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Chapter 1

Lessons Learned from a Pan-European Study of Large Housing Estates: Origin, Trajectories of Change and Future Prospects



Daniel Baldwin Hess, Tiit Tammaru and Maarten van Ham

Abstract Mid-twentieth-century large housing estates, which can be found all over Europe, were once seen as modernist urban and social utopias that would solve a variety of urban problems. Since their construction, many large housing estates have become poverty concentrating neighbourhoods, often with large shares of immigrants. In Northern and Western Europe, an overlap of ethnic, social and spatial disadvantages have formed as ethnic minorities, often living on low incomes, settle in the most affordable segments of the housing market. The aim of this introductory chapter is to synthesise empirical evidence about the changing fortunes of large housing estates in Europe. The evidence comes from 14 cities—Athens, Berlin, Birmingham, Brussels, Budapest, Bucharest, Helsinki, Madrid, Milan, Paris, Moscow, Prague, Stockholm and Tallinn—and is synthesised into 10 takeaway messages. Findings suggest that large housing estates are now seen as more attractive in Eastern Europe than in Western Europe. The chapter also provides a diverse set of visions and concrete intervention measures that may help to improve the fortunes of large housing estates and their residents.

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1.1 Point of Departure for Scholarly Inquiry

It has been nearly 15 years since a large European Union-funded project called *Restate* explored challenges in housing estates throughout several European countries and served as a clearinghouse for the exchange of ideas about counteracting negative trends in large housing estates (van Kempen et al. 2005). Since that time, a series of riots in the Paris *banlieues* and in the ‘million home programme’ suburbs in Stockholm have revealed that many problems remain. Major European newspapers, including *The Guardian*, frequently publish articles about deep social problems in housing estates, the poor image from which they suffer, and dissident groups that reside in them. Families with resources often move away from large housing estates, and housing estates contribute to increasing segregation levels in European cities (Tammaru et al. 2016a). Immigration currently introduces new groups to European cities whose initial places of settlement are low-cost neighbourhoods, often in large housing estates (Wessel 2016). Moreover, new challenges arise, such as the ongoing ageing of both buildings and their environments, which necessitates new investments and raises challenges related to sustainability, energy reduction and ageing populations. With many cities operating on austerity budgets and lacking cash to invest in improving housing and neighbourhoods, now is a good time to revisit the challenges faced by large housing estates in European cities.

There are three major pathways for responding to the many challenges that are faced by large housing estates. First is to not intervene and to leave potential changes to markets with little public involvement. Many European countries have in fact operated in this way by allowing stronger market functioning in the housing sector (Andersson and Bråmå 2018). A second option, from the other extreme, is wholesale demolition of apartment buildings and housing estates. For example, leaders in Moscow announced the demolition of a staggering 7,900 1950s- and 1960s-era apartment buildings (causing displacement of 1.6 million people) and replacing the obsolete residences with new modern apartment towers (Luhn 2017; Gunko et al. 2018). Third, selective demolition can take place, as has been common in many Western European countries in the last decade including the United Kingdom (Murie 2018). This third option falls between the first two strategies and focuses on more integrated interventions and measures aimed at upgrading housing estates both physically and socially, including building renovations, upgrading the flats, improving neighbourhoods and accompanying all tasks with supportive social, economic and safety enhancements. The French government has made perhaps the largest investments among European countries in improving housing estates by significantly upgrading their built environments (Chrisafis 2015; Lelévrier and Melic 2018). With this complexity in mind, our central research question asks:

Given the potential for urban policy and planning interventions, what role do large housing estates play in the reproduction of inequalities, poverty, and segregation in European cities today?

To explore this question, we present new evidence about changes in large housing estates from 14 European cities—Athens, Berlin, Birmingham, Brussels, Budapest, Bucharest, Helsinki, Madrid, Milan, Paris, Moscow, Prague, Stockholm and Tallinn (Fig. 1.1)—thus enlarging and updating findings from the *Restate* study (Dekker and Van Kempen 2004; van Kempen et al. 2005; Rowlands et al. 2009; Turkington et al. 2004). The *Restate* study found a great deal of diversity in the formation and development trajectories of housing estates, strongly influenced by factors such as context, building period and size, location and connectedness, maintenance, obsolescence, population structure, stigmatisation, the local economy, public space, and livability. Broadly, European experiences with regard to housing



Fig. 1.1 Location of 14 case study cities. *Source* Annika Väiko

estates differ in Northern/Western and Southern/Eastern European countries. The construction of housing estates took place in a relatively short time period in Northern and Western Europe as a response to rapid post-War population growth and subsequent housing demand. The construction of large housing estates in Eastern Europe began later and lasted longer. In Southern Europe, there was a strong private involvement in the construction of large housing estates unlike in other parts of Europe. These differences launched housing estates along different development trajectories, with the problem of spiralling social status still a major problem with many housing estates in Northern and Western Europe, while the prestige of housing estates remains higher in Eastern Europe.

The concluding chapter of the *Restate* project (van Kempen et al. 2005) is ominously titled “Deepening the Crises or Homes for the Future?” For a brighter future to emerge, the authors strongly advocate for diversified tenure and social mix in more problematic housing estates; this should be undertaken to provide opportunities for housing careers within the districts, more social contact and social cohesion in housing estates, increased social capital, providing more positive role models and reduced stigma in large housing estates. Now, since more than 10 years have passed since the last major publication from the *Restate* project, it is timely to make a thorough investigation of the changes that have taken place in large housing estates across Europe. In this context, we develop several penetrating research questions that guide the content of the chapters of this book:

- Have large housing estates remained differentiated or begun to follow more similar pathways? Have housing estates followed similar trajectories as they age? Are key differences related to time of construction, location, scale, density or other factors?
- Does the role housing estates play in social stratification and segregation depend on broader tenure and residualisation patterns and trends? Has it become apparent that privatisation has contributed to social and physical problems and to different trajectories of large housing estates?
- What is the success of various intervention measures applied in different European contexts? What works best? Are there different patterns of demolition and renovation across Europe? What are the key characteristics that could help large housing estates to become homes of the future?

The remainder of this introductory chapter is organised as follows. We first provide an overview of the common origins of large housing estates in Europe. We provide a definition of housing estates and present evidence about the variations in scale and timing of housing estate formation in Europe. This is followed by a synthesis of key findings from the chapters in this book, which are structured around ten takeaway messages. These messages convey that few substantial changes have occurred in large housing estates in Europe since the *Restate* project on the one hand, but they also carefully clarify some of the strategies for improvement that might help to secure a solid future for the dwellings and inhabitants of Europe’s large housing estates. Many housing estates still embody social democratic welfare ideals of state involvement in the lives of working-class people, and they still represent a buffer between downward mobility and homelessness. It

may be an important reason why levels of socio-economic and ethnic segregation are still lower in European cities compared to US cities since high-rise public housing in the US never became popular, as it was considered to be socialist and anti-capitalist and, as a consequence, un-American. The more prominent the share of large housing estates in an urban housing stock, the more appreciated housing estates are by the population, as is the case in many Eastern European cities.

