partly due to changing user needs and partly due to the reduced capabilities of the system compared to new alternatives. If space is designed to be easily modified and upgraded, adaptability can increase its lifetime value and long-term functionality. The concept of “architecture options” enables the quantitative design of space with a focus on adaptability, assessing the flexibility of components and layouts, as well as optimizing functionality throughout the entire lifecycle of space (Engel & Browning, 2008). In the context of micro-housing, it is necessary to create space capable of responding to the changing life needs of users, which must have multiple functionalities. Flexible housing is based on the principle of the “unfinished building,” where the basic framework leaves room for the resident’s personal interpretation in terms of the number of rooms, layout, and functional uses. Residents themselves decide how to organize the space, where to sleep and eat, and the house can adapt to changes in family composition and life circumstances. Such designed spaces show a balance between order and chaos, accommodating daily changes and user needs, while social and technical

aspects mutually support each other. The authors note that flexibility and adaptability can be achieved without significant additional costs and without demonstrating formal or technological “gymnastics,” making flexible housing a means of social empowerment for residents (Till & Schneider, 2005). This approach allows micro-apartments to be not only functional but also socially engaged, creating space that reflects the real-life needs of residents. Spatial flexibility also supports adaptive regeneration of functional zones, achieving a balance between permanent and variable elements in line with contemporary housing requirements.

Compact Housing: Compression and Release of Space

The process of compact housing is characterized by simultaneous compression and release of space, where private areas in micro-apartments are minimized to optimize their use, while space is released through deliberate formation and expansion of shared zones. These shared areas enable social interaction, flexible use, and compensation for limited private space, achieving a balance between individual and collective resident needs under compact housing conditions. This is particularly highlighted in research conducted in five European Union countries (Germany, Hungary, Latvia, Spain, and Sweden). The authors note that space compression usually occurs through voluntary or structurally conditioned reduction of apartment size, moving into smaller apartments or micro-units. While many respondents see this process as a limitation of privacy and comfort, the study shows that it can bring practical and ecological benefits, such as reduced living costs and lower energy consumption. On the other hand, compression does not have to mean a loss of housing quality if accompanied by space release through shared facilities and urban infrastructure. Well-organized communal infrastructure, as seen in Vienna and Barcelona, highlights the importance of public baths, libraries, green areas, and co-housing models, compensating for the lack of private space and creating conditions for a richer social life. In this way, compact housing is not just about reducing individual space but also about opening opportunities for new forms of collective life and sustainable urban development (Lehner et al., 2024). In contemporary urban contexts, the concept of “small does not mean less” becomes key to understanding the potential of compact housing and communal living. Communal living, from co-housing projects to eco-villages and land sharing, allows residents access to more amenities and encourages social interaction while reducing the ecological footprint of households. Such models, which Nelson (2008) calls eco-collaborative housing, show how shared spaces and activities can respond to housing crisis, sustainability, and social fragmentation challenges. In research on this topic, nearly all participants expressed satisfaction with less time spent on maintaining, furnishing, and cleaning their living space. They reported positive effects on mental health and social life, as they had more time for rest, personal care, and active mobility. Relaxing outdoor activities, learning new skills, and spending more time with friends and family were mentioned. Reduced stress from household chores led to a sense of improved quality of life (Lehner et al., 2022).

Regeneration and Adaptability

Contemporary challenges in micro-housing require approaches that enable continuous regeneration and adaptation of space according to the changing needs of users. Limited housing areas and growing functional demands necessitate flexible architectural solutions, adaptable internal structures, and multifunctional furniture elements.Based on the analysis of user needs, two key strategies for variable space planning are proposed: the space-overlapping strategy, which allows the same space to be used for different functions at different times, and the space-transfer strategy, which involves redistribution or reorganization of space to meet changing user needs. In addition, design strategies for the internal environment regarding sound, light, and heat are proposed, maximizing the use of natural conditions and improving the quality of the living experience. These strategies are particularly effective in small housing units, where space optimization has the greatest impact on functionality and comfort (Wang, 2024). Technological flexibility allows simple reorganization of the home using innovative building elements that replace traditionally fixed parts of the building, such as partitions, claddings, and installations, so that spaces can be changed, updated, or replaced according to user needs (Cellucci & Di Sivo, 2014). This approach enables manipulation of interior spaces without compromising structural elements, allowing the total area of micro-apartments to be adjusted according to changing resident requirements. This strategy represents a continuous dynamic between architectural space and daily user needs, which is especially important in urban environments with limited housing areas. Flexibility and multifunctionality of furniture are key principles in micro-apartment design, as they allow efficient use of limited space and adaptation to changing resident needs. Research in student dormitories in Turkey showed that flexible interior design contributes to better organization and flow of space, while the use of foldable and multifunctional furniture units allows transformation according to user needs. Additionally, furniture design integrates aesthetic and functional values, and human ergonomics and proportions are considered in space planning (Alhilo & Hussein, 2022).

