

Chapter 1

Modernist Housing Estates in the Baltic Countries: Formation, Current Challenges and Future Prospects



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Abstract This opening chapter of the book *Housing Estates in the Baltic Countries: The Legacy of Central Planning in Estonia, Latvia and Lithuania* presents seven important takeaway messages distilled from the chapters of this volume that, taken together, provide a comprehensive overview of the formation, current challenges and future prospects of large housing estates in the Baltic countries. Modernist housing built between the 1960s and the early 1990s forms a large share of the housing stock in the capital cities of the Baltic states. Their sheer size suggests that various methods of reconstruction, rather than downsizing or even demolition, would be among the ideal strategies for their future development. Today, reconstruction of these districts and housing contained therein is mainly the responsibility of private owners, since the public sector relinquished most of the housing sector in the early 1990s. Private apartment owners, organised into building-based flat-owners' associations, often lack the ability to undertake comprehensive renovation of apartment buildings and regeneration of surrounding neighbourhoods. For viable solutions to emerge, the public sector must again assume a prominent role. A comprehensive renovation strategy must be structured to include urban space even larger than individual apartments or apartment buildings and encompass (a) improving the physical environment of the apartment buildings and neighbourhoods; (b) enhancing the social mobility and social integration of the inhabitants (since many possess an ethnic minority background); and (c) facilitating integrated connectivity between housing estates and surrounding metropolitan space through transport, jobs, services and various other activities.

Keywords Housing estates · Baltic countries · Central planning · Retrofitting · Urban regeneration · Sustainable city

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1.1 Introduction

In the decades immediately following World War II, modernist apartment buildings within large housing estates were constructed in European cities to meet crushing housing demand. The construction of modernist housing estates was widespread in the centrally planned countries of Europe ruled by Communist parties, and the Baltic countries were no exception. Following World War II, housing estates began to shape the physical configuration of cities—especially their spatial layout and housing stocks—with profound effects that are still visible today (Hess et al. 2018a). Housing estates also maintained a place of prestige in Soviet cities until the collapse of the Union of Soviet Socialist Republics (USSR) (Hess et al. 2018a). Although nearly three decades have passed since the disintegration of the Soviet Union, Soviet-era housing still forms a significant share of the housing stock in major cities. The relative position of Soviet-era housing estates on the housing ladder has declined, while the position of central city neighbourhoods and suburbs has risen. In this book, we explore in significant detail the formation of Soviet-era housing estates and analyse their trajectories of change in order to better understand and to better address contemporary challenges.

Today, many people perceive socialist housing estates as obsolete and socially stigmatised, and the initially envisioned lifespan of apartment buildings—approximately 30 years—has now been exceeded (Ahas et al. 2019). Since nearly all housing units and apartment buildings require renovation, one option would be to completely demolish mid-twentieth-century housing estates and construct replacement housing to satisfy today's lifestyles and building standards, an approach announced in a large-scale khrushchëvki demolition project in Moscow (Gunko et al. 2018). But since the number of people living in housing estates is large and since apartments in housing estates are privately owned, the cost to demolish and built replacement housing is three to four times higher than comprehensive renovation. Consequently, it is virtually impossible to demolish housing at such large scales (Ahas et al. 2019; Kuusk and Kurnitski 2019). In Tallinn, for example, such a demolition programme would affect nearly 60% of city dwellers. Various renovation options are thus a more realistic way forward, especially since the structural condition of the apartment buildings is generally satisfactory and renovation is needed mainly for other features of the apartment buildings, especially reducing energy consumption, regulating indoor climates, rehabilitating facades and reinforcing balconies (Kuusk and Kurnitski 2019).

Modernist housing estates have attractive features that may be improved further through various renovation strategies. For example, apartment buildings dating from the era of state socialism provide affordable housing and they are often located close to city centres and/or are well connected to city centres through public transport. Through renovation, their physical appearance can be significantly improved. People living in housing estates could benefit from investments in community social infrastructure, including schools. In order to achieve better outcomes, we emphasise that individual apartment-based and apartment

building-based renovation (as is the norm today) should continue, and area- or neighbourhood-based renovation should be introduced to stabilise the development trajectory of neighbourhoods and reverse the downward spiral of neighbourhoods. For this to happen, the public sector must again assume a role, ideally helping to manage the complex socio-spatial structures that have evolved in the do-it-yourself urbanism framework prevalent since the 1990s which has produced both successes and eclectic outcomes (Kuusk and Kurnitski 2019). Instead of *demolishing* them, we can finally *complete* large housing estates (Tammis 2017) by enhancing various envisaged elements that were unfinished under socialism—including mixed uses and activities, embedded services networks and employment opportunities contained within—to enhance the long-term potential of housing estates.

This book draws together various perspectives that address the complexity of challenges that Soviet-era modernist housing estates face today in the Baltic countries. We begin by clarifying the motivations for establishing housing estates in the post-World War II era to seek a better understanding of the USSR housing system in which housing estates became a hallmark. We explore the social and ethnic landscapes and built environments of housing estates, and we consider various renovation strategies to prepare housing estates for their future lives in the context of a shift from a highly state-controlled and socialist housing system to a neo-liberal market-oriented system (Hess et al. 2018a). The Baltic countries—Estonia, Latvia and Lithuania—form a unified region in many respects, and the three nations were simultaneously occupied by the Soviet Union from World War II until 1991, when the USSR disintegrated (cf. Drémaitė 2019). While recent books have provided a pan-European view of socio-spatial changes (Tammis et al. 2016) and the role of large housing estates in such changes (Hess et al. 2018b), this book provides an in-depth exploration of large housing estates in the Baltic countries, focusing on their formation, trajectories of change and future prospects. We have distilled the following seven synthetic takeaway messages from the ensuing chapters in this book.

Lesson 1: The formation of housing estates in Eastern Europe and Soviet Union, including the Baltic countries, was somewhat delayed compared to Western Europe. Housing estates nonetheless became key elements of the residential cityscape. Most Baltic cities were situated on relatively flat land, and the addition of modernist residential towers added vertical planning to horizontal urban space, allowing cities to grow in a new dimension.

