



Promoting housing affordability

Best practices to deliver intermediate housing at scale

February 2020

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The Urban Land Institute is a global, member-driven organisation comprising more than 46,000 real estate and urban development professionals dedicated to advancing the Institute's mission of providing leadership in the responsible use of land and in creating and sustaining thriving communities worldwide.

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Drawing on the work of its members, the Institute recognises and shares best practices in urban design and development for the benefit of communities around the globe.

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The 19-storey Trudo Vertical Forest in Eindhoven, The Netherlands, will provide green homes at affordable rents. Credit: Stefano Boeri Architetti

Executive summary

Increasing numbers of people are struggling to find affordable housing in cities across the developed world. This situation has consequences for the individuals by lowering their quality of life and more widely affects city competitiveness and social cohesion. In particular, households that earn too much to be eligible for social housing and not enough to buy a home are increasingly squeezed in the rental market. This report highlights best practices for increasing housing supply aimed specifically at this group. Such homes are referred to in this report as ‘intermediate housing’. The report focuses on lessons for building new intermediate housing rather than making better use of existing stock.

Demonstrating on a place-by-place basis how barriers to intermediate housing related to land availability and pricing, stakeholder trust and engagement, and financing could be overcome, this report looks at lessons for transferring such best practices into different locations to enable intermediate housing to be built at scale.

The availability and especially the pricing of land are key barriers to more intermediate homes being built. Because land value is most often calculated as a residual – the difference between the value of what can be built on a site and the costs of producing the housing – identifying suitable land at a price that will enable development of intermediate housing to be commercially viable is difficult.

Even if a developer can identify savings in the construction phase, these savings may not be passed on to eventual residents but will instead be captured by the landowner. Other important barriers relate to a lack of alignment between the public and private sectors and a lack of suitable planning regulations.

This report is structured based on the value chain of delivering housing, as set out in figure 1.

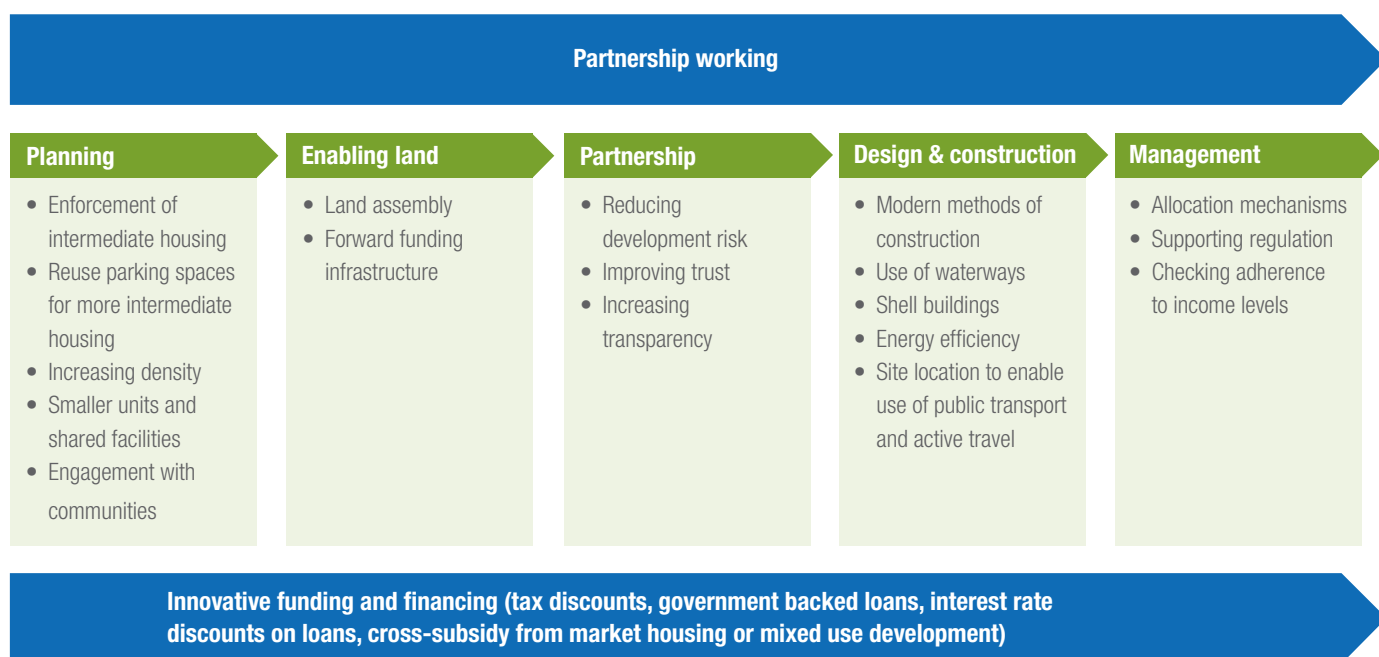
The public sector plays a key role in enforcing the delivery of intermediate housing by providing the long-term vision with clear

alignment in policies at the national, regional, and local government levels. Planning certainty can be improved, for example through the use of inclusionary zoning.

Cities require a clear framework to identify the balance and tradeoffs between different land uses and the effects of regulation on the ability to deliver intermediate housing. Stricter regulations, which we see in some cities, can reduce the number of homes being produced. There is a need to align stakeholders to enable long term production of housing.

Providing sub-market housing requires some source of government funding to enable the price to be set at an intermediate level. This support can include cash, in-kind funding, or guarantees but can also come from allowing increased smart density or cross-subsidisation from other market-priced housing, in pure residential development, or from other types of commercial activities in a mixed-use development.

Figure 1: Opportunities in the value chain to support the development of intermediate housing



Source: Urban Land Institute.

In addition, the public sector could encourage construction of intermediate housing by making land available by putting in the necessary infrastructure or taking care of remediation in the case of former industrial sites.

Land assembly requires strong political leadership, clear alignment of stakeholders, and a robust statutory process as it is often a complex and lengthy process that needs large upfront capital funding. To share the risks and rewards from development, cities could make more frequent use of development corporations, which also provide longer-term certainty and improve engagement through a shared vision for a specific site.

Opportunities exist for making more productive use of existing land, from reducing the requirements for the number of parking spaces to allowing well-designed smaller units and developments that place a greater emphasis on the provision of shared facilities.

Modern methods of construction can also support the scaling up of intermediate housing by enabling quicker buildout rates, improved quality, less waste and disruption to neighbours, and potentially lower costs. But this will only be effective if the savings are not then reflected in higher land prices.

Developers are using plenty of innovative practices to reduce the cost of building homes in other ways. These include the use of waterways for floating homes, which also provide climate change resilience. Learning from practices in developing countries, concepts such as shell housing offer the chance for households to buy a basic shell of a property and then fit out the fixtures and finishes according to what their incomes allow.

A key part of part of enabling more intermediate homes to be built is to reduce the price of land. This is most likely to happen on land that is owned by the public sector if governments commission new developments through a tender approach based on best overall value rather than simply highest price.

In addition, the public sector regularly intervenes to reduce risks and ensure stable returns for intermediate housing by providing loan guarantees, loans at reduced interest rates, or guarantees that units will be purchased on completion. The public sector also has important roles in aggregating different funding sources and providing leadership to ensure appropriate regulation and space for innovation.

Governments can also support intermediate housing through the provision of tax relief on building and investing in homes. Reducing the net cost of housing allows the developer or investor to achieve their minimum required return, thus encouraging them to produce an intermediate product.

Where funding has been made available to provide housing at sub-market prices, an efficient allocation mechanism is required to ensure homes are going to those households in most need. For the sake of fairness, mechanisms are needed to lock in affordability in the longer term.

From the private sector, in addition to traditionally being a source of debt financing for the sector, institutional investors and investment managers are becoming more active in delivering intermediate housing. They are responding to demand and are attracted by the risk/return profile and opportunities to diversify their property portfolios.

Many institutional investors are also seeking to make a greater social impact with their investments. In particular cities, market players are mandated by planning requirements to deliver intermediate housing as part of wider developments.

Lessons from the best practice examples provided throughout this report have led to the following recommendations that will enable more intermediate housing to be delivered in different cities and at scale:

- The public sector should provide a long-term stable vision, strategy, and framework for intermediate housing.
- Provide a clear definition of intermediate housing and how rents and prices in the segment relate to market rents and prices
- The public sector needs to enable more land for intermediate housing development.
- Build trust and develop better collaborative partnerships between the private and public sectors.
- Develop new funding models and reduce uncertainty in development.
- Engage with local communities to enable development.
- Encourage innovation in intermediate housing provision.
- Address long-term affordability and promote climate change adaptations.
- Facilitate knowledge sharing of best practices to deliver intermediate housing at scale.

Foreword

In many cities across Europe and beyond, the lack of good-quality affordable housing is a pressing problem that is affecting city competitiveness, economic performance, citizens' health, well-being, and quality of life. The issue is especially acute in the intermediate housing segment, which includes those households that do not qualify for social housing but cannot afford to pay full market rates and who are increasingly squeezed.

The gravity and scale of the problem has seen the topic of intermediate housing rising up both the political and investment agendas. City leaders are exploring a variety of strategies designed to increase the supply of affordable housing and preserve that which already exists through price controls. Meanwhile, the development and investment industry is starting to view intermediate housing as a sector in which they can generate stable returns and make a positive social impact.

Much has been written on the topic already – including by ULI – about the challenges that arise from a lack of affordable housing. A main issue that comes out of this work relates to a lack of supply and insufficient new construction, as well as the fact that there is not much research available about ways to increase the supply of intermediate housing.

In 2017, the ULI Europe Residential Council was launched, with a specific focus on housing affordability. At its inauguration, the council launched a vision statement (see page 8), which sets out the main causes and consequences of a lack of housing affordability and, as such, providing a scope of work for the coming years to address the housing affordability challenges in Europe.

The vision statement recommendations included the need to share international and European best practices for housing affordability, to explore densification and innovative housing solutions, and to promote private market investment initiatives. These areas of interest contributed greatly to the content of this report.

Those recommendations have served as the starting point for this project. We wanted to be able to address the issue of delivering intermediate housing at scale as well as to learn from the wide variety of good examples that are often applied in only one city and/or country, which could inspire others to use them in the market in which they are active.

This report provides an overview of many case studies from all across the value chain, including planning, land assembly, design, construction and management, to be able to offer practical, transferable ideas. These can help unlock solutions for intermediate housing and demonstrate the importance of innovative thinking on construction and financing, and the need for better collaboration between the private and public sectors.

Following the release of this report, we will continue to explore solutions to improve housing affordability across all segments, and we encourage you to provide us with feedback on this report and to share any further best practice examples.

We are particularly interested to be in touch with other stakeholders and organisations to help reach a broader consensus on ways to deliver more affordable housing across Europe. We are convinced that it is not about who gets the accolades for the best ideas, but how we can together make a real impact on positive change. We live in an increasingly urbanising world and we need to make this a livable place to feel the benefits of that.

We would also welcome new participants to the ULI Europe Residential Council, so please do get in touch and contribute to this important topic. We believe that with its multidisciplinary membership, ULI is perfectly placed to lead on this issue and contribute to what is a crucial social issue for all our cities.

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1 Introduction

Across the developed world, increasing numbers of people are struggling to find good-quality homes at a price they can afford. The traditional model based upon the idea of supporting those most in need with specific subsidies and building new homes for the wealthier part of society, which will then free up existing units for others to occupy, has failed. Especially in high-cost cities, too few homes are being built to keep up with growth in demand, and a mismatch often exists between the units that are built and the requirements of those in housing need.

This research responds to issues raised by the ULI European Residential Council in its previous analysis of the causes and consequences of a lack of housing affordability and factors affecting city competitiveness. The research is funded by group of sponsoring organisations, each of which had a representative on the project steering committee.

The overall research approach was guided by the Steering Committee, which shared their professional views with the research team on different aspects related to the delivery of intermediate housing in the cities and countries in which they operate as well as ensuring that the findings could be transferred to new locations and would help deliver intermediate housing at scale.

In this research, ULI set out to identify a range of innovative approaches for delivering intermediate housing at scale to foster the exchange of exciting new ideas across cities and countries. Learning from other countries and cities is useful, provided sufficient care is taken to understand what legal and planning system requirements are transferrable to enable them to be embedded into different locations.

For this report, ULI opted to use the locally applied definitions of intermediate housing, focusing on approaches to providing housing for those households which earn too much to be eligible for social housing but too little to be able to afford market rent or purchase prices. To reflect the variety of local conditions, the research looked at case study examples from a range of developed countries and cities of different sizes. The report also draws upon examples from social housing provision where they provide inspiration for mechanisms to deliver more intermediate housing.

The report focuses on supply-side interventions that could provide scalable solutions; it did not examine demand-side measures and does not include the current housing stock. The report explored the barriers that are restricting the delivery of greater amounts of intermediate housing supply and the opportunities arising for stakeholders from the public and private sectors to work more closely together.

The research covered intermediate housing that is for sale and for rent but excluded solutions aimed at specific segments of the market, such as senior living and student living. This is because each of these segments has different operating models based on the needs of the residents that are already well established. The report also excluded schemes that solely provide social housing allocated to households in most need.

Research approach

Although many small ad hoc examples exist of intermediate housing delivery, the research sought to include examples from which lessons can be derived that will enable the sector to grow at scale and in different locations supported by the private sector. To identify the report's innovative solutions, ULI reviewed literature from academics; national, local, and city authorities; housing charities; and investor organisations.

To provide depth to the case studies, ULI interviewed individuals from both the public and private sectors across Europe and the United States. Researchers attended a ULI Belgian Residential Product Council meeting¹ and hosted roundtables in London and Amsterdam with invited ULI members and external experts to discuss the following topics:

- How to maximise intermediate housing on public sector land;
- Innovations in design, construction, and management techniques; and
- How to better align stakeholders to enable delivery of intermediate housing.

The researchers also conducted an online survey of ULI members across Europe to identify which barriers were most commonly found and to learn about locations where intermediate housing was being successfully delivered in practice. The survey was conducted in November 2019 and attracted 331 responses.



Harbour Gateway, Edinburgh. Credit: Scottish Futures Trust

Structure of the report

Chapter 2 sets out how intermediate housing is defined, the consequences of having insufficient affordable homes, how affordable housing has traditionally been delivered and why intermediate housing is not currently being delivered in sufficient quantities, and the types of interventions that are required to make it work in practice.

Chapter 3 highlights innovative approaches to enabling intermediate housing related to changes in planning legislation and explores flexibility of regulations, incentives for local communities, and the role of inclusionary targets and zoning.

Chapter 4 identifies how innovative approaches to land assembly, use of public-sector land, and forward investing in infrastructure are bringing forward sites for development. It also looks at how cities are using their land to help build more intermediate housing at scale.

Chapter 5 explores how changing approaches to design, construction, and management of units are speeding up the delivery process, improving sustainability standards, and helping keep units intermediate into the future.

Chapter 6 focuses on the funding and financing of intermediate housing, giving examples of tax incentives, grants, discounted loans, and joint ventures to encourage more supply of intermediate units through the use of private funding.

Finally, **chapter 7** draws together key conclusions and recommendations for different stakeholders in the anticipation that these will help deliver more intermediate housing units for households most in need of them.



Social and affordable housing in east London. istockphoto © VictorHuang

Defining intermediate housing

Housing systems are culturally specific, location dependent, and take different forms across the world, so there is no international agreement on what 'affordable housing' means. UN-Habitat defines it as 'housing which is adequate in quality and location and does not cost so much that it prohibits its occupants from meeting other basic living costs or threatens their enjoyment of basic human rights'.²

In some countries, affordable housing is understood to refer exclusively to social housing – that is, housing provided at low rents and allocated to those deemed most in need. That is not how the term is used in this report, which focuses on intermediate housing for those households that are not eligible for social housing but cannot afford market prices or rents.

Official definitions of housing affordability often employ the following metrics:

- Ratio of price (purchase price or rent) to household income: One generally accepted benchmark of affordability is that housing costs (always mortgage repayment or rent; some countries also include utilities) should account for no more than one-third of household income. However, the European Union (E.U.) defines excessive housing costs as anything over 40 percent of household income.
- Ratio of 'affordable' price to market price: In the United Kingdom, for example, 'affordable rent' housing has rents below those in the local private market, typically up to 80 percent of local market rents, but higher than social housing. Some developers apply the term intermediate housing to housing that they provide at a price point that sits above social housing but within the lower part of the free market rental sector.

Intermediate housing is not necessarily rented; some countries have low-cost homeownership options. These include:

- Intermediate homeownership – homes for sale at below-market price for households on lower incomes.³
- Shared ownership – households buy a share of the property, sometimes paying rent on the remaining share.

However, in real life, people choose options depending on what their budgets will enable them to afford. In choosing where to live, people consider not only the costs of the housing itself (for example, rent plus deposit or mortgage payment) but also associated utility bills and local taxes, as well as locational factors such as transport accessibility and costs, local facilities, and the quality and size of the accommodation on offer. Therefore, housing affordability is linked with employment, taxation, mortgage lending, local housing policies, and transport services. For example, a person choosing between two cities with identical house-price-to-income ratios will have very different options if one of the cities has an excellent and cheap public transport system and the other does not.

2 The immediate need for intermediate housing, and barriers to its delivery

This chapter explains the main barriers preventing the delivery of sufficient intermediate housing units despite growing demand for such accommodation.