1.2 Formation of Large Housing Estates in Europe

Mid-twentieth-century large housing estates were to greater and lesser extents envisioned as modernist urban and social utopias that would solve various urban problems at times of rapid industrialisation and urbanisation in most of Europe during the post-World War II baby boom (Rowlands et al. 2009). In one extreme, in Eastern Europe, large housing estates were carefully planned at the apartment, building, and neighbourhood levels, with an aim to provide working and middle-class families with quality living environments in a cost-efficient manner. At the other extreme, large housing estates are almost absent in Athens, where they were never seen as an instrument to solve urban housing problems. Most countries in Western, Southern, and Northern Europe fall somewhere between these extremes. Many housing estates established during the post-World War II decades are now 30, 40, 50 and even 60 years old, and the built environment and infrastructure has decayed, since cheap building materials and economical construction techniques were often used to build housing estates inexpensively and quickly.

Physical decay in housing estates today is matched by a lowering of social status and ethnic segregation. Especially in Western and Northern European cities, social problems tend to cluster spatially, and housing estates are often the domain of such clustering since they provide affordable housing (relative to other segments of the housing sector). Consequently, many housing estates have over time become sites of problems—including social dysfunction, poverty, ethnic concentration and isolation—amid deteriorating buildings and public spaces (Bolt 2018). While some housing estates eventually became dysfunctional places for desperate people, not all housing estates are obsolete, because they currently house tens of millions of Europeans and they remain vital parts of cities' housing stocks, especially in Eastern European countries. Not all of these housing estates in Europe are problematic, but serious problems occur far more in housing estates than on average in Europe, and especially Northern and Western European cities.

The appeal of housing estates to Europeans in the post-World War II period is understandable, because housing estate programmes offered an inexpensive model for expanding housing supplies during a time of rapid industrialisation and urbanisation. Establishing housing estates also helped address several urgent problems: providing shelter to people relocating to cities (including a workforce supporting industrialisation, as was often the case in Eastern Europe); meeting housing needs for immigrants and guest workers (that was more common in

Western Europe); and providing replacement housing when slum clearance projects were needed (Hess and Hiob 2014). Governments in Europe assumed responsibility for housing provision after World War I because it was evident that market-based housing solutions proved inadequate (Wassenberg 2018). In many countries, especially in Northern Europe (Andersson and Bråmå 2018) and Eastern Europe (Leetmaa et al. 2018), egalitarian housing production and housing provision became one of the central elements of the welfare state. New master-planned residential communities (often for tens of thousands of residents) were established on the periphery of urban centres where land was readily available. Housing estates were often meant to function as semi-autonomous neighbourhoods that catered to the daily needs of residents, including day care/kindergartens, elementary schools, sports halls, culture/community centres, and shops and services all within easy reach. Protection from traffic was usually a guiding principle so that internal neighbourhood services were within comfortable walkable distance (Hess 2018).

Although the first modernist apartment buildings and housing estate-like neighbourhoods appeared in Europe during the inter-War period (Wassenberg 2018), we focus in this book on an intense period of post-World War II housing estate construction between the 1950s and 1980s. A well-known ‘million home programme’ in Sweden characterises the ambition of the period: one million new homes in modern apartment towers were built in Sweden between the early 1960s and mid-1970s (Andersson and Bråmå 2018). ‘One million homes’ became a magical target in other European countries, including Hungary (Kovács et al. 2018), France (Lelévrier and Melic 2018) and Spain (Leal et al. 2018). In Northern Europe, national governments funded and constructed housing estates, also acting as landowner, while in Southern Europe, housing estates were often a product of commercial real estate markets and, as a consequence, targeted to different income groups. Housing estates in city centres often targeted higher income groups while housing estates on urban peripheries targeted lower income groups. Housing estates for high-income residents were more centrally located than housing estates for low-income groups, which were geographically distributed where land values were lower (Leal et al. 2018; Lelévrier and Melic 2018).

The evolution of large housing estates in Europe demonstrates the tension between short-term versus long-term strategies for developing an urban housing stock. In the short-term, housing estates helped to solve the problem of urgent demand for housing at times of large-scale industrialisation and urbanisation. Housing estates also introduced vast improvements in the quality of living space, allowing many people to leave behind inadequate pre-World War II housing and take up residence in new, modern apartments (Lelévrier and Melic 2018). Large numbers of working-class people had access to better-quality housing in new housing estates, either as renters (more commonly in Northern Europe) or as homeowners (more commonly in Southern Europe) (Wassenberg 2018; Andersson and Bråmå 2018; Leal et al. 2018). Housing estates were developed to offer long-term housing solutions, but optimism faded as soon as alternative forms of housing became available. The usually well-planned housing estates did not survive as ideal living environments; they eventually transformed into problematic and undesirable living areas.

High densities, priority of cost-efficient construction, attractive alternative housing and many other factors quickly downgraded housing estates to the bottom of the housing ladder (Petsimeris 2018; Andersson and Bråmå 2018).

1.3 Large Housing Estates Defined

It is challenging to construct a consistent definition for large housing estates, and we recognise that housing estates contain various types of residences: social housing, privatised apartments and condominiums. In some European cities, especially in Eastern and Northern Europe, housing estates were thoroughly planned as coherent socio-spatial ensembles. In other European cities, especially in Western Europe, the focus was on social housing that is more scattered in urban space. Housing estates thus have different connotations in various European countries, and this is also reflected by differences in terminology (Wassenberg 2018).

Nevertheless, we attempt a universal definition in this book in order to clarify the meaning of the term ‘housing estate’. Following Wassenberg (2018), large housing estates are composed of groups of apartment buildings that are (a) distinct in form, (b) constructed as a planned, single development on a large scale for a local context, (c) situated in high-rise towers in vertical space, and (d) tall enough (usually five or more floors) that an elevator may legally be required. For empirical purposes, we define housing estates as areas containing at least 1,000 residences in high-rise buildings, established by a developer or development process between the 1950s and the 1980s as a coherent and compact planning unit. In most European countries, however, it is impossible to strictly apply this definition using population data, since national datasets lack geographic and housing detail; nevertheless, we have carefully attempted to adhere to this analytical definition. Cities with comparable data provide evidence that the share of people living in large housing estates ranges from less than 5% in Athens to 80% in Bucharest, with higher shares generally found in Eastern Europe than in other parts of Europe.

1.4 Key Findings

Findings from past studies including *High-rise Housing in Europe* (Turkington et al. 2004) and the *Restate* project (van Kempen et al. 2005) provide in-depth evidence of the varieties of change in large housing estates in Europe through the mid-2000s. A recent book entitled *Socio-economic Segregation in European Capital Cities* (Tammari et al. 2016b) documents growing levels of segregation across Europe, suggesting an increasing overlap of ethnic and social segregation, often to be found in large housing estates. Our current book focuses on the formation and later socio-spatial trajectories of large housing estates in Europe. The long-term growth in social inequalities in Europe, a growing number of immigrants in European cities

seeking affordable housing, as well as the physical ageing of apartment buildings form key policy challenges related to large housing estates in Europe.

