Knight Frank

# URBAN FUTURES

## AFFORDABLE LIVING SOLUTIONS FOR ECONOMIC LONGEVITY

**SAUDI ARABIA EDITION — 1**

2019

**Urban Futures**
*2019*

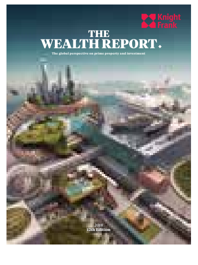
Saudi Arabia Edition

COVER ILLUSTRATION
MUTI

DATA VISUALISATIONS
Nicholas Rapp

OTHER KNIGHT FRANK PUBLICATIONS

01.
The Wealth Report




02.
(Y)OUR SPACE


### Definitions

**House prices**
references to house prices throughout this report refer to the whole market and not just the prime segment

**Real house price growth**
average house price growth adjusted for inflation

**Average income**
refers to average disposable (post-tax) household income

**Real income growth**
average household income growth adjusted for inflation



# WELCOME

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 recognise 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 six 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.

In this extended edition we include a focus on Riyadh, the capital of Saudi Arabia. With a young population and a nation undergoing wide ranging reform, the provision of new residential communities and their affordability has become a topic of great importance. To this end we explore some of the challenges facing the residential sector with a focus on the provision of the value add services of healthcare and education.

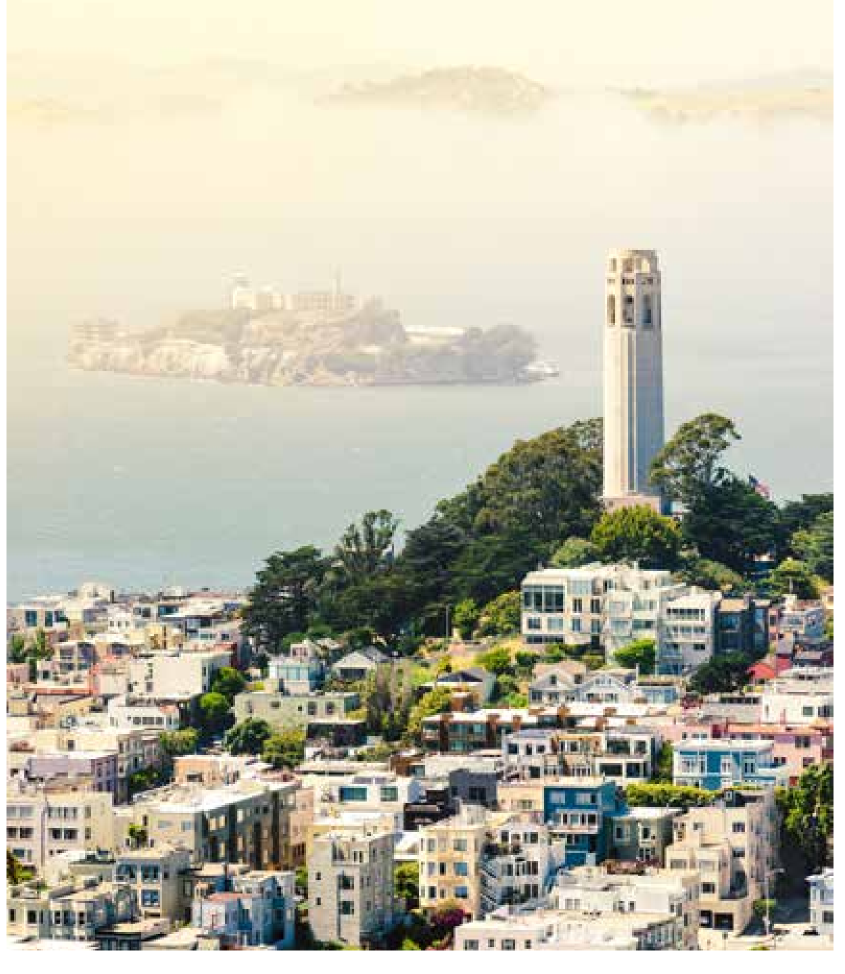
We hope that you enjoy the report and find it useful in assessing the ever-changing development space. Please do get in touch if you would like any further information from our research or property teams across our network of global offices.

