TRACING SHADOWS & SHAPING FUTURES

EXPLORING THE LEGACY AND FUTURE OF SOVIET-ERA HOUSING IN RIGA

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ABSTRACT

Despite nearly three decades having passed since the collapse of the Soviet Union, Soviet-era housing remains a significant component of major cities' housing stocks. Often perceived as outdated and socially stigmatized, these housing estates surpass their intended lifespan, leading to difficulties in maintenance and renovation. In this study, the interplay of history, architecture, and well-being in the context of Soviet-Era housing in Riga is explored.

By examining the historical context and development of socialist housing in Baltic cities and assessing architectural principles from the socialist era, the impact of architectural design on inhabitants is evaluated. By analyzing existing research on construction methods, lifespan, and sustainability of Soviet-era housing, this study intends to assess the feasibility of various renovation strategies and their implications for future urban development. Additionally, the research will investigate the emotional resonance of Soviet-era architecture among residents

The study employs a combination of methodologies, including historical literature review, case studies of specific housing complexes, and analysis of emotional responses to architectural features, to inform decision-making regarding potential interventions for Soviet-era housing estates in Riga. The study hypothesizes that architectural characteristics significantly impact residents' well-being, and strategic interventions such as revitalization or repurposing can enhance both physical and psychological aspects of these living spaces. Through comprehensive understanding and informed recommendations, this research aims to contribute to sustainable urban development and housing policy in Riga and beyond.

Keywords:
Riga, Soviet-era housing, architectural heritage, cultural memory, adaptive reuse

CONTENTS

INTRODUCTION

In the post-Soviet landscape of Riga, Latvia, the housing from the Soviet Era still shapes the physical and social fabric of contemporary urban environments. Despite almost three decades passing since the collapse of the Soviet Union, Soviet-era housing still constitutes a considerable portion of major cities' housing stocks. Nowadays, socialist housing estates are often perceived as outdated and socially stigmatized, surpassing their initially envisioned lifespan of approximately 30 years (Ahas, et al. 2019). Moreover, residents often struggle with difficulties in maintaining and renovating these structures.

These structures can be found in almost any region in Riga, and, although I have never lived in one of them, seeing the monotonic, grey housing blocks has always caused unpleasant feelings for me. The outdated lifespan together with the unpleasing aesthetics of post-socialist architecture calls for change. In this research, I aim to unravel the interplay of history, architecture, and well-being in the context of Soviet-Era housing, and determine the possible solutions to fight this problem.

To do this, I will examine the historical context and development of socialist housing in the Baltic cities because Soviet-Era has had a similar impact on all of them compared to Riga. Understanding the genesis of the housing structures is crucial in determining their influence on the built environment and the communities that inhabit them today. By tracing the evolution of architectural principles from the socialist era, I want to establish a foundation for assessing the relationship between architectural design and its impact on inhabitants.

To understand the possible future solutions for these structures, I will examine their construction lifespan and sustainability by delving into the existing research and renovation strategies. The analysis of the construction method and the buildings' lifespan will determine the flexibility, whereas the assessment of sustainability will highlight the average necessary renovation for a building.

Furthermore, I will investigate the correlation between architectural features of Soviet-era housing and their impact on individuals' memories and well-being, identifying areas for enhancement. Emotional insights regarding this architectural style will be sourced from Latvian literature and media outlets, where residents express their perspectives on living in socialist housing estates. This analysis will inform decisions regarding necessary architectural modifications or improvements. Additionally, I will provide case studies showcasing potential solutions.

The existing research on Soviet-era housing architecture is broad. Researchers have explored the architectural and social consequences of socialist-era housing in countries such as the Czech Republic (Babic 2024), Poland (Zadworny 2019), and Kazakhstan (Sarzhanov and Schurch 2023). However, Baltic cities, especially Riga, have been studied significantly less. In 2014 architectural office NRJA from Latvia drew attention to this matter at the Venice Biennale with the project Unwritten (NRJA 2014), which highlights issues of Latvian post-war modernist architecture and the inexistent research on it. As the topicality of this problem increased, the book Housing Estates in the Baltic Countries (The Urban Book Series 2019) was written to provide a current assessment of the state of large housing

developments in Estonia, Latvia, and Lithuania, and anticipated future directions.

Some areas in Riga witness ongoing renovation projects to improve living conditions, energy efficiency, and aesthetics. However, in other places, challenges persist due to economic constraints or a lack of comprehensive urban planning strategies. Overall, the main goal of these strategies is to make the buildings more energy efficient without considering the impact of architecture on residents' well-being, which might result in long-term problems. The book The Tenants (Zupagrafika 2022) features narratives from residents of mass-housing complexes in Eastern Europe, offering insights into their experiences living within prefabricated panel buildings.

I hypothesize that the architectural characteristics of Soviet-era housing in Riga significantly impact residents' mental well-being, and by strategically employing revitalization, repurposing, or demolition approaches, it is possible to enhance both the physical and psychological aspects of these living spaces.

How is Soviet-era housing architecture related to human well-being and national memory? Which aspects need special attention regarding renovation or other future changes?