The need for intermediate housing

Good-quality intermediate housing is a basic human requirement and the foundation for reducing poverty risks, improving access to opportunities, and making economic growth more inclusive and sustainable. The housing market in many areas, particularly in high-demand cities, is under pressure arising from economic recovery, demographic change,

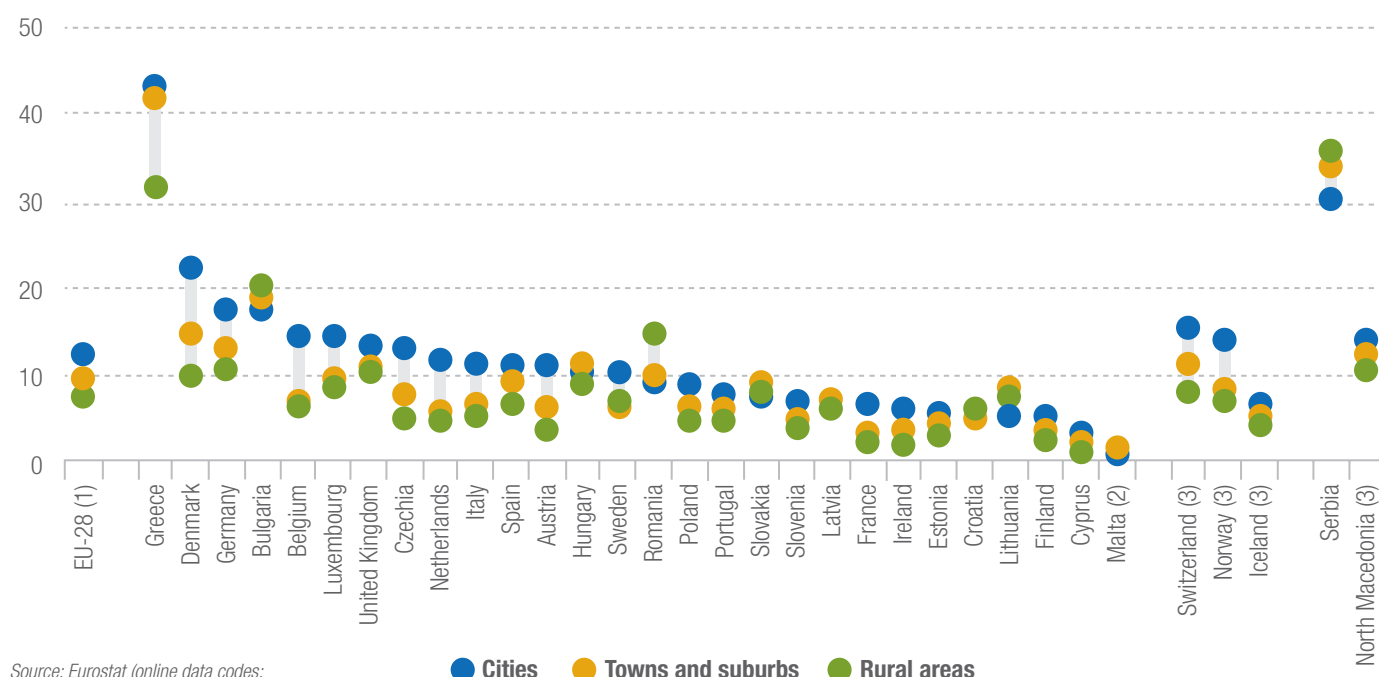
and a lack of supply response to growing demand. Previous ULI research highlighted the consequences of a lack of intermediate housing on the functioning of the housing market, city competitiveness, social cohesion, and quality of life (figure 3).

In many cities, house prices have risen far more quickly than wages, making finding a suitable home ever more difficult for people. As can be seen in figure 2, the housing costs overburden rate⁴ across the European Union is often higher for people living in cities, towns, and suburban areas than in rural areas.

Most developed countries have some heavily subsidised social housing for households on very low incomes, but the size of the social sector varies enormously, from one-third of the housing stock in the Netherlands to less than 5 percent of homes in Spain and Hungary. At the other end of the income scale, homeowners also often benefit from generous tax subsidies. As can be seen in figure 4, there is a large difference in levels of homeownership across Europe, ranging from 96.4 percent in Romania to 42.5 percent in Switzerland.

Figure 2. Percentage of population living in households deemed unaffordable by the E.U. in 2018

(% share of people living in households where total housing costs represent more than 40% of disposable income, by degree of urbanisation)



Source: Eurostat (online data codes: ilc_lvh07d and ilc_lvh07a).

Note: ranked on cities
 (1) Rural areas: estimate
 (2) Rural areas: Low reliability
 (3) 2016

Figure 3: The consequences of a lack of intermediate housing

Housing unaffordability consequences

Inflexible housing stock and costs

- Housing stock not suited to demand: Demographic and lifestyle trends mean there is a rise in single-person, migrant, ageing households and there isn't enough nor suitable housing to accommodate these people.
- High household incomes spent on housing: Due to housing demand and limited new construction, rents or house prices are pushed up leaving no choice for tenants and buyers to spend at least 50% of their incomes on housing costs, leaving little disposable income. Citizens being pushed further out of the city to access cheaper and larger housing.
- Rent versus buy: There is the challenge of spending a high proportion of income on rent and not being able to save enough money as well as not being able to access the mortgage market due to lending regulations such as minimum required deposits and salaries to qualify for a mortgage. Therefore we are seeing a rise in "generation rent" – a generation of young adults who have little chance of becoming home owners.

City competitiveness

- Impact on employees and businesses: As low-income workers cannot afford city house prices and live further out, they face longer commutes with high travel costs that negatively impacts productivity, affecting business performance.
- Wage pressure and labour workforce drain: Downward pressures on wages and increasing house prices encourage the movement of workers further out of the city or to a cheaper city, draining the workforce impacting on city performance.
- Lost consumer spending power: As a large part of people's incomes is spent on housing, this leaves them with less disposable income and a decline in real incomes means consumers will have to cut back on spending, and this means less income for businesses.
- Loss of talent: Talented and skillful workers are under pressure to move out and businesses lose the best employees, impacting city economic performance.
- Lack of liveability and city vibrance: Mixed populations including low-income and migrant workers contribute to the 'authenticity' of cities and a mixed-use environment is attractive both to residents and tourists. Cosmopolitan populations contribute to city rankings and attractiveness.
- Hinders economic growth: While higher house prices may encourage national economic growth, it also restricts city economic growth as houses become out of reach for certain urban populations.

Social cohesion

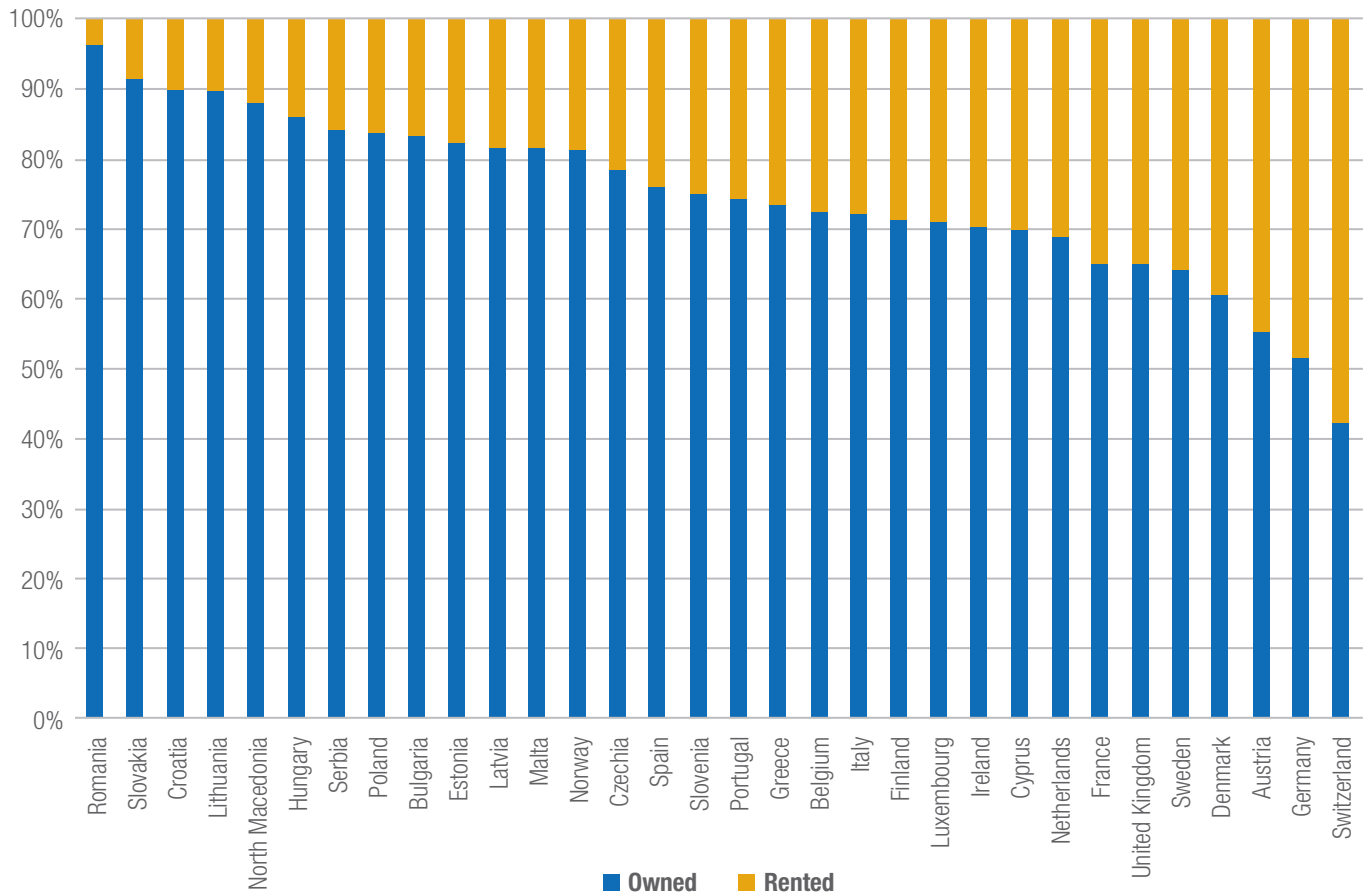
- Disparity/inequality: Housing segregation caused as a result of rising house prices causes social, income, racial and wealth inequality widening the poor-rich gap which undermines diversity within cities.
- Existing residents cannot move up the property ladder: Existing tenants or potential buyers are priced out of the market and are under pressure to look further out to make their next property step.
- Growing families moving out of cities: Families move to the suburbs with better housing stock that is affordable with more space, and in search for a better environment and quality of life.
- New, especially young or migrant residents priced out of the housing market: Squeezed low and medium-income wages cannot keep up with house prices widening the wealth gap.

Intra-urban travel

- Time and cost spent commuting: Workers face longer journeys commuting to work and pay increasing transport costs to access a more active labour market in cities, affecting health and well-being.
- Affected business performance: Longer travel leads to shorter work times and lower productivity
- Carbon emission impacts: Travel, especially by car, is one of the largest generators of carbon emissions which is environmentally unsustainable.
- Sprawl: Lack of land supply in cities encourages house building on cheaper available land encouraging sprawl.

Source: ULI Europe Residential Council Vision Statement.

Figure 4. Household tenure in Europe in 2018



Source: E.U. Survey of Income and Living Conditions 2016.

Furthermore, even within countries large variations in tenure often occur between different cities. In cities with high housing prices, there is often a significant gap between rents for social housing and the cheapest market rents. Lower- and middle-income households that earn too much to be eligible for social housing but too little to be able to buy or rent on the open market can be squeezed.

A well-functioning housing market should enable people to move as their circumstances change. However, those in social housing often have few options, or incentives, to move onto the next step of the housing ladder when their financial situation would allow, and for those

who are not eligible for social housing and on lower incomes, too few intermediate options remain.

A poorly functioning housing market has negative consequences for households, for city competitiveness, and for overall economic growth. If people are no longer able to afford homes in the cities in which they wish to live, then this can affect their ability to find employment or lead to longer commuting times. It can also lead to a delay in people having families and potentially increase levels of overcrowding. All of this negatively affects well-being and quality of life.

Lack of intermediate housing also has large consequences for the distribution of wealth, locking younger people out of homeownership and increasing differences between high-priced cities and other locations. A growing dependence on support from the 'bank of mum and dad' to get onto the housing ladder is also increasing intergenerational inequality. Those whose parents are not property owners are less likely to be homeowners themselves.⁵

People respond to a lack of affordability in a variety of ways. For example, in London single people tend to share accommodation to access rental property, but in other places such as Barcelona people have responded by finding accommodation up to 50 kilometres outside of the city.⁶ Local social norms and behaviours are critical to understand when looking at the transferability of solutions for intermediate housing between different places.

To run effectively, cities require a wide range of workers, including teachers, health professionals, police officers, and retail workers. People from across the income spectrum need to be able to access their places of employment and leisure, education, and retail facilities within a reasonable journey time.

How intermediate housing has been provided across different cities

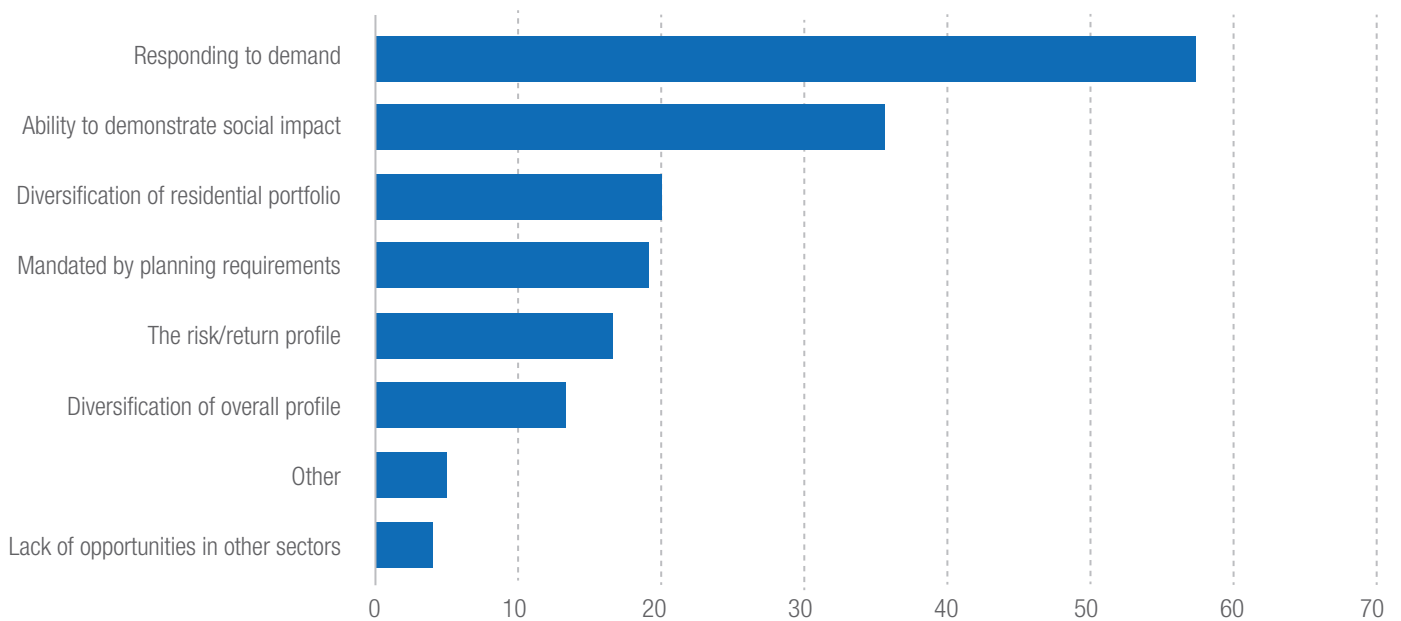
Historically, the provision of social and intermediate housing in most countries has been the responsibility of the public sector or non-profit bodies such as housing associations or both. The public sector in many countries sets out the legal definition for what constitutes social and intermediate housing and plays a crucial role in determining which part of the population will be eligible to live within intermediate homes, thereby controlling access to these scarce resources.

In many cities, given pressures on budgets and political leadership which discouraged local authority homebuilding, there has been an increasing trend towards the public sector working with other providers of housing (both profit-making and non-profit organisations)

to deliver these. Increasing numbers of public-sector bodies have recognised the opportunities from working in partnership as a route to deliver more intermediate homes, particularly where they are able to make better use of their surplus landholdings and retain the revenues.

Institutional investors such as pension funds are also increasingly looking at investments in the residential market due to the opportunities arising from urbanisation and long-term demographic trends that are increasing demand, as well as the diversification benefits for their overall portfolios. Residential investment more generally provides good diversification opportunities compared to other commercial real estate sectors such as offices, logistics, and retail, because it is less cyclical.

Figure 5. Main reason for ULI members' organisations to be involved in delivering intermediate housing



Source: ULI survey.
 Note: n = 202 respondents, surveyed November 2019.

Figure 6. ULI members' responses about the barriers preventing delivery of intermediate housing

Weighted average rank	Barriers preventing delivery of intermediate housing	Percentage of respondents ranking barrier as the top barrier	Theme
1	Land that is available is priced too highly or being sold in a way that does not enable intermediate housing delivery (for example, tenders decided on the highest price)	46	Land
2	Lack of alignment between public and private sectors	13	Stakeholders
3	Private-sector stakeholders can make more money from other forms of development	16	Capital
4	Lack of available land for building intermediate units	25	Land
5	Planning regulations that make intermediate housing unviable, such as density restrictions, lack of guidance for this sub-sector, lack of guidance for mixed use	12	Regulation
6	Lack of financial incentives from the public sector to make the schemes viable	8	Capital
7	Lack of understanding about the financing required to deliver intermediate housing	4	Capital
8	Lack of resourcing in local planning authorities to push forward new ideas that will enable intermediate housing	3	Stakeholders
9	Lack of local infrastructure around the land that is available to make it attractive for housing development	4	Land
10	Building regulations that make intermediate housing unviable	5	Regulation
11	Resistance from local residents for new intermediate housing units in their local area (NIMBYism)	7	Stakeholders

Source: ULI survey.

Note: n = 182 respondents, surveyed November 2019.

Barriers

One of the key reasons that intermediate housing across different cities has become less accessible over time is the chronic undersupply of new housing across all tenures, compared to the increased demand arising from changing demographics, migration, and household formation patterns.

Prospective developers of intermediate housing face similar barriers to other residential developers but with the added constraint that the gross development value of intermediate units is, by definition, lower than the market price for similar homes.

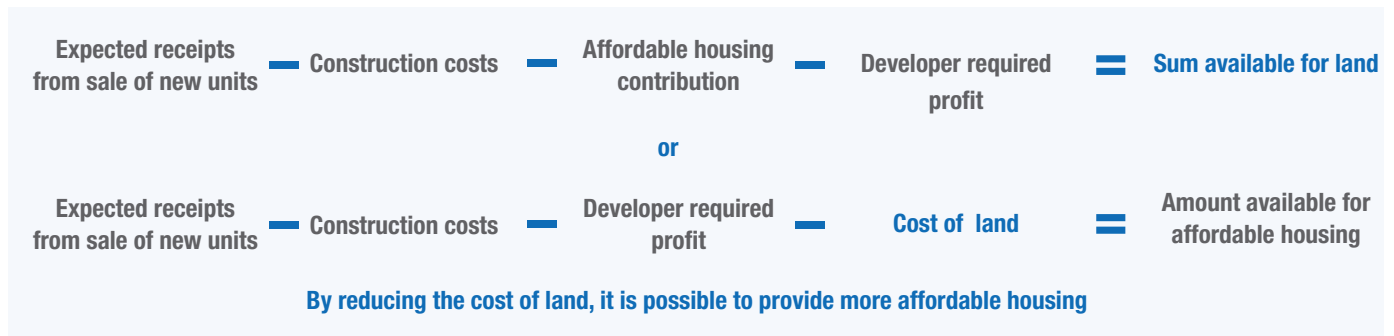
A survey of ULI Europe members asked them to rank the barriers they thought were preventing delivery of intermediate housing. Figure 6 shows these barriers ranked by the weighted average across all options selected, and the percentage of respondents who ranked each barrier as their top choice.

