Welcome to our inaugural edition of Urban Futures, a report which tackles the increasingly prominent global topic of housing affordability.

You may have seen our other publications, such as The Wealth Report, yet we recognize the responsibility of ourselves, governments and developers to help tackle the growing affordability pressures.

This subject has become a critical issue for city authorities and businesses across the globe but is often viewed in silo. Knight Frank’s global network enables us to provide a holistic overview of the solutions, which are being implemented in some of the world’s leading cities as well as providing insight into a range of future solutions.

The affordable housing gap has been increasing due to limitations on supply, historical restrictions and a growing urban population. This growing pressure on housing affordability is changing the development landscape – influencing the types of product on offer as well as the locations developers are focusing on and even the organisations becoming involved in the development process. For this first issue we focus on five cities which have been at the forefront of the affordability debate. In these cities we cover emerging trends from the burgeoning co-living sector to the building of micro homes.

We have assembled a global panel of industry experts who provide their views on the best way to navigate the affordability landscape. One thing is clear: there is no all-encompassing solution, yet a combination of different approaches has the potential to really drive change.

We hope that you enjoy the report and find it useful in assessing the ever-changing development space. Please do get in touch if you would like any further information from our research or property teams across our network of global offices.

Andrew Hay
Global Head of Residential
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Three years ago in the The Knight Frank Wealth Report, I commented that access to high-quality, truly affordable housing was set to become one of the dominant global political themes. The Economist magazine had at that time noted that 60 million rich-world households spent more than 30% of their income on housing; and in the emerging world, 200 million households lived in slums.

With rapid urbanisation, these numbers were only set to grow. And with global house prices rising by 6% more than incomes over the three intervening years, the issue has become further entrenched. The issue of affordability is not limited to one or two cities globally. While Hong Kong, San Francisco and London might spring to mind as the cities at the sharp end, the issue of how to ensure workers can access housing is relevant to almost all successful urban centres.

In many cases it is economic success itself that worsens the situation, attracting workers and pushing up the cost of accommodation as demand outpaces the ability of cities to provide new housing.

What does affordability mean?

There is no single definition of housing affordability. City authorities around the world have independently grappled with this issue and have come to different conclusions on how the problem should be defined let alone tackled.

The most common definitions look at the relationship between house prices and rents against income. The Demographia International Housing Affordability Survey, for example, defines ‘affordable’ locations as those where house prices are no more than three times average household incomes. The UK charity Shelter believes that affordability entails spending 35% or less of your net household income on accommodation.

Setting the bar at these levels reveals the scale of the problem. With the average household income, according to Oxford Economics, in London standing at £69,585 (US$87,600), and the average prices of property standing at £477,734 (US$602,000), house price to income ratios are more likely to be at 7 than anything approaching the bar set by Demographia.

Even if housing is apparently affordable based on the agreed official metrics, the quality of that housing may fall below the appropriate standard. For European and North American centres where mass urbanisation occurred much earlier than other parts of the world, ensuring older housing is fit for use is an ongoing challenge.
Flexible work force

While lack of access to affordable housing is felt most acutely by individuals and families, there are significant wider implications. The reduction in the mobility of labour impacts on economic growth. As companies become ever more footloose, the ability of cities to attract workers, especially top tier talent, becomes even more important.

Restricted movement can limit the opportunity to relocate to more productive areas, the cumulative effect of which is twofold: On one hand is the missed opportunity from unfilled positions or not attracting the most suitable candidates leading to lost output. On the other, businesses may need to compensate top talent by paying higher wages in order to offset the higher costs of living.

Talent and creativity determine the ability to increase productivity and innovation, whilst sustaining growth. The daunting reality for city leaders is that businesses are more mobile than people, when they can’t attract the right talent, or it costs them too much to do so, they may move to lower cost areas. Facebook Vice President of Communications and Policy Office, Elliot Schrage told investors in 2018 that “If we can’t solve the housing and transportation issues, Silicon Valley won’t be Silicon Valley,” he continued that “these companies, like ours, will expand elsewhere.”

Examples of where this may already be having an effect is in nearby Seattle with Amazon announcing its chosen locations for a second headquarters HQ2, in Long Island City, New York and Crystal City, Virginia, instead of expanding in Seattle. The original headquarters has generated roughly US$38 billion in economic activity for Seattle between 2010 and 2016. However, Amazon has outgrown the city, claiming it is unable to recruit the level of staff required, in part due to high living costs. HQ2 is estimated to include a US$5 billion investment and provide employment for 50,000 people.

If cities desire to compete on the global economic stage, then the affordability of housing needs to become a priority for both the public and the private sector.

Economic implications

The size of the win from tackling housing affordability is significant. Research in 2015 by the University of California, Berkeley and National Bureau of Economic Research estimated that if all barriers to urban growth in the United State’s housing supply was lifted, it would raise the country’s GDP by 13.5%, or up to US$2 trillion. In the UK, Shelter found that every £100 million (US$126 million) invested in affordable housing results in £210 million (US$265 million) of economic output into the economy and sustains 1,270 jobs.