To inform decision-making regarding Soviet-era housing estates in Riga, I will combine different types of methodologies. An examination of historical literature provides a contextual understanding of the origin and evolution of these structures. Primary sources include materials such as photographs and plans that help to understand the original design intentions. Moreover, the most common building types in post-Soviet Riga undergo case studies to assess their functionality and sustainability. To understand how Latvians perceive this type of housing architecture and what impact it might have, some literary works that mention the architecture and its emotional value are explored. This approach aims not only to discern the architectural implications on residents' well-being but also to offer informed recommendations for potential interventions—whether through revitalization, repurposing, or demolition—aligned with the broader objectives of urban development and housing policy in Riga.

1. FROM SOVIET-ERA HOUSING TO CONTEMPORARY CHALLENGES

After World War II, the destruction caused by the war left many cities in dire need of housing. In response, governments embarked on large-scale housing programs to accommodate returning soldiers and growing populations. Housing estates were seen as a quick and efficient way to provide mass housing. The new housing estates began to significantly influence the physical layout of cities, particularly in terms of spatial organization and available housing, leaving lasting impacts that endure today.

Since 1955, the entire Soviet architecture was affected by Nikita Khrushchev's construction reform, which focused on industrialization and standardized housing types and involved the creation of residential districts called microrayons (micro-districts). For many years these regulations controlled residential design. Techniques such as prefabrication and standardized designs allowed for the quick assembly of housing units, further facilitating the proliferation of housing estates.

The concept of 'form follows function,' commonly associated with Western design principles, also became the guiding principle for the architectural development of cities in the Soviet Union. The use of ornamentation was no longer deemed acceptable from an aesthetic or ethical standpoint. Due to the limited technological capabilities during the early stages of industrialization, standardized residential buildings with straightforward designs were frequently employed in the initial phases of industrial housing production (Engel 2022). Despite the common guidelines, Baltic countries exhibited a noticeable Western influence in their town planning, particularly from Nordic countries, absorbed during the Soviet era.

1.1. BALTIC SOCMODERNISM

Architects in Latvia, Estonia, and Lithuania drew inspiration from Finnish housing estates. Finnish housing estates, in turn, were influenced by the Swedish model, which itself drew from British and American inter-war urban planning concepts such as the Garden City and New Towns. As a result, the housing estates in the Baltics inherited design qualities not only from the ongoing construction reform in the East but also from Nordic and Western countries (Figure 1.1.). The convergence of international modernism and Soviet socialism in the Baltic countries during this period resulted in a distinct form of Modernism known as "Socmodernism," a term proposed by David Crowley (Drėmaitė 2019). Because of this influence, Soviet housing in the Baltics differed from the rest of Eastern Europe and was even considered exceptional throughout the entire USSR.