Barriers related to land prices and availability were ranked highly by ULI members, with concerns over a lack of alignment between the public and private sectors also coming out strongly. The ability of the private sector to make better returns from other forms of development shows that, for some, the

returns do not make it an attractive option for investment. Members also had concerns about planning regulations making intermediate housing unviable to deliver in practice.

Despite the barriers raised by ULI members, there was strong interest in the intermediate housing segment with 66 per cent of respondents being active in one way or another (see figure 5, page 10).

Figure 7. What is the residual?



Source: Urban Land Institute.

Availability and price of land

The most difficult challenge when delivering intermediate housing in high-cost areas is being able to identify suitable land at a price that will enable the development to be commercially viable. In places with free land markets, development land is not usually sold at a fixed price. In general, land value is calculated as a residual (see figure 7). This is the difference between the value of what can be built on a site and all the costs of producing this product, including construction costs, fees, financing costs, and profits.

Intermediate housing units have a lower gross development value than market units but cost about the same to build. This means developers that want to build intermediate housing can be outbid by market developers, which are able to pay more for the land. Even if a developer can identify savings during the development, these savings may not be passed on to eventual residents as they will instead be captured by the landowner.⁷

Lack of alignment between stakeholders

A complex web of stakeholders is involved in the delivery of intermediate housing, with legislation and funding opportunities set at national, sub-regional, and local public-sector levels.

Incentives are not always sufficiently high to offset the real and perceived cost of development to local authorities, and local communities can be reluctant to accept the change in character that increased densification will bring to their neighbourhoods. There is often a lack of trust between stakeholders and insufficient engagement at the local level to encourage developments that the local population regard as fit-for-purpose.

The property development cycle is often misaligned with the political cycle, resulting in uncertainty about regulatory and taxation regimes, which can add to the costs of delivering units, thereby making intermediate housing a less attractive option.

But perhaps the biggest obstacle is the question of trust. Many people regard housing as a human right and argue that it should be controlled locally rather than become a ‘financialised’ asset class for investors. They are not convinced that private investment can serve the public interest. There is a strong requirement for open debate about financing, responsibility, and risk to enable better collaboration between the public and private sectors.⁸

Regulatory barriers

Land use planning regulations determine what land can be developed and therefore affect all residential developers. The more restrictive the planning system is, the more it affects the cost of housing by limiting the amount of land available or makes building more expensive. Indeed, some experts say planning restrictions are mainly to blame for the high cost of housing and have estimated, for example, that planning policies in England add 35 percent to the cost of housing.⁹ One example of restrictive land policies is the green belt in the United Kingdom (see box).

Opportunities arising from reducing restrictive land use policies

The United Kingdom has very restrictive land-use policies, including the highly contested green belt policy. The green belt was implemented by the government for London in the 1930s and the rest of the country in 1955, with the intention of preventing urban sprawl. The green belt covers over 12 percent of all land in the United Kingdom, compared with just 10 percent that is currently designated as urban.

The green belt plays an important role in food production, flood prevention, climate change mitigation, and access to leisure, but it also prevents development of new housing close to cities. Consequently, people who wish to access the employment and wider opportunities of major cities must live farther away and commute longer distances than they would if more housing was built nearer to their places of employment.

A recent report outlined what housing could be achieved if 47,000 hectares of green belt and farmland within a 10-minute walk (800 metres) of 1,035 existing train stations close to major cities (within a 45-minute journey) were developed.

The analysis showed that just 1.8 percent of existing green belt–designated land would be affected, yet the number of homes would increase by 8 or 9 percent even without allowing development on National Parks or Areas of Outstanding Natural Beauty.

The proposed approach would enable more than 1.1 million homes to be built, and as they would be based around public transport nodes they would encourage sustainable travel behaviours. Under the National Planning Policy Framework (NPPF), at least 10 percent of these homes would need to be intermediate.

New commuter villages across the U.K. within a 10-minute walk of an existing railway station

City	Number of potential commuter stations to be developed in the city-region	Potential number of new homes	Potential revenue raised from development (£ billions)
Birmingham	116	260,340	10.1
Bristol	36	68,950	3.7
London	567	1,114,500	82.5
Manchester	242	494,000	15.0
Newcastle	74	171,250	4.5

Source: Paul Cheshire and Boyana Buyuklieva (September 2019), *Homes on the right tracks: Greening the Green Belt to solve the housing crisis*, Centre for Cities.

In general, regulatory barriers add to the costs of new housing in three ways:

- Restricting housing supply: for example, by setting zoning limits on plots for apartment buildings or restricting density of development; introducing numerical caps on the number of units that can be built in a year, or allocating land for non-housing purposes such as the green belt in the United Kingdom;
- Increasing the direct cost of development: for example, by requiring expensive components or methods that lead only to marginal improvements over less costly approaches, or by adding sizable fees to pay for the protection of endangered species; and
- Generating delay through lengthy permission and review processes.

One U.S. study identified nine specific types of regulatory barriers, (see figure 8).

Even where governments loosen planning restrictions to speed up housing provision, this may not increase the number of intermediate housing units built. For example, in the United Kingdom in 2013, the government introduced permitted development rights, which allowed developers to convert office accommodation to residential use without planning permission.¹⁰

Although this did increase the overall supply of new housing, only a third of the conversions met national space standards, and the quality of the units produced was not always of a high standard.¹¹ Some of the units built under permitted development included very small studio flats of 15 to 16 square metres, or 30 percent of national space standards, which

because of their limited size were available at a low cost to the market. However, under the permitted development rights, developers were not required to implement Section 106 obligations, which is the mechanism typically used to deliver new affordable housing in the United Kingdom. Units delivered under the Section 106 obligations are required to meet national space standards.

Applying rent controls

The governments of major cities including Berlin, London, and Paris have recently implemented or proposed rent controls in response to concerns over rapid increases in rents. Rent controls typically take one of three forms: capping rents, which can be at current market rates or to a lower limit; capping increases to rent, often introduced alongside minimum rental periods to prevent landlords frequently raising prices in between short tenancies; or temporarily freezing rent levels.

Although rent control is often politically popular, the policy can have major unintended consequences and often results in a fall in the supply of housing for rent. When initially enacted, rent controls benefit existing tenants, who are protected from future price rises. However, with lower returns from their investments, landlords and investors have less incentive to build new units or to maintain high quality standards within their existing stock, and over time landlords exit the market by selling their units.

Figure 8. Types of regulatory barriers found in the United States

Building regulations which have not kept up to date with the latest innovations and may require use of certain materials or methods that cost more than other, cheaper approaches.
Environmental regulations that are costlier than the wider benefits that they protect.
Labour regulations (for example, the U.S. Davis-Bacon Act) that require paying prevailing union wages for construction on even small-scale developments if federal funds are involved.
Size and quality of streets even in areas of low traffic and mandated parking spaces even in locations with good alternative active and public transport options and car-sharing schemes.
Historic preservation regulations.
Building controls that stipulate a minimum size, thus restricting access to the area for those on low incomes.
Lengthy process of planning permission applications adds to costs of development.
Impact fees and development fees.
Prejudice against modern methods of construction.

Source: Anthony Browns (1990), The Advisory Commission on Regulatory Barriers to Intermediate Housing: Its Behaviour and Accomplishments, *Housing Policy Debate* 2, no. 4. Available at https://www.innovations.harvard.edu/sites/default/files/hpd_0204_downs_pt1.pdf.

Figure 9. Conditions applicable for middle-rent housing in cities across the Netherlands

	Amsterdam	Rotterdam	Utrecht	The Hague
Maximum starting rent	€1,000 per month Average €850 per month	€1,000 per month	€950 per month	20 percent of new build must be available for middle rent, of which half must be up to €850 per month and the other half between €850 and €950 per month
Maximum rent increase	Consumer price index (CPI) plus 1 percent	CPI plus 1.25 percent	CPI plus 1 percent	Not defined
Minimum unit size	40 sq m for multi-family homes and 80 sq m for single-family homes	50 sq m in the city centre, 60 sq m in the city districts, 70 sq m in the suburbs	50 sq m for rent just above the free limit and 80 sq m for a rent of €950*	Not defined. More generally, up to 20 percent of the new homes are small houses
Minimum operating period	Not to be sold for 25 years	Not to be sold for 15 years	Not to be sold for 20 years	Not to be sold for 20 years, but with a review after 10 years to see if this measure is still necessary
Who housing is assigned to	Households with a middle income of 1 to 1.5 × modal of approximately €39,000 to €57,000. Priority for households who leave a social rental property.	Pilot providing access to specific professions	Households with a middle income of 1 to 1.5 × modal. Priority for households who leave a social rental property.	To be eligible for intermediate housing, single person households have a maximum income cap of €57,000 and €67,000 for larger households. Rents are not restricted by the municipality but landlords can only ask for rents greater than €950 per month if the household income is in excess of the caps.

Source: ULI interview.

* The same conditions apply to Utrecht city centre, but the area is 40 square metres and 60 square metres.

It also means that space is inefficiently allocated because the tenants who live in rent-controlled housing are far less likely to move on, even when their circumstances change and they can afford more, or even if they might prefer to live in a home of a different size or in a different location.

This lack of mobility has negative implications for overall city competitiveness and equality. Rent control can achieve the short-term goal of making rents more intermediate for current tenants, but at the expense of making the city less intermediate more generally for new arrivals as they potentially have less stock available to them to rent.

Instead of, or in addition to, imposing rent controls, cities should focus on increasing the supply of intermediate housing. This report provides examples of ways in which the public sector is enabling more supply within their cities.

Inconsistency of regulation between cities

Consistency of regulation between cities enables developers to become more efficient in their delivery models, thus saving time and money, which can help reduce the costs of building intermediate homes. However, large variations can exist in the regulatory frameworks applied not only between countries

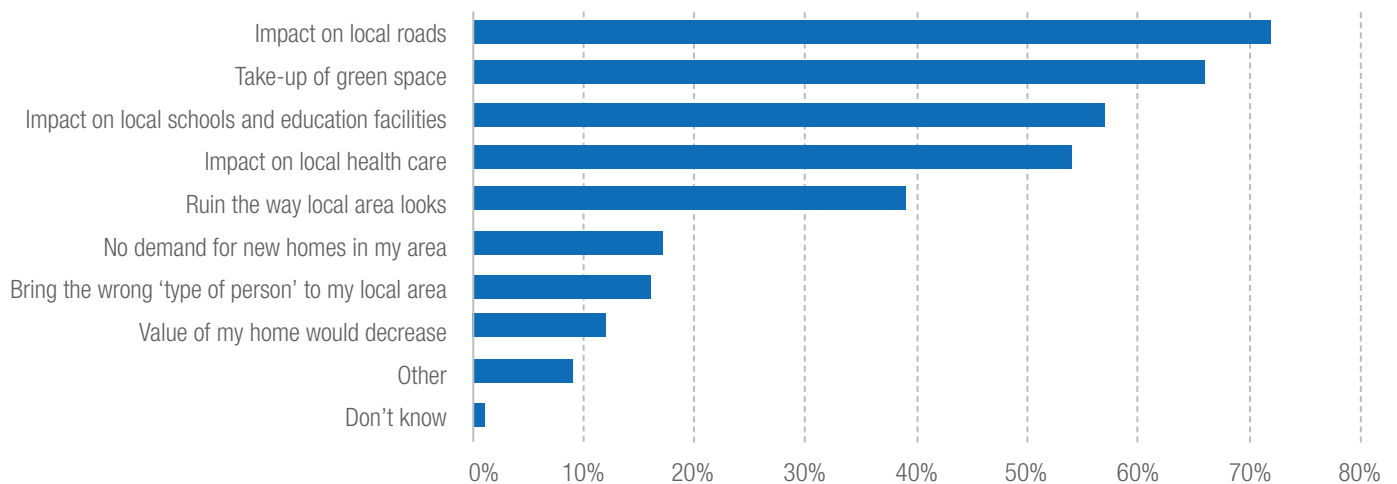
but also between cities within the same nation. For example, figure 9 sets out the different regulations that apply to cities across the Netherlands for middle-rent housing. On the other hand, allowing cities to create their own frameworks to deal with local circumstances can lead to beneficial innovations that could be more widely adopted.

Resistance from local residents

A survey conducted in 2015 of 20,000 U.K. adults by homeless charity Shelter highlighted that 69 percent of respondents were positive or neutral to homes being built in their local area but were less likely to actively support local schemes than those who would actively oppose. Supporters of local homebuilding

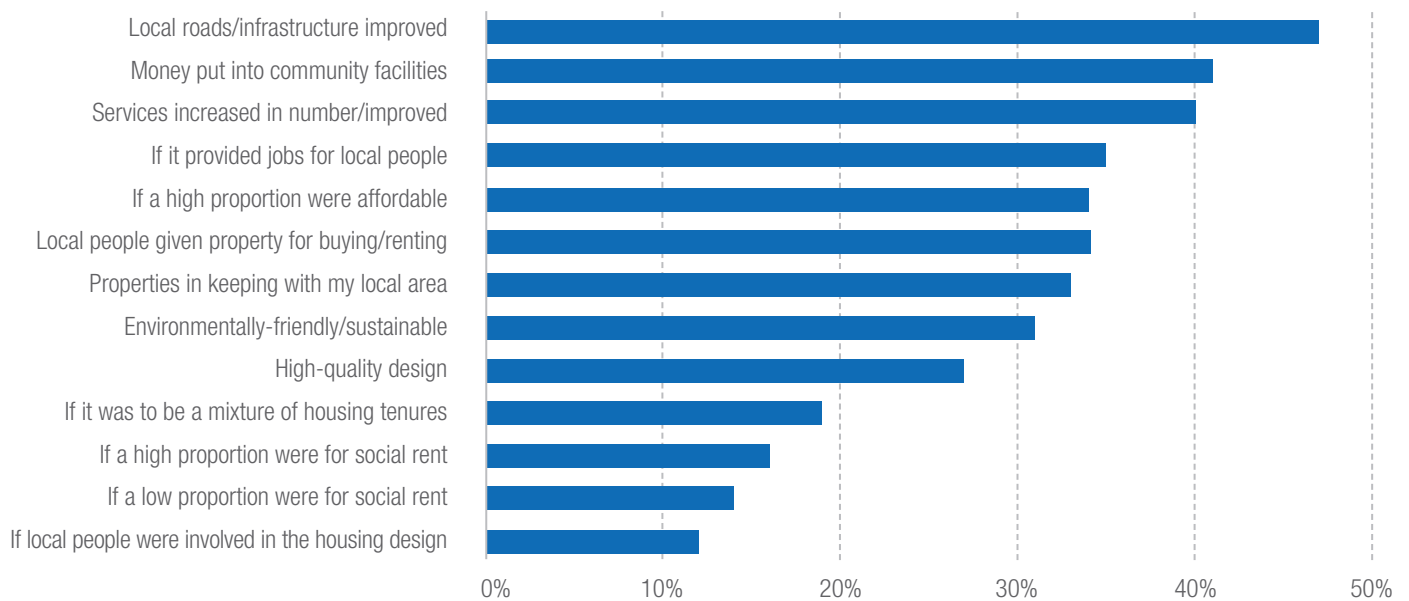
outnumbered opponents by a ratio of 5:3 (48 percent:29 percent) with only 11 percent being strongly opposed. However, the level of active opposition was more than double the rate of active support (10 percent compared to 4 percent). The main reasons for opposing and supporting development are outlined in figures 10 and 11.

Figure 10. Reasons for opposing development in their local area



Source: Shelter (2015), Addressing our housing shortage: engaging the silent majority. Available at http://england.shelter.org.uk/_data/assets/pdf_file/0004/1092757/Shelter_report_FINAL_-_WEB_-_MAR15.pdf.

Figure 11. Reasons for supporting development in their local area



Source: Shelter (2015), Addressing our housing shortage: engaging the silent majority. Available at http://england.shelter.org.uk/_data/assets/pdf_file/0004/1092757/Shelter_report_FINAL_-_WEB_-_MAR15.pdf.

3 Best practices in planning

The starting point for analysing the potential to use planning to support the delivery of more affordable housing – including both social and intermediate housing – is that all advanced economies have land use planning systems that seek to organise land use in a way which is both efficient and enables necessary goods and services to be provided.

However, these systems are fundamentally constraining in that they set standards and restrict uses. Moreover, regulations risk not being reviewed sufficiently frequently to account for changes in lifestyles and living trends and so may no longer serve the reason for which they were established. These restrictions can provide the opportunity to support the provision of intermediate housing – by either changing the rules so that dwellings can be provided at lower prices (for example by building smaller units or building units in less market-desirable locations) or helping support sub-market-priced housing through reducing land costs, which provides a framework to support delivery by cash, in-kind contributions, or other means.

Planning systems vary widely between different countries. At one end, the planning authority decides, on the basis of some fairly general guidelines, whether or not to permit development; the landowner cannot develop by right. For example, in England, not only do planners have discretion over whether to permit development but also the state – not the landowner – technically owns all development rights. This creates uncertainty because a developer often has to decide about land purchase without knowing what it will be allowed to build.

Planning certainty is much less of an issue in countries with zoning systems, as can be found in several U.S. cities as well as similar systems in France, Germany, and Sweden. In these cities and countries, the local authority or zoning board sets out what amount and type of development is permissible within each designated spatial zone. U.S. zoning regulations usually specify the use of buildings (for example single-family housing), whereas the European systems often are less prescriptive about the use of buildings but instead specify floor area ratios (FAR), building height, or external appearance.

Although certainty is less of an issue in zoning-type systems, that does not mean they produce lots of intermediate housing. In fact, some types of zoning can effectively rule it out – for example, minimum lot sizes in upmarket suburbs – often called exclusionary zoning. This is a recognised problem in many cities in the United States.