This book provides comparative city- and metropolitan-level evidence of the origins, trajectories of change and future prospects of large housing estates. We are specifically interested in the actions needed to realistically improve the fortunes of housing estates experiencing downward trends and enhance life for the residents living in them. Part 2 of the book includes two pan-European views on (a) built environments and planning, and (b) social and ethnic change in large housing estates, focusing on the challenges that relate both to their physical characteristics and residents living in them. Part 3 is composed of targeted case studies of housing estates in 14 European cities—Athens, Greece; Berlin, Germany; Birmingham, United Kingdom; Brussels, Belgium; Budapest, Hungary; Bucharest, Romania; Helsinki, Finland; Madrid, Spain; Milan, Italy; Paris, France; Moscow, Russia; Prague, Czechia; Stockholm, Sweden; and Tallinn, Estonia—in which authors address the following five questions:

- Are housing estates spatially clustered or scattered?
- Which social groups originally had access to residential space in housing estates?
- What is the size and scale of housing estates, their architectural and built environment composition, their position on the local housing market, the level of services and neighbourhood amenities, and connections between housing estates and the rest of the city (in terms of work and leisure-time activities)?
- How did or how do housing estates contribute to the urban mosaic of neighbourhoods by ethnic and socio-economic status?
- Which policies and planning initiatives have been implemented to prevent the lowering of the social status of housing estates?

The remainder of the introductory chapter is organised around ten synthesised takeaway messages distilled from the 16 chapters of the book.

1. Although large housing estates are a common phenomenon in Europe, large variations exist between countries. There were wide variations in the initial conditions and contexts of housing estates, and these placed housing estates along different trajectories of change.
2. Housing estates are often viewed as universally problematic, but this characterisation is too simplistic and there are varieties of trajectories of change, even within the same cities. Some housing estates have downgraded significantly, while others have been more successful in maintaining or even improving their status.
3. Interventions that aim to reduce densities and improve the relative location of housing estates—investments in transport infrastructure, including the expansion of subway systems, construction of pathways for pedestrians and cyclists—can substantially improve access to housing estates.
4. The position of housing estates on the housing ladder is unclear. Housing estates could have a better-defined role—for example, either as a final housing destination or as an interim position in a family's housing career—which could make it easier to clarify goals and design concrete interventions.

5. Privatisation of collective space should be handled with care. The function of housing estates, originally built by a central authority and intended for collective ownership, is strained when structural changes cause housing units to be placed in private hands. The often-grandiose physical configuration and social structure of housing estates require thoughtful management of common spaces also when apartments get privatised.
6. It is critical to improve the perception and elevate the reputation of housing estates. People have a tendency to create images in their mind that may or may not match reality, but a poor reputation for large housing estates can further hurt their future performance.
7. Intervention strategies for reversing the fortunes of large housing estates are complex. The focus is usually on area-based interventions with an aim to improve the physical qualities of neighbourhoods, or on access- and connectivity-based interventions with an aim to link large housing estates originally located in peripheral urban space. More attention is needed, however, on people-based improvement strategies.
8. Many ideas about contemporary urban life—including sustainability, ecological footprints, communal life and the sharing economy, and social equity—align well with the underlying principles of housing estates, which offers chances for the future.
9. Reliable, up-to-date and comparable data are needed about the residents of large housing estates across Europe. We cannot expect city governments and other actors to define effective intervention strategies if they cannot accurately diagnose problems and challenges.
10. Past mistakes made with large modernist housing estates could help guide the way current and future cities are planned in Europe and beyond. A lesson can be offered from twentieth-century experiences in Europe with housing estates: the larger, higher density and the more peripherally located housing areas are at higher risk of concentrating poverty and producing and reproducing triple disadvantages—social, ethnic and spatial—through a vicious circle of poverty and segregation.

1.5 Takeaway Messages

Message 1

Although large housing estates are a common phenomenon in Europe, large variations exist between countries. There were wide variations in the initial conditions and contexts of housing estates, and these placed housing estates along different trajectories of change.

The standardised grand structures of housing estates in Europe are the children of post-World War II urban growth, industrialisation and urban renewal. Housing estates often formed a high-density urban-industrial circle around the historic cores of cities (Petsimeris 2018; Lelévrier and Melic 2018) but in some cases they were

built to facilitate the redevelopment of inner-city neighbourhoods of slum housing (Murie 2018). Many housing estates were built outside the urban core on peripheral greenfield spaces where land was cheap and where it was easy to reap economies of scale, i.e. to provide a large amount of housing units at a single construction site (Wassenberg 2018). In some cases, the ease of movement of cranes on construction sites determined the way housing estates were planned (Meuser and Zadorin 2016).

Although there are fewer housing estates in some cities, for example, in Athens (Kandyilis et al. 2018) or Brussels (Costa and de Valk 2018) and even if they have been built outside the city central areas as in Paris (Lelévrier and Melic 2018), they are still a common characteristic in virtually all European cities. Despite many similarities in form and function, large variations among housing estates exist between European cities. The number of apartment buildings built, as well as the social and physical conditions in housing estates today, relate in part to the welfare regime that was prevalent in the countries at the time housing estates were established. In some countries—the former Soviet Union, of course, but also the social democratic welfare states of Northern Europe—collective visions prevailed and communal living and egalitarian social conditions were consistent with societal expectations. In other countries—notably in Southern Europe—collective vision promoted private homeownership, even through a period of expansion of social housing and collective housing estates. Both societal visions shaped the formation of housing estates as well as set the tone for their long-term development.

The peak of large-scale housing construction varies by European region as well. In Northern, Southern and Western Europe, the main construction period occurred in the 1960s and 1970s. Turkington et al. (2004) identify peaks in high-rise construction in several countries. Construction slowed quickly thereafter when the problems of housing estates—such as mono-functionality (residence), low construction quality, spatial isolation of housing built on the periphery of cities, deprivation, lack of safety, problematic public spaces, etc.—were quickly recognised. An alarm bell rang after a gas explosion in Ronan Point tower in Newham, London, in 1968. Critical public debates began in France around the same time. After the 1981 riots, the term ‘deprived neighbourhoods’ entered the French public discourse (Lelévrier and Melic 2018). Likewise, critical public debates about housing quality in large housing estates began in Sweden in the 1970s, soon after the ‘million home programme’ (1965–1974) housing was completed.

The construction of new high-rise housing estates began decreasing in the 1970s in Western Europe. In the socialist countries of Eastern Europe, their construction increased rather than decreased in the 1970s, and the growth trend continued in many countries until the fall of the Berlin Wall in 1989 and the demise of the Soviet Union in 1991. The provision of free-of-charge public housing was one of the cornerstones of the egalitarian ideology in communist Europe. The ideals of large housing estates were modelled from Northern Europe (rather than from Western Europe) because central planners were inspired by the grand socio-spatial structures of Northern European cities, notably Sweden. Central planners were less impressed by the public housing-based approaches to housing estate formation that prevailed in Western Europe. They developed various templates for planning the internal

spatial structures of modernist neighbourhoods. These templates included a (a) surround-type where a square inner-courtyard is formed between apartment buildings, (b) a canyon-type formation with grand roads with tall apartment buildings along both sides and (c) a parallel blades formation featuring long rows of parallel buildings (Marin and Chelcea 2018). The neighbourhoods, which were planned to deliver necessary daily services within a walkable reach, became the foci of daily life for people despite the fact that oftentimes not all planned service facilities were actually built.