Opportunities for investors in this area are numerous. Innovations in housing design, funding, land assembly and construction are developing rapidly. And this is an area where the flow of ideas and experience is moving both ways, between private and public sectors and developed and emerging economies. As challenges and opportunities come, they don’t get much bigger, or more important.

Hard to fill

The percentage of employers with difficulty recruiting for a selection of countries

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<tr>
<th>Country</th>
<th>2013</th>
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Source: Knight Frank Research, ManpowerGroup Talent Shortage Survey

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The issue of affordability is not limited to one or two cities globally, affordability pressures rise in conjunction with a city’s success.

Global house prices have risen by 5% more than incomes over the past three years leading to growing affordability pressures. If cities fail to address affordability pressures, businesses will be forced to move to more affordable areas to negate productivity losses. Tackling affordability will generate significant opportunities for investors, especially with the innovative techniques being used within the sector.

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The politics of property
A political battleground seems to exist: the need to create more affordable housing is matched by the government’s desire to raise revenue.

Across the US, for example, many states have tax and incentive schemes that either unassumingly or residential developments; local governments are more likely to approve new office, retail or hotel developments, because the tax take will be substantially greater.

However, often when residential developments are approved, pressures arise that act to halt the project, for example incumbent homeowners resist new developments, especially affordable housing. The challenge is to create the conditions where existing new developments will bring added value and not diminish property values, we discuss this concept in greater detail on page 14.

Strangling supply
Individual nations, many restrictions and regulations have burnt in place over time that are no longer fit for purpose. Indeed, many land supply issues are potentially due to regulatory constraints. There are two main ways to restrict land supply by not letting a city grow outward or not allowing building density to increase.

In the UK, for example, developers are prevented from building on Green Belt land – a ring of countryside encircling major cities, which is maintained solely for agricultural or non-urban uses.

Some cities are unable to grow in response to demand pressures, purely due to their geography. This is the case with island metropolises or, for example, Mumbai, which is bordered on three sides by the sea.

Almost all of the urban growth we expect to see over the coming years will take place in developing countries. In sub-Saharan Africa and South-East Asia, which together will account for almost 60% of global urban population growth, planning rules are not always respected or remain in place simply as legacy rules from the colonial era. “In Dar es Salaam, Tanzania, the minimum legal plot size for a property was set according to British post-war standards at 800 square meters,” said Kallergis. “This is far too large when you consider average incomes, so many properties immediately end up on the informal market. As a result of these excessive and inappropriate rules, housing that is built to meet regulations is out of reach, even for the middle classes.”

The overhauling of planning laws doesn’t come without its challenges. Kallergis says there needs to be a greater amount of forward thinking. Instead of shocking people through existing systems and processes, we need to be dynamic and adapt to the ever-changing urban landscape.

Urban clusters
Urbanisation is the key trend leading to stretched affordability. Job prospects and increased wages are the major draw to global cities. The UN estimated that in 2017, over half of the world’s population lived in urban areas, up from 42% 30 years ago. This trend is set to continue with the proportion expected to rise to over 90% by 2050. The region with the highest urban population is North America, with 82%, however the fastest growing is what the UN defines as ‘East Asia and the Pacific’ where the urban population has gone from a third in 1987 to 58% in 2017.

While young workers are still attracted to cities, older generations remain or are even relocating to urban areas. The relocation enables a greater level of independence and connection through access to shops, amenities and transport. With more and more people vying for space in cities, land values, and therefore rents and property prices, rise accordingly.

That is not to say that every city is created equally. The draw of ‘first tier cities’ is such that, London in the UK, for example, has witnessed faster growing affordability pressures compared to other cities such as Manchester.

Housing as a commodity
Following the 2008 financial crisis, housing increasingly shifted from a relatively straightforward part of the economic mix to a complex investment vehicle, attracting huge sums from families and corporations. In the wake of the crisis, a growing number of investors bought up ‘safe haven’ properties in cities like London and New York.

“Housing has lost its social function and is seen instead as a vehicle for wealth and asset growth,” commented Eshlani Faris, of the United Nations, in an extreme interpretation of the trend of viewing housing as a global commodity. The availability of cheap debt exacerbated this, enabling individuals to become highly leveraged in order to invest.