*Stefan Burch*
PARTNER, GENERAL MANAGER, KNIGHT FRANK KSA

# Contents

# AFFORDABILITY FOR PROSPERITY

*Liam Bailey examines why housing affordability is the critical issue to city economies across the globe.*



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.

Illustration: Stephan Schmitz

### 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 ever more important.

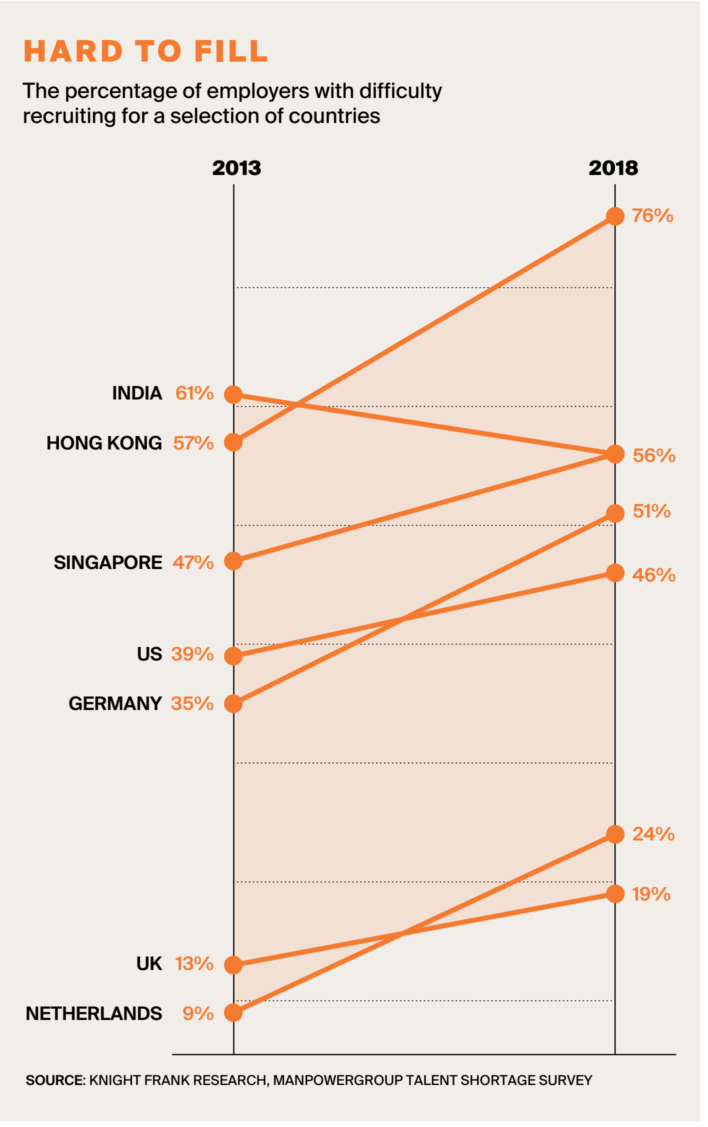
Restricted movement can limit the opportunity to relocate to more productive areas, the cumulative effect of which is two-fold. On one hand is the missed opportunity from unfilled positions or not attracting the most suitable candidates leading to lost output. On the other, businesses may need to compensate 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 this: 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 Officer, 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) as 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.




> "TALENT AND CREATIVITY DETERMINE THE ABILITY TO INCREASE PRODUCTIVITY AND INNOVATION, WHILST SUSTAINING GROWTH"

### 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 States'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 enormous. 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.