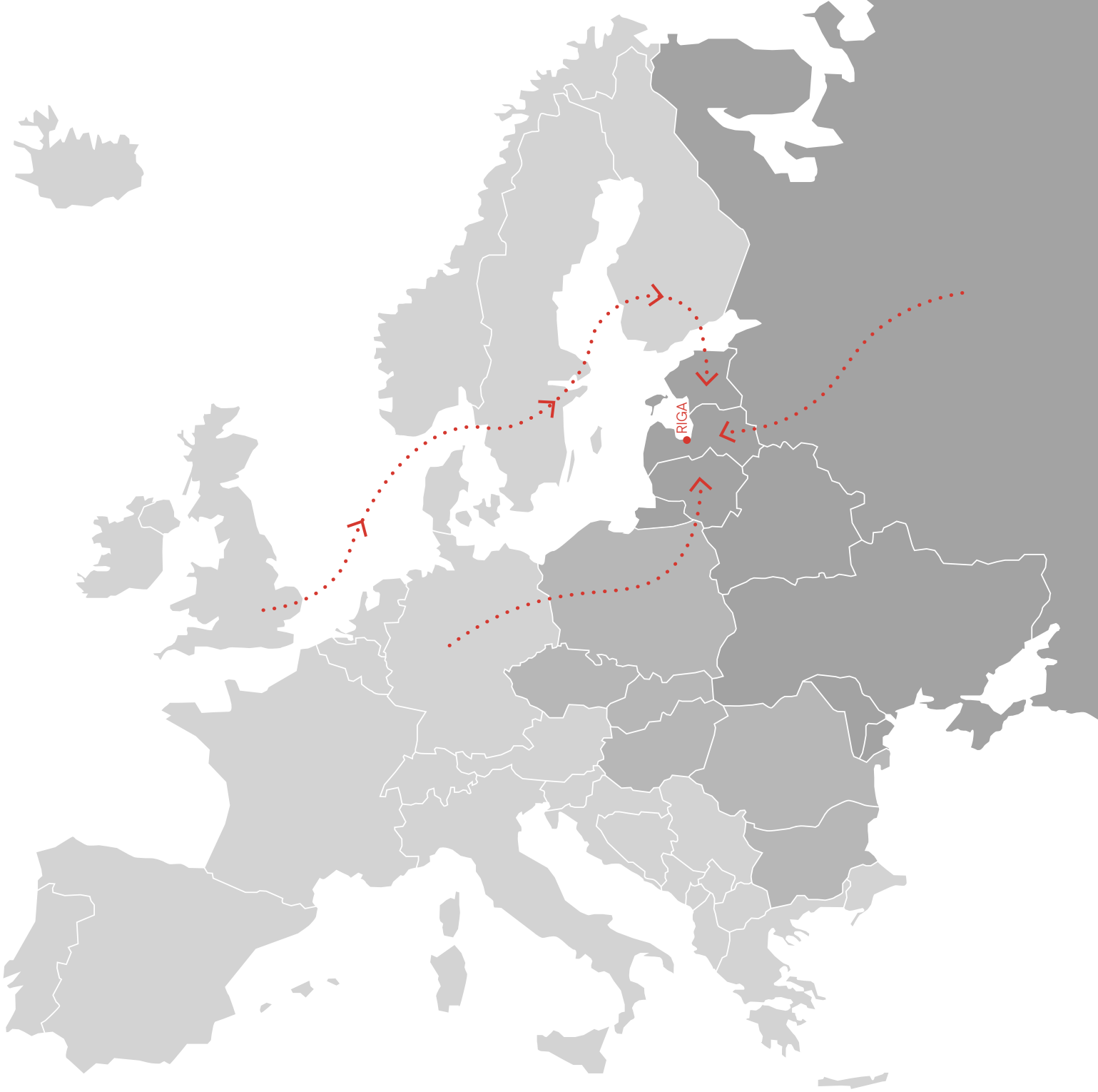

Fig. 1.1. The influence on Soviet-era architecture in the Baltics.

In the primary cases of Soviet housing in the Baltic states, there was little architectural experimentation to the new directives on Prefabricated housing construction. The first large-scale micro-district in Riga was “Āgenskalna Priedes” composed of five-story brick houses. The construction started in 1959 and was completed in 1961 (architect Nikolajs Rendelis). Although the architecture was monotonous and followed the determined guidelines, the housing blocks were arranged asymmetrically to reflect the surrounding nature (Figure 1.2.). The arrangement of the Āgenskalna Priedes buildings is considered the first free-plan residential district not only in Latvia but in the entire Soviet Union.

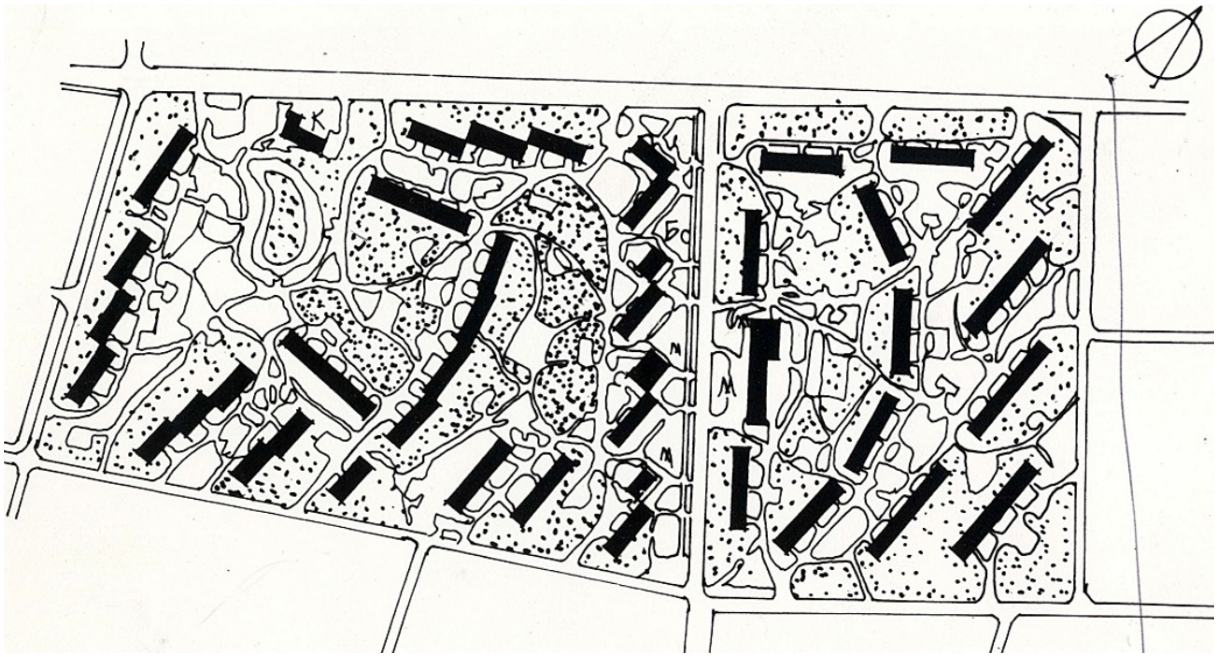

Fig. 1.2. Site plan of micro-district Āgenskalna Priedes in Riga.

The original name of the district Āgenskalna Priedes was preserved, which includes the combination of the words “hill” and “pines”, but ironically the natural formations of the area - both pines and dunes - were destroyed because of the micro-district construction (Krastiņš 2013). This was not the only case in the Baltics – the Tapiola (forest) district in Finland was often cited as a source of inspiration in similar cases like Mustamäe (black hill) in Tallinn and Lazdynai (hazelnut trees) in Vilnius which again highlights the Nordic influence.

1.2. THE RISE OF MICRORAYON HOUSING DISTRICTS IN RIGA

In the following years, urbanization called for the development of new micro-districts. Microrayon became the new standard for a large housing estate. Around 200,000 apartments were constructed in Riga between 1958 and 1990 (Figure 1.3.). Given Riga’s moderate size and the spread of micro-districts throughout its downtown, experiencing the atmospheres of these neighborhoods is easily attainable, whether or not one seeks them out.