MOVING TO THE CITY
The proportion of the population that live in urban areas as a percentage of the total population

<table>
<thead>
<tr>
<th>Region</th>
<th>2017</th>
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<tbody>
<tr>
<td>NORTH AMERICA</td>
<td>80.0%</td>
<td>82.0%</td>
</tr>
<tr>
<td>LATIN AMERICA &amp; THE CARIBBEAN</td>
<td>68.6%</td>
<td>71.4%</td>
</tr>
<tr>
<td>SUB-SAHARAN AFRICA</td>
<td>27.8%</td>
<td>29.9%</td>
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<tr>
<td>EUROPE &amp; CENTRAL ASIA</td>
<td>77.8%</td>
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<td>MIDDLE EAST &amp; NORTH AFRICA</td>
<td>10.5%</td>
<td>10.9%</td>
</tr>
<tr>
<td>SOUTH ASIA</td>
<td>67.0%</td>
<td>72.0%</td>
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<tr>
<td>EAST ASIA &amp; THE PACIFIC</td>
<td>58.2%</td>
<td>64.9%</td>
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Affordability is recognised as an issue across the globe. Here we look at different measures across 32 cities to gain insight as to the breadth of affordability.

To understand the scale of the affordability challenge across the world we have built a Global Affordability Monitor to assess 32 cities around the world and to consider relative performance in three important areas:

- **House price to income ratio** – This measure is the most commonly cited affordability measure. For this we have looked at the ratio between average house price and average household income, after taxes.

- **Rent as a proportion of income** – As the population of tenants increases globally it is critical to assess not only the affordability of buying a home but also how affordable it is to live in a city with respect to rented accommodation.

- **Real house price growth compared to real income growth** – We have included this measure as we believe it demonstrates clearly whether affordability has improved or worsened over recent years. We have adjusted both house price and income growth for inflation, over the time period, to assess the real impact.

We present our findings as quadrants of affordability with the ‘least affordable’ cities including Auckland, Hong Kong, San Francisco and Vancouver and ‘most affordable’ Dubai, Kuala Lumpur and Sao Paulo.

However, compared to Demographia’s definition, many of our cities would be considered unaffordable with the average house price to income ratio being 8.

According to Shelter’s rental definition many would be affordable with rent, on average, accounting for 30% of income, below their 35% threshold.

Over the following pages we further explore the findings of this year’s Global Affordability Monitor.
The Knight Frank Global Affordability Monitor 2019

Key Findings

There is a growing global disparity between house prices and income. Across the 32 cities covered, there was an average five-year real house price growth of 24%, while average real income grew by only 8% over the same period.

Some cities bucked the trend. New York saw its income growth exceed real house price growth by 3%. Moscow, Singapore, Mumbai and Paris also saw their average real income, over the last five years, grow faster than real house prices, indicating an improvement in affordability and a contributing factor to their positions. In Moscow, where there was the largest difference, real income growth outpaced real house price growth by 22%.

Amsterdam, Vancouver and Auckland, however, saw real house prices outstrip real income growth by 39%, 46%, 32% respectively. This evident disparity between the two indicators is a clear contributing factor to these cities falling into the ‘least affordable’ quadrant. Berlin’s performance has been similar which has contributed to the city being placed in the ‘second least affordable’ quadrant.

Dublin’s strong economic performance over the last six years has led to an increasing demand for housing, however, the new housing supply has failed to keep pace. This has given rise to affordability issues, placing Dublin in the second ‘least affordable’ quadrant. A lack of new supply was compounded by expensive debt and equity funding; stringent minimum design standards; and macroprudential measures which made it much harder for prospective buyers to access mortgage financing.

Things in Dublin are changing however. Design standards and the planning process have changed, which is helping to address development viability issues. And, while Ireland’s macroprudential measures may have-suppressed the pool mortgages that would otherwise be available, they have achieved their aim of reducing systematic risk in the market. Developers and their funders are also adapting to the evolving landscape, by placing an increased focus on the private rented sector where there is an estimated €3 billion (US$3.4 billion) to €5 billion worth of capital available to be deployed to the Dublin market.

Affordability in Jakarta remains a key issue; despite the city’s ‘most affordable’ quadrant status. Indeed, to mitigate affordability pressures, developers are having to reduce the size of new residential units to maintain maximum capital value levels at accessible levels. In the year to September 2018, nominal prices in Jakarta increased by 5.3%.

In the year to June 2018, nominal house prices in Kuala Lumpur fell by 0.6%, helping to maintain the city’s presence in our ‘most affordable’ quadrant. The city’s high level of new supply has helped to increase price competition keeping prices attractive.

City-wide average affordability statistics are useful but they fail to highlight disparities in housing costs within sub-markets or across the income spectrum. Therefore, even cities in the ‘most affordable’ quadrant still have room for improvement and may not be affordable to lower income groups. The discussions in the next section of this report will provide many examples on how cities are looking to alleviate affordability pressures.

Affordability for Singapore is based on private housing. However, it is worth noting that most Singaporeans tend to purchase public housing. In addition to which, many can utilise their mandatory central provident fund savings to finance the purchase of a home.

Sources:

In the next section of this report will provide many examples on how cities are looking to alleviate affordability pressures.
SAN FRANCISCO SPOTLIGHT

San Francisco is a city at the forefront of the affordability debate.
New approaches here are providing lessons for other cities.