Some of the most grandiose modernist urban structures can be found in Eastern Europe. Moscow (Gunko et al. 2018) and Bucharest (Marin and Chelcea 2018) consist of endless housing estates that are home to hundreds of thousands of people. For example, the number of people living in Balta Alba estate (300,000) in Bucharest and in the Lasnamäe estate (125,000) in Tallinn is comparable to the size of the second largest cities in these countries. In Berlin (Urban 2018), housing estates grew larger in the eastern part of the city (the largest, Marzahn, with 100,000 people) compared to the western part (Märkisches Viertel, the largest, with 35,000 people). In many Western European cities, only about 10% of urban residents live in large housing estates. For example, in the Paris region around 11% of people live in housing estates (Lelévrier and Melic 2018), and in Stockholm this figure is 15% (Andersson and Bråmå 2018), while more than 80% of the residents of Bucharest live in large housing estates (Marin and Chelcea 2018). Interestingly, though, higher shares of people living in large housing estates do not necessarily correspond to larger social problems. In cities with a high share of the population living in housing estates, these estates are accepted as a normal part of life (Marin and Chelcea 2018).

Message 2

Housing estates are often viewed as universally problematic, but this characterisation is too simplistic and there are varieties of trajectories of change, even within the same cities. Some housing estates have downgraded significantly, while others have been more successful in maintaining or even improving their status.

Characteristics and features of housing estates vary not only between countries but also within cities. Construction methods for large housing estates changed over time. The first housing estates were smaller in size, strongly influenced both by modernist housing aims as well as by the ideals of the Garden City concept (Urban 2018). As mass production techniques improved and in order to meet the growing demand for new housing units, apartment buildings became taller and housing estates became denser from the 1960s onward. This change is especially evident in Eastern European cities where the construction of large housing estates lasted longer (until the early 1990s) compared to West European cities (Urban 2018; Marin and Chelcea 2018; Ouředníček et al. 2018).

The metropolitan location of new housing estates changed over time as well. The first housing estates were often built either as in-fill in city centres or close to city centres, while later housing estates were usually built further away, on plots of land still available for large-scale construction. This implies that high densities and spatial isolation are often combined in newer housing estates, making them less

attractive in today's housing market compared to older housing estates (Kovács et al. 2018). However, older housing estates face problems too. These problems relate to their older age and consequent higher investment needs, fewer amenities, and, in some cases, the small size of the apartments. In some cities, apartments increased in size and quality over time, better meeting families' needs (Ouředníček et al. 2018; Leal et al. 2018).

Figure 1.2 depicts the relative size (measured by current or recent residential population) and spatial arrangement of housing estates as detailed in the chapters in the book. High-density arrangements of housing estates (in Moscow and Bucharest, for example) can be identified, and largely peripheral locations for housing estates (in Milan and Brussels, for example) can be contrasted with central locations for



Fig. 1.2 Distribution of housing estates in metropolitan space in case study cities. *Source* Figure prepared by Raivo Aunap

housing estates (in Paris, for example) and evenly-distributed housing estates (in Budapest and Prague, for example). Underlying political contexts at the time of housing estates construction explain the concentration of housing estates in East Berlin (but not West Berlin), and the socialist system explains a fewer number of housing estates that are nonetheless large in size (in Tallinn, for example, and elsewhere in Eastern Europe).

Once established, the built environment is slow to change due to inertia. Initial choices made about the physical characteristics of housing estates—location, size, design and construction—have had a crucial impact on the long-term trajectory and performance of housing estates, even if social and housing values have changed since then. As a rule of thumb, immense housing estates and those located in more peripheral locations face higher risks for social and physical downgrading than smaller housing estates (Andersson and Bråmå 2018; Kovács et al. 2018; Leetmaa et al. 2018), while smaller building types in housing estates within the urban core tend to perform better over the long run (Kovács et al. 2018; Vaattovaara et al. 2018).

While the absolute location of housing estates cannot be changed once established, in many cities, their relative location has changed; where European cities have sprawled further since large housing estates were built, housing estates now often form a middle zone between urban cores and lower density outer rings. Transportation connections have often improved as well (Hess 2018). The relative spatial position of housing estates can be improved more by focusing on their better integration with opportunities elsewhere in the city through transport networks (Lelévrier and Melic 2018). For example, in Tallinn, some housing estates face the challenge of a lowering social status, but people are not trapped in these neighbourhoods, thanks to free public transport (Leetmaa et al. 2018; Hess 2017).

Message 3

Interventions that aim to reduce densities and improve the relative location of housing estates—investments in transport infrastructure, including the expansion of subway systems, construction of pathways for pedestrians and cyclists—can substantially improve access to housing estates.

High-density per se is not necessarily a source of problems and dissatisfaction for residents; other related factors may be more detrimental, such as poor environmental quality, noise, lack of community involvement or lack of safety (Howley et al. 2009; Andersson and Bråmå 2018). Since gentrification has elevated housing prices in central cities beyond the reach of large numbers of dwellers in many European cities, people seek alternatives in the housing market, and that could gear choice towards housing estates. For this to happen, measures need to be taken to downplay the negative aspects of high-density residential space, to improve the relative location of housing estates in urban housing markets and to invest in the built environments within housing estates.

There are many aspects of housing estates that contribute to differences in the trajectories of change. Housing estates that are functionally more diverse and provide good jobs, services and leisure-time activity can be relatively attractive. For

example, Mustamäe, a housing estate in Tallinn, Estonia built between 1962 and 1973, is remarkable for the level of land-use and functional mixing that was originally achieved and has been maintained. Situated only five kilometres from the city centre and possessing good transport connections, it houses approximately 65,000 people. Its interior is focused on kindergartens and schools, and it also contains a university, an industrial quarter, shops and services, and other workplaces (Metspalu and Hess 2018). Functional diversification is an important way to increase the attractiveness of large housing estates.

The initial social composition matters, too. In Brussels (Costa and de Valk 2018) and Madrid (Leal et al. 2018), for example, the initial social composition of housing estates varied significantly depending on the developer and location. In Madrid, housing estates in the city centre were constructed by private developers for higher income groups while those constructed by the public sector were located mainly on the urban periphery and targeted for low-income people. Likewise, the current ability of residents to fund basic building maintenance may differ according to ownership structure. In Brussels (Costa and de Valk 2018), private owners are less capable of large-scale renovations and publicly owned apartments are therefore better maintained. In Tallinn, ethnicity (in the majority group, Estonian) rather than income predicts residents' willingness to afford large-scale housing renovations (Leetmaa et al. 2018).

Private ownership of apartments combined with poverty and high shares of minorities may exacerbate the downward spiral of housing estates. The trend towards an overlap of ethnic, social and spatial disadvantage is growing in Western and Northern European cities, and an increasing share of the housing stock is privatised. Certain risk factors call for caution when it comes to the future of particular housing estates in Eastern Europe as well, since there is some evidence of high-income groups moving away from the less attractive housing estates built in the 1980s (Kovács et al. 2018; Leetmaa et al. 2018). Similar risks also apply to many Southern European housing estates located on urban peripheries, which are characterised by high densities and tall buildings and private ownership combined with mainly low-income groups (Petsimeris 2018; Leal et al. 2018).

An alternative way to intervene is to demolish less attractive housing estates. Demolition of apartment buildings has been undertaken in three of our case study cities: Birmingham, Moscow and Paris. In Paris, social aims drive housing demolition and renovation schemes (Lelévrier and Melic 2018). There is an ambition to provide one new housing unit for each one demolished and to reduce housing density through the removal of high-rise towers. The opposite takes place in Moscow, where an immense demolition plan of 1960s housing departs from an entrepreneurial way of thinking. Profit-driven developers operate within a rather ruthless real estate market and social considerations are unimportant (Gunko et al. 2018). The demolished area will be significantly densified through the addition of clusters of taller towers. Although their physical configuration thus becomes similar to the most problematic housing estates in South European cities, the social structure would be different since in Moscow, a respectable income is needed to buy an apartment in new tower blocks to compete in the dynamic housing market

with limited choice for new housing. In Birmingham, density has been increased with new private and social rented housing alongside new investment to improve the standard of existing housing (Murie 2018).