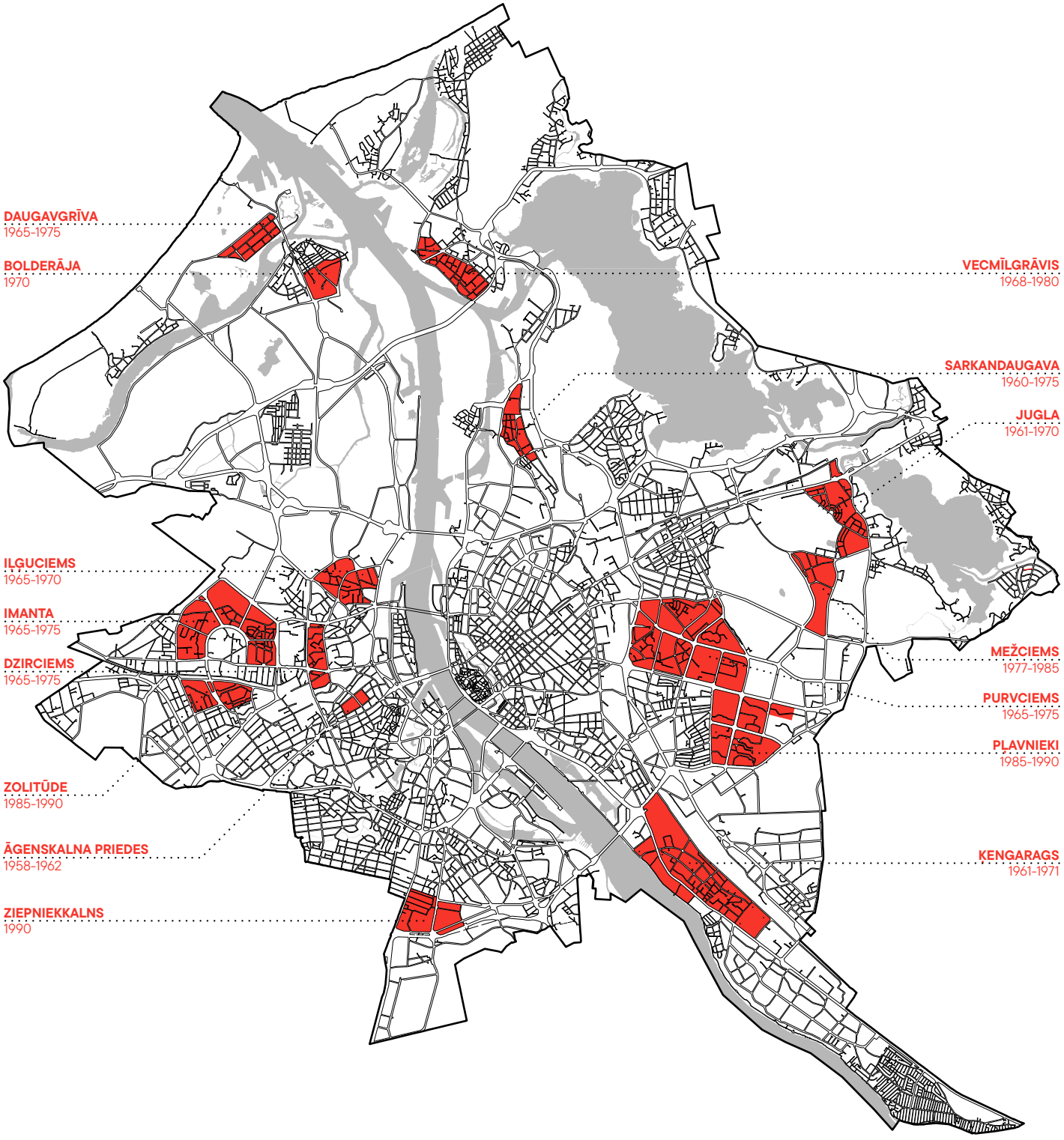

Fig. 1. 3. Location of micro-districts in Riga.

Although the districts might look similar to each other at first glance, they bear different characteristics. The formation of large housing districts in Riga can be divided into 3 stages. The first housing types were produced right after World War II and were characterized by flat walls and regularly arranged windows. The facades were clad with white silicate bricks. The architecture of these buildings followed strict guidelines and typologies that were established in Moscow and implemented across the entire USSR. Architects did not interfere much in this process because the designs had to be approved in Moscow and they were being constructed in a mass way. The apartments in these buildings were designed very small and narrow and were referred to as “economic ones”.

The second residential building phase began in the 1960s and can be characterized as modernization because the projects were adapted to specific cases and not standardized in a mass way anymore. These buildings were usually a little bit higher and had wider entrance halls and kitchens, the toilet was separated from the bathroom and some balconies were covered. Because of industrialization, larger building blocks could be produced compared to the previous period.

In the 1970s, third-generation buildings were designed. The apartments were even larger with more developed layouts. Some apartments even had built-in furniture. Buildings higher than 5 floors had an elevator. One of the first building types of this generation was called Series 103, where the functional design was so well thought over that even some contemporary residential building plans are based on the Series 103 layout (NRJA 2014). The rooms of the third-generation apartments were isolated, and even small apartments faced two directions allowing for natural ventilation (Figure 1.4.). The mass-housing had evolved to the point of providing conventional and functional living space.