Lesson 2: Although socialist societies were closed, ideas and knowledge about urban planning travelled across the Berlin Wall and through the Iron Curtain. Ideas that were critical to planning large housing estates in the Baltic countries were obtained from architects' study trips, most often to neighbouring Nordic countries. Two forces consequently combined in the Baltic countries in the decades following World War II: international modernism and Soviet socialism.

Lesson 3: A shift from Garden City and City Beautiful inspirations in Stalinesque guise (through the 1950s until the mid-1960s) to a Concrete City orientation (from the mid-1960s through the 1980s) took place in the physical configuration of housing estates. This phenomenon can be attributed to an abrupt

political shift that prioritised attention towards housing needs and industrialised the construction industry.

Lesson 4: Housing estates in the Soviet Union were a vast experiment in socio-spatial organisation of cityscapes. They embodied an egalitarian ideology in which massive residential spaces structured the everyday lives of people in relation to the neighbourhoods in which they lived. Deliberate socio-spatial mixing, however, did not necessarily lead to joint activities of ethnic and socio-economic groups.

Lesson 5: A shift from a more communal to individualistic lifestyle took place over time in housing estates. In the early decades of the Soviet Union, shared public space (outdoors, and within community areas) was maximised and individual space (indoors, within apartments) was minimised. As the residential density of housing estates increased, architects expanded the size of individual apartments in subsequent projects to maximise the comfort of occupants.

Lesson 6: Housing estates that were located at a certain distance from city centres in places of abundant land are, relatively speaking, more advantageously located today as cities have sprawled since then. They are usually well connected to city centres via public transport.

Lesson 7: There are four potential ways to consider the next stage for housing estates: (a) do-nothing, (b) downsize, (c) demolish (and replace) and (d) renovate. Since the apartment buildings in housing estates consume a substantial share of the total housing stock and since individual apartments are mostly owner-occupied, demolition is a difficult option. With time, the do-nothing approach has gradually given way to building-based renovation. The next step would be more comprehensive renovation coordinated by the public sector; this would help improve building-level management and finally complete housing estates relative to the original aims of the housing programme under which they were conceived and planned.

The remainder of this introductory chapter will elaborate on these takeaway messages in greater detail.

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The starting point for the formation of large housing estates in the USSR can be attributed to the 1957 Communist Party Congress (Hess et al. 2018a). Industrialisation subsequently triggered employment-based migration to cities and new housing units were built at breakneck speed in vast planned residential districts (Burneika et al. 2019; Kährik et al. 2019; Krišjāne et al. 2019). Amid a USSR occupation from the 1940s until 1991 and forced industrialisation that fueled urbanisation—due in part to migration from other parts of the Soviet Union—the demand for post-World War II housing was acute, especially in the capital cities of Tallinn (Estonia), Riga (Latvia) and Vilnius (Lithuania). See Fig. 1.1. The cities underwent profound changes, since urbanisation had been only modest before



Fig. 1.1 Location of Estonia, Latvia and Lithuania and their capital cities and key urban centres. *Source* Figure prepared by Annika Väiko

World War II (Puur et al. 2019). The spatial structure of Baltic cities was relatively simple at that time: historic medieval towns were surrounded by late nineteenth- and early twentieth-century neighbourhoods of worker housing and villas. In the Soviet years, an ample layer of modernist housing was added, forming the most important segment of the housing stock.

Post-World War II urbanisation in Estonia, Latvia and Lithuania was strongly linked to in-migration from other parts of the Soviet Union, and these mainly Russian-speaking (now) ethnic minorities became the majority urban population in many cities, especially in Estonia and Latvia (Puur et al. 2019; Hess et al. 2012; Leetma et al. 2015). For example, the population of Tallinn increased by 70% between 1959 and 1989 and the share of Russian speakers increased to almost 50% of the city's population (Kährrik et al. 2019). The respective share is higher in Riga (Krišjāne et al. 2019) and lower in Vilnius, where Poles form the third largest ethnic group (Burneika et al. 2019). This migration produced demand for new housing, resulting in reshaped cityscapes and, notably, the addition of planned modernist estates to house workers and their families (Fig. 1.2). When the USSR disintegrated in 1991, 61% of the population of Tallinn and 74% of the population of Riga lived in large housing estates built since the 1950s. By 2011, 58% of the population in Tallinn, 75% of the population in Riga and 67% of the population in Vilnius lived in large housing estates (see Fig. 1.3).

Within the vast Soviet Union housing programme, Baltic housing estates were usually ambitious and often original, and architects in Estonia, Latvia and Lithuania challenged the rigid standard housing guidelines that were enforced since the 1960s in the USSR. There was an ambition to give new residential districts a sense of uniqueness. With a 'westward gaze' towards architectural and town planning innovation in Western Europe and even North America, Baltic architects and city planners aimed to design housing estates with a sense of dignity, especially in the capital cities (Berger et al. 2019; Hess and Metspalu 2019; Metspalu and Hess 2018). The smaller industrial towns were often planned in a more uniform fashion. Two housing estates in the Baltic countries were awarded the prestigious Soviet Union State Prize for urban residential design: Žirmūnai (Lithuania) in 1968 and Väike-Õismäe (Estonia) in 1986 (Drėmaitė 2019). The Lenin Prize, the highest award in the Soviet Union, was bestowed in 1974 upon Lazdynai in Vilnius.