In short, vital neighbourhoods adjust to changing circumstances in complex ways. These may include refurbishments, replacements of housing and people, physical and social upgrading, modernising the built environment, adding new facilities, changing the housing stock when necessary, and altering individual dwellings (by combining, splitting or enlarging them). There is no single measure that can neatly apply to all countries, cities and housing estates.

Message 4

The position of housing estates on the housing ladder is unclear. Housing estates could have a better-defined role—for example, either as a final housing destination or as an interim position in a family's housing career—which could make it easier to clarify goals and design concrete interventions.

The original aim of the housing estates programme was to provide modern apartments for working-class families. These apartments were often seen as a final destination in the housing career; they were carefully and scientifically designed to meet the expectations of families and then replicated in large numbers. In many European countries, the first residents were middle-class or affluent working-class families (Andersson and Bråmå 2018; Murie 2018); in others, the profile of residents was more diverse and included large shares of immigrants (Lelévrier and Melic 2018; Kandylis et al. 2018). The subsequent trajectory of change—lowering of social status and increase of immigrant population—bears more similarities, although the pace of these changes yet again varies from country to country and from housing estate to housing estate. Families with children have opted for low-rise housing alternatives as well. The lowering of social status, departure of native families and increase in immigrant population have been most rapid in Western European cities (Andersson and Bråmå 2018; Lelévrier and Melic 2018). Higher income people have left housing estates and for them, this housing segment is either out of the question altogether or considered only for temporary housing; for many low-income groups, housing estates still form a final and permanent housing destination (Lelévrier and Melic 2018).

However, new population groups are on the rise in European cities for whom large housing estates would serve as an attractive option on the housing market. As the second demographic transition evolves, in most countries, the highest growth is predicted for small households—composed of young singles, elderly, divorced people, foreign students and temporary workers—not families. In the meantime, there are plenty of apartment buildings built during the last decades for families with children, and these are located in the suburbs, away from central cities. Not all groups look automatically towards a single-family house in the suburbs with a garden and a parking place. Instead, they prefer centrally located and easy-to-reach apartments with shared services, ease of maintenance, smaller dwelling units and (for the elderly) one-level units. Many apartments in large housing estates meet these requirements.

The social composition of housing estates has been more stable in Eastern European cities (Leetmaa et al. 2018; Kovács et al. 2018; Ouředníček et al. 2018; Gunko et al. 2018) than other parts of Europe for two main reasons. First, there was little lowering of the social status of housing estates during the socialist period. There was less life cycle related mobility in socialist countries and housing estates aged simultaneously with people who moved into them. Housing allocation was centrally administered; people waited in housing queues for years or even decades, and once an apartment was received, there were few opportunities for further residential moves. Second, housing estates became a dominant housing segment and they still provide shelter to a significant share of urban dwellers, slowing the pace of social change. However, there is some evidence of the lowering of the social status as well as increasing shares of immigrants in housing estates in Eastern European cities in the last two decades.

To conclude, lower socio-economic groups and ethnic minorities have become increasingly concentrated in large housing estates and in other areas where social, ethnic and spatial disadvantage overlaps and intensifies (Hess et al. 2012; Leetmaa et al. 2015; Bolt 2018). In this context, it is critical to better conceptualise the current role of housing estates in urban housing markets, especially in light of the second demographic transition and an increase of mobile people without families. Large housing estates are ideal for many of these groups. However, if the role of housing estates on the housing market is unclear, it is difficult to devise suitable intervention measures. Since the origins, size, location and current condition of housing estates vary from country to country and housing estate to housing estate (Lelévrier and Melic 2018), it is difficult to universally conceptualise their role in the housing market. Increased marketisation makes this complex too. Still, planning interventions could help to influence the choices made by specific population groups like students, families or older people through planning of public spaces and services. Various innovations—such as setting up the best school in the city, locating a ministry office, establishing a centre with diverse and sophisticated services for older people, providing land free of charge for a leisure-time centre and other measures—could potentially shape the main function, social vibe and population composition in certain housing estates.

Message 5

Privatisation of collective space should be handled with care. The function of housing estates, originally built by a central authority and intended for collective ownership, is strained when structural changes cause housing units to be placed in private hands. The often-grandiose physical configuration and social structure of housing estates require thoughtful management of common spaces when individual apartments become privatised.

The construction of large housing estates was usually publicly financed, resulting in publicly owned and publicly managed housing complexes. Public financing occurred to a lesser degree in Southern Europe and especially Athens, where housing estates have always been under private ownership (Kandylis et al. 2018). Governance structures were devised that were regarded as appropriate for

public ownership and management. A common contemporary trend across Europe, however, is increased private ownership (Murie 2018; Petsimeris 2018; Lelévrier and Melic 2018) or semi-private ownership (Andersson and Bråmå 2018) of housing units (both in the general housing stock and in large housing estates). In the U.K. (Murie 2018), private owners are leaseholders and the freeholder (usually the local authority) retains key legal responsibilities for maintenance and repair of the external fabric and common areas of buildings; private owners are consulted and charged for these services. In many Eastern European countries, most apartments became privately owned in the 1990s, usually through 'right-to-buy' or 'pure give away' strategies to sitting tenants, resulting in the formation of super-homeownership societies (Kovács et al. 2018; Marin and Chelcea 2018; Leetmaa et al. 2018). In Prague, the transformation period (housing restitution, privatisation, rent regulation, administrative and legal changes) was top-down and overseen by municipal governments, but now the private and commercial sector influences the development of residential and commercial space of large housing estates (Ouředníček et al. 2018; Liepa-Zemeša and Hess 2016). In Berlin, large numbers of apartments have been sold to international investors (Urban 2018).

Today, redevelopment of many of the publicly constructed and formerly state-managed housing complexes thus sometimes lies in the hands of private owners. Although private ownership is usually related to better housing maintenance, it does not always work this way in large housing estates for various reasons (Kandylis et al. 2018; Marin and Chelcea 2018). First, private ownership of apartments puts them morally outside the realm and responsibility of local and central governments. Second, owners do not always possess the culture, knowledge or resources for property management to effectively upgrade housing themselves. Third, area-based coordination and management of common spaces is needed in housing estates. Privatisation with no eye on the grand spatial structures, private management of apartments and management of common spaces can easily lead to eclectic arrangements; individual improvements and care at the apartment—or even apartment building-level do not necessarily contribute to improved overall quality of living environments in housing estates. The selling of properties to large private development companies does not necessarily work, either. For example, Berlin sold 100,000 apartments to international investors; setting high rents for earning high profits tends to be more important for such investors than investing into the quality of the housing units and built environment (Urban 2018).