The tech boom has transformed the fortunes of San Francisco, attracting tens of thousands of workers to the city for homeowners and renters alike.

Corporates step in
The tech giants have transformed the fortunes of San Francisco, attracting tens of thousands of workers to the city. As wealth in the local area rises, along with its population, the housing market has seen rising high price growth.

This has forced the tech giants to step into the fray to provide new housing for workers. In 2017, Facebook announced that it was spending $1 billion on buying factory-built homes for its staff, a trend that we are seeing in other global locations. Cambridge University in the UK, for example, has been building properties which will include homes for staff to let at affordable rents.

Shared Living
For those unable to access housing through employment opportunities, co-living could provide an affordable alternative. Typically, co-living developments are smaller than individual apartments, and include a private bedroom with an en-suite bathroom, complemented by communal space including kitchens, shared spaces for working and socialising with other people, and fitness facilities.

The concept has proved popular with both developers and renters. Leasing multiple units with the opportunity of living income from additional services is attractive to developers. For tenants, variable leases provide flexibility while central locations help them to stay close to work and local amenities.

In San Francisco, there is a cohort of co-living start-ups that have come to market offering short-term rentals, aimed at all ages and lifestyles. Start-up Roam was originally designed for ‘traveler types’ as an alternative to hotels. Daisy Onubogu, global head of community at Roam, says it is a “common misconception that co-living is just for millennials. In San Francisco the median age of occupants is 39, with residents ranging from 22 to 75 years old.”

Roam’s reach stretches from London to Bali and it currently operates one development in San Francisco. Their properties are usually made up of between 25 and 50 units and, while they are typically priced above other shared living options, they are far below the city-wide monthly average. Onubogu says this is justified given the high-quality amenities, ample space and community atmosphere. With their development in San Francisco being oversubscribed, Onubogu says that “hitting capacity has confirmed that we’re on the right path,” adding that further locations are planned in San Francisco.

Indeed the popularity of the concept has led to significant investment. “In the last four years, multifamily has been the recipient of the highest levels of investment of all property types in the United States,” says Michael Wolfson, multihousing specialist at Newmark Knight Frank. For example, in May 2018 Brookfield Company and joint venture partner Rockpoint Group spent US$905 million on Starrett City, a 5,301-unit affordable multifamily housing complex in Brooklyn.

Further growth may be limited in some locations, as policymakers struggle with the new concept and how to include it into existing zoning regulations.

“There’s simply no framework in place for us,” says Onubogu. “Governments are still finding their way so we are doing our bit to start discussions about zoning and licences and any other questions that come up.” Governments around the world will have to adjust quickly.

Changing the mindset
Existing homeowners can also contribute to a worsening of the affordability situation in San Francisco, and across the globe. Homeowners and local stakeholders block new housing developments to preserve the character of their locality, known as NIMBYism – “Not In My Backyard.” Conversely, YIMBYism (Yes In My Backyard) is gaining traction in the city.

Laura Foote, executive director of YIMBY Action, a group set up to actively battle this viewpoint is gaining traction in the city. Laura Foote, executive director of YIMBY Action, states that “there is no solution to this crisis, which does not involve building large amounts of multifamily housing.”

More widespread adoption of this mindset globally has the potential to make a big impact on existing supply pressures. YIMBY Action sees 2,000 members in San Francisco, and their lobbying is starting to bear fruit. According to the San Francisco Planning Commissioner’s Housing North and Tenderloin Report, the city produced an average 1,900 new units per year since 1990, but this figure rose to 4,400 a year between 2014 and 2017.

Existing residents and homeowners need to subscribe to the YIMBY (Yes In My Backyard) agenda to bring about a positive attitude to development and encourage greater supply.

The rise of the concept of co-living is changing spatial planning, and future rules. This concept will also require governments, globally, to adjust zoning regulations.

The private sector steps in, with large companies including Google and Facebook creating their own affordable housing options for workers.
London Affordable Rent

The UK’s National Planning Policy Framework (NPPF) defines Affordable Rent as being no more than 80% of open-market rent, including service charges. However, no matter rents in London are genuinely affordable, as Mayor stated in the Affordable Homes Programme 2016-21 Funding Guidance that he expects rents to be set at benchmark substantially below this level, based on traditional social rents.

London Living Rent (LLR)

Locally specified rents for Londoners on average incomes, enabling them to save for a deposit. The LLR varies by area and is based on one-third of median gross household income for the local borough, as well as the number of bedrooms in the property.

London Shared Ownership

Shared Ownership allows Londoners, with household incomes of up to £90,000 (US$113,000), to purchase a share of the property, between 25 and 75 per cent, and pay a low rent on the remaining share. Owners can then buy additional shares in the property over time.

TfL’s landholdings, combined with the mayoral target and the need to deliver new revenue streams due to funding reforms, makes them ideally placed to boost the delivery of homes in London. Peter Elliott, senior property development manager at TfL, talks to us about how they plan to deliver.