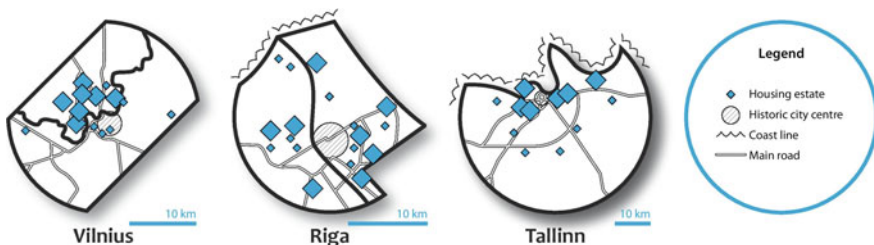
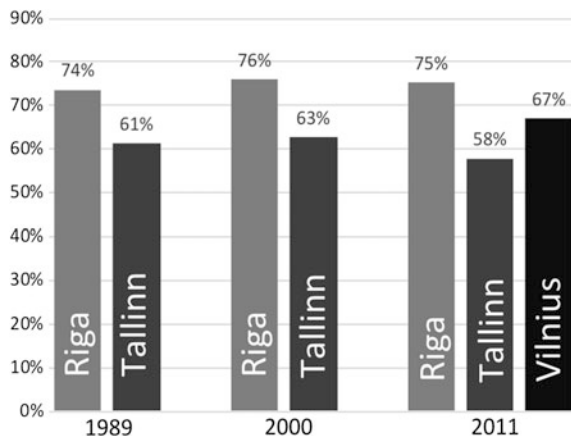


Fig. 1.2 Metropolitan distribution of housing estates in Tallinn, Estonia; Riga, Latvia and Vilnius, Lithuania. *Source* Figure prepared by Raivo Aunap

Fig. 1.3 Share of residents living in housing estates in the Baltic capital cities, 1989, 2000 and 2011



However, architects in the Baltic countries also had to surrender to the pressures of mass construction of low-cost housing, limiting the creativity of architects.

The Soviet system provided a unique opportunity to experiment with new models of city planning that was embraced by architects (Hess and Metspalu 2019). A centrally planned economy and government ownership of all land and industry, including the construction sector, permitted a grand-scale approach to the processes of industrialisation, employment-driven migration and urbanisation (Burneika et al. 2019; Kährik et al. 2019; Krišjāne et al. 2019). The rapid expansion of housing in post-World War cities in the Baltic countries thus dramatically altered the region’s traditional cityscapes. But the initial estate-based housing programmes were delayed in the Eastern Bloc (compared to Western Europe), mainly due to Communist Party leader Joseph Stalin’s preference for expensive grand architecture (also known as Stalin Baroque), a general emphasis on heavy industry under central planning and, accordingly, a low priority assigned to housing construction (Berger et al. 2019; Gentile 2019). However, construction of housing estates continued through the early 1990s—a longer duration in the Eastern Bloc compared to Western Europe—due to intensive urbanisation (Fig. 1.4).

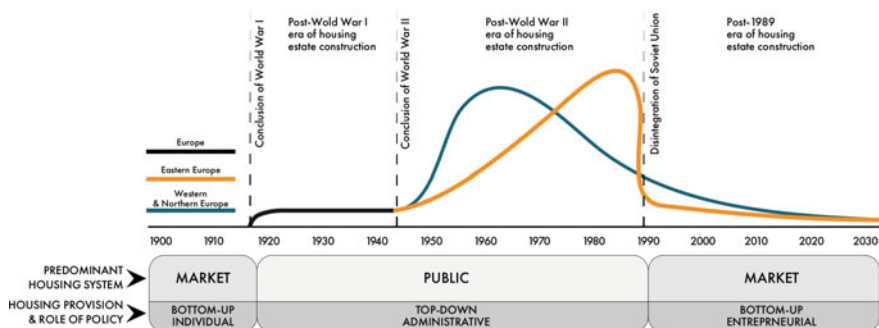


Fig. 1.4 Growth and decline of housing estate construction in Eastern and Western Europe

Apartments were centrally allocated to residents queued in housing lists, and rents were generously subsidised (Gentile 2019). The waiting period for a new apartment lasted for years, and acquiring a flat was considered an immense achievement for families, especially in the 1960s and 1970s (Janušauskaitė 2019). When apartments in newly built housing estates in Soviet cities were allocated to occupants, preference was given to migrants, usually arriving through ‘organised channels’ of migration from the other Soviet Republics and needing apartments immediately upon arrival (Krišjāne et al. 2019). Despite the addition of seemingly endless apartment buildings in brand-new urban neighbourhoods, people were crowded into an inadequate number of apartments with meager per-capita living space. The allowed living space according to SNIp (a Russian acronym for Construction Norms and Rules), excluding kitchen and bathroom, was defined as 9 m² per person (cf. Gentile 2019), while the minimum provision was set to 4 m² (Treija and Bratuškins 2019).

The main spatial element of housing estates became mikrorayon (Treija and Bratuškins 2019) which were further organised into makrorayons or housing estate districts. The number of people living in a typical mikrorayon ranged between 5,000 and 15,000 people, while the size of housing estate districts varied even more, between 30,000 and 100,000 people in the Baltic countries (Burneika et al. 2019; Kährlik et al. 2019; Krišjāne et al. 2019) and even more greatly elsewhere in the Soviet Union and Eastern Europe, especially in larger cities such as Moscow, St. Petersburg, Kiev or Bucharest (French and Hamilton 1979). Usually sited on greenfields where developable space was available, land use separation and other urban planning techniques were employed to create master-planned ‘modernist’ residential space that was thought at the time to be an improvement over traditional city form. Also, in these peripheral areas, necessary urban infrastructure could be provided with a reasonable investment (Treija and Bratuškins 2019).

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Housing estates arose in the decades following World War II in Estonia, Latvia and Lithuania to meet desperate housing needs, but Baltic housing estates were distinguished from housing estates elsewhere in the Soviet Union, even though all were built under the same strictly controlled and centrally administered Soviet system. It was compulsory to follow the USSR norms for housing estates in the Baltic countries, especially those norms related to the design of apartment buildings; nonetheless, a detectable Western influence on town planning, especially from Nordic countries, was absorbed by the Baltic countries during the Soviet years (Hess and Metspalu 2019). Furthermore, the Baltic countries served as a bridge that allowed these ‘imported’ ideas to travel further to the East, and Nordic housing

estates consequently became exemplars for housing estates throughout the USSR (Šiupšinskas and Lankots 2019).