Although apartment associations are common in Eastern Europe, the management of renovation programmes is often chaotic. In Tallinn (Leetmaa et al. 2018) or Moscow (Gunko et al. 2018), for example, apartment owners who are dissatisfied with apartment association practices often pursue un-coordinated efforts to improve their apartments. The outcome of these improvements often leads to aesthetic compromises in buildings; for example, when windows are replaced by individual owners, every apartment may look different on the building facade. Even more radical developments, falling under the umbrella term 'do-it-yourself urbanism' can be found in less-wealthy post-socialist cities in the form of balcony construction or unregulated building additions (Bouzarovski et al. 2011). Again, the outcome is an

eclectic building facade. Better coordination and management does not necessarily mean costly public investments; reasonable-cost renovations have been conducted in France (Lelévrier and Melic 2018). Poland is a good example of a healthy combination of privatisation and management, with large housing associations responsible for large numbers of apartment buildings and collecting modest maintenance fees from residents. The outcome is a fully renovated housing stock in large housing estates that is still attractive for socially diverse urban residents without creating burdens for public finances (Szafrańska 2014).

Productive management structures may not help if differential residential mobility has already produced significant population dynamics, leaving low-income groups in large housing estates. As the social status of residents of housing estates downgrades, it may be more difficult to reverse trends (Lelévrier and Melic 2018). Consequently, well-structured management programmes in Czechia and Poland are effective since there is still a relatively high social mix in housing estates in those countries. If high-income and low-income groups sort into different housing segments, the financial capacity for housing upkeep in low-income housing estates could fall short of investment needs. It follows that management structures should be revised in some countries before it is too late, since the differential sorting of various income groups is in an advanced state (Ouředníček et al. 2018).

To conclude, any action that increases private or semi-private ownership—and this is a pronounced and growing trend across Europe—in housing estates that are designed as grand macro-structures should be connected to effective systems of area-based urban management. This simple rule seems self-evident but is often violated in everyday life in many European countries; in no other housing segment can the violation of this rule create more harm than in large housing estates.

Message 6

It is critical to improve the perception and elevate the reputation of housing estates. People have a tendency to create images in their mind that may or may not match reality, but a poor reputation for large housing estates can further hurt their future performance.

At the time of the construction of housing estates, people had high hopes for them. There was great excitement, since new apartments in modernist housing estates offered major improvements in living quality. Many of the previous residential units were without running water (or cold water only), without showers or baths, without indoor toilets and without central heating. This made people enthusiastic about newly constructed housing estates, which offered a modern living style. Since social mixing within housing estates was a common aim of policymakers and planners, both working-class and middle-class families had the chance to live in a new modern apartment. However, the public perception of housing estates in Western Europe reversed quickly as the negative qualities of housing estates or the high concentration of low-income people were acknowledged. For example, the term ‘deprivedhoods’ was coined in France in 1981, referring to neighbourhoods in which large social problems were readily apparent (Lelévrier and Melic 2018).

Large housing estates today tend to house people with lower than average incomes, but this is not always regarded as problematic (Urban 2018). As a rule of thumb, there is more stigma attached to large housing estates in Western European cities (e.g. Costa and de Valk 2018) than in Eastern and Southern European cities. Stereotyping by the media has contributed to the poor reputation of housing estates and has diminished their chances for success. For example, the public tends to have a distorted image of housing estates in Milan, based in part on media coverage of certain negative events. People think that housing estates are overrun with foreigners, but in reality, the share of ethnic minorities is small there (Petsimeris 2018). Likewise, residents of large housing estates find it shocking when media depicts them as criminals living in ghettos (Urban 2018). In Paris, large-scale investments have significantly improved the built environments of large housing estates, but their reputation has not increased among middle-class families, especially when riots and delinquency are emphasised in the media (Lelévrier and Melic 2018). Meanwhile, housing estates in Finland are well-managed and often beautifully landscaped with fully renovated modern housing (Vaattovaara et al. 2018). Hence, there is nothing substantially wrong with housing estates in many cities of Western and Northern Europe, and the negative perception towards them, especially among people not living there, does not always fully reflect the objective reality.

There is less stigma towards large housing estates in Eastern Europe (Ouředníček et al. 2018; Kovács et al. 2018; Marin and Chelcea 2018; Gunko et al. 2018), probably because they form a much more important segment in the housing sector and because there are fewer alternatives. The formation of large housing estates was closely linked with urbanisation and industrialisation. Eastern European cities industrialised rapidly, and, despite attempts to limit large city growth, grew rapidly as well, maintaining high demand for new housing construction (Marin and Chelcea 2018; Gunko et al. 2018). This high demand for new housing overshadowed the possible problems related to building large housing estates. In East Berlin, the critique of housing estates was surprisingly blunt as early as 1960, when the housing blocks were depicted as ‘monotonous’, ‘uniform’ and ‘carelessly designed’ (Urban 2018). The state was responsible for housing development and since the costs of new housing construction are high—8% of the GDP in Romania was spent on housing construction (Marin and Chelcea 2018)—new housing developments grew both in terms of height and density until the late 1980s, despite significant criticism. Furthermore, as new housing construction was almost absent in many Eastern European countries in the 1990s and early 2000s and during the period of major social transformation that impoverished people (Sýkora and Bouzarovski 2012)—there is little choice in the form of new housing, and the reputation of large housing estates has suffered less as well. In short, as large housing estates form the most important segment of housing in many Eastern European cities, their relative reputation has suffered less and they still form a well-appreciated segment of the housing stock.

A poor reputation for housing estates can certainly jeopardise their success. People often judge various segments of housing in relative terms, and the perception of each individual tends to follow the perceptions of the crowd. For

example, the reputation of inner-city neighbourhoods is high across Europe today, but not long ago these neighbourhoods were sites of poor quality housing and low social status (Hess et al. 2017). This suggests that changes in perception could significantly alter the development trajectories of residential neighbourhoods. Policy and planning interventions at all levels—places, people and connectivity—can help to improve all aspects of housing estates and also the image of them. The latter is as crucial as the first. Changing the reputation, once damaged, is not an easy task, though. It only succeeds when supported with a range of related measures, including real, visible improvements for the residents ('the internal image') and newcomers to the city; it is most difficult to change reputation for those living outside housing estates (Wassenberg et al. 2004).

Message 7

Intervention strategies for reversing the fortunes of large housing estates are complex. The focus is usually on area-based interventions with an aim to improve the physical qualities of neighbourhoods, or on access- and connectivity-based interventions with an aim to link large housing estates originally located in peripheral urban space. More attention is needed, however, on people-based improvement strategies.

There is little wrong with large housing estates in many parts of Europe either because they have never experienced significant physical decline and lowering of social status or they have been subject to large-scale renovation. What is problematic is their negative public reputation and relative position at the bottom of the housing ladder. The consequences are, however, unfavourable since social, ethnic and spatial problems are often intermixed in a vicious circle of poverty and segregation (van Ham et al. 2018; Bolt 2018). This cycle has turned large housing estates into poverty traps where delinquency can readily develop. As a consequence, a lack of safety is one of the major challenges in large housing estates (Wassenberg 2018; Petsimeris 2018). Poor quality of the built environment is another important issue. Many policymakers have clearly understood this, and a majority of investments have consequently been channelled to improving the physical conditions of apartment buildings and surrounding built environments. Political rewards can be tied to physical improvements. In Eastern Europe, the requirement to comply with European Union energy directives is the most common way of improving large housing estates (Marin and Chelcea 2018; Lihtmaa et al. 2018).