The Mayor’s recent announcement on affordable homes targets for all new development sites means that as a holder of ‘government’ land, you need to deliver 580 affordable housing across all sites. How are you approaching this?

We have looked at our portfolios to prioritize the schemes most likely to deliver the highest levels of affordable housing. We will be able to navigate the challenges through a holistic approach and using the wider portfolio to achieve financial targets, housing number targets and affordable housing targets.

There is a need to boost the delivery of affordable homes, and all homes, on a relatively short time-frame. How can you meet this challenge?

We are looking at different models of delivery, for example, we are trialling modular housing on three sites. Modular housing is interesting on a number of levels and can help meet some of TfL’s key objectives, namely, quick delivery and potentially increased affordability.

Looking at different forms of tenure also opens up the possibility of generating a longer-term revenue stream, for example, through build-to-let or multi-housing units. The focus is delivering these units where there is prior demand for market need to be. We are building products that the growth of the private rented sector is as unhealthy as London needs.

London Transport for London (TfL), one of the world’s largest transport operators, is also one of the largest landowners in the UK capital, with an estimated 5,300 acres of prime and brownfield land. It is playing an integral role in helping the London Mayor achieve his housing priorities.

In the Mayor of London’s 2018 ‘London Plan’, the document which outlines London’s strategy over the next 25 years, Sadiq Khan set new targets for housing delivery. He says the capital needs 64,935 new homes every year to meet the growing demand for housing. Of those, he says, some 45,500 should be ‘affordable homes’.

Affordable homes are available to rent at below-market rates, and for potential purchasers, a shared-ownership model allows tenants to partnering, possibly their homes.

The different typologies of affordable housing, as defined by the London Plan, can be seen on the right. Currently, all intermediate rented products such as London Living Rent and Discounted Market Rent should be affordable to households on incomes of up to £50,000 (US$78,700).
Creating more land

In addition to the realisation of nine sites initially earmarked for private property to public housing, the government is also actively attempting to expand the amount of land available to build on.

In 2018, the government unveiled plans for Lantau Tomorrow Vision, a new island created by reclaiming land. The proposal includes the building of 1,700 hectares, and creates housing and infrastructure for up to 1.1 million people at a cost to the public purse of up to HK$600 billion (US$64 billion). Another proposal encouraged the creation of an artificial island to house Hong Kong’s waste dumps, waste recycling and sewage plants, which could free up as much as 390 hectares for residential use, creating homes for 500,000 people, according to Hoeng Yei Kuk, a rural government body.

Small homes, big opportunities

Another reaction to Hong Kong’s lack of available land is micro housing units. One example of this is the OPod Tube Housing project created by James Law. The project is a start-up that converts disused water pipes into micro homes. His vision of a studio apartment measures around 9.5 square metres. The stackable homes, at 2.5 metres wide, are designed to slot into gaps between existing buildings. The OPod is estimated to cost £11,000 (US$14,336) per apartment to manufacture, and could be rented out for less than £300 (US$140) a month.

Micro housing schemes can be found through the market at all price points. For example, a micro apartment in Mumbai, as developers dramatically slash apartment sizes to help more buyers access home ownership. “We have seen a 12% reduction in apartment size in Mumbai,” comments Vishal Rathi of Knight Frank. Some of these spaces are as small as 17.3 square metres and capital values start at 4,500,000 rupees (US$61,644).

Cool down

Since 2009, the government of Hong Kong has introduced a slew of measures, including increasing stamp duty, reducing loan-to-value ratios and taxing unsold homes. The success of these measures has been debated, with statistics indicating that prices in Hong Kong had more than doubled since then. The latest stamp duty changes raised the levy to 15%, from 8.5% in 2016. However, to aid affordability, first-time buyers have been excluded. In addition, a new vacancy tax, aimed at unsold units, was introduced in 2018 and has been set at 200% of the annual rental value. The market started to cool at the end of 2018, however, this is largely due to rising interest rates and the weakening economy led by a fall in the stock market. The government has also been subsidising purchases. Of the 7% of the territory’s land earmarked for residential use, almost three-quarters is earmarked for public housing, with the government planning to build 350,000 units over the next 10 years. This will include 20,000 public rental units and 3,000 subsidised flats for sale. These new flats will be made available under subsidy to young couples and middle-class families, at a 50% discount.
be problem is driven by the city’s own success; people are arriving faster than the bricks can be laid. Between 2000 and 2016, the population of New York grew by 1.4%, while housing stock grew by 8%. This is a principle driver for affordability pressures, although it has been compounded by property prices and rental values.