Architects from Estonia, Latvia and Lithuania reproduced concepts especially from Finnish (notably Pihlajamäki and Tapiola, near Helsinki) and Swedish (notably Vällingby, near Stockholm) housing estates, with design inspiration especially evident in Estonia owing to its close links with Finland (Šiupšinskas and Lankots 2019). In fact, Finnish housing estates were inspired by the Swedish model for new suburban high-density residential settlements, which itself was based on ideas from British and American inter-war urban planning, including the Garden City concept, neighbourhood residential planning and post-War 'New Towns' (Berger et al. 2019; Hall 2014) (Fig. 1.5). Thus, two forces combined in the Baltic countries in the decades following World War II: international modernism and Soviet socialism. The outcome has been labelled 'socmodernism' (a term proposed by Crowley), a specific version of Modernism distinguished from Western Modernism (Drėmaitė 2019).

In many European countries, including the United Kingdom, France and the Netherlands, the focus of post-World War II housing expansion was social housing (and not necessarily within housing estates) and did not appeal to Soviet planners (Šiupšinskas and Lankots 2019). In contrast, however, the combination of egalitarian social aims and elaborate spatial planning considerations for housing estates captured the attention of architects and urban planners of the Soviet Union. There was a perception that social housing was intended for low-income and working-class people (or social groups who relied on state support for housing), but socialist leaders were in search of models of equal housing for everyone. Such housing models were readily found in the social-democratic Nordic countries. Housing was at the very heart of Nordic welfare systems (Andersson and Kährrik 2016). In fact, Vällingby, a Stockholm housing estate established in 1954, strongly reflected the planned welfare state of mid-twentieth-century Europe (Wassenberg 2013) since the social-democratic environment required that affordable housing be ubiquitous, accessible to all people and spatially coherent (Fig. 1.5). Housing estates thus became spatial manifestations of the socialist ideology in the Soviet Union and Eastern Europe (Kährrik and Tammaru 2010; Kovács and Herfert 2012).

How did Soviet-era architects in the Baltic countries learn, as early as the 1950s, about housing estate design outside of the Soviet Union, given the conditions in the Soviet Union of control, censorship and isolation? A specific policy of collaboration and friendship with the Soviet Union offered an important corridor for exchange of ideas for Estonia, and meaningful contact between Finland and Estonia was maintained through most of the operable years of the Soviet Union, especially since the Khrushchëv Thaw (Berger et al. 2019; Kalm 2012). The first official delegation to Finland took place in June 1959 and it consisted of 21 specialists from Latvia, Estonia, Lithuania and the city of Leningrad (Drėmaitė 2019). The Association of Finnish Architects made its first excursion to Tallinn in 1962 (Berger et al. 2019). Knowledge was also shared through professional journals, books and exhibitions. Although the division between the Western World and the Eastern Bloc was remarkable during the Cold War, there was considerable mutual exchange—



Fig. 1.5 Views of Stevenage 'New Town' (upper panel) and Vällingby (lower panel). *Source* Wikimedia Commons

despite significant institutional and political barriers—in both directions between Estonia and Finland between the late 1950s and the 1970s, a period coinciding with rapid production of housing estates.

Estonia, due to its membership in the Soviet Union, was in a more restricted position for international engagement and was consequently a greater beneficiary than Finland of this exchange. Estonians interacted with visiting Finnish architects, visited Finland (and other countries) on a restricted basis on official study trips, co-hosted architectural exhibitions and acquired Western magazines [especially the French publication *L'architecture D'aujourd'hui* (translated: *Architecture of Today*)] and other literature about architecture and city planning (Drémaité 2019; Hess and Metspalu 2019). These international publications from Finland and Sweden (and beyond) became a 'window to the west' for Estonians, and the relationship between the two countries could be described as a 'hinge-point' of architectural influences between 'Western' and 'socialist' countries during the Soviet years (Berger et al. 2019; Hess and Metspalu 2019). Mutual exchange was made easier when regular ferry service between Helsinki and Tallinn was restored in 1965 and the sight of Finnish visitors in Estonia became more common; still, it was not an easy exchange for Estonians, as travel permits were required (Berger et al. 2019). Thus, Estonia and Finland were in the nexus of Baltic cooperation that linked urban ideas across the Iron Curtain.

With great influence on architecture, city building and city planning from Finland, however, the built works in the Baltic countries—including apartment buildings, housing estates and other aspects of the residential sector—were of lower quality in physical aspects than built works in Finland. The outcome is a cityscape that integrates Western ideas and the specific context of the Soviet system, producing an atmosphere in which housing estates exhibiting characteristics of the 'Soviet West' and reflecting 'Baltic exceptionalism' are evident (Drémaité 2019; Glendinning 2019). Socialist ideology and standardised designs and construction came from the East. This ideology, with its vigorous focus on equality and related apartment building models and spatial planning rules, often led to monotonous architecture, unwelcoming public space and unending repetition of housing estates (Hess and Metspalu 2019). Town planning ideas and physical form of housing estates came from the North along with a stronger attachment to the landscape. Despite being restricted by rules and serial housing, some independent architectural thinking was allowed that shaped the formation of large housing estates in the Baltic republics (Hess and Metspalu 2019). In housing estates from the 1950s and 1960s (e.g. the first plan of Mustamäe), architectural influences in Estonia from Finland are noticeable—including references to organicism, use of natural materials and naturalistic site layout that emphasised existing landscape features—but distance to Western models was maintained and a certain 'Soviet' touch was added from the outset, especially a greater degree of standardisation (Berger et al. 2019). In later decades, the Soviet influences became more prominent as each new housing estate became denser compared to previous projects. Still, the architecture in the Baltic countries was less grandiose and there was a stronger link to nature compared to many other cities in the USSR and Eastern Europe (Glendinning 2019).

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Khrushchëv-era housing marking the initiation of mass housing construction in the Soviet Union in the 1950s and early 1960s tends to possess features that suggest how apartment buildings were inspired by the (a) Garden City movement and (b) ‘neighbourhood unit’ concept first introduced by the American planner Clarence Perry in 1929, originating with the seminal 1943 County of London Plan by Forshaw and Abercrombie (Berger et al. 2019). Hence, the origins of Soviet urban planning ideals emanate from ideologically opposite contexts (the United States and Great Britain). Key features of built environments included low-rise apartment buildings, human-scaled design, small and compact neighbourhoods focused around elementary schools, harmony with nature, natural building materials, landscape elements and mature trees, and protected pathways and convenient walkability. High-quality materials were used in the design of buildings and other structures.