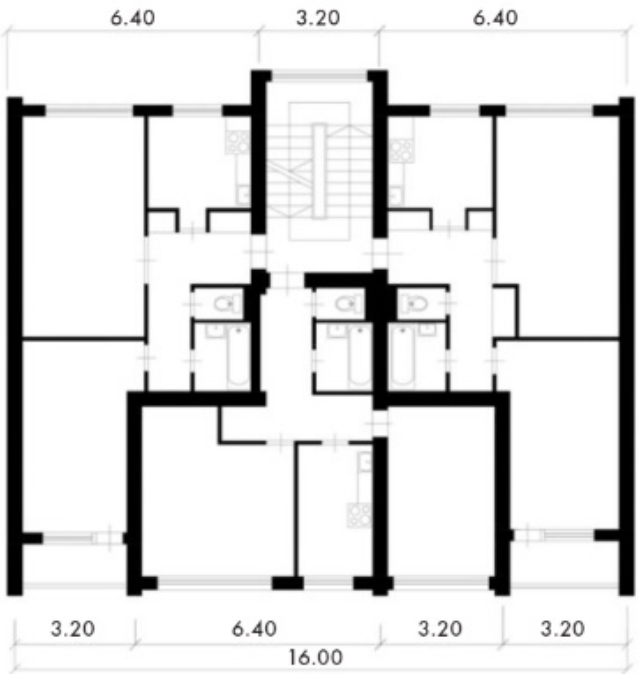

Fig. 1. 4. Series 103 typical plan. 1st floor.

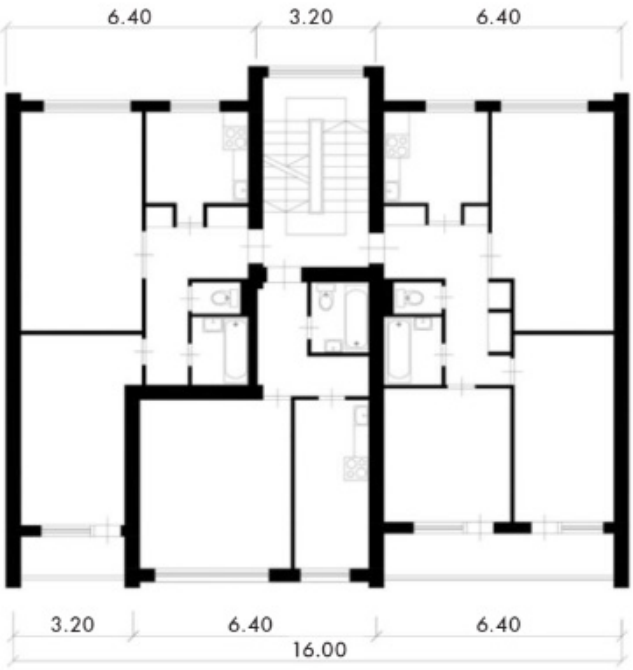

Fig. 1. 4. Series 103 typical plan. 2nd floor.

In most of the micro-district development cases, architects concentrated on designing entire building complexes rather than individual structures, therefore, a building became only an element in a larger complex and lacked its architectural value. A few decades after the construction of most micro-districts, they were criticized by many architects. They argued that the large structures were not made for human scale, the courtyards were deemed excessively large and not fully utilized, and the architecture was characterized as inadequate and inexpressive (Treija and Bratuškins 2019). Combining the experts' opinion with the fact that the apartments are mostly functional and conventional, we can assume that the root of the problem is the exterior architecture and the arrangement of buildings in the district.

1.3. SOVIET-ERA HOUSING AND CONTEMPORARY SOCIETY

In modernist housing estates characterized by large apartment buildings, individuals had the option to isolate themselves, reflecting a notable aspect of Soviet social life. Despite minimal socio-spatial differences, daily practices highlighted efforts to underscore the social standing of one's family, neighbors, or neighborhood. People were critical of their neighbors' children based on perceived social class distinctions, including behavior in the neighborhood and school performance (Janušauskaitė 2019). The closed nature of Soviet society was reinforced by the city's structure, particularly in the residential planning of extensive housing estates. In contrast with the restrictive atmosphere of Soviet times, where dissenting voices were often suppressed, there is greater respect for freedom of expression in contemporary society making it more open and inclusive, however, the lingering presence of soc-modernist architecture continues to shape people's perceptions of the world.

If we take a step back and assume that Soviet-era housing architecture has an architectural value and that the original buildings should be respected, it would still be difficult to achieve an integrating neighborhood because of the self-contained courtyards. Architects evaluated the inner courtyards of the housing blocks as hypertrophic (Treija and Bratuškins 2019). Typically, apartments are privately owned, and the management of apartment buildings falls under the purview of associations. However, the courtyards situated between these buildings are either owned by local governments or the central state, or they remain on unreformed state land. Consequently, associations lack direct rights, obligations, or incentives to maintain these areas. As a result, there is often a deficiency in landscaping, children's playgrounds, and recreational spaces (Figure 1.5.). In my opinion, by arranging the courtyards and making them pleasant for inhabitants, we could encourage society to be more inclusive and engaging, despite the massive housing estates surrounding the now abandoned courtyards.

Fig. 1. 5. Public courtyard with sport equipment in Riga, Latvia.