Under zoning systems, landowners have the right to build as long as their schemes are consistent with the rules. For example, in Germany a Bebauungsplan (B-plan) provides the same legal certainty that private developers expect from French or American zoning: it gives detailed area-based rules, compliance with which guarantees the right to develop.¹² Such systems obviously afford a far greater degree of certainty, because only nonconforming proposals require specific permission.

Importantly, in some countries the planning system is fundamentally a national responsibility, although it is implemented at the local level. In others, the system can be regionally based or each metropolitan or rural area may have its own rules.



Low-cost modular apartments for families in Vilnius, Lithuania. istockphoto © vavlt

Furthermore, housing policies such as the definition of intermediate housing may be made at different tiers of government and may not be consistent with planning powers. In England, for example, the 2018 NPPF set out four types of intermediate housing including starter homes. In practice, there has been very little take-up of starter homes, and local planning authorities have been unwilling to accept them as a tenure of intermediate housing.¹³

This is an important issue because most of those taking part in the roundtables for this project suggested that uncertainties about definition were making scale-up of intermediate housing initiatives difficult.

Planning systems play two main roles in determining whether intermediate housing can be provided in particular locations:

- They may include requirements that land be provided for such homes or that numbers or proportions of development must meet affordability criteria; and/or
- They may help provide funding in cash or in kind to enable the intermediate housing to be provided.

Milan recently approved a new city plan that enables developers to increase the FAR from a baseline of 0.35 to a maximum of 1.0 by building intermediate housing on land transferred to the municipality in accordance with a town planning agreement or on private land. On sites next to transport nodes, there is no limit on FAR, as long as the housing additional to the baseline ratio is build-to-rent. The measures specifically incentivise corporate build-to-rent, a new approach for Italy.

The plan says major development projects involving at least 20 percent residential use on sites of one hectare or more, or which involve change of use of that amount of space, are required to provide 35 percent intermediate housing. This is further subdivided as follows:

- Up to 10 percent of the floor area can be housing for discounted sale, co-housing, or rent-to-buy homes.
- At least 25 percent of the floor area should be for build-to-rent housing, which the plan defines as entire blocks of private rental units owned and managed by a single professional landlord with covenanted rents or student housing with shared facilities.

Developers receive a 50 percent discount on municipal building fees, which are around €300 per square metre, for construction of intermediate housing.¹⁴

Enforcing provision through local planning requirements and inclusionary zoning

An increasing number of countries and regions require that some element of intermediate housing be included in new building activity, whether in terms of land or the housing itself. This is probably the most usual mechanism for expanding the supply of intermediate housing across advanced economies.

The United States provides some of the best examples of inclusionary zoning to specifically counter exclusionary zoning practices that have been prevalent across the country and as a means of delivering the equivalent of social housing in Europe. The two approaches may, however, exist together in the same locality with some land for exclusionary zoning and some for inclusionary zoning.

The principle is very straightforward in that the zoning requires that a share of new construction be intermediate housing for people with low-to-moderate incomes. The policies usually involve placing deed restrictions on 10 to 30 percent of new houses or apartments to make the cost of the housing intermediate to lower-income households.

Variations exist among inclusionary zoning programmes: they can be mandatory or voluntary. In practice, however, the great majority has been built as a result of local mandatory programmes requiring developers to include the intermediate units in their developments. These variations in approach may be coupled with the period of control; developers may be given incentives for engaging in these programmes, such as a density bonus, fast-track approvals, and fee waivers.

However, there are risks associated with density bonuses where schemes may impact on the livability of the area. For example, in New Jersey, U.S., there are concerns that density bonuses are leading to too many single-use developments and the over-densification of existing areas.

In Australia, two states mandate the development of intermediate housing when land is rezoned, offering developers voluntary planning incentives and providing density bonuses to create more intermediate housing. The South Australian government's inclusionary housing requirement, introduced in 2005, requires that 15 percent of all housing in significant residential developments (including urban renewal and greenfield contexts) should be intermediate to low- or moderate-income earners. In New South Wales, a voluntary 'density bonus' offers developers increased floor space in return for intermediate rental housing. The intermediate units must be rented to eligible households at a 20 percent market discount for a minimum of 10 years.¹⁵



Accordia in Cambridge, United Kingdom, which includes 30 percent affordable housing. istockphoto © frazaz

Contributing to the costs of providing intermediate housing

By definition, inclusionary zoning modifies the price at which land used for development can be purchased – the higher the proportion of intermediate housing and the lower the rents or prices to be charged, the less the developer is able to pay for the land. This often has a negative impact on total supply as owners refuse to put their land forward for development and hold it back in the hope of future changes in zoning requirements.

For this reason, many governments that use this approach look to the market to deliver intermediate housing but also provide incentives to developers in the forms of tax relief, cash, or density bonuses. These, of course, offset the lower returns associated with intermediate housing.

Other administrations attempt to build landowner/developer contributions into the cost of providing the intermediate housing. England uses such an approach by obtaining planning contributions – enabled by the system of individual planning permissions and the fact that the overall supply of land given permission generates large increases in land prices in many areas.

In the United Kingdom, Section 106 of the 1990 Town and Country Planning Act enables each local authority to determine the proportion of housing on larger sites that must be affordable based on housing needs assessments and to contract for its delivery with the developer. Section 106 also determines the proportion that may be intermediate (or social) rented housing and the proportion of low-cost homeownership, usually in the form of shared ownership

(where a proportion of the property is owned by the household and the remaining share rented), which is generally more suited to the intermediate market.

Section 106 requirements are negotiated, which can add to development risk due to uncertainty. Intermediate rental housing is usually then owned by a housing association which would rent at rates determined by a government framework. However, the benefits of below-market pricing for shared ownership go only to the first purchaser.

Clearly what can be obtained by systems of inclusionary zoning is determined significantly by the extent to which the price of land is affected, and more fundamentally, how much zoning land for development or giving individual planning permission increases the price of land as compared to the best alternative use.

Increasing certainty in the planning process

In England the National Planning Policy Framework sets out the government's planning policies and provides a framework for local authorities to follow when developing local spatial plans. The NPPF emphasises homebuilding and encourages local authorities to allow construction of more housing, including intermediate housing. It sets a target of a minimum of 10 percent of housing to be intermediate for major development sites.*

This proportion is far too low to meet the needs of the country's capital. Estimates show that London requires an additional 66,000 homes per year of which 65 percent should be affordable (including both social and intermediate housing).** The Greater London Authority (GLA) has adopted a multifaceted approach to delivering more homes through direct investment in 'genuinely affordable housing', releasing public land for affordable homes, and increasing the delivery of affordable housing through the planning system.

The GLA has introduced a new 'threshold approach' to viability to speed up the negotiation process for major planning applications and increase planning certainty. This threshold approach exempts all development applications that meet the GLA 35 percent minimum requirement for affordable (including social and intermediate) housing from viability testing, with a higher target for public-sector and industrial land of 50 percent.

The thresholds for planning applications apply to all development capable of delivering more than 10 units or combined floor space greater than 1,000 square metres. If a scheme meets the relevant threshold without public subsidy and is consistent with the GLA's strategic tenure split, which requires at least 30 percent of affordable housing to be social rent/London intermediate rent, then a fast-track option is applied. London boroughs retain the freedom to require a higher minimum percentage of low-cost rental housing from developers.

This approach speeds up the application process by removing the need to provide a viability assessment at application stage. If sufficient progress is not achieved within two years of grant planning, the scheme becomes subject to an early viability review. This encourages delivery of the units.

For schemes where the applicants do not meet the threshold requirements, they are subjected to a 'viability-tested route' to determine how much affordable housing can be delivered. They are then subject to a second, late-stage viability review to determine an extra financial contribution for additional affordable housing provision with an expectation that 60 percent of any surplus profit should be used for affordable housing.

The mayor's threshold approach seeks to embed affordable housing requirements into land values and counter the circularity of land transactions when used to establish benchmark land values in assessments of scheme viability. It offers greater certainty and the opportunity to move away from prolonged viability negotiations, which speeds up development, and is helping to increase the level of affordable housing secured through the planning system. The approach is also being adopted by London borough councils in their Local Plans.***

Notes

* *The 2017 London Strategic Housing Market Assessment*, Greater London Authority, November 2017.

** *National Planning Policy Framework*, Ministry of Housing, Communities and Local Government, February 2019.

*** *Planning for Intermediate Housing: Guidance for Councils*, Town and Country Planning Association, April 2019.

Adapting to changes in travel behaviour

There will always be instances when planning regulations have not kept up to date with changes in wider societal behaviour. For example, most cities have regulations on the minimum amount of car parking space required by type of unit being built. This regulation is set to make sure there are enough parking spaces for residents of the new development without adding to parking pressures in the existing neighbourhood. However, these parking spaces are taking up valuable land that could be used to build more housing units.

However, these parking space regulations do not always account for changes in travel behaviour. Many urban dwellers are now forgoing car ownership because of improved public transport, access to car-sharing schemes, cycle-hire schemes including e-bikes that enable longer bike journeys, and app-based transport services (such as Uber) as well as an improved urban realm that makes walking more appealing.

To help provide more intermediate housing on a specific plot, one possibility is to reduce the amount of car parking spaces required for each development if sufficient alternative modes of transport are available to the residents. This strategy can be controversial, not only to the city authorities but also to the existing surrounding residents who could directly suffer if more cars than anticipated arise from the new development. This issue can be resolved if the surrounding area has a regulated parking zone for existing residents and residents of the new scheme are not permitted to apply.

For example, in Haarlem in the Netherlands, the current regulations stipulate that for an



Bike sharing schemes help reduce the need for car parking provision. istockphoto © tupungato

expensive home, 1.5 parking spaces are needed. For every intermediate home, one parking spot is required. For a plot of land that is a typical size for one expensive home, a block of four to six intermediate flats could be built, but not when a requirement exists to also provide parking for four to six vehicles instead of 1.5.

In the Netherlands, developer BPD is considering offering its tenants and buyers a 'mobility guarantee' that they will be able to reach places they want to go without having to own a car. For this guarantee to operate, they are locating these specific developments in areas that are close to the public transport network and providing facilities including shared cargo bikes (in which children can be transported) for local journeys.

BPD is also exploring opportunities to partner with car-sharing service providers on one of its new developments in the west side of Amsterdam. Here, they will provide space for 19 shared cars as part of the mixed-use

development, which has 170 dwelling and commercial units. To minimise the risk of this innovative approach, BPD is in negotiation with the municipality to create a temporary green park, which can be converted to parking space if the behavioural changes required to reduce car ownership fail to kick in.

Allowing smaller units

Well-designed smaller units are a replicable concept, though the final consumer will only see savings if the lower cost is not capitalised in higher land prices.

Pocket Living in the United Kingdom is a private developer that builds schemes mostly made up of standardised, single-person one-bedroom homes of 38 square metres that are sold to qualifying middle-income households at 80 percent of market price. The homes are for sale, not rent, and require no government grant funding.

All Pocket schemes are car-free, and the homes do not provide individual gardens. The developer emphasises good, space-efficient design and provision of community space. The schemes are mostly affordable (defined as 80 percent of market rate) but include no social housing, which would require higher rates of subsidy. The homes can be sold only to local first-time buyers on moderate incomes. The discount and eligibility restrictions are applied in perpetuity and are a condition of the planning permission. Buyers are not permitted to resell within the first year, and when they do sell the property they must find a buyer who meets the same eligibility criteria.

The firm is able to sell homes at below-market price for the following reasons:

- Higher-cost extras such as parking and balconies are not provided.
- The homes are standardised and compact. They are typically 38 square metres, just over the minimum space standard for a one-bedroom one-person flat under the London Plan (although smaller than permissible size for a unit intended for two people).
- The firm uses modular construction techniques where possible.
- Historically, small infill sites that other developers were not interested in have been used, including sites owned by the local authority.

The housing is aimed at single people or childless couples with a household income under £90,000 per year, although the average income of buyers is about half that. The units can be sold only to buyers who meet the income and local residency tests. Pocket Living conducts an annual verification process to ensure purchasers remain resident and do not sublet illegally.

The model reportedly generates a similar return on capital as standard development, but with reduced sales risk because of the high demand for intermediate housing. The company still manages significant planning, finance, and construction risk. In 2015, the company raised £4 million through crowdfunding, and in 2016 Related Companies, a U.S. investor responsible for the development of Hudson Yards, bought a 50 percent share of the firm. In 2018, Pocket received a £2 million working-capital loan from OakNorth Bank. Land investment loans from the GLA and Homes England have also been critical.

Increasing density of development

Increasing density of development within cities should enable greater levels of housing to be produced. By reducing the mismatch between demand and supply for housing, the effect should be to lower house prices.

The population of Tokyo grew by 7 percent between 2007 and 2017, adding an extra 908,000 inhabitants to the city. Yet, unlike most other growing cities, Tokyo appears to be accommodating this extra growth. Annual new-home starts in Tokyo have averaged around 150,000 units under construction in the city each year over the last two decades.¹⁶ And, even though the city has a high demolition rate of buildings, it has consistently added more homes to its stock than other world cities (figure 12).

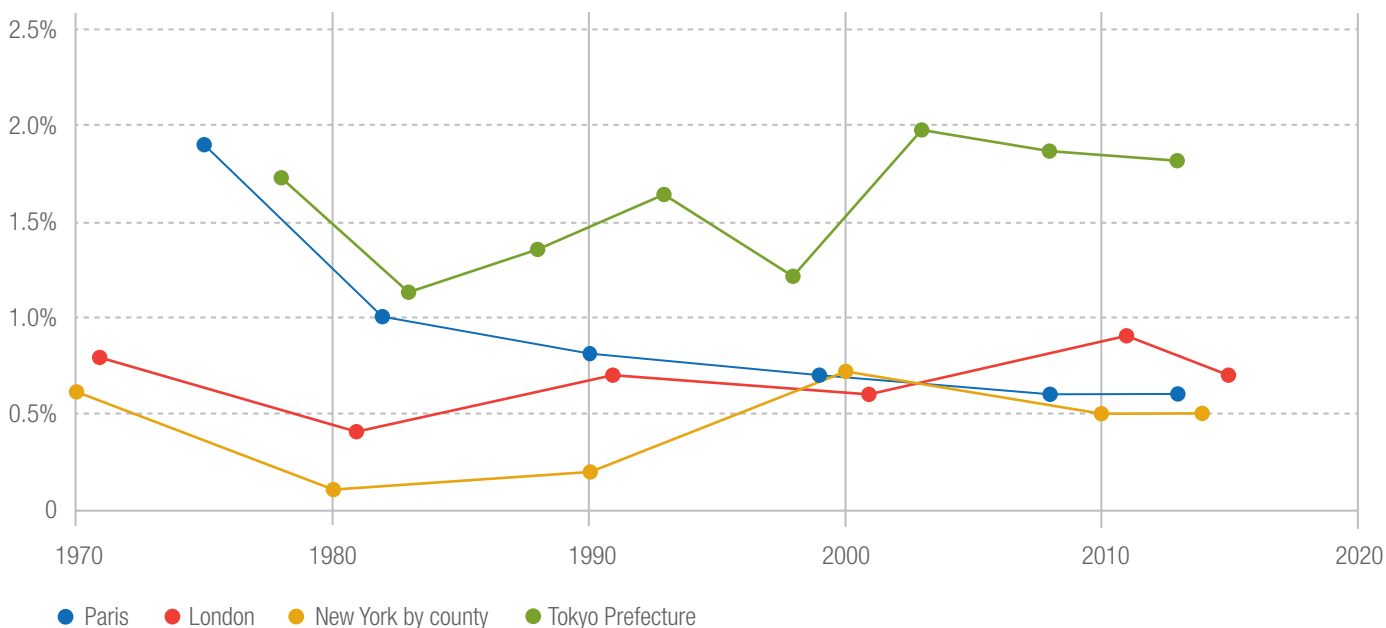
Tokyo's growth in housing has been achieved through densification of the existing urban area rather than urban sprawl. The city has elected to build upwards rather than outwards. Since the 1980s, when housing in Tokyo was far from the affordable model seen today, the national government has taken more control over property development.

Although this may lead to some disgruntled citizens, as they have little input into changes in their neighbourhoods, it also has meant that receiving permission to build potential properties is far easier and quicker. Tokyo has also made the process of applying for permission to build new houses more efficient with a simple zoning system. Zones are decided based on the maximum possible nuisance level allocated for an area, and as long as a project does not exceed this maximum allowed nuisance level, any type of building can be built.

The average property in Tokyo is 63 square metres, so somewhat smaller than units in other cities (for example, London's average is 80 square metres), but because the new supply is often designed to be used by single people, this enables young people to live independently without needing to share with housemates, a situation that is forced upon many in other world cities.

Previous research by ULI highlighted that smart density in cities brings benefits to local communities through improvements to environmental and social well-being as well as economic productivity. The research also showed that larger and denser cities are associated with higher returns for real estate investment, thus bringing benefits to investors.¹⁷ However, in a number of interviews for this report, it was clear that developers who wished to increase density of development were often faced with vocal disagreement from local communities, particularly if the schemes were in suburban locations and were seen to threaten the character of the local neighbourhood.

Figure 12. Annualised rate of housing stock growth in four world cities since 1970



Source: James Gleeson (2017), *Housing in London: 2017 – The evidence base for the Mayor’s Housing Strategy*, Greater London Authority.

Engaging with local communities to encourage more house building

As more and more people are being priced out of cities, many of those who would previously have been silent are becoming more active in voicing their agreement with local development. For example, a movement called ‘YIMBY’ (standing for Yes in My Back Yard) originated in Sweden in 2007 and was picked up in the San Francisco Bay area in 2014.

Since then it has spread rapidly across the United States and the world. The ideas on solving the housing crisis arising from this movement are being seriously considered by local politicians keen to be seen as active in resolving housing issues. YIMBY provides

a platform for local people to advocate for new buildings in their city, challenge current planning policies, and champion specific site development schemes.

These grassroots activists argue that new housing of all kinds is required to enable people to live near where they work. The movement encourages densification, infill, and reuse of plots of land and encourages local people to actively engage with local planning officers. In 2017, the London YIMBY movement proposed that parishes and other neighbourhoods should be able to authorise more homes on green belt land within their boundaries. In 2018 that was implemented (subject to limitations) in national planning policy.

Transferable lessons for planning

Although planning systems vary widely, the following are some transferable principles and approaches that can support the delivery of intermediate housing.