Garden City principles broadly and strongly influenced designs and plans for modernist housing estates in Sweden and Finland (Vaattovaara et al. 2018). Nordic countries became an inspiration in the Soviet Union for the design of large housing estates. The first state-sponsored study trip in 1957 was perfectly timed with initiation of the design for one of Tallinn’s first large housing estates, Mustamäe, and visiting Soviet architects’ experience in Tapiola (and other residential projects near Helsinki) left a lasting impression for planners and designers, as evidenced by their notes in excursion reports (Berger et al. 2019; Hess and Metspalu 2019; Metspalu and Hess 2018). Housing estates in heavily treed districts in Tallinn (Mustamäe), Riga (Āgenskalna Priedes) and Vilnius (Lazdynai) were inspired by the natural landscape retained in the design of Tapiola and the Finnish concept of the ‘forest-suburb’ (Berger et al. 2019; Drémaitė 2019).

By the late 1960s, however, many of the charming features of housing estates had been abandoned for the sake of efficiency. The refinement of mass construction techniques allowed housing estates established during the 1970s and 1980s to become larger and denser and to feature taller high rises (16 storeys are the highest in the Baltic cities, but apartment buildings are taller elsewhere in the former Soviet Union and Russia). We refer to the latter as the ‘Concrete City’ housing estate model. There were fewer ‘protected’ places within housing estates (formed by apartment building placement) and landscaping was virtually absent, in sharp contrast to the earlier heavily treed housing estates. Concrete slabs were practically the only visible material, with occasional brick structures. This design evolution is visible, for example, in the differences between two housing estates in Tallinn: Mustamäe (construction began in 1962) and Lasnamäe (construction began in 1973). In short, the relentless demand for new housing is reflected in the addition of apartment buildings that grew significantly larger during the Soviet years

(beginning with 3- to 4-storey simple khrushchëvki and mushrooming to 16-storey apartment towers towards the end of the Soviet period) (Fig. 1.6).

The shift from the Garden City to the Concrete City was due in part to (a) political conditions creating strict regulations imposed on city planning from the Soviet system (aimed at industrialising the construction industry and improving quality while reducing costs) and (b) high immigration to the Baltic countries during the peak Soviet years, when tens of thousands of migrants (mainly from Russia, Belarus and Ukraine) required housing quickly, and this large and urgent demand for housing decreased the quality of built environments that designers and planners were ultimately able to deliver in housing estates. The Third Congress of Soviet Architects in 1961 identified the problem of monotony, lack of aesthetics and lack of creativity in use of standardised designs. Likewise, despite censorship, architects and even the general public regularly published articles in the popular press in the 1970s about their dissatisfaction with housing estates (Metspalu and Hess 2018). Although there was valid and public criticism of housing estates by the late 1960s and early 1970s, people with decision-making capability did not react (Wassenberg 2013), and unlike in Western Europe (Fig. 1.4), housing estate construction continued with abandon until the dissolution of the Soviet Union. Economic considerations were prioritised and housing construction had to support economic needs in a cost-efficient manner (Drëmaitė 2019).

The requirement to house large numbers of people in apartments, and the obligation to follow strict building norms and employ standardised designs,



Fig. 1.6 View of Lasnamäe, Tallinn, Estonia. *Source* Annika Väiko

presented challenges for architects. In the early years of the housing estate movement, some of the best architects in the Baltic countries were willing to attempt to meet the challenges, and they were generally employed in Soviet housing institutes (Drėmaitė 2019). Even though Baltic architects had opportunities to participate in official state-sponsored study trips to view architecture and city planning abroad—and they visited Nordic housing estates such as Tapiola and desired to emulate them—they returned to the Baltic countries and built Concrete City housing estates in response to the demands of the system in which they worked. Consequently, in the Baltic countries, there was potential for high-quality urban environments in housing estates, realised only in early attempts and in occasional small projects but not sustained during the predominant era of large housing estate construction.

Lesson 4: Housing estates in the Soviet Union were a vast experiment in socio-spatial organisation of cityscapes. They embodied an egalitarian ideology in which massive residential spaces structured the everyday lives of people in relation to the neighbourhoods in which they lived. Deliberate socio-spatial mixing, however, did not necessarily lead to joint activities of ethnic and socio-economic groups.

During the Soviet era, the maintenance costs of apartments in housing estates were subsidised generously by the state and apartments were therefore financially affordable for everyone who acquired apartments through the central housing allocation system (Treija and Bratuškis 2019). Socio-economic segregation in housing estates according to occupation during the Soviet years was virtually nonexistent; this was an outcome of socialist egalitarianism and the centralised housing system (Gentile 2019; Marcińczak et al. 2015; Tammaru et al. 2016). Everyone from a factory janitor to a factory director was intended to live nearby in harmony in socialist apartment buildings (although housing queues were an inherent barrier to smooth operation of the housing system). Housing estates thus served as classical meeting places for various social and ethnic groups. Nevertheless, even during Soviet times, there was a low level of social integration between people from different ethnic and socio-economic status groups, with infrequent intermixing with nongroup members in daily life. The main vectors of segregation in the Baltic countries ran across ethnicity, social origin (people of rural origin versus intelligentsia) and social position (white-collared employees versus workers) (Janušauskaitė 2019).

A parallel system of local-language (Estonian, Latvian, Lithuanian) and Russian-language education contributed to ethnic segregation in the Baltic countries (Tammaru et al. 2017). In mikrorayon within large housing estates, local-language and Russian-language kindergartens and schools are often found side by side, sorting children into different education institutions and socio-ethnic networks. Hence, ethnic divides existed in large housing estates, dual mikrorayons emerged, and architects designed larger mikrorayons (12,000 inhabitants instead of 6,000 inhabitants) to accommodate a dual society and ensure that all families could benefit from socialist-modernist town planning (Bruns 2007; Leetmaa and Hess 2019).