A political priority
Mayor Bill de Blasio has made affordable housing one of his administration’s top priorities. He has committed to “build or preserve” 300,000 affordable units by 2026 and to “build or preserve” 119,000 affordable units by 2028. The administration has also created two initiatives that will help New Yorkers own their homes. One scheme, Open Door, aims to boost construction on apartments for families earning between US$60,000 and US$120,000 per year. A second, HomeFi, will provide low-interest loans for residents seeking to renovate or repair their homes. Some 15,000 Mitchell-Lama units will be repaired and renovated.

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Rent control
An often-cited way to address affordability is to introduce rent control, which has been implemented in New York, San Francisco and Berlin among other places. Indeed, the 2017 New York City Housing and Vacancy Survey found that, of the 3,183,064 occupied and vacant rental units, less than half (42.9%) were rent-controlled, or “free market” with the remaining units rent-regulated in some way.

In New York, rent control generally applies when a tenant has been living continuously in their apartment since 1 July 1971 in a building constructed before 1947. Overall rent control numbers are declining because when a rent-controlled apartment becomes vacant, it either becomes rent-stabilized, or if it is in a building with less than six units, typically removed from regulation altogether. Rent-stabilized apartments mean that rent can only be increased by a percentage determined by the Rent Guidelines Board. For renewals after 1 October 2018 this has been set at 1.9% for one-year leases and 2.9% for two-year leases.

Rent control has benefits to current tenants, providing insurance against increases and potentially limiting displacement. However, according to economists Diamond, Quad and Qian in Quarterly Journal of Economics, rent controls tend to worsen the position of new households. They incentivise tenants to remain in their homes, despite a change in their housing needs, which limits the efficient allocation of housing. Controls also reduce the quality of housing as landlords are not incentivised to invest, and with values artificially divorced from market reality, development values are reduced. Rent controls tend to aid a group of fixed existing tenants to the detriment of new households.

Revolutionising fractional ownership
A new ownership model is helping New Yorkers to get on the housing ladder. Property investment start-up Meridio, founded by Mohammad Shaikh, turns any property type into ‘units’ that represent a share of the building, which can be purchased by tenants and investors alike. Currently they are offering private placements to ‘Retail Investors’, but plans to scale to public offerings next year. This fractional ownership model will allow anyone to get into real estate, even on a $5,000 or $10,000 budget. It also helps tenants to invest in their home on a shared ownership basis, and much like shares they will receive dividends on their investment, ending the ‘empty money’ of rent.

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Over the past decade, Mumbai has attracted people from all over the country, most notably from rural regions. The city’s population has more than doubled since the early 1990s and has struggled to cope with the influx. By 2030, Mumbai is expected to have a population of 28 million, according to the UN’s World Urbanisation Prospects Report.

Urbanisation has put significant pressure on Mumbai’s housing market. The city faces a severe shortage of land, because of its situation on a peninsula surrounded by the Arabian Sea. The average house price to average household income ratio stands at 7.

Incentives
To enable more citizens to afford stable housing, the Indian government has introduced a range of measures to make property more affordable. The most significant is the credit-linked subsidy scheme (CLSS), which incentivises citizens to get on the housing ladder. First-time buyers earning up to 1.8 million Indian rupees (US$24,685) qualify for the incentive, which is worth around 267,000 rupees (US$3,662). Given that average household disposable income is 1.1 million rupees (US$15,085), the majority of residents will qualify for the subsidy. In addition, under the Goods and Services Tax (GST) regime, buyers who access property through the CLSS are only taxed at 8%, down from 12%.

However, “these measures are only effective on the outskirts of Mumbai, where property prices stand between 5 million and 6 million rupees (US$68,568 – US$82,281). “In the Mumbai city area, where prices are upwards of 10 million rupees (US$143,500), they deliver no meaningful benefit,” according to Vivek Rathi, Knight Frank India’s senior vice president of research.

Building a sustainable future
India is now three years into the “Pradhan Mantri Awas Yojana” (PMAY), a scheme that aims to ensure “housing for all” or 20 million affordable houses, by 2022. Just 8% of the 4 million affordable homes promised by 2018 have been constructed. However, work is currently in progress on a further 1.8 million units, according to the Ministry of Housing and Urban Affairs. Mumbai has yet to benefit from the national scheme. Despite setting a target to build almost 50,000 homes across the city by 2018, and over 240,000 housing units approved in the wider state of Maharashtra, we are yet to see notable progress.

A high rise boom
Developers seeking to build high-rise apartment buildings are currently constrained by India’s floor space index (FSI). This determines the amount of floorspace permitted on any given plot of land. In Mumbai, where land is scarce, raising the FSI limit could allow more vertical building to accommodate the swelling population. The Ministry of Housing and Urban Affairs is currently debating the issue, where accommodating more people into an already densely-populated area will place extra pressure on local transport and infrastructure.

Mumbai Spotlight
With an estimated 22 million citizens, Mumbai is the most densely populated city in India, which means that access to housing has become more challenging, and for many households, housing affordability has struggled.

Noted
The Indian government is implementing programmes, including the credit-linked subsidy scheme, to incentivise residents to get on the housing ladder.