- A requirement for the public sector to provide a long-term vision and strategy for the delivery of intermediate housing with clear alignment in the policies at national, regional, and local government levels;
- A clear framework set by the public sector to accommodate the balance and trade-offs between different land uses and the impact of regulations on the ability to provide intermediate housing; and
- Engagement with local communities and providing reassurance about how negative impacts of new developments will be properly mitigated as well as seeking opportunities to integrate new facilities for existing residents that will reduce the risk of opposition to the scheme development.

4 Best practices in enabling land use and partnerships

The price and availability of land are critical to enable intermediate housing to be delivered. This chapter looks at best practices in land assembly and how the public sector is seeking to leverage its landholdings to help solve local housing challenges. It also identifies how the public sector has been unlocking sites for future investment by investing in infrastructure.

As well as supporting and incentivising the delivery of intermediate housing through the provision of land, the public sector can work in collaborative partnerships with private organisations. Given that stakeholder alignment is key, this chapter describes some successful joint partnerships between the public, private, and not-for-profit sectors, focusing on ways in which risks and rewards are shared to the benefit of lower-income households.

Land assembly

Cities are subject to continual development, but frequently plots of land are overlooked because the ownership may be fragmented or uncertain, or the sites might have traditionally lacked the infrastructure required to make them viable for development. Land assembly can be a complex and time-consuming

process as it requires bringing together a range of stakeholders to deliver a common objective. Figure 13 outlines the factors involved.

Public authorities often have extensive powers to assemble land for housing and other infrastructure, but to which extent this power is used varies as it is often contentious in practice. Whenever people are displaced, the human costs in terms of disruption to community cohesion, livelihood patterns, and way of life may go beyond what can be fully mitigated through standard compensation packages, however generous those may be.¹⁸

Some countries, such as the Netherlands and Spain, have active land policies where the public sector has legal rights to buy land at existing values to deliver projects of public interest. In other locations, those attempting land assembly may have to cope with inflated 'hope value' from landowners. Aligning utilities and transport agencies can also be difficult, because these entities' organisational priorities are not aligned with the need to deliver more homes.

Effective land assembly requires a substantial amount of funding to be in place, supported by sufficient personnel with the required specialist skills to work with a range of stakeholders. Statutory mechanisms are required to underpin and incentivise voluntary land assembly, with the objective of minimising the 'hope value' from landowners. Where attempts to use voluntary methods for land assembly fail, compulsory purchase powers can be used, but that requires sufficient local legislation to allow it to happen and strong guidelines about how to make use of such powers.

Strategic planning for land assembly can be supported by clear designation of land assembly zones, which focus resources in areas with the strongest growth potential. These zones enable local authorities to exercise compulsory purchase power within their boundaries, adhering to a clear set of agreed criteria. To minimise speculation and increases in land values as a result of these designations requires legislation that enables land values to be frozen at a point in time and gives councils the right to defer planning decisions where applicable.¹⁹

Figure 13. Factors affecting land assembly

Unifying multiple interests affecting the title of the land, including adjoining landowners, lease holders, and others
Potential to remediate land
Investing in advance of planning permission being granted and certainty that development can proceed
Removing ransom strips (land that is required to provide access to the development site) and other impediments such as rights-of-way
Providing infrastructure to land which would otherwise not come forward
Obtaining agreements with statutory agents, e.g., highways, heritage, and environmental agencies
Relocating non-compliant uses that would conflict with housing

Source: Adapted from Nicholas Falk (2018), Capital Gains: a better land assembly model for London, *Urbed Trust research commissioned by the Greater London Authority*. Available at https://www.london.gov.uk/sites/default/files/gla_capital_gains_report_.pdf.

Public-sector funding of infrastructure to bring sites forward

Providing infrastructure improves the attractiveness of sites for development. It is typically the role of the public sector to fund large-scale infrastructure works for the sake of wider societal benefits, including opening up sites for housing development. One major example of this has been the Aspern Seestadt in Vienna, Austria (see case study).

In 2017, the U.K. government announced a capital grant programme, the Housing Infrastructure Fund (HiF), designed to unlock stalled sites and bring strategic sites forward to support its target of increasing national homebuilding to 300,000 homes a year. The fund was divided into two pots. A marginal viability fund was designed to get homebuilding started quickly on sites where the upfront

costs of putting in the infrastructure were not financially viable. The bids were capped at £10 million and were available for local authorities. The government received 430 bids from local authorities of these schemes; 133 projects were successful and will receive grants totalling £866 million to unlock up to 200,000 new homes.²⁰

The second and larger grant pot, Forward Funding, was £4.1 billion and available to larger councils. It was aimed at funding a smaller number of strategically important sites that would give confidence to the market to unlock further funding. As of November 2019, £2.6 billion of funding had been announced, covering 25 projects. Furthermore, money raised through the development process enabled by HiF could be recycled by the local authorities into providing other affordable homes.

In Ireland, a similar government-led intervention, the Serviced Sites Fund, has been set up with funding of €310 million, of which 89 percent comes from central government and the remaining 11 percent from local authority contributions. The objective of the Serviced Sites Fund is to support local authorities in providing key enabling infrastructure on their – or Housing Agency – land to get sites ready for the delivery of intermediate housing.

The funding is to be used for enabling infrastructure, including roads, water/drainage, and community facilities. The maximum amount allowed is €50,000 per intermediate home, and it is envisaged that at least 6,200 intermediate homes will be facilitated.²¹ By the end of 2019, 35 projects have been approved across the country and €127 million allocated with the aim of facilitating 3,170 intermediate homes that will be made available for purchase and rent.²²

Case study

Aspern Seestadt Development, Vienna

With 240 hectares of land, Aspern is one of Europe's largest urban development areas. The aspiration is for Aspern to provide housing for 20,000 people and workspace to support 20,000 jobs; 2.2 million square metres of gross floor area is planned for development by 2028.

With remarkable foresight, the former airfield where Aspern is now located was purchased by the city of Vienna from the Austrian government in the 1980s as a reserve holding. The original intention was to develop the site into an industrial park: General Motors was operating on site, but the remaining 80 percent was undeveloped land.

In the mid-1990s, when many other city developments were being built, a master plan for the Aspern site was created. However, further planning and development was put on

hold due to a lack of necessary investment for the supporting infrastructure that the site required. It was in 2004, when pressure for land and land prices were rising, that the idea of developing a new city quarter emerged for the site. This was a transformative vision for the area because it was surrounded by a sea of low-rise housing in the 22nd district.

The easiest option for the site would have been to divide it into smaller lots and sell it off, but a few dedicated people pushed forward the concept of a mixed-use development based on ecologically sound practices. The Aspern Master Plan is based on the concept that high-density use could support public transport provision, cycling, and walking. The ambition is for less than 30 percent of journeys to be made by motorised traffic. Given that the site is some 10 kilometres away from Vienna's city centre, it needed to be of sufficient scale to be self-sustaining.

The backbone for the development was the metro extension into what was essentially an empty field. This scheme funded by the city of Vienna opened up development potential

for a radius of two kilometres around the new station. Other infrastructure costs for the development, such as roads and green space, were being jointly funded by the city of Vienna and the Aspern Development Corporation but the site will ultimately be transferred into the care of the city council for long-term maintenance.

In Austria, about 45 percent of the housing stock is social housing owned by the City of Vienna and Limited-Profit Housing Associations. The large amount of stock means that Austria has relatively high income limits for households to be eligible for social housing, ranging from maximum net income of €53,950 for a single-person household to €101,550 for a four-person household. About 80 percent of the population are eligible for social housing.

At Aspern Seestadt, the City of Vienna has built 3,700 residential units in cooperation with the Limited-Profit Housing Associations, of which 75 percent are subsidised. By 2021, an additional 1,250 are planned, of which 75 percent will be subsidised housing.

Source: Aspern Seestadt.

Using public land for housing

In some cities, public-sector organisations, including municipalities, transport providers, hospitals, schools, and the military, are large landholders. Some of this land may be set aside for potential future operational needs, but some may simply be lying idle or inefficiently used because there is no mandate to make optimal use of it. Given that the cost of land represents a large proportion of development costs, these underused public assets provide a unique opportunity to enable intermediate

housing to be brought forward. One example of this is the Toronto Open Door Affordable Housing Program (see case study).

Other cities, including London (see case study), New York, Vancouver, and Montreal, have also allowed public landholdings and buildings to be used to drive new intermediate housing development while creating new mixed-income communities at transit hubs, supported by strong community services, employment, retail, and other amenities.

Case study

Open Door Affordable Housing Program, Toronto

Toronto City Council approved the Open Door Affordable Housing Program in 2016 to accelerate affordable homebuilding by providing financial contributions including capital funding, and fees and property tax relief. It fast-tracked planning approvals and made use of surplus public land, including properties owned by the city's real estate agency, CreateTO, the Toronto Transit Commission, the Toronto Parking Authority, and Toronto Community Housing. The programme aims to deliver 5,000 new affordable rental homes and 2,000 new affordable ownership homes between 2016 and 2020.*

In December 2018, Toronto City Council initiated Housing Now to further boost affordable housing supply. This programme seeks to create a mix of affordable rental, market rental, and ownership housing options for households earning between C\$21,000 (€14,500) and C\$52,000 (€35,800) annually.

So far, 11 sites have been identified with opportunities to bring forward 10,000 homes, of which 3,700 will be affordable rental units. The city council approved a C\$20 (€11.51) million fund to prepare the 11 sites for marketing, including adding a temporary staff complement, undertaking necessary environmental studies and remediation, market analyses, and planning studies.**

The following principles were adopted by Toronto City Council to guide the development of new housing:

1. Develop the sites to achieve the highest possible public benefits.
2. Optimise the development of market and affordable rental housing with a mix of unit types and sizes. At least 20 percent of all units will meet or exceed disabled accessibility standards.

3. Create homes affordable for a diverse range of incomes, including 'deeply affordable' homes.
 - Average rents across all intermediate units in each site will not exceed 80 percent of the average market rent for the city of Toronto.
 - A minimum of 10 percent of all units will be 'deeply affordable', rented at 40 percent of average market rent.
4. Appropriately address and accommodate existing city uses and other operations on the 11 sites.
5. Retain public ownership of the properties, including prioritising long-term land leases.
 - Affordability will be secured for new intermediate rental units for 99 years.
6. Engage city councillors and local communities in the planning and developing of each property.

* Toronto City Council (2019), *Open Door – Intermediate Housing Program Guidelines*. Available at <https://www.toronto.ca/wp-content/uploads/2019/02/8de2-2019-OpenDoorGuidelines.pdf>.

** CreateTO (2019), *Housing Now Program*. Available at <https://createto.ca/housingnow/>.

Case study

Transport for London delivering new communities and intermediate housing units

In 2012, Transport for London (TfL) established a property development function to make better use of its landholdings to raise revenues for reinvesting in the city's transport network. In 2016, under a new mayor, that remit was expanded to help address London's intermediate housing crisis. TfL's 75-person property development team is tasked with building communities through mixed-used development focused on areas around transport hubs as well as increasing supply of social and intermediate housing units.

TfL owns 5,700 acres across the city, mostly located within outer London and in close proximity to the transport network. The team has identified over 300 acres so far, which are suitable for 10,000 homes with 50 percent of its portfolio allocated for intermediate units. TfL undertakes a range of delivery models, from direct development to joint ventures and disposals, working with partners from local authorities, landowners, and the wider development industry on a site-by-site basis.



Proposed future use at Morden underground station and surrounds. Credit: Transport for London

By autumn 2019, TfL had permission for 3,500 homes and a further 1,180 submitted for planning. In the next six to nine months, it is targeting applications for more than 6,000 homes. To ensure quality of development, all schemes are reviewed by the Mayor's Design Advocates before being submitted for planning approval.

In the south London neighbourhood of Morden, TfL has aggregated its own landholdings with surrounding land belonging to Merton Council

to create a 20-acre development opportunity by Morden tube station. The scheme will be funded by Merton Council, TfL, and the GLA's land fund to create a new town centre that reflects changing trends in living, working, and leisure and is based on the principle of healthy streets. Forty percent of the 1,070 new residential units will be affordable housing, and the scheme aims to improve the attractiveness of the local centre by linking Morden with its surrounding green spaces.



Current use of London's Morden underground station and surroundings. Credit: Transport for London

Reducing risks associated with developments

Public-sector landowners may provide land at reduced prices to developers on the condition that they build intermediate housing. This has a real opportunity cost to the agencies involved so requires political commitment.

One example of this approach is in Luton, England, where Luton Borough Council sold a site at below market value to a private hedge fund, Cheyne Social Property Impact Fund. The low cost of land allowed the scheme to be viable at 100 percent social housing and provided 32 one-bedroom flats and 48 two-bedroom flats. The new housing was leased back to the local authority, which rents it out at low rents. Luton Council has an operational lease with nomination rights for 21 years and will maintain and manage the properties for the lease duration.

The price at which the land was sold was based on the understanding that all the homes developed on the site would be affordable, although for legal reasons this was not stipulated contractually. It therefore required that the council be willing to sell land for less than market price and that there was a high degree of trust between the private investor and the local authority.

In Amsterdam the city sells or lets land on long leases for intermediate co-op or self-build housing, built by *Bouwgroep*. This term is often translated as co-operatives, but literally means building groups, and is closer to cohousing. If the land is leased, the co-op or *Bouwgroep* pays the city an annual ground rent, which goes up by the rate of inflation; alternatively, the group can buy the land at the capitalised value of the ground rent.

Amsterdam imposes contractual restrictions on the use of the land: it cannot be sold or traded, and rent increases for the housing built on the land are capped. These restrictions reduce the market value of the land and therefore the ground rent, allowing the groups to produce new homes more cheaply than if they had to pay market ground rents. This is a new model for Amsterdam and is being explored on pilot sites where 70 percent of the housing will be built using this model.

In recognition that increasing numbers of its residents are being priced out of the city, Porto's development agency, Porto Vivo, has recently announced a new approach to deliver intermediate housing, encouraging construction on public landholdings. The intention is for the city to assign leasing rights to the private sector on two sites at Monte Pedral and Monte da Bela for a period of 50 years. Two investment models are under consideration. The first is for the private sector to invest in building apartments where 70 percent of the units will be capped at intermediate rent levels and the remaining 30 percent will be at market rent. The second is to grant leaseholds for 70 percent of the site to the investor and then to give them a freehold for the remaining 30 percent. In practical terms, this means that the Porto municipality is paying for the development of the intermediate units by providing the land.²³

Using development corporations for large-scale delivery

Development corporations are one approach to delivering large-scale development, including mixed-use regeneration, transformational urban extensions, and new settlements. These vehicles enable a focused, coordinated, and

consistent delivery by a dedicated organisation that is able to harness the delivery expertise and leadership of the private sector, provide visible public-sector commitment which can help attract investment, and frequently have broad planning powers to facilitate the delivery of projects at a specific site.

Real estate development can take many years from the initial planning stage through to the final building of the homes. The long duration of projects brings strategic risks arising from changes in political administration as well as the economic cycle and housing market.

If the public sector can support the subsidy, for example by helping reduce the development risk through the use of development corporations, this can make more intermediate homes possible.

At the ULI roundtables for this project, some developers felt that the public sector did not appreciate the risks and economics of the development process nor the costs associated with delays, leaving residential developers over-exposed as an industry to both higher costs and political risk. They stated that reducing bureaucratic delays to development was critical to ensuring the delivery of intermediate homes. This was also highlighted in the survey of ULI Europe members where 13 percent of respondents rated the lack of alignment between the public and private sectors as their top barrier to delivering intermediate housing. It was also ranked as the second most significant barrier overall.

In HafenCity, Hamburg, this issue has been addressed by giving the area a priority area status to improve certainty while maintaining quality. HafenCity, located on the Elbe River, is Europe's largest inner-city development project. The 125-hectare site is being transformed into a mixed-use sustainable urban district ultimately providing up to 7,000 new homes, of which one-third will be intermediate. The development process is innovative and includes higher levels of densification, strong quality controls, and mass public participation.

All zoning plans are discussed by the Commission for Urban Development, which represents all political parties in Hamburg's city parliament. Building permissions are granted by the Urban Development Ministry. The tenders for residential developments are awarded based on the overall quality of the submission rather than exclusively on price.

Once the bid is ratified by the Land Commission, an exclusive option period follows with an obligation to plan. During this period the investor/user, in conjunction with the city of Hamburg, with an architectural competition, may commission site surveys and prepare for building approval.

The advantage of this process is that the developer can postpone the financing of the purchase price until after the building permit is granted, which provides more time to hone the quality of the development and secure financing. At the same time, the city retains its ability to ensure the building's quality by intervening during the development process, which lasts up to one-and-a-half years after award of the option. This encourages cooperation between the city and the developer in optimising risks, costs, quality, and time scales.²⁴



One-third of housing at HafenCity, Hamburg, Germany, will be intermediate. istockphoto © RossHelen

Improving trust between stakeholders through greater transparency

The cost of providing intermediate housing is affected by a range of public policies, often including those that apparently have little to do with housing. Policies aimed at expanding community input, lowering carbon emissions, or increasing green space can affect housing affordability in ways that are not always considered.

To encourage a more collaborative approach between the private and public sectors requires transparency about the way that intermediate housing projects are financed and a greater understanding of how different public policies impact scheme viability.

With better transparency, a greater opportunity exists to build trust between relevant stakeholders and, if required, to transform relationships from being adversarial to more collaborative and innovative.

In Seattle, the Up for Growth National Coalition, a non-profit forum representing many stakeholders, developed an online tool to support discussions about local policy development and how to balance the impact on housing affordability with other public policy goals. This tool is now also available for other U.S. cities.

The calculator²⁵ generates estimates of how implementing various local policy options, covering environmental impact, community impact, and design and public revenues, would affect the rent for a typical new one-bedroom apartment, as well as development feasibility, overall housing production, and citywide rents.

In Utrecht in the Netherlands, the *Stadsakkoord Wonen*, or City Housing Agreement, clearly sets out how the city authorities work with more than 100 different partner organisations, including those from the private sector, to deliver and improve housing across the city.

The City Housing Agreement sets out Utrecht's aspiration to work in partnership to increase the speed of housing production and align it more closely with residents' requirements; to collaborate to provide more creative and effective solutions with partners, including residents; to ensure housing that is accessible for all, including vulnerable groups; and to share knowledge to ensure that interventions are effective.