People from ‘higher’ white-collar socio-economic groups felt that they (and members of their peer group) possessed a special or unique status and were socially distinct from ‘others’ living in housing estates (Janušauskaitė 2019). Large apartment buildings typical of modernist housing estates provide space for people to avoid others if they choose to do so. It is remarkable that activity-based avoidance and self-segregation were phenomena of daily social life in the Soviet Union, where socio-spatial differences between people were small. Through daily practices, people tried to emphasise the high social status of their family, their neighbours or their neighbourhood (reflecting a natural human tendency to try to make oneself feel ‘special’). Also, people were critical of their neighbours’ children (behaviour in the neighbourhood, performance in school) if they thought others were part of a lower social class (Janušauskaitė 2019).

Despite avoiding firsthand contact with people they perceived to be different from themselves, individuals in the Soviet Union lived a ‘neighbourhood-based life’ and this occurred intentionally and by design of housing estates. A neighbourhood-based life was consistent with socialist ideology, and modernist housing estates provided various opportunities for emphasising a community-based socialist life (while the factory was the centre of work life) (Janušauskaitė 2019). In fact, people derived their own ‘local identity’ from housing estates in which they lived (Janušauskaitė 2019) and tended to conduct daily life within their mikrorayon or small residential unit, generally avoiding travel out of their neighbourhood. Vällingby in Stockholm was among the first neighbourhoods that applied the integrated ABC—an acronym for *Arbete-Bostad-Centrum* or Workplace-Housing-Centre—concept developed by Sven Markelius in 1945 in the spirit of British New Towns, and it was eagerly applied in planning mikrorayon service centres in Baltic housing estates, including ABC-5 in Tallinn, Žirmūnai in Vilnius and Imanta in Riga (Šiupšinskas and Lankots 2019).

A strongly localised orientation for people’s everyday lives was consistent with Soviet Union control over the populace. Subversive and anti-communist ideas should not spread, and Soviet Union propaganda should be available (in so-called ‘Red Corners’ planned within community facilities and schools in mikrorayon) to emphasise socialist ideology. Certain restrictions existed in printing and distributing maps in Soviet Union cities (for fear that the maps might fall into enemy hands and reveal state secrets), further limiting people’s knowledge of cities beyond their immediate surroundings (Hess and Hiob 2014; Jagomägi and Mardiste 1994). To help its original residents navigate the built environment of Annelinn in Tartu, Estonia (constructed between 1969 and 1973)—and to aid them in overcoming the repetitive architecture without printed maps—the designers provided a crude depiction of the physical form of the mikrorayon as a building façade mural that still exists today (see Fig. 1.7). Nevertheless, the built environment of housing estates constituted places of memory and formed people’s cognitive maps of neighbourhoods (Šiupšinskas and Lankots 2019). Soviet society was closed, and the form of the city—especially regarding residential planning in large housing estates—reinforced it.

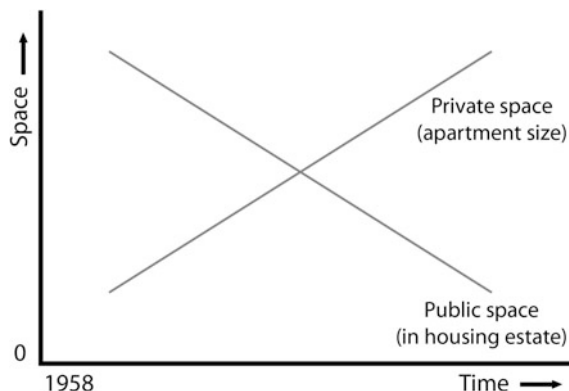


Fig. 1.7 A map of Annelinn appears as building façade artwork in Tartu, Estonia. *Source* Image by Daniel Baldwin Hess

Lesson 5: A shift from a more communal to individualistic lifestyle took place over time in housing estates. In the early decades of the Soviet Union, shared public space (outdoors, and within community areas) was maximised and individual space (indoors, within apartments) was minimised. As the residential density of housing estates increased, architects expanded the size of individual apartments in subsequent projects to maximise the comfort of occupants.

There was popular excitement about new apartment buildings in the 1950s. These first-generation buildings contained significant improvements over the existing housing stock, with basic comfort facilities inside apartments. The design of housing estates initially emphasised ample shared communal space outside individual apartments—within schools, child care centres, Culture Halls, social clubs, saunas, shared dining, sports and recreation—in which individual Soviets were envisioned to maximise their participation in socialist life. In the first generation of standardised housing, apartments were small (Treija and Bratuškina 2019), while service networks and community space in housing estates were intended to be rich. With abundant services in every superbloc and mikrorajoon, people were expected to spend a great deal of time away from their apartment, participating in a structured socialist life. Daily services such as kindergartens, schools, food shops, canteens, clubs, housing unit administration services, sports

Fig. 1.8 Changing paradigm of private versus public space in apartment buildings and housing estates



fields and playgrounds had to be located within the boundaries of a given mikro-rayon and no further than 400 metres from any residence (Drėmaitė 2019). Large employers often provided space for leisure activity in Culture Halls. In reality, however, these service networks were undersupplied, and there was a chronic shortage of nearby commercial opportunities (Leetmaa and Hess 2019; Metspalu and Hess 2018; Šiupšinskas and Lankots 2019).

In later-generation standardised housing, when it was evident that services could not be supplied at levels suggested in housing estates norms (subscribing to socialist doctrine), individual apartments within apartment buildings were designed to be larger. For example, a communal one-bedroom apartment only 45 m² in size was the most common, and it constituted 51% of the dwellings in the large Lithuanian housing estate Karoliniškės (Janušauskaitė 2019). In the more spacious apartments, toilet and bath were separated, and comfort amenities increased in number both within apartments and apartment buildings; for example, interior trash receptacles and elevators were installed in apartment buildings taller than five storeys (Treija and Bratuškis 2019). Architects attempted to improve on standardised designs by enlarging the interior space of apartments and creating flexible configurations of interior space in dwellings to provide families with greater comfort (Drėmaitė 2019). Plans were drafted for experimental series of apartment buildings in which apartments were equipped with corner balconies, larger service rooms and larger kitchens (Drėmaitė 2019). Consequently, older housing estates now possess cramped apartments but more human-scaled exterior space (such as the older parts of Ķengarags in Riga, Mustamäe in Tallinn and Lazdynai in Vilnius), while later-period Soviet-era housing estates have larger apartments but repetitive and monumental exterior space not appropriately scaled for pedestrians (such as Plavnieki in Riga, Lasnamäe in Tallinn and Justinskes in Vilnius) (Fig. 1.8).