If the government was to lift floor space regulations in Mumbai, developers could build vertically, thus alleviating the pressure on space in the city, whilst increasing supply.

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The virtual expansion of a city is not a new idea. In current times, compared to other modes of transport, Hyperloop aims to project commuters through a vacuum at 1,000km per hour, thus acting to considerably ease commuter congestion on other modes of transport. It could be made a reality within three years, with early experiments already being conducted in the United Arab Emirates. Hyperloop is not a direct way to combat the affordability crisis, but if it’s prices are affordable for all, it could reduce demand in high-price areas and increase the standard of living for commuters from satellite towns.

The Next Mode of Transport

It may be cheaper to build property in isolated or underdeveloped areas but few people would choose to live there. However, lightning-pace travel could change all that.

Hyperloop

The brainchild of Elon Musk, Hyperloop, is taking this concept one step further. As a new spectacularly fast mode of intercity transportation, Hyperloop could help open up swathes of unused land for residential development.

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The estimated time for select journeys with hyperloop compared to current times

If successful, Hyperloop could make travel between cities much easier, taking the pressure off gridlocked roads, cutting travel times and breathing new life into and extending the commute back around towns and cities. Affordable to many or just few?

For Hyperloop to contribute to affordable living, the price needs to be low. According to Musk, this is achievable. For the route between San Francisco and Los Angeles, he forecasts that US$6 billion of investment would be required to create the infrastructure. Each pod would be able to hold 28 passengers, according to his model, and pods would depart every 30 seconds. The round trip would be the price of a one-way ticket sitting at US$20 per person. If similar prices were realised in countries such as the UK, where commuters can spend more than £3,000 (US$3,850) on an annual season ticket, this represents a saving of around £750 (US$960) per annum.

Politicians in the UK have cited Hyperloop as a viable solution to many of the nation’s transportation and mobility woes. The Australian Parliament’s Committee on Infrastructure, Transport and Cities has also called on Australian Government to look at Hyperloop as a way to ease the tight housing market. This would help workers in cities like Sydney move to homes that are twice the size and half the cost of city-center accommodation, while remaining just 15 minutes away by Hyperloop.

Can it be done?

Two companies have been working on making this concept a reality, Hyperloop Transportation Technologies (HyperloopTT) and Virgin Hyperloop One. Both claim that this new mode of transportation could be a reality within three years. Early experiments are already taking place on the stretch of desert between Abu Dhabi and Dubai.

There has also been the development, by Musk, of The Boring Company, a tunnelling venture that would allow Hyperloops to be built underground. Various city councils across the UK have reportedly given him the go-ahead to drill tunnels. The dirt that is excavated during the drilling process will not be wasted, either. Councils across the US have reportedly given him the go-ahead to drill tunnels. The dirt that is excavated during the drilling process will not be wasted, either. There has also been the development, by Musk, of The Boring Company, a tunnelling venture that would allow Hyperloops to be built underground. Various city councils across the UK have reportedly given him the go-ahead to drill tunnels. The dirt that is excavated during the drilling process will not be wasted, either.
Singapore property expert

Debra Ma
Senior Development Manager at international property and infrastructure group, LandUse.

Affordable housing has to start at policy level. Singapore’s success in affordable housing stems from a strong public housing policy, anchored by political will and a long-term approach to planning. Since 1960, Lee Kuan Yew, Singapore’s first prime minister, promoted home ownership with the aim of giving every citizen a ‘stake’ in a country comprised mainly of immigrants. The Housing and Development Board (HDB) was set up to chart the course to deliver a large number of quality affordable housing units. Today, there are 1.2 million HDB flats and over 80% of Singaporeans live in public housing. The high rate of home ownership is facilitated by a suite of financing options, subsidies and grants to support HDB flat purchase, especially for couples and lower-income households.

As land is scarce in Singapore, continuous urban renewal is integral to optimise real estate use. Singapore’s housing fabric is being transformed with the growth of high-rise blocks and tower blocks. The world could learn a lot from how this has been done. In the late 80s, Germany, for example, transformed inner-city structures, combined with wood, are a sustainable material that can be transported easily, which makes it the ideal material to support modular building. Steel for structural elements, combined with wood, are likely to become more and more commonplace.

Affordable housing has to start at policy level. A more balanced approach would allow the release of poor quality, accessible Green Belt land in London’s borough of Newham and in a station. A more balanced approach would allow the release of poor quality, accessible Green Belt land. In return local authorities should demand exceptional development standards with very high quality sustainable outcomes and delivering much needed new homes.

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**THE INDUSTRY VIEW**

*Fin industry commentators from across the globe offer their thoughts on the best ways to improve affordability.*

**AFFORDABLE HOUSING HAS TO START AT POLICY LEVEL.**

**“POLICIES IS THE FRAMEWORK ON WHICH THINGS ARE BUILT.”**

Alexander Bechter is the head of sustainability and responsible investments, Sygna Group.