Design Strategies for Micro-Housing

Effective design requires a comprehensive approach that combines spatial, functional, and visual interventions, optimizing space while preserving user comfort and privacy. Proper zoning, thoughtful furniture placement, and visual decluttering contribute to reducing the sense of crowding, while flexible and adaptable solutions allow the living space to continuously respond to changing functional requirements of residents. In micro-apartments, the use of transformable and reconfigurable furniture shows significant potential for space optimization and increased functionality of small interiors. Movable walls and foldable modules allow temporary storage of functions used occasionally, such as sleeping, kitchen activities, or personal spaces, enabling multiple uses of the same space and improving the sense of spaciousness. Additionally, modular and transformable furniture developed for small urban apartments can be adapted for spacecraft, demonstrating the universality of principles of interior space optimization and design flexibility (Simon & Toups, 2014). Research shows that carefully designed interior configurations can significantly reduce the perceived sense of crowding in micro-apartments. Key factors contributing to lower perceived density are spaciousness, spatial flow, and openness to external views. Optimal solutions include high ceilings, mezzanines above bathrooms to efficiently use height, and large windows oriented opposite the entrance, allowing long visual axes toward the outside and sky. Such spatial concepts simultaneously ensure privacy and a sense of control while visually decluttering the interior, directly contributing to the quality of life in micro-units (Fisher-Gewirtzman, 2017). The organization of minimal residential space must be adapted to the specific building and aligned with user needs. Research shows that in extremely small micro-apartments, the most effective solutions are achieved through functional and spatial strategies, while decorative elements such as color, materials, or furniture play a secondary role, complementing existing solutions and contributing to residents' well-being but cannot compensate for poor spatial organization. The paper notes that a key lesson for architects and interior designers is that micro-unit quality can only be ensured through comprehensive analysis of external conditions and specific user needs, opening space for bold, even non-standard, functional spatial organization (Gronostajska & Szczegielniak, 2021).

Methodology

The methodological framework uses a case study approach, with three carefully selected examples: one historical, the smallest housing unit within Habitat 67 (Moshe Safdie, Montreal, 1967), one contemporary international, Carmel Place in New York (nARCHITECTS, 2016), and one current local, a micro-apartment on Tomaša Ježa Street (authors: Dejan Todorović, Milena Kordić; 46th Architecture Salon, Belgrade, 2024). The main selection criteria were size and flexibility of spatial organization as potential for regeneration of internal functional zones. The smallest unit in Habitat 67 was chosen because it clearly demonstrates the basic modular principle connecting this project with Metabolist ideas and the concept of capsule architecture. Analyzing this module allows for a more precise understanding of how prefabrication, compactness, and clear spatial structure enable flexibility and potential transformation of functional zones. Carmel Place was selected as a contemporary example that reinterprets similar principles in a different urban, technological, and social context. Its housing units show how modularity and multifunctional elements can be used to achieve high spatial efficiency while adapting to the living needs of residents. The micro-apartment on Tomaša Ježa Street represents a local example of contemporary architectural practice. It was selected because it explores modern possibilities for organizing small spaces using flexible furniture solutions and variable functional zones, making it relevant for analyzing the potential for spatial regeneration in today's context. Each selected example will be analyzed according to the following criteria, consistent with the paper's focus on the quality of micro-apartments through possibilities for transformation and regeneration of functional zones (living, sleeping, and service), with particular emphasis on the living area as the most intensively used space with the greatest potential for change:

1. **Spatial Flexibility and Multifunctionality of the Living Area**
   The capacity of the space to integrate multiple functions (rest, work, dining, social activities) without permanent interventions is examined. The degree of openness, proportion, and shape of the space, including visual or movable boundaries that allow functional changes during the day. Connection to quality of life: assessment of how flexibility contributes to the sense of spaciousness, comfort, and adaptability to daily activities.
2. **Structure and Construction System**
   Examines the type of structural system (skeletal, massive, mixed) in relation to flexibility. The position of structural elements in relation to the freedom of interior space design, the number and layout of entrances, and the availability of technical cores are analyzed. Special attention is given to the ability of the structure to support long-term spatial interventions without major construction work.
3. **Regeneration and Adaptability**
   Assessment is based on the potential for the living area to be easily transformed through changes in

furniture layout, partitions, or lighting. Focus is on the presence of modular and neutral elements enabling quick adaptation to different life scenarios (working from home, hosting guests, changes in family structure). The flexibility of service areas in supporting this adaptation is also analyzed.

4. **Design Strategies for Space Organization**
   Spatial and design decisions enabling flexible interpretation of the living area are considered – shape of space, position of openings and natural lighting, integration of built-in elements, visual opening to other zones. How spatial geometry and materiality encourage multiple usage modes and responsive adaptation is analyzed.
5. **Long-Term Sustainability and Adaptability**
   Evaluates how well the analyzed housing unit can respond to changing life stages of users over time, from independent living to family life, remote work, or aging. Material and system durability, as well as compatibility with potential changes, are considered. The balance between spatial resilience and technical feasibility of future transformations is assessed.
6. **Technical and Spatial Strategies of Flexibility**
   Specific elements and systems enabling physical space transformation are analyzed in detail: mobile walls, sliding or rotating partitions, multifunctional furniture, foldable elements, lighting systems with variable functions. The analysis assesses how these strategies contribute to daily usability and the extent to which they are accessible for user intervention without professional assistance.

Criterion	**Description of Criterion**	**Habitat 67 (Moshe Safdie, 1967)**	**Carmel Place, NY (nARCHITECTS, 2016)**	**Apartment on Tomaša Ježa Street, Belgrade (2024)**
1. Spatial flexibility and multifunctionality of the living area	Capacity of the living area to integrate multiple functions (rest, work, dining) without permanent interventions; openness and proportion of the space; visual/movable boundaries	Modular blocks allow different configurations; there is a division into zones, each zone can integrate multiple functions; open space without movable boundaries	Multifunctional furniture enables the living area to be easily transformed as needed for work and relaxation, and then into a nighttime zone	Significant openness. Flexible furniture and movable partitions allow for different functions; the living area serves as the central space
2. Structure and Construction System	Type of construction and its impact on flexibility; position of structural elements; technical core	Prefabricated modular construction; prefabrication allows for module replacement, but not major structural interventions within the module itself	Combination of skeletal and modular construction; allows minimal adaptation of interior units in accordance with spatial and structural possibilities	Combination of skeletal and traditional structural system, with integrated flexible partitions and modular elements

3. Regeneration and adaptability	Potential of the space for transformation; presence of modular/neutral elements; adaptability to changes in life stages	Open space without fixed partitions allows the apartment to be adapted to different functions throughout the day. The living area cannot easily support simultaneous activities	Transformable furniture elements; easily adaptable living space. Limited area hinders long-term transformation of life scenarios.	Modular furniture and flexible layout; the living area is characterized by high flexibility and the possibility of overlapping zones.
4. Design strategies for shaping space	Space layout, position of openings, integration of built-in elements; visual openness	Open spaces connect the living and sleeping areas; large openings create a sense of connection with the surroundings	Use of natural light; optimization of vertical space; integrated elements	Visually connected space; large openings and natural lighting; slight floor level changes subtly emphasize transitions between zones; flexible partition elements allow multiple scenarios
5. Long-term sustainability and adaptability	Response to changes in life stages; material durability; compatibility with adaptations	There is the possibility of replacing and connecting modules. Flexibility does not include structural options for expansion within the module itself; the only option is connecting multiple units	Materials and elements designed for long-term use and changing needs. Flexibility refers to micro-transformations, without the possibility of major spatial-functional changes	Combination of durable and flexible elements supports different life stages
6. Technical and spatial strategies for flexibility	Mobile walls, sliding/rotating partitions, multifunctional/foldable furniture, adjustable lighting systems; user accessibility	Space adaptation is limited to simple interventions (furniture layout, lighting), rather than structural or functional changes	Multifunctional elements require regular repositioning, which may reduce comfort in daily use. The lighting system and ceiling height allow for ambient adjustments	Movable partitions and flexible furniture; easy user adaptation