In response to the agreement, a collective of investors, housing corporations, and developers are joining forces to build 7,000 medium-sized rental properties across the wider province of Utrecht and describe their offer in a bid book. This book is a transparent explanation of how rents for middle-income households are calculated and the financial consequences of certain agreements.²⁶

Helsinki is an example of a city with an active management programme to ensure that housing for all income levels is delivered to provide a balance of social mixes across the city. The city manages the land, constructs housing units, and works with the private sector to deliver affordable housing. As the city owns 64 percent of the land, it is able to provide land at reduced costs for development. This is supported by the city's zoning policies.

Initiatives such as the Re-thinking Urban Housing programme provide developers with the opportunity to try new concepts

and work in partnership with city experts to deliver new developments. The programme began in 2009 and has so far delivered 32 projects. The projects have mainly been delivered on city-owned land, but some have used private plots and existing property. The projects have covered all forms of occupancy, including intermediate housing such as at the Kohtuuhintainen Kerrostalo where developers were able to use developments to demonstrate the solutions that enable the construction of intermediate housing in Kivikko and Laajasalo.²⁷

Transferable lessons to enable land use for intermediate housing

The pricing and availability of land are crucial in bringing forward more intermediate housing. The role of the public sector as owners and policy makers underpins the transferable lessons.

- Strong political leadership, clear alignment of interest between stakeholders, and a robust statutory process are required to make land assembly happen because it is often a complex and lengthy process that needs significant upfront capital funding.
- Sufficient incentives are needed for the public sector to bring forward its landholdings for development, and the public sector must recognise that a land development function requires a specific skill set to deliver.

- Building infrastructure to make sites viable for development means large capital expenditures, which typically requires government-level grants.
- Predictable, stable public policy reduces risks for developers and helps speed up delivery. One way of providing this stability is to remove housing delivery from the political arena by designating zones or setting up development corporations covering certain areas.
- Subsidising intermediate housing through cheap public land is widely applicable. The nature of the transactions will depend on local legal, cultural, and governance norms around public land use.
- Improving trust between stakeholders through greater transparency encourages greater collaboration and provides opportunities for innovation.
- Forward investing in infrastructure requires trust between stakeholders at all stages of the development process to ensure that the benefits arising are recognised and appropriately allocated.
- Use of development corporations to coordinate and activate public and private sectors can ensure continuity of delivery of intermediate housing throughout various economic and political cycles.

5 Best practices in design, construction, and management

The housing construction industry faces several challenges, including lack of ability to deliver at volume, an aging, low-skilled workforce, and lack of investment in research and development. Across the world, more restricted movement of people is exacerbating the shortage of skills required to build new homes.

This chapter presents innovative methods for designing and building homes. Such techniques can cut costs for residents and investors alike, save time, and produce higher-quality, more energy-efficient products. These ideas can contribute to delivering more intermediate housing. Examples include using modern methods of construction (MMC; see box) to deliver units at scale, shell buildings,

smaller units, and whole-life-cost-reducing buildings and making better use of water for floating homes.

To ensure an equitable housing system, the report also identifies mechanisms for allocating intermediate homes and ways to ensure affordability beyond the first occupier.

The affordability of housing depends not only on the initial rent or purchase price, but also on longer-term costs. When identifying suitable homes, tenants will look at the total cost of occupation, including energy costs, while owner-occupiers will consider their mortgage payments, service charges (if any), and expected cost of running and maintaining the home in the longer term.

Reducing costs through good design and construction techniques can help make units more affordable for residents, not only initially but throughout their occupational life – but only if any savings in construction costs are not reflected in higher land prices.

Higher energy efficiency requirements have been a driver of technical innovation. With growing awareness of climate change and increasing costs of energy provision, governments are making building standards related to energy efficiency and sustainability ever more stringent. These standards should be seen in light of total occupancy costs, because the savings accrue to the tenant rather than the building owner.

What is MMC?

Modern methods of construction (MMC) is the umbrella term for new technological approaches to construction, including, but not limited to modular buildings. In practice, most MMC developments use a hybrid approach. There are seven recognised categories of MMC:



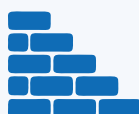
Category 1: Pre-manufacturing – 3D primary structural systems;



Category 5: Pre-manufacturing – Non-structural assemblies and sub-assemblies;



Category 2: Pre-manufacturing – 2D primary structural systems;



Category 6: Traditional building product-led site labour reduction/productivity improvements; and



Category 3: Pre-manufacturing – Non-systemised structural components;



Category 7: Site process-led labour reduction/productivity improvements.



Category 4: Pre-manufacturing – Additive manufacturing;

Source: Cast Consultancy (2019), *Modern methods of construction working group developing a definition framework*. Available at <https://www.gov.uk/government/publications/modern-methods-of-construction-working-group-developing-a-definition-framework>.

The benefits and challenges of modular construction

Using MMC can improve fabric efficiency, which is the preferred route to lower carbon emissions; reduce the performance gap between design and finished product,²⁸ as components are produced in a factory with better ability to maintain quality standards; and help address the skills shortage facing the construction industry.

The best-known type of MMC is modular or volumetric building, which uses a standard set of component parts that are designed and engineered to form the structure and internal fabric of houses and apartments.

Modular construction and other scalable production technologies are becoming more popular as they are seen to speed up delivery of good-quality homes without constraining the external design of the buildings produced. The technique enables developers to build out large schemes in a single stage rather than phased over time; this often suits institutional investors in residential property, because many are funding large-scale all-rental schemes.

Modular homes will outperform traditional build in terms of thermal and acoustic performance as well as air permeability. Studies have shown that they have around 80 percent fewer defects and can reduce heating bills by up to 70 percent compared to traditionally built housing.²⁹ Fewer defects benefit the end user through lower maintenance costs.

The construction industry has historically generated large amounts of waste, but political interest is now growing in reducing this waste. In a recent report the Mayor of London called on the sector to 'embed circular economy principles into built environment practices and adopt less resource-hungry approaches to the delivery of buildings and infrastructure'.³⁰

Modular building can reduce the environmental impact of construction by significantly reducing waste through the more efficient use of materials in a controlled environment. According to Bruno Balbinot, chief executive officer of Brazilian construction technology company Ambar, with traditional construction, usually about 30 percent of all the materials delivered to sites become waste. By combining modular or off-site construction with building information management, estimates are more precise and construction site waste is close to zero.³¹

Using MMC gives a developer greater control over the speed of the development programme, can reduce health and safety risks, minimises the requirement for skilled labour on site, and results in a more consistent (and, some say, higher-quality) final product. In addition, disruption to local residents is minimised because site deliveries are concentrated in a shorter period and the build programme is faster.

The approach has been successfully applied to hotel construction and student housing, and some operators are adopting it for intermediate housing. Advocates claim that the improved productivity of modular techniques can reduce the total cost of construction – a reduction that can be passed on to the final users if it is not allowed to feed through into higher land prices.

The challenges facing those wishing to use MMC is that it requires developers to have their design completed at the outset of development, a change from the traditional build approach, which has more flexibility throughout the duration of the project. For MMC the design has to be agreed in advance because the units are manufactured away from the site.

MMC requires access to production facilities (either the developer's own organisation or within their supply chain) and setting these up requires capital to invest in the materials and costs of retraining staff in new skills. At the roundtables held as part of this project, ULI also heard how adopters of MMC need to fully understand the costs of transporting the completed units to the site, which may require road closures or overnight transportation given their size. For some sites in cities, delivery of large units may be physically impossible because of obstructions such as low bridges preventing access to the site.

Modular techniques have clear advantages over traditional construction in terms of time on site and consistency of manufacture (see case study). The evidence on cost savings is less obvious, as the initial cost of off-site manufacture can sometimes be higher than traditional build methods. But looking at the full development life cycle, modular construction can contribute to cost savings because of:

- greater certainty in terms of build times and costs;
- earlier revenue from rents and sales due to an accelerated build schedule; and
- a higher-quality product and digital record, leading to reduced maintenance costs over the life of the asset.³²

MMC appears to be most successful when it is applied on larger sites or projects, where there is good road access to the location and standard dimensions are not viewed negatively by potential purchasers/occupiers.



Dortheavej Residence with cycle parking. Credit: Bjarke Ingels Group

McKinsey & Company recently estimated that modular techniques, when optimised and capably delivered, could be used in the construction of U.S. and European property worth \$100 billion and deliver \$20 billion in annual savings. These savings are more likely to materialise when the type of structure has a degree of repeatability, a unit size that suits land transport, and a value density where the savings of shifting activities to the plant outweigh logistics cost.³³

Vonovia SE, Germany's largest listed residential property company, has adopted the use of modular construction as part of their drive for increasing efficiency of operations and use this approach in addition to traditional building, depending on the site requirements in their developments. The switch to modular building required a transformation in their whole approach to housing delivery but has led to quicker and cheaper production with better quality.

In Copenhagen, modular construction was used to deliver the Dortheavej Residence, which was completed in 2018. The scheme provides 66 intermediate units of 60 to 115 square metres in area.

The building height was restricted to five storeys to maintain the character of the neighbourhood, which has many industrial buildings from the period of the 1930s to 1950s. However, the pre-fabricated units were able to be stacked in a way that allowed every second module an extra metre of room height in the kitchen/living areas. The modules were also designed to curve away from the street to be able to expand the sidewalk into a public square.³⁴ By using modular construction, the partnership between prize-winning architect Bjarke Ingels Group, Jan Gehl, and Danish non-profit housing association Lejerbo, was able to work within the design restrictions but maximise the space of the affordable home for residents.

Government support for MMC

Governments across Europe, including Spain, Italy, France, and the United Kingdom, are exploring how they can support the use of MMC to help diversify the construction market, improve the quality of buildings and productivity of the industry, as well as seeking ways to deal with the climate emergency.

For example, the U.K. government is supporting the development of MMC by placing funds in partnerships and through loans. It recently lent £30 million to Yorkshire-based Ilke Homes, which won a contract in 2019 to build 750 units for property company Places for People.³⁵ This funding should enable the firm to improve its production facilities so as to reach 5,000 units per year over the next five years.³⁶

Case study

Using MMC in east London

Plot N06 in East Village, Stratford, London, is a scheme from developer Qatari Diar Delancey for build-to-rent operator Get Living, which will provide 524 units. The development is the flagship project for contractor Mace Tech's new High Rise Solutions methodology, which combines a hybrid of MMC category 1 volumetric construction, MMC category 2 panelised facade and structure, and MMC category 5 premanufactured pods for utility cupboards and bathrooms.

The pre-assembled MMC category 2 facade and structural panels are consolidated offsite into MMC category 1 volumetric units. These volumetric units are then transported to the site and lifted from the lorry into place in one crane movement, with each assembled unit taking 45 minutes to install. The anticipated completion date is third quarter 2021. The



Computer-generated image of N06, Stratford, London, using hybrid MMC construction techniques. Credit: Hawkins\Brown

expectation is that the premanufactured elements will have saved approximately 18 weeks from the construction programme, reduced site labour by 20 percent, and reduced construction waste by 70 percent.*

* Cast Consultancy (2019), East Village Plot N06. Available at www.cast-consultancy.com/project/east-village-n06-kb/.



Vonovia's modular housing units in Dortmund, Brechten, Germany. Credit: Simon Bierwald, Vonovia

Homes England has also supported the partnership of U.K. developer Urban Splash with Sekisui, Japan's largest homebuilder and experienced user of MMC techniques, into the House by Urban Splash residential business. Sekisui invested £22 million of equity, and Homes England provided £30 million of equity and debt funding via the government's Home Building Fund. This is the first time that Sekisui has invested into Europe. The partnership plans to deliver thousands of new homes in the north of England and through planning obligations some of these will be intermediate homes.³⁷ Homes England is also supporting the wider uptake of MMC as one of the criteria to be considered when releasing its land for development. In Northstowe, Cambridge, House by Urban Splash has been appointed to build 406 homes using MMC techniques.³⁸

In London, the Mayor's office offers the free, open-source Prism app to support MMC. This app helps developers conform to the city's spatial planning rules and indicates which rapid off-site construction technology is most suitable for their designs. It enables developers to identify how their housing projects could benefit from modular and pre-construction technologies using existing volumetric and panelised products. The tool was developed in consultation with the city's architectural and manufacturing communities and funded by the Greater London Authority, Transport for London, Housing Association L&Q, insurer Legal & General, and U.S. housing developer Greystar.³⁹

Finland, Norway, and Sweden, where around 45 percent of the housing stock is produced using off-site techniques, have been at the vanguard of this approach.⁴⁰ In Japan, 14 percent of the 946,300 homes built in 2018 were created using MMC.⁴¹ By contrast, China, Australia, the United Kingdom, and the United States have been slow to adopt MMC and produce only 3 to 6 percent of their new housing using these methods. But this looks set to change, for one country at least, with the

U.K. government recently saying it aspires to make the country a world leader for housing standards and MMC.

The stages of modular construction are different from a standard development, and this can affect the timing of financing and the risk profile for lenders. In traditional construction, the value of the site increases incrementally as the developer develops the project, which reduces risks for the lender. In modular construction, by contrast, the developer commissions and pays for modules manufactured offsite, but until these are in place they do not increase the value of the development site itself. To enable the adoption of MMC for homebuilding will require financing models to adapt to the new building approach.

Innovative approaches for floating homes

Other opportunities arise from using waterways to provide floating homes. To date these have been typically small scale but offer a creative opportunity to adapt housing to climate change. In cities such as Amsterdam, where water is abundant, building on water can be less expensive than building on land as the cost of the water space is cheaper than an equivalent plot of land. For example, Dutch architects Space and Matter developed Schoonschip,⁴² a floating residential area which adopts sustainability and circular economy principles to develop 30 water plots providing 46 dwellings ranging in size from 80 to 240 square metres and housing more than 100 residents.

According to Space and Matter living on water is cheaper than living on land as land is scarce and water is abundant. As development costs are higher to build on water, this is reflected in the price that is asked for a water plot. In addition, they negotiated with the local authority for access to a plot of land and water that did not require additional spending on connections to the sewage and electricity

networks. As the city did not need to invest in enabling infrastructure, this also reduced the price of the development site. The development included its own smart-grid and black-water sewage systems, which enabled residents to produce their own energy and provided an off-grid sewage system for waste disposal. Each home is insulated and equipped with solar panels, and water pumps extract heat from the water in the canal for heating the homes. Each home has a battery to store energy surplus, and a single connection to the national energy grid allows residents to trade their generated solar power.

Wastewater from toilets and showers is treated and converted back into energy, and many homes also have a green roof where residents can grow their own food. The water and energy systems require higher initial investment cost but lowers the ongoing operational cost of the development. These long-term savings helps to retain affordability for residents.

The housing was developed as a cooperative 'crowd building' project with the households each paying up to €30,000 in advance to secure the development rights. Thereafter they were able to apply for mortgage funding for the homes themselves. The initial investment cost was higher than a standard build, and the maintenance costs are higher than on an equivalent plot of land to account for the complexities of the technological solutions present but, because of savings in energy bills and sewage charges, the total ongoing costs are expected to be cheaper so the homes will be affordable during occupancy.

Similarly, Urban Rigger, which creates affordable, floating student residences in Copenhagen, is seeking opportunities to expand its offer to provide intermediate housing in other harbour, canal, and river-intensive cities.⁴³



Urban Rigger floating structures in Copenhagen. Credit: Urban Rigger

Each Urban Rigger contains 12 apartments with monthly rents starting at DKK 6,950 (€930), compares favourably with the average rent for a one bedroom apartment of DKK 9,200 (€1,050). The apartments are either 23 or 30 square metres and have an individual kitchens and bathrooms. They have shared facilities in the form of a central courtyard with bike racks, direct access to the water, and storage facilities for kayaks and barbecues. A rooftop terrace and basement laundry, storage facilities, and a large community room with kitchen facilities are also amenities. The apartments are equipped with high-speed internet, and residents can apply for housing benefits (boligstøtte) from the Copenhagen municipality.

Shell buildings

One way of reducing initial costs for occupants is for the developer to provide the basic shell of a property but let the residents bear the responsibility for – and the cost of – fixtures and finishes. This approach has a long history in the developing world; many countries have operated very large-scale programmes to supply low-income households with basic structures which they then customised, improved, and expanded as their incomes allowed. Some ‘sites and services’ housing programmes were more basic still, offering only plots of land supplied with the necessary utility and water connections on which households could build their own homes. Self-build is also a widespread practice in countries such as Germany.

The modern version of this approach is the ‘shell home’, which can reduce costs for the initial occupants and appeals to those who want to customise their home as their incomes will allow. Building a shell home is less costly than producing a standard new-build product, as the buyer is responsible for buying and installing finishing touches. It can also be produced more quickly because the final stages of construction can be the most drawn-out. The final consumer can therefore realise cost savings but only if the savings on construction costs are not capitalised into higher initial land values.

In London, non-profit developer Naked House is starting to offer intermediate homes for purchase using this model. The first homes, in the north London borough of Enfield, are under construction and will be available in early 2020. Naked House has received a subsidy from the Mayor of London of £500,000, or £22,700 per unit, to deliver 22 custom-built new and permanently intermediate homes for first-time buyers across three sites. In addition, the developer received land at a low cost from Enfield Council. The 50-square-metre open-plan homes, each with a small walled garden, will have high ceilings allowing for insertion of a mezzanine floor, which will nearly double the floor area.

Unlike some other custom-build developers of shell homes, Naked House produces an explicitly intermediate product. Its website says the homes will be genuinely affordable for households earning the London median wage of £34,473, with units expected to cost 65 to 70 percent of market value. The units will be permanently intermediate, as the discount is locked in through a covenant. If the first buyer pays 70 percent of market value, it must sell the home at 70 percent of market value to any subsequent purchaser.

So far there has been no funding from major investors; the developer is a non-profit and has received support from local government and a number of charitable foundations.



Naked House interior. Credit: Naked House

Whole-life cost reduction

Reducing ongoing housing costs is a powerful way to improve the financial well-being of households. Several housing providers are trying to improve whole-life costs by increasing the energy efficiency of units or making them more efficient to maintain.

In Belgium, developer Revive has recently launched a development called Ekla in Sint Jans Molenbeek, Brussels, in a location with excellent access to public transport facilities via West station.

Revive has made a higher-than-usual investment to create energy-efficient, low-maintenance buildings with block provision of high-speed wi-fi and parking for 200 bicycles. The intention is to benefit both tenants, who will see a notable reduction in their energy bills and service charges, and the owner, who will have reduced maintenance costs.