**“RATHER THAN FURTHER SYSTEM CHANGE, LET’S FOCUS ON THE CULTURE OF PLANNING.”**

Judith Salomon is head of strategic planning for The Berkeley Group.

The fundamental issue with housing affordability is that we do not deliver enough homes any faster. This is the result of insufficient land for housing and a slow and costly planning system which delays development and acts as a barrier to entry for new players.

More land is needed for housing, including greater and faster release of public land and a more balanced approach to the Green Belt. Between a quarter and a third of potential residential land is controlled by the public sector. This could make a real impact on the delivery of new homes, including affordable homes. Despite successive government initiatives, public sector land release remains low and slow. Tender processes are lengthy and extremely expensive, which excludes many developers from being able to build.

England’s Green Belt has more than doubled since 1979, at 15% of the country it is larger than the urban area. Not all Green Belt land is of high quality and much provides little public benefit. 62% of non-environmentally protected Green Belt land in London is within 500m of a station. A more balanced approach would allow the release of poor quality, accessible Green Belt land. In return local authorities should demand exceptional development standards with very high quality sustainable places supported by community amenities and facilities, affordable housing and generous public open space. This would make the best use of poor quality, accessible land, resulting in better community and development outcomes and delivering much needed new homes.

Twenty years of planning reforms, six planning acts and two editions of the NPPF have led to a complex, lengthy and extremely expensive, which excludes many developers from being able to build. The Berkeley Group is head of strategic planning.

Nnenna Lynch is founder & CEO of Khoren LLC, formerly a senior advisor to New York Mayor Michael Bloomberg during his tenure.

When people talk about solving the affordable housing crisis, the focus tends to be on producing more stock. Preservation, however, is just as critical. In the US, this has proven to be a cost-effective way to help create a reliable supply of affordable homes. It is cheaper to invest in the repair of older buildings than to build new. However, whether you’re preserving or building new affordable housing, the single biggest issue is financing. If sources of capital could be expanded and harmonised more efficiently, it would go a long way to making a dent in the crisis.

Another interesting area of potential innovation is the unbundling housing typologies. To date, efforts in this area have been focused on market rate projects targeting young people — such as micro-units or group-living situations. I would like to see similar principles applied to family housing. Anything that brings down costs or allows you to build more units for the same amount of money is an important avenue to explore.

I am excited to see the burgeoning field of new technology companies dedicated to real estate and am hopeful that they will have an impact on affordable housing. PropTech start-ups such as Travtus are now using artificial intelligence to streamline property management, which could have a massive impact on cost. The more you can reduce upfront and operating costs, the easier it is to build affordable projects. There are also interesting developments happening in the energy sector that could benefit the affordable housing market. New York-based Blueprint Power is turning buildings into power sources, creating sustainable homes that also sell energy back to the grid. At the end of the day, there’s no magic bullet. It’s going to take a variety of creative approaches across the spectrum of disciplines that effect housing — finance, design, policy, construction, management, etc. — to help alleviate the crisis.

Nnenna Lynch, founder & CEO of Khoren LLC, formerly a senior advisor to New York Mayor Michael Bloomberg during his tenure.
PLANNING IN THE THIRD-DIMENSION

Flora Harley
SENIOR RESEARCH ANALYST

The report has touched on how technology has the potential to enhance construction with the use of "building information modelling" (BIM) systems and run through more efficient property management. However, technology also has the ability to substantially alter the development space by enabling smarter spatial planning and policy.

For the most part, development considerations can be defined as either an opportunity or a constraint, both of which can be articulated and examined through data and digital mapping. Opportunities include identifying areas of low density around transport nodes, whereas constraints may be archaeological sites or flood plains. Geospatial mapping technology enables these two vital components to be explored, visualised and profitably implemented in planning.

Further to this, one of the biggest limitations faced by global cities, is the availability of land. Planning and development has, until recently, been limited to thinking in the two-dimensional space – with cities only looking to expanding horizontally. To efficiently utilise the diminishing land supply within a city there needs to be a consideration for the third-dimension. Not just constructing new and bigger buildings on land, but expanding above existing developments where significant opportunities lie.

However, it is worth noting that to capitalise on this, cities need to ensure high-quality data that is easily accessible to enable the effective digital mapping of opportunities.

THE KIRNH FRA NК AFFORDABLE HOUSING team works on behalf of developers, Local Authorities, Registered Providers and private landowners in all aspects of Affordable Housing. The team has extensive experience in this field, with an in-depth knowledge and track record across the UK market. The team is well versed in all aspects of this ever evolving sector and has a specific focus on Section 106 acquisitions and disposals, valuation, and consultancy and design. We work closely with our clients to ensure that the Affordable Housing within their scheme is efficiently designed and provides the best possible outcome for all parties in ways that both meets the demands of the market as well as providing economically sustainable benefits for all parties.

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