Habitat 67 (Moshe Safdie, Montreal, 1967) demonstrates how prefabrication and a clear spatial structure enable the transformability of residential units. It shows a high value of spatial flexibility relative to the period in which it was designed. The open layout of the living area, the possibility of multifunctional use, and direct connection with the exterior contributed to a sense of comfort and quality of life. The prefabricated system allowed for a freer arrangement of interior spaces, but at the same time, the module dimensions and rigidity of the concrete blocks limited deeper adaptations. Although the space has good potential for regeneration through furniture and visual partitions, it lacks a contemporary level of technical solutions that would enable easier transformation. In the long term, the apartment is characterized by durability and resilience, but it is less adaptable to changes in family structure compared to contemporary examples.

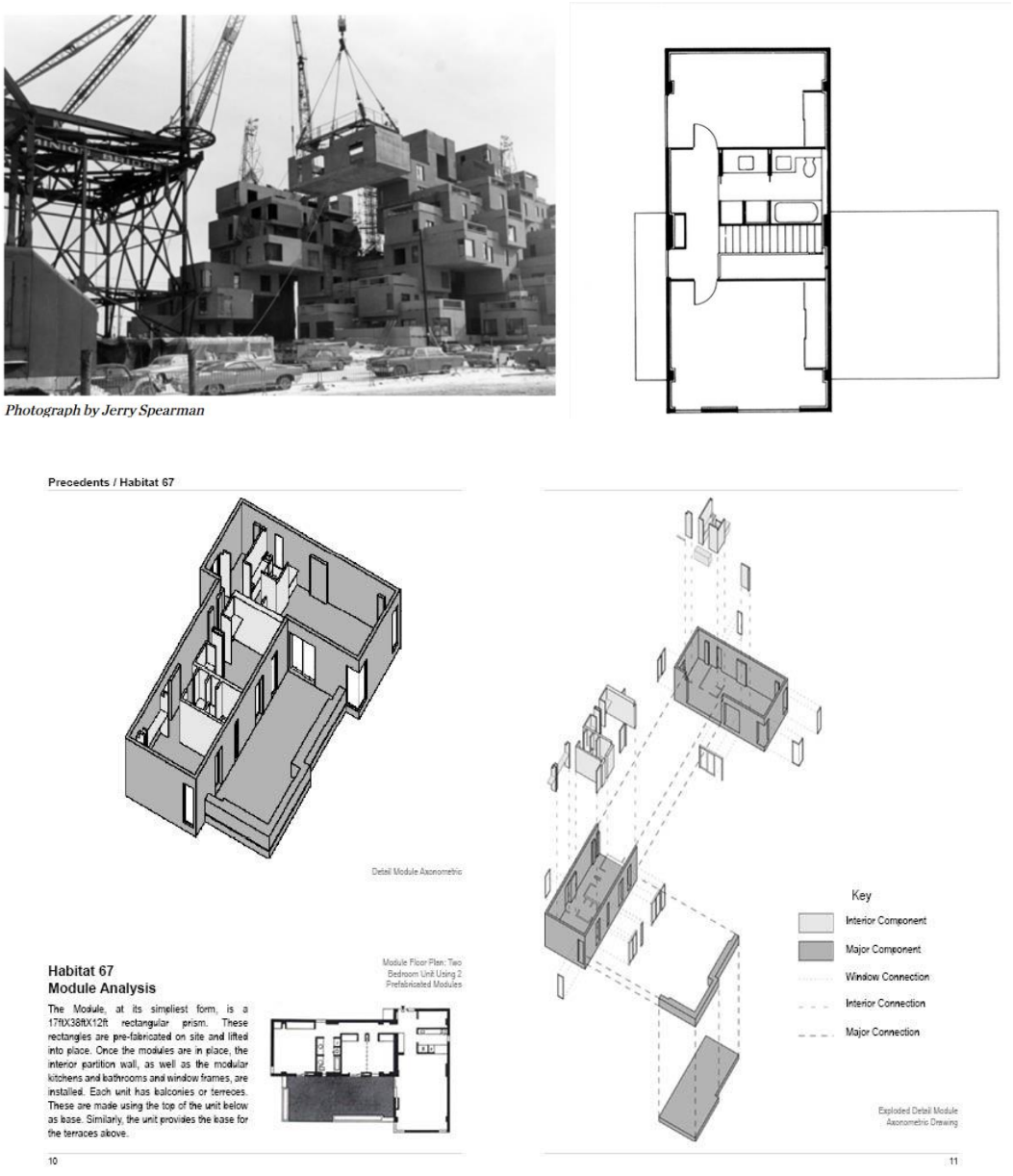

Figure 1. Habitat 67 – (photograph: Jerry Spearman; drawings source: ArchDaily, 2023, https://www.archdaily.com/404803/ad-classics-habitat-67-moshe-safdie](https://www.archdaily.com/404803/ad-classics-habitat-67-moshe-safdie)