In reality, redesigning the courtyards alone would not solve the underlying issue as the buildings have extended their expected lifespan (Ahas, et al. 2019). With the need for renovation in nearly all housing units and apartment buildings, one potential solution involves demolishing mid-twentieth-century housing estates and constructing new housing that aligns with current lifestyles and building standards. However, due to the large number of people residing in these estates and the fact that the apartments are privately owned, the cost of demolition and replacement housing is three to four times higher than comprehensive renovation. As a result, the prospect of demolishing housing on such a massive scale is practically unattainable (Kuusk and Kurnitski 2019). The dilemma persists: whether to renovate or downsize these structures. Drawing definitive conclusions requires a comprehensive understanding of the construction principles, sustainability levels, and the architecture's impact on residents' well-being.

2. STRATEGIES FOR SOVIET-ERA HOUSING IN RIGA

Maintaining the remaining beneficial features of socialist housing estates could significantly enhance sustainable urban living, impacting not just East Central European nations but also influencing Europe as a whole (Tosics 2004). Therefore, it is important to consider the reuse of Soviet-era housing and its advantages. This approach not only acknowledges the historical significance of these structures but also recognizes their potential to contribute to contemporary urban sustainability efforts.

2.1. STATE OF TYPICAL HOUSING ARCHITECTURE IN RIGA

Renovation efforts have been underway in numerous Western European cities for several decades now, with many notable instances of modernist housing regeneration providing valuable lessons. Understanding and drawing from these examples is crucial (Muliuolytė 2013). However, Soviet-era housing differs from Western post-war architecture. As highlighted in the 1st chapter, housing types are also not the same in different Eastern European cities. To understand the construction and sustainability level of buildings in Riga, I will examine the housing block types that are the most popular in the Baltics: Khrushchev-era apartments ("Khrushchevka") and Brezhnev-era apartments ("Brezhnevka").

A Khrushchevka is a three to five story apartment developed during the early 1960s (Figure 2.1.). The building type is made of concrete panels or bricks. The Khrushchevka apartments were developed as a part of a micro-district, which includes not only green areas and playgrounds but also shops, schools, etc. Every apartment was designed with a balcony – either open or covered. The apartments are rather small, with thin walls and low ceilings. The structure of this building type was based on longitudinal load-bearing walls including the middle wall. While the layout of the apartment can be changed easily, the absence of an elevator is a big problem in this type of housing regarding accessibility.

Fig. 2. 1. Khrushchev-era buildings in a micro-district in "Āgenskalna Priedes", Riga.

A Brezhnevka was developed in the Soviet Union from 1960-1980, originally intended as an update to the Khrushchevka. These buildings typically range from 5 to 17 stories tall and are integrated into vast architectural complexes, sometimes featuring experimental projects. They offer larger rooms, improved layouts, and utilize more durable materials. Unlike the cramped conditions of Khrushchevka, a three or four-room Brezhnev-era apartment can easily accommodate an entire family comfortably. Additionally, they are equipped with elevators (Shannon 2022). Apart from Khrushchev-era buildings, this housing type mostly incorporated cross walls as the main load-bearing element.

Fig. 2. 2. Brezhnev-era apartment buildings in Pļavnieki, Riga.

These buildings typically consist of external wall panels composed of two layers of reinforced concrete, with an inner layer ranging from 50 to 125 mm and an outer core ranging from 30 to 70 mm. These layers encase low-quality thermal insulation measuring 100 to 150 mm in thickness. The main issues encountered in typical apartment buildings in Riga include increased energy consumption and inadequate indoor climate conditions. While studies indicate satisfactory conditions regarding load-bearing structures, certain issues persist, particularly concerning the deterioration of facades and balconies (Kuusk and Kurnitski 2019). It is recommended to enhance external thermal insulation and improve ventilation to address critical thermal bridges and prevent degradation mechanisms.

2.2. EXISTING RENOVATION STRATEGIES IN THE BALTICS

One of the most recent and in-depth refurbishment strategies regarding the renovation of Soviet-era housing districts in the Baltics was implemented in Tartu, Estonia. The Smart City concept (European Commission 2017) has been applied to Khrushchev-era apartment buildings which will be renovated to achieve sustainability standards and become modern dwellings, i.e. “Smartovkas” (Davies 2019). The renovation includes outer insulation, window

and door replacement, and the installation of a new ventilation system. The Smartovkas are also equipped with solar panels and low-temperature cooling systems to cut down the blocks' energy waste. Moreover, within the SmartEnCity initiative, strategies for renovating Khrushchev-era buildings embrace an integrated and sustainable approach to urban regeneration (Figure 2.3.). This approach aims to improve energy efficiency in apartment buildings while simultaneously developing comprehensive infrastructure solutions that target both building energy performance and sustainable mobility.

Fig. 2. 3. Khrushchevka renovation concept in the SmartEnCity project.

As the SmartEnCity project in Tartu initiated the transformation of Khrushchyovka apartments into smart, zero-energy dwellings, it was essential to recognize the neighborhood's significance and commend the housing associations involved in this groundbreaking pilot project. By integrating art onto and around the renovated smartovkas (Figure 2.4.), the neighborhood has been transformed into a captivating public art gallery, enriching the experience for both residents and visitors.

Fig. 2. 4. Mural on Smartovka in Tartu.