Lesson 6: Housing estates that were located at a certain distance from city centres in places of abundant land are, relatively speaking, more advantageously located today as cities have sprawled since then. They are usually well connected to city centres via public transport.

Housing estates originally built at a considerable distance from city centres (where sufficient un-built land could be assembled to accommodate the significant space needs of a housing estate) were often poorly connected by transport to city centres and worksites (Hess 2018). Even when the actual distance from a city centre was not great, the perceived distance was much longer (Janušauskaitė 2019). Distance from the city centre is important in the current trajectory of change in housing estates, and housing estates closer to city centres are often more attractive than those more distant (Burneika et al. 2019; Kährik et al. 2019; Krišjāne et al. 2019). The perceived distance has shortened owing to improved transport and sprawl of cities resulting from suburbanisation (Janušauskaitė 2019). However, the quality of housing estates often improves with distance from the city centre, and the age of housing estates decreases with distance from the city centre (Burneika et al. 2019). Urban locations that once seemed remote—as Baltic cities have evolved and grown in size—now provide relatively reasonable access to city centres, as surrounding metropolitan space has expanded. For example, 1970s-era housing estates in Vilnius are now considered to be well located and to possess attractive community and social infrastructure (Burneika et al. 2019).

Public transport and automobile transport have vastly improved since socialist times in Baltic cities, with better connections to city centres. The socialist system was a virtually carless society (for the average resident), but Soviet-era planners always had lofty aspirations for urban grandiosity and therefore built wide and spacious roads unwittingly capable of accommodating today's significantly higher traffic volumes (Hess 2017). Housing estates were rather grand places with large infrastructure and generous space between buildings, and the 'extra space' is now available for other uses, including automobile parking (Tuvikene 2019). Another important element of the improved relative location pertains to services: new commercial outlets have been added to housing estates, especially shopping centres within or adjacent to residential districts. This has improved the comfort and convenience of living in housing estates because they now contain fitness centres and swimming pools, schools (for all levels), cinemas and shopping malls. These additions to housing estates have helped shift the urban form of Baltic cities in part from compact to sprawling, as many of these new services are provided in automobile-friendly (more than pedestrian-friendly) environments.

Lesson 7: There are four potential ways to consider the next stage for housing estates: (a) do-nothing, (b) downsize, (c) demolish (and replace) and (d) renovate. Since the apartment buildings in housing estates consume a substantial share of the total housing stock and since individual apartments are mostly owner-occupied, demolition is a difficult option. With time, the do-nothing approach has gradually given way to building-based renovation. The next step would be more comprehensive renovation coordinated by the public sector; this would help improve building-level management and finally complete housing estates relative to the original aims of the housing programme under which they were conceived and planned.

There are various ways to envision the future of large housing estates. In many cities, especially in the United States and Western Europe, demolishing large tower

blocks has been an important urban revitalisation tactic since the destruction of the Pruitt–Igoe housing estate in St. Louis, Missouri in 1972 (Hess et al. 2018a). Similar debates have surfaced in the public agenda in Eastern Europe since the fall of the Iron Curtain. Challenges with physical environments due to a gradual decline and natural wear and tear (Janušauskaitė 2019) and risks related to socio-economic downgrading (Burneika et al. 2019; Kährik et al. 2019; Krišjāne et al. 2019) propelled prominent urban researcher Ivan Szélényi (1996) to predict the swift deterioration of housing estates into ghettos. So far, such predictions have not been fulfilled. Furthermore, because of the very prominent role of socialist apartment buildings in the housing sector, complete demolition has not been an option. For the very same reason—high importance and dominant role in Baltic capital city’s housing stocks—the do-nothing approach is not an option. Hence, the most reasonable way forward must address the gradual decline of modernist housing (so that it can compete with new housing continuously added to the housing stock) and the renovation of the existing housing stock.

Individual apartments in the large housing stock within modernist housing estates are mostly in private hands, and most apartment owners have joined building-based flat-owners’ associations (Tuvikene 2019). The reason for the large-scale privatisation in the 1990s was twofold. First, it represented a symbolic break with the totalitarian regime in which nearly all properties, including housing, were in common ownership. The second reason was pragmatic. After regaining independence, the Baltic countries faced severe economic challenges and there were no public funds available for housing maintenance (Liepa-Zemeša and Hess 2016). The result is a poorly managed housing stock. Lack of understanding about the legal relations between landowners, managers and apartment owners as well as a lack of knowledge about their mutual rights and responsibilities creates frustration and passivity with regard to maintaining and improving housing and its environs (Treija and Bratuškis 2019).

The second outcome is closely related to the first and fits under the umbrella term ‘do-it-yourself urbanism’: every apartment owner has acted within her or his best abilities; however, their poorly coordinated efforts—owing to a weak management system—have led to an eclectic appearance of apartment buildings (Kuusk and Kurmitski 2019). In addition to individual apartment owners, flat-owners’ associations have undertaken joint renovation efforts, usually to improve overall energy efficiency. Although most modernist apartment buildings were built during a period of cheap energy, contemporary energy efficiency concerns are often important to inhabitants since heating costs today are comparatively high (Lihtmaa et al. 2018). However, flat-owners’ association funds often permit only single renovation measures that typically neglect the complexity of problems involved, including the need to invest in ventilation, leading to a deterioration of indoor climate. Financial support may be acquired for apartment building renovation from European funds for improving energy efficiency (KredeEx in Estonia, JESSICA in Latvia and Lithuania). The focus of European support is on improving the overall energy efficiency of the building envelope as well as ventilation and indoor air quality, aiming at nearly zero-energy buildings (nZEB) (Ahas et al. 2019; Kuusk

and Kurnitski 2019). When comprehensive renovation of apartment buildings is undertaken—an exception rather than a rule—retrofitted Soviet-era apartment buildings can be quite attractive. This practice also maintains the socially mixed ownership structure, contributing to lower levels of residential segregation than newly built apartment buildings where the socio-economic structure of residents is more homogenous (Kährik and Tammaru 2010). In short, positive outcomes in apartment building renovation are possible, but they require efforts that go beyond the individual flat owners' abilities and call for better coordination and management.