Carmel Place (nARCHITECTS, New York, 2016) A contemporary example of micro-housing reinterprets modularity through multifunctional furniture and optimization of interior space. Mobile and foldable elements, integrated multifunctional furniture, and clearly designed service zones enable the space, despite its extremely small area, to perform multiple functions throughout the day without compromising comfort. Design strategies focused on light, openness, and built-in elements contribute to a sense of greater space and long-term sustainability. However, such high flexibility also has drawbacks, as it relies on complex technical systems, while extreme compactness can limit the sense of privacy.

Figure 2. Carmel Place – exterior (photograph: nARCHITECTS; source: official author's website)

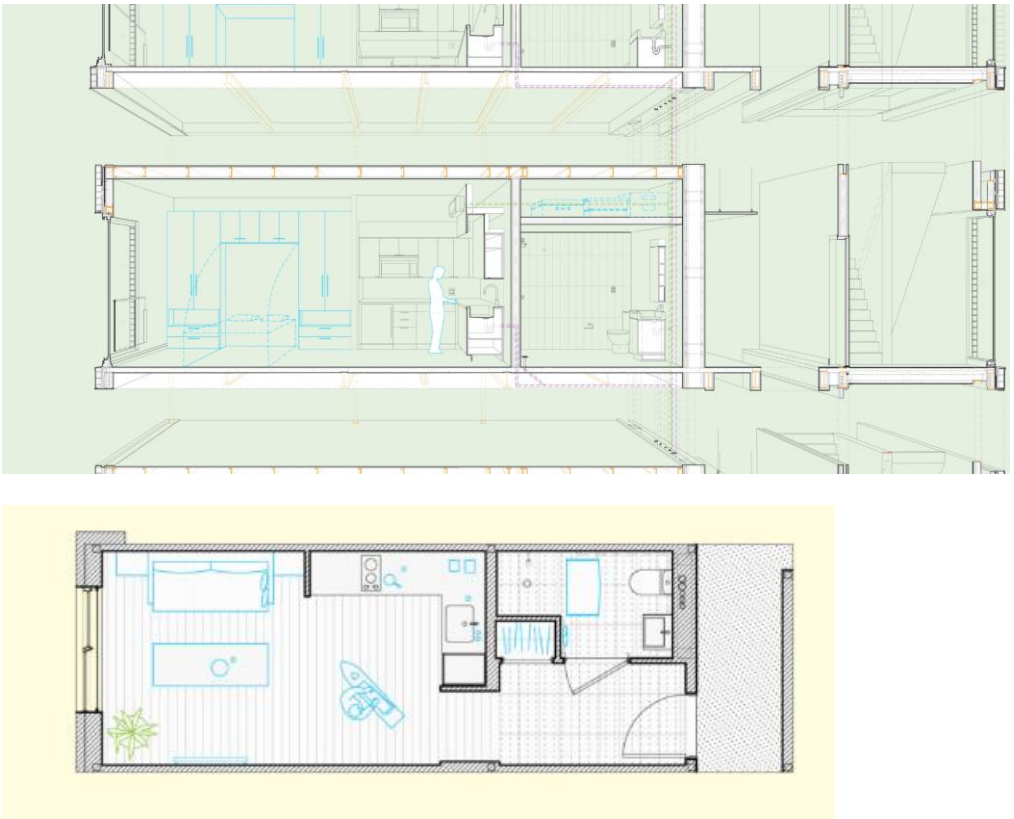

Figure 3. Carmel Place – plan and section (nARCHITECTS; source: official author's website)

Apartment on Tomaša Ježa Street (Dr. Milena Kordić and Dejan Todorović, Belgrade, 2024). The local example demonstrates contemporary solutions adapted to the context of the site. By using flexible furniture and variable functional zones, the living and service areas can be transformed according to user needs, achieving high spatial efficiency and quality of living within a minimal floor area. The high degree of openness in the living area and modular furniture enable multifunctional use of the space, sleeping, working, dining, and social activities, while easily overlapping functional zones. The construction combines a skeletal and traditional system, allowing the integration of flexible partitions and modular elements, while service areas remain compact and functional. Design strategies include visual openness, natural lighting, and floor level changes that emphasize transitions between functions, contributing to a sense of spaciousness and comfort. Long-term sustainability and adaptability are high.