In 2017, a large-panel apartment building serving as a dormitory for Tallinn University of Technology underwent renovation using prefabricated walls and roof modular panels (Figure 2.5.). Employing prefabricated solutions significantly reduced the time required for such refurbishment projects. The estimated installation time for external wall elements is two weeks per apartment building. This building stands as the sole pilot project in Estonia to undergo renovation with prefabricated facade elements.

Fig. 2. 5. The installation of prefabricated wall panels on a Soviet-era building in Tallinn, Estonia.

Although the buildings have exceeded their expected lifespan, their structural durability is still satisfactory and exploitable. As the buildings do not meet contemporary requirements regarding energy efficiency and sustainability, they must be renovated. Insulation can be easily done from the outside, however, we can not ignore the visual appearance of the final architecture. The challenging part is to choose a suitable approach in terms of materials, colors, and architectural elements for the new facades.

3. ARCHITECTURE, MEMORY, AND RENOVATION

Soviet-era housing architecture vividly illustrates the sentiment that the way we design and construct our buildings influences our behaviors and attitudes, shaping the way we live and interact with our surroundings (Zupagrafika 2022). The architecture of that time was characterized by standardized designs and mass-production techniques that contributed to a sense of sameness and conformity among residents, shaping their perceptions of space and identity within the built environment. Although contemporary society consists of individuals with their own personalities, the buildings surrounding it are all the same. By renovating these buildings, we have a chance to not only improve their energy efficiency but also the architecture and space around us. Assessing the beauty of a design is inherently subjective and varies from person to person, so it is essential to tailor the design to suit the specific cultural context, in this case, the values of the Latvian people.

3.1. SOVIET-ERA HOUSING AND CULTURAL MEMORY IN LATVIA

For many Latvians, Soviet-era residential buildings serve as a tangible reminder of the country's past and the endurance of its people through challenging times. Latvia regained independence in 1991 when the USSR was dissolved. That period has been over for more than 30 years, but the buildings stand still as a reminder of that time. My parents and grandparents experienced Soviet times and lived in those buildings, whereas my generation was taught about the occupational period in school. Both from stories and history books we can learn that those times were tough and people felt oppressed. Nonetheless, for many residents, these apartments hold cherished memories, as they were essentially provided for free or made available for purchase at nominal costs when ownership was transferred to tenants by the government (Attwood 2012). These apartments have become more than just dwellings—they represent personal ownership and the concept of home. However, the good memories are mainly associated with the individual apartments and the idea of owning them rather than the architecture overall.

Soviet-era housing often features large, monolithic apartment blocks that can contribute to feelings of isolation and anonymity among residents. The uniformity of design and lack of distinct architectural features may lead to a sense of sameness and disconnection from one's surroundings. For those who lived through the Soviet occupation period, Soviet-era housing architecture may evoke memories of oppression and hardship. While some may feel a sense of alienation and dissatisfaction with their living environment, others may find comfort and familiarity in the communal atmosphere and shared history of these buildings.

In Unwritten (NRJA 2014), a research project conducted by Latvian architects, residents living in the micro-districts of Riga were interviewed regarding various topics, including the evaluation of housing estates, environmental assessments, and social interactions within the community. The residents expressed satisfaction with the convenient infrastructure and the district's proximity to the city center, highlighting its accessibility. However, they noted issues such as narrow pathways, inadequate lighting, and a lack of recreational spaces within the block. Negative remarks were often made about neighbors, indicating a lack of community among residents.

In many Latvian literary works Soviet-era apartment buildings are referred to as ugly and depressive. For example, a popular Latvian writer Alberts Bels in his book Fire Reflections on Eggshells (2000) writes that "Khrushchevkas are all the same, the doors are dilapidated, the courtyards are impersonal". He implies that he could not even recognize his door from others. Ināra Vaivode in her work Unconventional Technologies Returning from the Depths of Hundreds of Years (2003) refers to Khrushchevkas as "rotten". Negative remarks regarding the architecture of that era permeate Latvian literature, ingraining a negative perception in people's memories, even if they didn't initially hold such views.

Beyond the literary realm, discussions about Soviet-era buildings extend into broader societal debates. Some argue for the preservation of these structures as part of Latvia's architectural heritage, emphasizing their historical significance and potential for adaptive reuse. Conversely, others advocate for their demolition, citing concerns about urban blight, safety hazards, and the need for modernization. This tension between preservation and demolition reflects deeper questions about collective memory, identity, and the legacy of Soviet occupation in Latvia.

3.2. HUMANIZING SOVIET-ERA ARCHITECTURE

Residents have varied associations with these buildings influenced by multiple factors. Despite the uniform layout of the apartments, individuals have personalized their living spaces to align with their unique needs and preferences. Whether opting for a complete renovation (Figure 3.1.) or retaining the original Soviet-era design (Figure 3.2.), the decision lies with the private owner, offering them control over the interior aesthetics and functionality of their home. However, as noted before, the Latvian nation as a whole bears slightly negative associations with this type of architecture. To avoid the negative impact, the exterior architecture could be improved in a way that does not remind us of the occupation period.

Fig. 3. 1. Complete renovation of the Soviet-era apartment interior.

Fig. 3. 2. Original Soviet-era interior design.