Another important issue—especially in West European cities—pertains to quality of schools. Since schools often draw their students from surrounding residential districts (and in many countries, children must attend the nearest neighbourhood school); when low-income families begin to concentrate in certain areas of cities, higher income parents leave these places (and avoid moving into them in the first place) due to school quality (Bernelius 2013). This may deepen and hasten the lowering of the social status of large housing estates. The lowering of the social status of residents is partly related to changes in the economy in Northern and Western European countries. Middle-class families affected by the loss of jobs due to globalisation and de-industrialisation often become trapped in the most affordable

parts of the housing sector, usually within large housing estates. As middle-income families leave (or avoid) such areas, unemployment levels are high in large housing estates (Lelévrier and Melic 2018; Andersson and Bråmå 2018). Children raised in these social environments often have low motivation to do well in school, lack positive role models and lack resources for getting good education and jobs; consequently, poverty tends to pass from parents to children (van Ham et al. 2018).

We identify three types of policy interventions—related to segregation and poverty—that can be pursued in large housing estates: place-based policies, people-based policies and connectivity-based policies. The place-based policies have been most popular in European cities and they mainly focus on upgrading the physical environments of large housing estates. This is achieved, for example, by demolishing low-quality (social) housing, by building higher quality social housing, by establishing more expensive rental and owner-occupied housing, and by enhancing neighbourhood amenities. Such measures have been extensive in the UK (Murie 2018), France (Lelévrier and Melic 2018) and Russia (Gunko et al. 2018). Place-based policies often require enormous investments, but within a relatively short period of time the physical layout can be upgraded by renovating and replacing buildings. Interestingly, though, the physical outcomes of demolition differ—in terms of densities and other factors. In Western European cities, the outcome is often reduced density (e.g. Lelévrier and Melic 2018), while in Eastern Europe, the outcome is often increased density, either as a result of in-fills as new apartment buildings are inserted among existing ones (Marin and Chelcea 2018) or existing apartment buildings are replaced with denser and taller housing blocks (Gunko et al. 2018).

While uniformity, repetition and equality were original guiding principles for large housing estates, diversity, individualism and choice are important for changing the future fortunes of large housing estates (Wassenberg 2018). Area-based intervention policies can only be successful if more affluent households can be attracted to large housing estates or in situ social mobility of existing residents occurs, driven by changes in built environments and local services, improved local school quality, and employment opportunities. It is a challenge to keep the socially upward climbers within housing estates; it would require a parallel renewal of dwellings and upgrading of neighbourhood facilities and amenities.

While some progress has been made in improving the quality of built environments and services, there has been less success in attracting middle-class families to large housing estates once social decline has advanced to a certain extent or ‘tipping point’ (Lelévrier and Melic 2018). Recent evidence from the Moving to Opportunity project suggests that mixing in situ works better than relocation (to better neighbourhoods) for low-income people (Chetty et al. 2016). An important lesson that follows is that it is never too early to intervene into the physical degradation and lowering of the social status of large housing estates, but it may be too late to intervene in an effective way.

People-based policies focus on reducing poverty and creating opportunities for residents in the areas of education and employment. People-based policies require a long-term perspective as it might take a generation or longer to reduce (intergenerational) poverty. An important realm that could have important spill-over effects

in local communities pertains to primary and secondary education. Investing not only in the physical qualities of schools but attracting well motivated and good teachers in pre-schools and schools located in large housing estates could be a crucial catalyst for positive change. Especially when a share of residents of large housing estates is of immigrant background, their better integration in European societies hinges on policies that adjust to specific local contexts and day-to-day activities. A large pan-European project shows that across Europe, central governments tend to pursue naïve and value-based integration policies that poorly relate to people living in housing estates who experience everyday challenges (Tasan-Kok et al. 2014). More context-sensitive approaches are thus needed. A good example is the halving of class size in French housing estates in order to pay more attention to each child.

The success of people-based policies is not always visible in local communities, since success might be masked or it might dissipate. Hence, people-based policies should be combined with place-based policies to effectively improve housing and neighbourhoods. If the focus is on only people-based or place-based policies, the interventions will likely fail. If people-based policies are successful, children may perform well in school and advance to higher education and employment, eventually earning higher incomes and allowing themselves to consider wider choices in the housing market and consequently move to better neighbourhoods. A way to intervene is to motivate companies to locate their offices in or near large housing estates (using tax incentives) and to also locate public institutions and jobs there (similar to the way that institutions such as universities are sometimes located in peripheral locales as part of regional policy measures). Locating an art university (or a branch of an art university), for example, within a large housing estate could invigorate its surroundings, bring new people to the area and contribute to an improved reputation for large housing estates. Other potential additions to housing estates include local libraries, museums, football stadiums, concert halls, or regional shopping malls; it is important to bring outsiders to housing estates for functional reasons. This would also help improve the perception of housing estates. However, the juxtaposition of various social groups is only successful when social links between social groups form as well.

Place-based policies do not necessarily reduce poverty and inequality, and people-based policies might not have desired local effect; therefore, a full set of interventions should ideally also focus on connectivity. Interventions to improve connectivity are aimed at reducing spatial separation of poor groups from opportunities, leisure-time facilities, services, suitable jobs and, in particular, education. For example, segregation levels have risen quickly in Tallinn compared to other European capital cities (Tammaru et al. 2016b) but free public transport in the city helps to overcome the problems of socio-spatial isolation of residents living in large housing estates (Leetmaa et al. 2018; Hess 2017). But the effect also works in the opposite direction. When better connected to the rest of the city, other urban dwellers can have easier access to large housing estates. If private companies are attracted to large housing estates and if some public institutions and jobs are located there, good connectivity is crucial for facilitating inward mobility to large housing

estates. In other words, new policies are needed to promote investments that link large housing estates with other parts of cities and wider metropolitan regions. Such linking includes public transport, improving road access (often large estates are poorly accessible by roads, or easy to avoid), and creating bicycle routes, with each travel mode providing convenient access to the city centre.

Place-based policies can also lead to the gentrification of housing estates, similar to events in central cities in which higher socio-economic groups replace lower socio-economic groups, or fragmentation of large housing estates into smaller subdistricts where people with different social statuses still live parallel lives. Intervention strategies should thus have an eye on such changes in large housing estates as well.

Message 8

Many ideas about contemporary urban life—including sustainability, ecological footprints, communal life and the sharing economy, and social equity—align well with the underlying principles of housing estates, which offers chances for the future.

The reputation of large housing estates tends to be poor, due to either real or perceived problems related to their physical decline and spiralling social status. The original formation of large housing estates was driven by a need to provide new housing in large quantities, but there was also a belief that modernist housing and urban planning could produce a more equal and fair society (Wassenberg 2018). In Sweden, modernist housing was intended to become the core element of the welfare state (Andersson and Bråmå 2018) and in the former Soviet Union, large housing estates acted as the spatial manifestations of egalitarian ideology (Leetmaa et al. 2018). Contemporary social and urban discussions also revolve around the topics of equality and justice, especially in light of growing levels of income inequality (World Inequality Report 2018) and residential segregation (Tammari et al. 2016b).