Figure 4. Apartment on Tomaša Ježa Street – photo: Miloš Martinović; plan and axonometry: project authors Dr. Milena Kordić and Dejan Todorović (2024).

Comparison of Examples and Key Factors of Micro-Housing Quality

The apartments in Habitat 67, Carmel Place, and on Tomaša Ježa Street represent different approaches to micro-housing, adapted to their time, technology, and urban context. Habitat 67 pioneered the exploration of spatial flexibility through modular blocks and open living areas, enabling multifunctional use and connection with the exterior, but with limited long-term adaptability due to the rigidity of the structure and fixed modules. Carmel Place demonstrates a contemporary response to extremely small apartments, with maximum space optimization

through multifunctional and foldable furniture; high interior flexibility allows daily functional transformations, but the small area and reliance on furniture limit privacy and freedom of movement. The Tomaša Ježa Street apartment successfully combines the advantages of both previous examples: the spatial flexibility and modularity of Habitat 67, with contemporary technical and interior solutions similar to Carmel Place. Flexible furniture, movable partitions, floor level changes, and natural lighting enable multiple scenarios for using the living area, adaptation to different life stages, and maintaining comfort within a limited area. The analysis shows that the Tomaša Ježa Street apartment is an example of balanced micro-housing that integrates spatial flexibility, adaptability, and long-term sustainability, while also addressing contemporary user needs. These factors indicate that the quality of micro-housing depends not only on floor area but also on the space's ability to continuously adapt to changing user needs through a combination of modular design, flexible functional zones, and intelligent use of the living area.

Conclusion and main Findings

The comparative analysis of the three selected case studies, structured through six analytical criteria, enabled a qualitative evaluation of micro-apartment design. The results indicate that spatial flexibility and the capacity for regeneration within the living area have the strongest influence on users perception of comfort and on the longterm usability of the dwelling. The structural system defines the extent to which spatial transformation is technically possible, while design strategies, such as openness, access to natural light, and visual continuity, significantly enhance the sense of spaciousness despite limited floor area. Longterm sustainability and adaptability depend on achieving balance between durable core elements and flexible, user modifiable components. Moreover technical and spatial strategies including movable partitions, foldable furniture and modular systems, translate these conceptual principles into practical, everyday adaptability. Overall, the study confirms that micro apartments offering several interrelated layers of flexibility, structural, spatial, and functional, achieve the highest quality of living, as they are capable of evolving and adapting in parallel with the changing needs of their users over time.

The analysis of the three case studies shows that design strategies contributing most to flexibility and regeneration in micro apartments include modularity of residential units, multifunctionality and transformability of the living area, use of movable partitions and foldable furniture, as well as rational spatial organization that ensures visual continuity and optimization of functional zones. The initial hypothesis is confirmed: micro-apartments with greater capacity for transforming the living area provide a higher quality of life for residents, as they enable adaptation to various life scenarios, from work and recreation to social activities and family changes. These findings contribute to the contemporary discourse on sustainable housing, emphasizing the architects role in creating intelligent and adaptable solutions within limited floor areas. Flexibly and regeneratively designed spaces not only enhance functionality and comfort but also strengthen the longterm sustainability of urban living. In conclusion, the architects role in contemporary micro housing increasingly involves creating intelligent and adaptive spaces that evolve together with their users. Living spaces do not possess a permanent or final value rather, they are optimal at a given moment and transform in response to residents changing needs. Building development can therefore be understood as an adaptive process driven by the interaction between residents and the built environment, where architecture functions analogously to natural evolution, without predefined goals, yet oriented toward adaptability and sustainability (Bak, Rask & Risi, n.d.). This perspective highlights that architectural intervention is not static but dynamic, opening new avenues for designing micro apartments that enhance quality of life through flexibility and spatial regeneration.

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