To accommodate the human scale, create a more inviting atmosphere, and foster a sense of belonging among residents, it is recommended to break down large-scale monotonous architecture into smaller sections. It can be achieved by the use of architectural elements like balconies, different materials, and colors. To achieve the architectural identity shift, one of the solutions is to choose different materials for the facades. Originally, bricks and concrete panels were chosen for the exterior of the buildings which made them appear inexpressive and monotonic. For some ongoing and realized renovation projects, painted plaster was chosen as the finishing material, for example, in the Smart City project in Tartu. This is one of the cheapest and most common choices for renovation, however, the result is still monotonic and does not solve the discussed problems. Therefore, I will investigate other case studies that employ different renovation strategies.

3.3. DIFFERENT SOLUTIONS FOR RENOVATION

Some solutions of socialist housing renovations include wood as the facade cladding material. Wood makes the building look more inviting and the relief makes it human-scale friendly. Moreover, many historical Latvian districts like Āgenskalns (where the micro-district Āgenskalna Priedes is located), have wood cladding as the main facade material. The use of wood would help to integrate the micro-district into the surrounding area. A great example of how Soviet-era buildings can be transformed with the help of wood is Edinburgh Apartments & Lofts (Figure 3.3.) in Jurmala, Latvia, by Open Architecture Design (OAD 2021). The chosen materials, colors and vegetation contribute to a fostering environment for residents.

Fig. 3. 3. Renovation of Edinburgh Apartments & Lofts in Jurmala, Latvia, by Open Architecture Design.

This solution would be more suitable for Khrushchev-era buildings as they are a maximum of 5 stories in height and located in smaller and quieter areas in general. The use of wood is not the best choice for high-rise buildings, therefore Brezhnev-era buildings could adopt a different solution. An example of a hire-rise building renovation is set by Lacaton & Vassal in their social housing project Transformation of 530 dwellings (Figure 3.4.) in Bordeaux, France (Lacaton & Vassal 2016). The project involves the transformation of three fully occupied modernist social housing buildings.

This project serves as an exemplary demonstration of a cost-effective renovation that turns existing structures, previously perceived as lacking in quality and negatively viewed, into spacious, enjoyable, and efficient residences. This renovation revitalizes and redefines living typologies, enhancing comfort and pleasure while also enhancing the appeal and attractiveness of urban housing. The inclusion of winter gardens and balconies offers each

apartment the chance to benefit from increased natural light, enhanced versatility in use, and expanded views. Added architectural elements like balconies or a second facade would also transform the identity of the building and not bear the cultural memory of Latvian people anymore.

Fig. 3. 4. Transformation of modernist social housing in Bordeaux, France.

The courtyards and urban areas surrounding the micro-districts lack greenery, infrastructure for pedestrians and cyclists and have insufficient land use. Environmental solutions for this problem include preserving existing trees and planting additional greenery, adding green roofs and facades to improve bio-diversity, and incorporating rain gardens for water collection. Green areas like parks, playgrounds, and small plazas nestled between residential buildings can contribute positively to the physical and mental well-being of residents. These spaces provide opportunities for stress reduction, encourage physical activity, and foster a sense of community among residents. A concept for revitalizing the micro-districts has been developed by Strelka KB (ESG Renovation 2021). This concept covers and analyzes different problems in mass housing districts and suggests possible solutions (Figure 3.5.). This approach can also be adapted to micro-districts in Riga

Fig. 3. 5. ESG Renovated courtyard. An example of housing series 1-510 renovation.

CONCLUSIONS

The unique architectural character of socialist housing in the Baltics sets it apart from its counterparts in Eastern Europe. This distinction underscores the importance of tailored renovation approaches that account for regional context and cultural heritage. By examining historical literature and case studies, valuable insights were gained into the practical considerations guiding renovation efforts. Despite the shortcomings of Soviet-era housing, wholesale demolition is neither practical nor efficient. Instead, concerted efforts should be directed towards renovating these buildings to improve their durability, sustainability, and overall livability. The additional research about residents' perspectives sourced from Latvian literature illuminates the architectural significance of socialist-era housing and its impact on communities.

Latvian society's strong emotional ties to socialist-era architecture, underscore the need for sensitive renovation approaches. While the monotonous, grey housing blocks may evoke unpleasant feelings for some, others express satisfaction with the convenient infrastructure and central location. Preserving these buildings while avoiding reminders of Soviet oppression is crucial for fostering positive associations and collective memory. Central to the success of renovation efforts is the active engagement of residents and local communities in the decision-making process.

The renovation of socialist-era housing in Riga presents a multifaceted challenge that demands innovative design solutions. While the layout of apartments allows for adaptability, the primary focus of renovation efforts should lie in enhancing the exterior of these structures. By prioritizing exterior enhancements, such as façade updates and courtyard revitalization, negative perceptions can be addressed while enhancing aesthetic appeal and sustainability. Incorporating materials like wood, wall cladding, and green facade systems can rejuvenate these structures, creating visually appealing and environmentally friendly neighborhoods. Furthermore, the self-contained courtyards of socialist housing complexes offer untapped potential for community engagement and social interaction. By integrating features like small gardens, green spaces, and playgrounds, these courtyards can be transformed into vibrant communal hubs that promote residents' well-being and sense of belonging.

By addressing the needs and aspirations of residents, preserving cultural heritage, and promoting sustainable urban development, Riga can unlock the full potential of its socialist-era housing estates that honor the past and embrace the future. It is through collaborative efforts and innovative design approaches that we can realize the full potential of socialist-era housing as integral components of modern urban living.

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