The SmartEnCity initiative in Tartu and Estonia is a promising example of what can be accomplished by moving from an apartment building-based to area-based approach in revitalising modernist housing neighbourhoods within an integrated sustainability and 'smart city' framework. It includes retrofitting apartment buildings; modernising public and private transportation systems; adapting neighbourhoods to new lifestyles; establishing new uses and activities; and focusing on place-making (Ahas et al. 2019). It also addresses apartment buildings, their surroundings, the people who inhabit them, and connectivity through integrated planning and holistic revitalisation (cf. Wassenberg 2018). It focuses not solely on profit—currently the main feature of the heavily market-based housing sector in the Baltic countries (Tammaru et al. 2018)—but instead on people, seeking ways to improve quality of life, solidarity and well-being (Ahas et al. 2019). Financial schemes for such renovation programmes are complex and beyond the reach of single flat-owner associations, but assistance can be provided through pan-European energy efficiency programmes such as KredEx and JESSICA, enhanced by other funding sources such as municipal governments, private banks and stakeholder involvement (Ahas et al. 2019; Kuusk and Kurnitski 2019).

More can be done, however. While 'smart city' interventions are attractive, the addition of common space, improved sanitary facilities and especially elevators to apartment buildings in older housing estates is crucial (Kuusk and Kurnitski 2019), making life more comfortable especially for the elderly and families with children. These tactics could also increase the attractiveness of housing estates among these two large population groups.

Model interventions can be designed for specific Soviet-era apartment building types and then replicated. For 1–464 series apartment buildings, there are four areas of specific concern: the spatial layout of apartments is rigid; repartitioning interior building space could create new apartment sizes for various household types; additional communal space is needed; and people underestimate the large effort required for comprehensive renovation (Kuusk and Kurnitski 2019). Both the quality and speed of the retrofitting process can be improved by introducing new technological innovations, such as using prefabricated modules for renovating building facades. According to Kuusk and Kurnitski (2019), using prefabricated panels with factory-installed windows can reduce the renovation time for external walls from 6 months to 2 weeks. Since the apartment buildings are standard, renovation practices that take advantage of prefabrication can be very time-efficient.

Western European experience suggests that policies facilitating social mobility and ethnic integration are crucial for residents of large housing estates (Bolt 2018). Although ethnic and social challenges in large housing estates in the Baltic countries are not comparable to those in Western Europe, certain similarities exist: (1) ethnic minorities are over-represented in large housing estates in the Baltic countries; and (2) while the social mix of housing estate residents is still high in Riga and Vilnius, the first signs have appeared of poverty concentration in housing estates in Tallinn (Burneika et al. 2019; Kährlik et al. 2019; Krišjāne et al. 2019). In housing estates that are less centrally located, connectivity enhancements are critical for integrating housing estate residents through transport improvements and access to activities (Hess et al. 2018a). The key lesson from Western Europe is that it is easier to invest in built environment improvements than socially based improvements, causing the revitalisation strategies to be skewed to infrastructure and other physical aspects (Hess et al. 2018a; Wassenberg 2018).

When districts are renovated holistically like in Estonia's SmartEnCity, rather than a flat-by-flat or a building-by-building approach, there is a potential for accumulated benefits for other parts of the city (with better results from central locations), while area-based improvements are most appreciated locally. The key benefits of the area-based SmartEnCity renovation include energy efficiency, energy performance, sustainable mobility, integrated infrastructure and sharing programmes (bicycles, laundry) (Ahas et al. 2019). In short, many modern ideas about urban life—including equity, sustainability, ecological footprints, communal life and the sharing economy—align well with the underlying principles of housing estates, offering a glimmer of hope for a productive future for housing estates (Hess and Metspalu 2019).

In-migration of young people is needed to demographically balance the age structure of housing estates. This could also enhance inter-generational cooperation for aspects of daily life such as childcare. True, housing estates are generally not attractive to young people with sufficient resources to live in older gentrified neighbourhoods or new suburbs (Kährlik et al. 2019). Gentrifiers are usually drawn to central city neighbourhoods with historic housing (pre-World War II wooden tenement buildings) and not to apartments in standardised prefabricated buildings (Hess 2011). However, real estate prices in gentrifying or gentrified neighbourhoods are rising beyond the reach of average young families. Real estate price escalation related to the revitalisation of inner-city neighbourhoods could produce a spillover effect for modernist housing estates as families in search of housing turn their attention there. Gentrification of central city places suggests that the reputation of neighbourhoods can undoubtedly change with time.

It is therefore important to understand the conditions necessary for young families to move by choice to large housing estates. Housing estates do indeed have appealing aspects (Tammis 2017; Ouředníček 2016; Marin and Chelcea 2018; Kovács et al. 2018) and certain differentiations between the appeal of housing estates are now evident (Kovács et al. 2018; Temelová et al. 2011). Many (young) people looking to lessen their 'ecological footprint' find they can do so in housing estates with small, renovated energy-efficient apartments. Housing estates possess

various features appealing to ecologically minded people: nearby playgrounds and greenspace (within walking distance); community gardens; shops and services in proximate commercial nodes; and efficient public transport connections (making it possible to live without a car or at least reduce daily driving). Walkability within housing estates reflects the urban compactness inherent in their design. Renovation programmes that focus on the needs of people and on new urban lifestyles may also lure younger generations (Ahas et al. 2019). Enhancing community engagement, grass-roots advocacy groups (Tammiss 2017) and other collective initiatives could also help to improve the fortunes of housing estates.

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