The improved energy efficiency of the buildings and the fact that they are located close to public transport has resulted in an estimated 15 percent reduction in typical household spend on energy bills and travel costs. These savings will only materialise if they are not captured in higher rents and prices of the apartments by the developer. Of the 92 apartments in the block, 20 will be available to rent under the brand of Hejme, appealing to those who prefer convenience and shared services rather than direct ownership.⁴⁴ The remaining apartments will be made available for sale.

Both the rental and for-sale housing is available at market prices with the affordability coming in through reduced spending for the duration that residents live there. The development also offers 1,000 square metres of commercial space on the ground floor of the building, a supermarket, Dutch-language preschool and primary school, a nursery, and a new local park.

The project has been funded through the Revive investment fund and will be held for a minimum of 10 years. This investment is aiming to act as a catalyst to transform the wider neighbourhood which needs regeneration.

In France, Elithis, an engineering and consulting group in the fields of energy and environmental efficiency, has partnered with fund manager Catella Residential Management to create 100 energy-positive residential towers in Europe. Elithis, building upon its experience in designing energy-positive buildings for office and social facilities such as schools and hospitals, has initially introduced the concept to residential developments in the Danube Tower in Strasbourg in 2017. This was the first energy-positive residential tower in the

world, designed to produce more energy than is consumed by the building and tenants, and was built at standard construction costs.

In France, the average annual household income is €22,077 and households spend €1,600 on energy costs.⁴⁵ As the apartments are energy positive, this is equivalent to an annual saving of 7.3 percent of a household's budget and also reduces carbon emissions. If all new dwellings in France were built to this same energy efficient standard, it would save households €45 billion per year.

For institutional investors, there is a desire to invest in energy-positive buildings as they achieve the same yield and, if the savings are passed onto the tenants rather than the developers, it can lower the risk level



The Ekla development. Credit: Revive

for investors. This is because increasing affordability for tenants reduces the risk of defaulting on payments.

The apartments are designed to a bioclimatic design using a high-performance thermal wrapping. Photovoltaic panels on the roof, south, and eastern facades of the building produce electricity, and the use of innovations such as movable slat blinds, access floors with technical fluid, heating devices in the access floors, and the use of grey water and heat recovery within showers combine to create a building that creates more energy than its

residents use. Residents of the buildings are also provided with an app that encourages them to further improve their green awareness and to lower consumption.

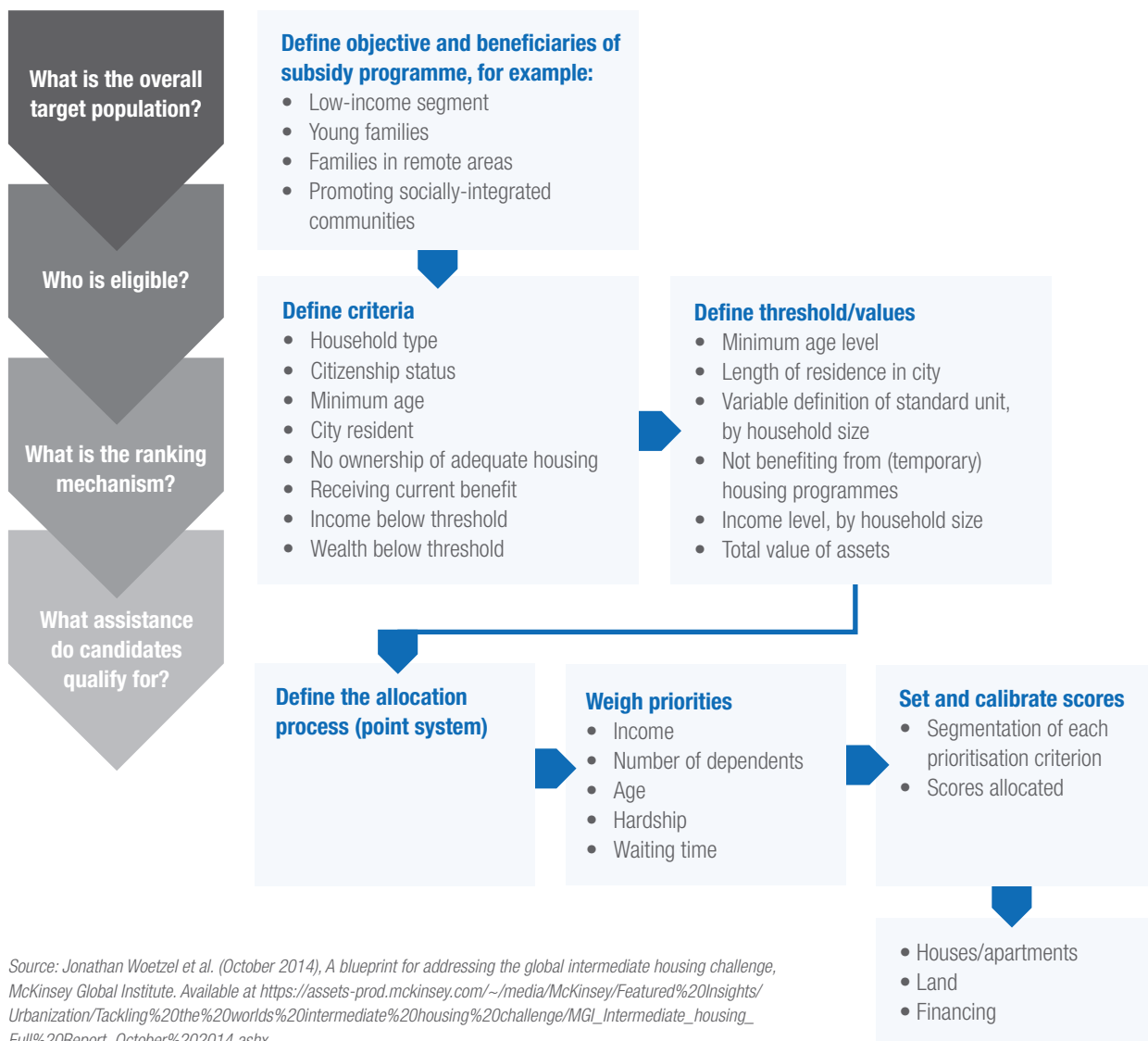
Mechanisms for allocating intermediate homes

Given that intermediate housing is essentially provided through some kind of subsidy, an important step in delivery and ensuring equitability is to make sure that the occupiers are those in the targeted group. At the roundtables held as part of this project, ULI heard that in some cities data protection

laws made it impossible for private owners of housing to ask for evidence of income levels of those applying for sub-market housing. This made ensuring that the housing was going to qualifying households very difficult.

For social housing, there are four steps used to define who is eligible as set out in figure 14, but defining eligibility is much less clear for those who are accessing intermediate housing. A similar framework could be applied for access to intermediate housing.

Figure 14. Eligibility criteria setting used for social housing that could be applied to intermediate housing



Source: Jonathan Woetzl et al. (October 2014), A blueprint for addressing the global intermediate housing challenge, McKinsey Global Institute. Available at https://assets-prod.mckinsey.com/~media/McKinsey/Featured%20Insights/Urbanization/Tackling%20the%20worlds%20intermediate%20housing%20challenge/MGI_Intermediate_housing_Full%20Report_October%202014.ashx.

One way in which the public sector could assist with fair and equitable allocation of intermediate housing for sale is to build a directory of interested applicants, who should be encouraged to make credit applications to banks in advance. In the absence of a well-defined target list, developers must employ various forms of promotion and marketing, which can add significantly to costs. By providing a list of qualified applicants and speeding up sales, the public sector can help improve the rate of return on the project and overcome concerns about personal data protection and its use by the private sector. This approach is proposed to be used in Porto, Portugal.⁴⁶

Furthermore, it is essential that periodic reviews are carried out to account for changes to households which affect eligibility. For example, Pocket Living in London do annual checks that the owner still occupies the house, as the owner is not allowed to rent out their house without permission. As households' incomes change over time, regular income checks should also be undertaken.

Ensuring affordability beyond the first occupier

Considerable resources are required to create intermediate rental and for-sale homes. As these homes have received some kind of subsidy, communities have a vested interest in ensuring that these homes stay intermediate over time. For rental development, policies to maintain long-term affordability include covenants specifying how long the units should remain intermediate and associated funding structures that enable the owners to deliver the units.

For intermediate housing that is for sale, communities can adopt shared-equity homeownership policies, such as community land trusts or shared-appreciation mortgages. By sharing the gains in home price appreciation with the initial investor, shared-equity ownership results in benefits to the homebuyers who are able to purchase at a lower home price and provide the opportunity for equity gains. Local communities benefit because key workers are able to live in locations that they could not otherwise afford. By ensuring sharing of the equity, the initial investment can benefit future homeowners with a single investment.

At the roundtables for this project, for some developers the challenge of longer-term intermediate housing, particularly for units which were sold, clearly had yet to be solved, with the gains of affordability currently going to the fortunate few who were the first-time purchasers only.

Transferable lessons for design, construction, and management

Innovation in design and construction could provide a new route to delivering intermediate housing at scale. In addition to delivery, any transferable lessons needs to focus on ensuring affordability is retained in the long-run.

- MMC has the capability to transform intermediate housing delivery with the development of a whole new approach to financing and building. MMC requires large capital upfront funding, sites that have regular features and are easy to access.
- Waterways for providing floating homes should be explored alongside land-based buildings for providing intermediate units.
- Adoption of ideas from developing countries such as 'shell building' could be explored further.
- Whole-life cost reductions are achievable through energy-efficient building without increasing the initial build costs.
- Robust mechanisms are required to ensure equity in allocating sub-market housing. The public sector can play a role in overcoming data protection issues and developing interest in advance of the development phase.
- Ensuring affordability of housing in the long run can be achieved with appropriately designed covenants and shared-equity schemes, including regular checks to ensure that those accessing intermediate housing are still part of the target group.

6 Best practices in funding and financing intermediate housing

To produce intermediate housing at sub-market prices requires some kind of intervention. This may take the form of regulation, government subsidy, or tax breaks.

This chapter provides examples of public and private funding and financing innovations that are helping deliver intermediate housing. It includes examples from the delivery of social housing units with lessons for mechanisms to provide funding for intermediate housing.

Public-sector support

Perhaps the most straightforward way that governments could intervene to promote intermediate housing is to provide subsidies. Many governments offer non-repayable grants for providers of low-cost social housing, but cash subsidy for intermediate housing is much less common.

Instead, governments can intervene to reduce risks and ensure stable returns by providing loan guarantees, direct loans at reduced interest rates, or guarantees that units will be purchased on completion (see case study on page 42). Governments can play an important role in aggregating different funding sources and in providing public-sector leadership to ensure appropriate regulation and space for innovation.

Subsidised loans

Intermediate housing subsidies often take the form of preferential loans. For example, the European Investment Bank (EIB) and Raiffeisenlandesbank Niederösterreich-Wien AG (RLB NÖ-Wien) have developed a joint fund of €300 million for social and intermediate housing in Austria. Over the next four years the funds will be distributed through RLB NÖ-Wien to housing providers to construct 1,800 intermediate units in Greater Vienna and Lower Austria. The loans carry interest rates

that are fixed for up to 28 years and will enable non-profit housing associations and social and municipal housing developers in eastern Austria to secure the current historically low interest rates for the construction of subsidised housing over almost three decades. The loans are intended to be used in regions where demand for intermediate housing is particularly high.⁴⁷

Subsidised-loan programmes are less powerful than they used to be. Market interest rates are so low that many well-capitalised intermediate-housing providers can borrow more cheaply from commercial lenders than from such programmes, and there is less bureaucracy involved.

Several countries offer government-backed loan guarantees, which protect lenders against defaults and make it easier for the lenders to offer potential borrowers lower interest rates. Various models exist. For example, in Helsinki, two Re-thinking Urban Housing Projects will make use of a loan with a 20-year guarantee provided by the Finnish government's Housing Finance and Development Centre of Finland.⁴⁸

The Village Co-Living and Living in Metropolises (LiM) project in the Kalasatama neighbourhood will produce co-living housing where residents will have private space and shared community facilities with the dual aim of providing intermediate units and reducing loneliness. The schemes are designed in collaboration with those who intend to occupy the homes in the future.⁴⁹

The second programme is based on the principle of the circular economy. Located in Jätkäsaari, the City Village CO-10 development will apply 10 principles of sustainable urban housing that bring together issues related to construction and housing.⁵⁰

In 2013, the United Kingdom's Housing Finance Corporation (THFC), which aggregates debt finance and receives some support from the European Central Bank and the UK government, established a wholly-owned subsidiary, Affordable Housing Finance, to implement the government's £3.5 billion Intermediate Housing Guarantee Scheme. The scheme provided loans backed by a government guarantee to 67 housing associations at rates significantly below market rates by raising money through the public bond markets. Housing associations in the United Kingdom build not only social housing but also housing for intermediate rent and shared ownership. This funding has been used to support the delivery of more than 30,000 homes along with regeneration and community care projects. The underwriting phase of the scheme ceased in March 2016 but the ongoing portfolio management will continue until 2044.⁵¹ A new approach is now being developed by the U.K. government and is out to competitive tender.

This model was closely followed in Australia when it established the National Housing Finance and Investment Corporation (NHFIC) in 2018. One of the NHFIC's core responsibilities as Australia's first intermediate housing bond aggregator is to provide cheap long-term financing to registered community housing providers.⁵²

In Spain, the cost of land and the cost of borrowing money are reduced for those building intermediate housing. In exchange for the lower borrowing and land costs, the units must be offered to those earning below a certain income threshold.

Intermediate housing in Scotland

In 2018, to support the growth of intermediate housing in Scotland, the Scottish government provided £47.5 million of loan funding to Places for People Capital to create a new fund that will source sites to develop and operate 1,000 new intermediate rental properties.

The government loan funding will be combined with an initial £10 million of equity investment from Castle Rock Edinvar Housing Association to create a platform to attract further equity investment from institutional investors.*

To date, 63 homes in Paisley, 85 homes in Edinburgh, and 150 homes in Glasgow have been delivered through the fund.**

The Scottish government also established the Scottish Futures Trust (SFT), an infrastructure centre of expertise responsible for working in partnership with the public and private sectors, to plan future infrastructure investment, innovate to secure new ways to fund and deliver essential infrastructure, and improve the management of existing properties. It is fully funded by the Scottish government, and the SFT works closely with the government to deliver intermediate housing.

The SFT set up the National Housing Trust (NHT) to support collaborative development of intermediate-rent homes across the country. Under NHT, developers (many of whom are small and medium-sized homebuilders) are appointed to build a specified number of

intermediate homes on land they own. The developers finance the build costs themselves. Once built, a local partnership comprising the developer, the local authority, and the NHT buys the homes and leases them to tenants at intermediate, mid-market rents. The acquisition of homes is funded by a loan from the local authority partner (70 percent in the majority of cases) and developer equity (30 percent). The repayment of the local authority loan is guaranteed by the government. To date this approach has delivered 1,700 energy-efficient, high-quality, intermediate-rent homes on 30 sites across Scotland.***

The NHT offers a low-cost intermediate solution with potentially flexible exit routes, including more long-term and social provision options. After the homes have been available for intermediate rent for a minimum of five years but before 10 years, the developer partner will lead a disposal of the homes.

The disposal proceeds are applied to the repayment of the partnership's liabilities in the first place, with any residual proceeds being payable to the developer by way of a developer's return, which is subject to a cap.

The developer is obliged to offer existing tenants the opportunity to purchase the homes in the first place, and any home not purchased by a tenant at build costs needs to be offered to a nominee of the local authority partner.

If neither the tenant nor the local authority's nominee opts to purchase the home, then

the developer can sell the home on the open market. This can be with vacant possession (subject to the existing tenant receiving the necessary notice to quit) or with the tenant remaining in place. To date, all but a few homes have been sold with tenants remaining in occupation.****

The NHT reduces the risks to the public purse by being a shared programme between the different participants of the schemes including private-sector developers.

Scotland has also provided a 25-year loan of £55 million to the LAR Housing Trust, a charitable organisation that was established in 2015 to build intermediate housing across Scotland. In 2017, LAR secured a further £65 million of private funding in a deal arranged by Bank of Scotland Commercial Real Estate through its partnership with Scottish Widows.*****

* Scottish Government (2018), *More homes Scotland mid-market rent* proposal. Available at <https://www.gov.scot/publications/more-homes-scotland-mid-market-rent-proposal/>.

** People for Places (2019). *Annual report*. Available at <https://www.placesforpeople.co.uk/media/2290/places-for-people-annual-report.pdf>.

*** Scottish Futures Trust (2019), National Housing Trust. Available at <https://www.scottishfuturestrust.org.uk/page/national-housing-trust>.

**** Personal communication from Jenna Monteith, Associate Director, Scottish Futures Trust.

***** LAR Housing Trust. Available at <https://www.larhousingtrust.co.uk/>.



Examples of housing produced by the National Housing Trust, Scotland. Credit: Scottish Futures Trust

Tax relief

Governments can also support intermediate housing through the provision of tax relief on building new intermediate homes. The tax incentive reduces the net cost of the housing and so enables the developer or investor to earn a more attractive return than would otherwise be possible.⁵³

In France, Ampere Gestion, with the support of CDC Habitat, launched the Fonds de Logement Intermédiaire (FLI; Fund for investment in intermediate housing) and its successor FLI2, which are used to forward-fund construction of new intermediate housing, which is intended to be concentrated in areas of high demand, particularly the Paris region and some coastal zones.

The funds have contracted with about 15 major private developers to construct the new homes built under the scheme. The tax incentives applied to the scheme are reduced VAT on purchase, which is 10 percent rather than 20 percent, and an exemption on property taxes for 20 years. Those tax incentives enhance residential investment profitability and make intermediate housing an attractive option for investment by compensating the lower yield associated with lower rents.

The VAT reduction generates an average 25 percent discount to market prices on initial purchase.⁵⁴ Once the homes are built, the tax incentives are protected from future regulatory change.

Investors in the funds come from both the public and private sectors. Organisations including insurance companies and other institutional investors located in France and overseas have become involved. As of 2019, the funds have completed 5,800 homes with the aim to build 45,000 intermediate units in the next 10 years.

FLI and FLI2 will fund 20,000 of these homes, with the remainder funded by direct state support and by CDC Habitat.⁵⁵ The scheme produces new homes with rents capped at 85 to 90 percent of regional market rents and offers investors a stable income stream because of low vacancy rates – given their location in high-demand areas – and contractually indexed rents, like all rental housing in France. Investors are also attracted because there is little correlation with returns from other asset classes and the potential for capital gains.