The problems tend to be larger in the most grandiose housing estates with high densities and tall apartment towers. However, recent studies challenge the assumption that higher densities per se are harmful to community life or to local social interaction, suggesting that the specific urban form of neighbourhoods is more important (Arundel and Ronald 2017). In some cities where high-rise housing is almost ubiquitous, high densities are not perceived as a large problem; in Moscow, for example, high urban density is a norm and new urban regeneration programmes increase rather than decrease housing densities (Gunko et al. 2018). In cities with a more diverse choice set for housing, i.e. with more alternatives to large housing estates, high densities tend to correlate more strongly with poor reputations (Andersson and Bråmå 2018). It is thus important to avoid the formation of stigma towards high-rise buildings and to create social mix and change within them (Lelévrier and Melic 2018).

Although differences exist in the perception towards high densities in large housing estates that might lead to different intervention strategies, a compact city strategy was not necessarily misguided. It aligns well with contemporary urban ideals that celebrate community life, urban sustainability and the sharing economy. What has proved to be terribly wrong, rather, was confidence in an assumption that

planners and architects know what is good for people, especially the replication of the idea *en masse*. Design weaknesses of housing estates can be changed to a certain degree—modifying urban densities, diversifying housing through retrofitting, introducing elements of smart cities and the sharing economy—which can help bring about important change. In housing estates with high shares of elderly people, sharing of out-of-home obligations (like daily errands and shopping) might be useful. Likewise, shared usage of bicycles or electric vehicles might be another option, not to speak of common laundry and leisure facilities. When well-managed and cared for, shared activity spaces and activities might be attractive for younger people who have difficulties entering the labour market and achieving a good starting salary, who care about sustainability, and are comfortable with the idea of resource sharing.

Measures that connect housing estates efficiently to the rest of the city—to jobs, leisure-time activity sites, urban parks, suburban and rural greenery—not only by public transport but also by well-designed pathways for non-motorised travel are also an attractive option for young people who value environmental sustainability and cost efficiency. There are various ways to be creative and to try to match housing estates better to contemporary urban ideals, thinking in a very concrete way about the needs of people living in large housing estates by acknowledging the variety of living contexts, tenure structures and trajectories of change that they represent in European cities.

Message 9

Reliable, up-to-date and comparable data are needed about the residents of large housing estates across Europe. We cannot expect city governments and other actors to define effective intervention strategies if they cannot accurately diagnose problems and challenges.

In the current age of information and big data, there is, most surprisingly, little solid, reliable and comparable data about European housing estates and their residents. The diversity of housing estates and their urban contexts pose challenges to amassing relevant data. However, the problem explicitly relates to the flexibility of using data at fine-grained geographic scale by important population segments (such as ethnic groups) and data that can be longitudinally analysed over time. Without adequate and fine-grained data that can be flexibly used to fit a variety of definitions, it is difficult to quantify and understand urban problems and, as a consequence, it is challenging to design appropriate interventions addressing confirmed problems. Non-existence of detailed data, making it impossible to accurately delineate housing estates (Marin and Chelcea 2018; Lelévrier and Melic 2018) is the norm; fortunately, however, relevant detailed data exists in a few places such as Sweden (Andersson and Bråmå 2018). Since there are few problems in many housing estates in Europe and negative public perceptions often emerge from media coverage of specific events, it is also difficult to overcome prejudice and stigma attached to housing estates and to their residents, as evidenced in Milan (Petsimeris 2018). It follows that the reputation of large housing estates in European cities unfortunately hinges more on media reports than on solid scientific evidence.

A lack of detailed geographical data in Europe is often grounded on a privacy argument. However, the good intentions of data protection often produce negative outcomes, since poor knowledge about population characteristics in large housing estates can exacerbate problems associated with their downgrading. Therefore, census data and population register data should be adjusted so that they can be used to study housing estate residents, and new data sources should be developed that reflect changing realities, such as data from smartphones (Silm and Ahas 2014). As more research on various aspects of challenges related to large housing estates is conducted in European cities, we can better measure, understand and compare contributors to successes and failures that shape the trajectories of large housing estates. Such research would also generate more evidence and new ideas for designing better and smarter policy interventions that ultimately improve the lives of people living in housing estates.

Message 10

Past mistakes made with large modernist housing estates could help guide the way current and future cities are planned in Europe and beyond. A lesson can be offered from twentieth-century experiences in Europe with housing estates: the larger, higher density and the more peripherally located housing areas are at higher risk of concentrating poverty and producing and reproducing triple disadvantages—social, ethnic, spatial—through a vicious circle of poverty and segregation.

Housing estates in Europe were established during the post-World War II period of rapid industrialisation and urbanisation, providing cost-efficient housing for rapidly expanding urban populations. There is a risk, however, in succumbing to short-term thinking in attempts to solve housing crises, because this strategy is attached to long-term societal costs. The sequence of events is as follows for reproducing a vicious cycle of poverty and segregation (van Ham et al. 2018): lower income people cluster into large housing estates; schools are often neighbourhood-based, and thus children in less affluent families living in large housing estates attend the same schools, resulting in the transmission of social and spatial disadvantage from parents to children; these differences are carried on to the labour market and result in income inequalities; the vicious circle of poverty closes when labour market outcomes shape residential choice. The signs of the formation of segregation cycles are most clear in Northern and Western European cities (Lelévrier and Melic 2018; Andersson and Bråmå 2018), but can also be traced elsewhere (Leetmaa et al. 2018). Focusing on teachers and school outcomes in large housing estates is a potential strategy for breaking the cycle of segregation.

Although the fortunes of housing estates and their residents can be changed, the main lesson is that city leaders should conscientiously avoid the formation of such quickly and cheaply constructed housing areas on inexpensive land in urban peripheries—where migrants, immigrants, guest workers and low-income people become highly concentrated—since this would most likely produce long-term challenges. While the phase of large-scale industrialisation and urbanisation in Europe is in the past and will not be repeated, these processes are at their peak today

in other places across the globe. The number of people living in cities increased from 0.75 to 3.9 billion between 1950 and 2014, and an additional 2.5 billion people will move to cities worldwide by 2050, a third of them in India, China and Nigeria (United Nations 2014). To accommodate this contemporary urban population growth, large tower block districts continue to grow.

It is not imperative to completely avoid high population densities in urbanising countries today since it would be a nearly impossible aim to achieve; the population size in countries urbanising today is larger than in Europe and lower population densities would consume a great deal of valuable land. High densities *per se* are often not a problem in European cities. Problems emanate, however, from (1) the relative position of high-density housing estates at the bottom of the housing hierarchy; (2) a ‘one-size-fits-all’ way of thinking in urban planning and (3) new housing districts with deleterious features including cost-efficient planning and construction, repetition, spatial isolation, an undeveloped sense of community and place attachment, and a lack of safety. To overcome these issues, planning for new residential areas should instead focus on creating human-scale environments and avoid density-related problems. Eastern European cities demonstrate that large housing estates can be desirable living spaces for many and provide a considerable share of the urban housing stock.

It is undoubtedly tempting for city planners to build cheap mass-produced housing on urban peripheries because the living conditions provided are better (at least at the time of construction) compared to most existing housing units in a city’s housing stock. Based on the twentieth-century European experience, however, grandiose cost-efficient housing estates should be avoided in favour of more human-scale urban models. Although more expensive at the time of construction, traditional and human-scale residential environments would last longer and produce fewer social problems for future generations to solve. Moreover, good connectivity, an abundance of neighbourhood amenities and a sustainable social mix supporting interaction across social groups are important for avoiding poverty concentrations in large housing estates like those in Northern and Western European cities.

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