In the United States, the main mechanism for producing low-cost housing is through the Low-Income Housing Tax Credit (LIHTC). The federal government gives each state an annual allocation of tax credits, which can be offset against the federal tax payable. Each state agency distributes these credits to private developers through a competitive process, which in return build or renovate intermediate-housing units. The credits are tradeable, so developers without large federal tax liabilities such as charities can sell them to other organisations.

Developers, which are usually private companies, do not normally rely on the LIHTC alone to provide intermediate housing, but layer it with other subsidies. Most developers sell a substantial portion, typically 99 percent, of the equity ownership of credit developments to equity investors.

The market was originally dominated by private individual investors investing in retail funds but is now almost entirely made up of institutional investors. These investors generally enter into a limited partnership that will own the property. They make periodic cash contributions through the construction period and the early years of project operation in exchange for a flow of

tax credits. They can deduct depreciation and operating losses from the rental properties from their income for tax purposes. After the 10-year period for claiming tax credits, the original equity investors usually take their money out of the properties.⁵⁶

LIHTC has helped build or renovate 2.97 million homes between 1987 and 2015. Because tax credits are available only for units that meet the affordability and income criteria, most schemes are not mixed income, but rather 100 percent intermediate in order to maximise the tax subsidy. Since 2018, households earning up to 80 percent of the area median income are eligible to apply for the units as long as the average income of all households in assisted units remains at 60 percent or below of area median income.

In Porto, Portugal, one model under consideration to support private investors who wish to use private landholdings to bring forward intermediate housing is to enhance the taxation benefits that are already in place at the national level. It offers local tax benefit exemptions and fast-stream planning approvals.

Private-sector financing

The traditional role of the private sector in intermediate housing has been through debt financing, typically through bank debt and capital market funding from either public or private bond issuances to fund housing delivery organisations.

An example of the traditional role of financing is bLEND Funding PLC, which was established in 2018 in the United Kingdom by THFC as a financial aggregator to provide bonds to housing associations across the nation. The fund finances the purchase, acquisition, development, repair, and improvements of property used for intermediate housing (including social housing, shared ownership, and sub-market rental properties provided by housing associations) and refinances existing loans. The initial programme size is up to £2 billion and provides an alternative to own-name bonds and private placements which generally price wider and demand larger amounts of debt.⁵⁷ The bonds are typically bought by institutional investors including pension funds.

Institutional investment

Institutional investors such as pension funds and insurance companies have a long history of investing in commercial property, such as offices and retail, but in some countries are just starting out in the residential sector, driven by strong long-term demographic developments and the attractive risk/return profile of residential real estate. Developers and operators are responding to the new interest from institutional investors by producing housing in which they can invest, but fewer institutional investors directly deliver intermediate housing.

In France, the Fonds de Logement Intermédiaire (described previously) has successfully garnered institutional investment at scale for investment in intermediate housing. The first fund, which is now fully invested, raised €1.045 billion, and the most recent collected €1.25 billion in nine months. In the Netherlands, Dutch cooperative Rabobank and its subsidiary property company BPD is setting up the BPD Woningfonds housing fund to provide 15,000 energy-efficient sustainable mid-price rental homes for the Dutch market. The fund will invest around €5 billion, of which Rabobank will provide €1 billion, over the next three years. An evaluation will take place after three years to determine if Rabobank will remain the sole investor or whether the growth will be co-financed with capital from external institutional investors.

Beginning in 2020, the fund will purchase its first 1,000 units built by BPD. The new homes will include mid-range apartments and family homes for rent, priced between €650 and €1,250 per month. The homes will be located in residential neighbourhoods in urban areas inside and outside the Randstad.⁵⁸

The United Kingdom's Legal and General (L&G), an insurance and asset management group, has been involved in developing and investing in housing for nearly 20 years through a multi-tenure housing strategy. In 2016, L&G partnered with PGGM to invest £600 million into a fund to build private rental housing across the United Kingdom, providing 3,000 new homes.⁵⁹

It has undertaken large-scale regeneration programmes in cities across the United Kingdom; it owns homebuilder CALA Homes and has invested about £1.5 billion in

both the build-to-rent sector and student accommodation. The partnership has so far delivered 51 intermediate housing units as part of a larger residential development in Bath. The houses are targeted to key workers such as nurses and teachers and are offered at a range of discounts of an average of 25 percent of the prevailing market rent. For this scheme, the partnership is responsible for finding occupiers. The partnership allocates intermediate housing units with the same specifications as those used for market-rent housing throughout the scheme. As the partnership will be a long-term owner of the assets, the income from the intermediate units is assessed as part of the whole scheme income. Future developments to provide intermediate housing are underway in London, Bristol, and Brighton.⁶⁰

In 2019, L&G set up Legal & General Intermediate Homes with the ambition of becoming the leading private intermediate housing provider in the country. As a registered for-profit social housing provider, L&G has access to government grants to deliver homes where the local authority allocates the tenant, but it is also seeking to provide intermediate homes in the private sector. Working in partnership with L&G Modular Housing, which has a production facility in Leeds to build 3,500 homes each year, L&G is identifying opportunities to develop sites together.

Using this approach provides L&G with the opportunity to grow intermediate housing at scale. For L&G, one of the highest strategic risks associated with this sector is policy changes at national and local levels. This can make it difficult to design funding strategies over the long run, adding delays to building.



istockphoto © Duncan_Andison

Financing through cross-subsidisation

In the United Kingdom, major social housing providers such as L&Q and Notting Hill Genesis build market housing and use the profits to cross-subsidise the provision of social and intermediate housing units. Encouraging mixed-use developments also provides opportunities to support cross-subsidisation between commercial and residential uses. Building at increased density levels enables greater amounts of cross subsidy to be provided, as shown in the inclusionary zoning of cities in the United States.

The role of value capture finance

Previous research by ULI highlighted how value capture finance (VCF) offers a mechanism that shares the risks, costs, and rewards of urban development between public and private stakeholders. VCF can involve relatively complex financial and contractual arrangements but can be defined as the appropriation of value generated by

public-sector intervention and private-sector investment intervention. VCF creates a win/win situation from development as it maintains an adequate rate of return for the private sector following initial investment and an external rate of return where a proportion of revenue is reinvested for the public good.⁶¹

In HafenCity, Hamburg, Germany, this approach was used to construct the infrastructure required to provide development sites to extend Hamburg's city centre. The initial step was to create a holistic master plan for the area to provide the vision to drive demand for sites in the area along with obtaining capital investment from private-sector developers. The publicly-owned development agency, HafenCity Hamburg GmbH, sold land as freehold to investors and developers. The revenues from the land were reinvested to pay off the initial loan that financed the construction of the area's infrastructure and amenities.

Transferable lessons for funding and financing

Innovation in public and private funding and financing are key to deliver more intermediate housing at scale. Transferable lessons from the best practice examples include:

- Intervention of some form is usually required through direct financing, reducing the costs of borrowing through guarantees, provision of tax incentives, or cross-subsidisation from market-rate housing or other commercial units enabled through mixed use and increased density.
- If the public sector mandates the proportion of affordable housing to be delivered, this has the potential to reduce land costs.
- Appropriately designed funding can share the risks and rewards between different stakeholders.
- Value capture finance offers a mechanism that can provide shared returns between the public and private sectors that can be used to help develop non-commercial uses including intermediate housing, place making, and cultural facilities.

7 Key recommendations to enable intermediate housing to be built at scale

This chapter draws lessons from the best practice examples provided throughout the report. These recommendations will enable more intermediate housing to be delivered in different cities and at scale. They exist all along the value chain, as shown in figure 15.

Recommendation 1: The public sector should provide a long-term stable vision, strategy, and framework for intermediate housing.

This recommendation is aimed at all levels of government: national, regional, and local. The relevant level depends on the legal and constitutional framework in each country.

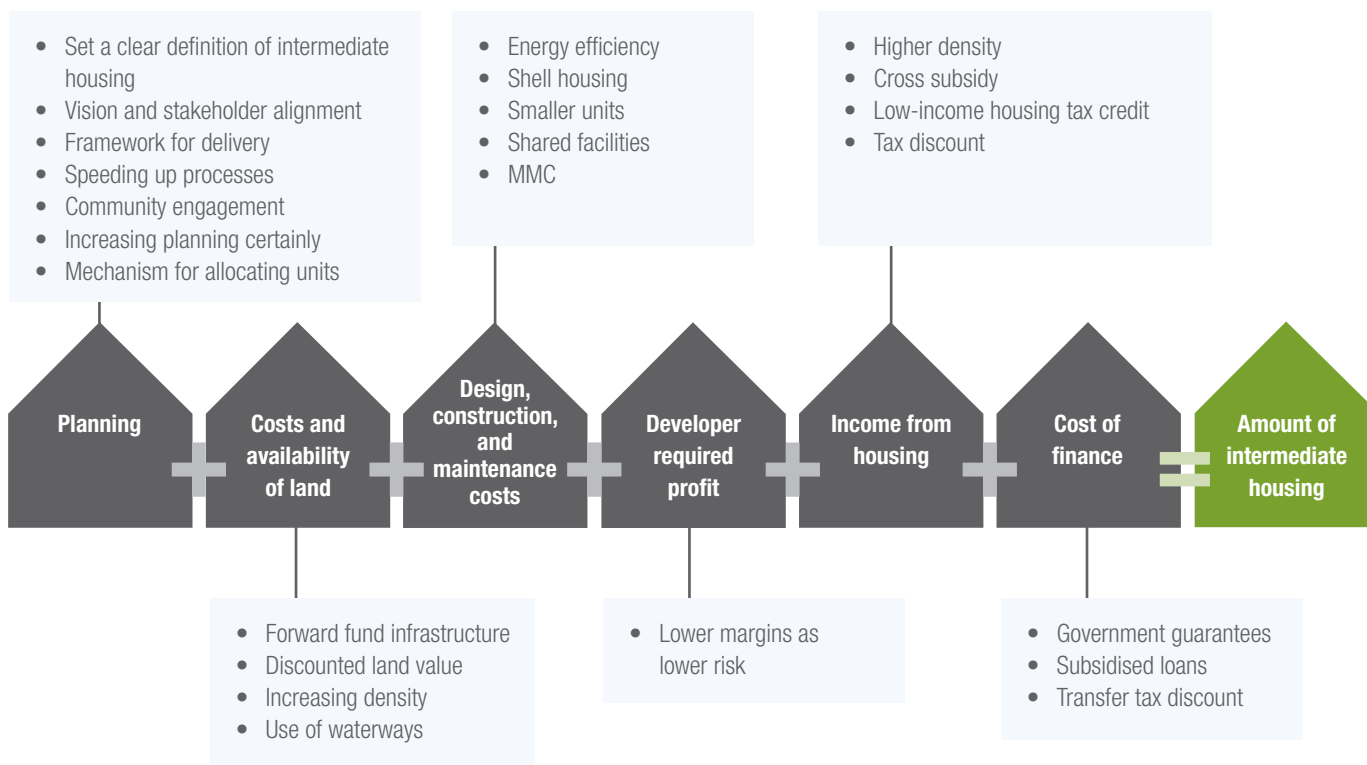
Good-quality housing is a basic human right. Providing appropriate intermediate housing can help achieve this and supports economic growth and social cohesion. In areas where there is a need for intermediate housing, government can support delivery by providing a clear vision and strategy.

Political leaders need to take a long-term view, given that time scales for delivering housing extend beyond typical political cycles. It may be beneficial to separate the housing delivery from the political process through mechanisms such as development corporations. This can help reduce uncertainty and ensure continuity through various economic and housing market cycles.

Politicians need to understand the balance and trade offs between different land uses and the impact of regulation and uncertainty on the ability to deliver intermediate housing. Strong, consistent political leadership is required to manage the limited availability of land, competing land uses, and NIMBYism.

Local and national policies need to be aligned, but each local authority should be able to tailor its approach in response to local demand for intermediate housing, land availability, and opportunities to leverage private-sector funding.

Figure 15. Key intervention points for increasing the supply of intermediate housing



Source: Urban Land Institute.

Integrated city planning is vitally important to deliver more intermediate housing and mixed communities. City governments should explore opportunities for developing intermediate housing in areas that are well connected by public transport to major employment hubs and in urban and suburban (re)development areas, as well as in areas where transport improvements could make low-valued land viable for development. New mobility solutions such as e-bikes and scooters can improve lower-cost options to improve accessibility of areas and therefore the opportunity for larger-scale intermediate housing and commercial development.

The extent to which city administrations are active in tackling housing shortages varies significantly and depends not only on political will, but also on each city's legal and constitutional powers, fiscal position and autonomy, and the amount of land it owns. The public sector needs to review the taxation and regulatory frameworks to determine if they are restricting or encouraging intermediate housing delivery.

Recommendation 2: **Provide a clear definition of intermediate housing and how rents and prices in the segment relate to market rents and prices.**

An intermediate housing plan, as part of an overall housing plan, should define (a) the income and types of households to be supported along with (b) the types of products that will count as intermediate housing, (c) how prices and rents will relate to the market, and (d) the length of time they will be retained in this category. There must also be clearly defined mechanisms for allocating the intermediate housing to qualifying households. It is important that this definition is generally accepted and remains in place as through different political cycles.

Recommendation 3: **The public sector needs to enable more land for intermediate housing development.**

As land is the largest cost of producing intermediate housing, the public sector plays a critical role in setting out the incentives and framework to encourage the release of land for these homes. The public sector is itself a major landowner in most cities, and public organisations should be required to examine their landholdings with a view to releasing land for housing where possible. This requires a supportive legislative system and in-house property development skills and experience in the relevant organisations. The commissioning process should explicitly account for maximising intermediate housing across the portfolio rather than act on an individual site level to provide sufficient flexibility.

Investments in infrastructure improvements, wherever possible, should be explicitly tied to the delivery of more intermediate housing. Land value capture mechanisms should be explored where appropriate to enable better sharing of risks and rewards from development between the public and private sectors.

The public sector should explore the possibility of proactively using land assembly powers to bring forward sites that are suitable for development at scale.

Recommendation 4: **Build trust and collaborative partnerships between the private and public sectors.**

Governments and, increasingly, private investors share an interest in delivering intermediate housing, but neither can achieve this goal by working alone. Institutional investors are interested in investing in intermediate housing as the long-term risk/

return profile is well aligned with the goals of their funds. Such investments allow them to diversify their portfolios and at the same time deliver social impact.

The public sector enables and enforces private intermediate housing provision by setting planning targets and providing tax incentives and subsidies, but cannot provide enough housing on its own. To maximise delivery of intermediate housing, there must be an alignment of interest and a common understanding between stakeholders.

The private and public sectors have different skills and experience in developing intermediate housing. These skills are often complementary, and, if combined, might generate new business and development models. Knowledge sharing about the broader requirements of profit making and delivery of public services can contribute to a more collaborative approach. This can be achieved in many ways, including using tools that set out the implications of different policy options on the financial viability of delivering intermediate housing units.

Effective collaboration between the public and private sectors requires transparency about the costs of intermediate housing projects, the way they are financed, and how different public policies affect development viability. Trust can be built, for example, through city housing agreements, which are delivered in partnership with all stakeholders. With greater trust come more opportunities for innovation.

Recommendation 5: **Develop new funding models and reduce uncertainty in development.**

Successful delivery of intermediate housing requires intervention to enable sub-market pricing. Some governments intervene to reduce risks and ensure stable returns by providing loan guarantees, loans with lower interest rates, or guarantees that units will be purchased on completion. Governments can also play a role in regulating funding aggregators and providing space for innovation. Cities should work with the private sector to develop new collaborative funding models that better share the risks and rewards.

Cities can reduce costs associated with development uncertainty by, for example, using publicly-owned, privately-managed development corporations for large-scale delivery; ensuring long-term continuity of intermediate housing policies; and encouraging consistency to enable transferability of existing business models. In addition, cities should develop clear planning policies and ensure that planning departments are properly staffed and skilled, to prevent delays in the planning process.

Recommendation 6: **Engage with local communities to make development more acceptable.**

As problems of affordability deepen in cities, a grassroots activist movement is attracting growing numbers of people asking for more intermediate homes. YIMBYs can be found in several cities across the world. Both developers and city administrations need to identify how they can mitigate negative impacts of new developments and deliver broader social benefits through the schemes that are being

built. They need to ensure that not just the loudest ‘anti-development’ voices are heard but also the voices of those who would like to live near their places of employment and other future potential residents. This wider dialogue can be facilitated through the use of digital tools and apps.

Recommendation 7: **Encourage innovation in intermediate housing provision.**

Modern methods of construction (MMC) have the capability to transform intermediate housing delivery if cost savings are not absorbed into the price of land. However, MMC is still at a nascent stage. To accelerate the use of MMC requires adaptation of procurement models, harmonising of manufacturing standards, training workers in new skills, streamlining planning permissions through to inspections, appropriate financing arrangements and identifying new partnership opportunities. There is also a need to develop new financing models that are adapted to the new building approaches. This requires a concerted effort by all stakeholders but can be supported through incentives provided by the public sector. For example, by offering financial incentives for the use of MMC to deliver housing on public land.

Recommendation 8: **Address long-term affordability and promote climate change adaptations.**

Evidence has shown that buildings that are energy efficient or even net producers of energy do not have to cost more than less energy-efficient buildings. In addition, these buildings will require less updating in the future, which benefits investors. Where the savings are passed onto the residents, rather

than being captured in higher rent or purchase prices, lower utility bills will benefit residents. They may even be able to obtain a net profit from the energy generated, which contributes to longer-term affordability. New intermediate homes should incorporate energy-efficient features.

It is essential to ensure long-term affordability by developing measures to check that intermediate housing is being occupied by those it is targeted at. The subsidy for affordable housing should not only be applicable to the first household who occupies the home.

Recommendation 9: **Facilitate knowledge sharing to deliver intermediate housing at scale.**

The research process undertaken for this report demonstrated strong interest in this residential sub-market and growing demand from investors across the globe. However, many stakeholders have an incomplete picture and many ‘myths’ are still circulating. To encourage wider delivery, ULI and its members need to continue to actively share knowledge and identify ways to transfer best practice from successful places to other locations.

Next steps

Many innovations, large and small, have contributed to the delivery of intermediate housing units across Europe. ULI intends to act as a repository of best practices to deliver intermediate housing at scale and to actively communicate examples that its members can learn from and further develop. ULI is keen to hear from others who may have relevant examples. Please share them by emailing suggestions to elliott.hale@uli.org.

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