## NOTED +

**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 6% 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.**

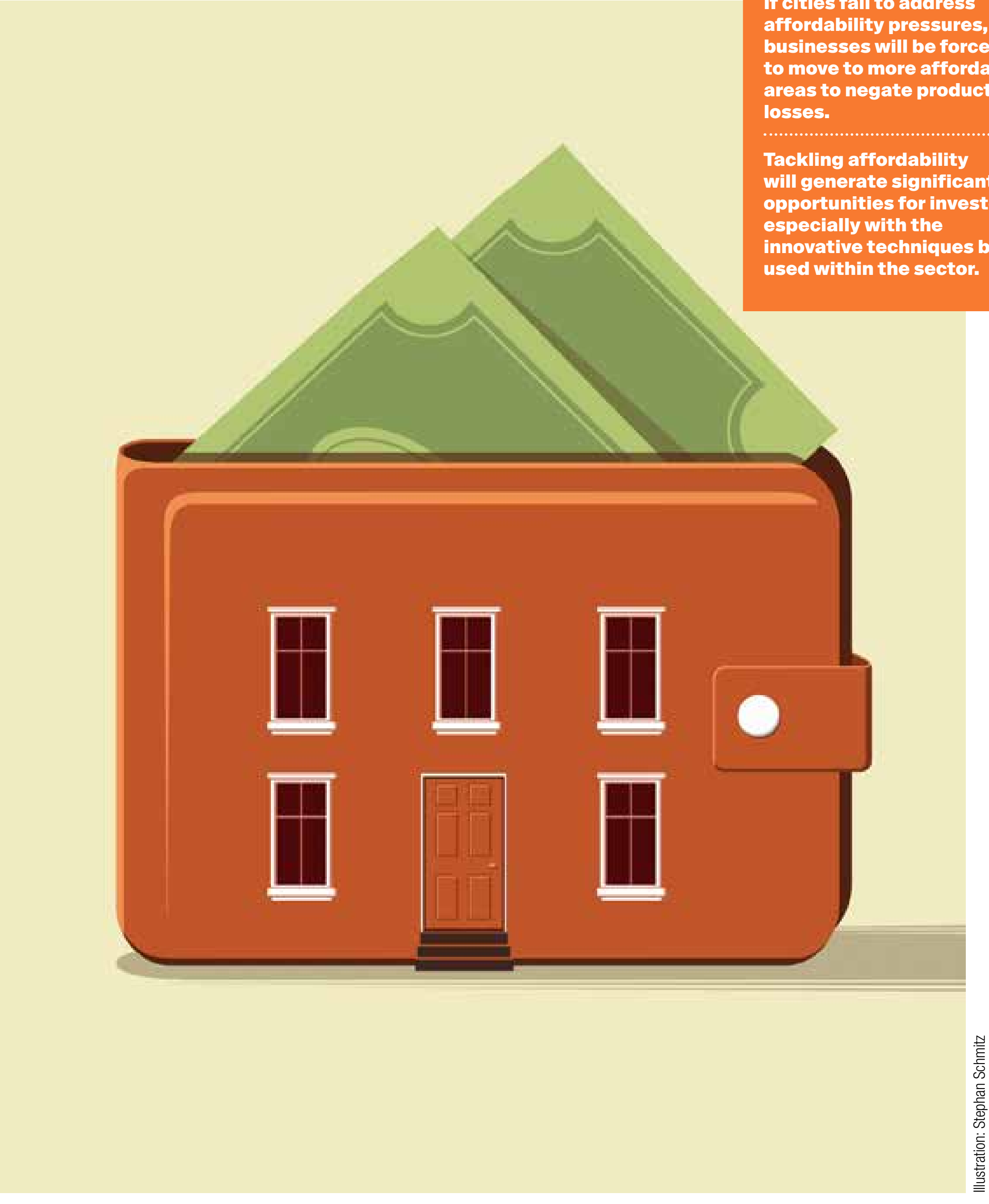


Illustration: Stephan Schmitz

PREVIOUS PAGE:

Bay watch, San Francisco a city at the sharp end of the affordability issue

OPPOSITE PAGE:

New horizons, Amazon is expanding away from its home in Seattle due to the inability to recruit the level of staff required

# NO HOME OF ONE'S OWN

*In recent years, homes across the world have become increasingly unaffordable to a growing number of people. We take a look at the key drivers underpinning this trend.*


The world is facing an affordable housing gap – which we estimate hit US$740 billion in 2018 as measured by the difference between house prices and income.

## 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 two-thirds 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 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.

THIS PAGE:

City living, 82% of the population of North America now live in urban areas

NEXT PAGE:

First tier cities such as London often witness faster growing affordability pressures

## 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 funds 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 Leilani Farha, 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.



## The politics of property

A political tug of war seems to exist; the need to create more affordable housing is matched by the governments' desire to raise revenues.

Across the US, for example, many states have tax and incentive schemes that reflect unfavourably on 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

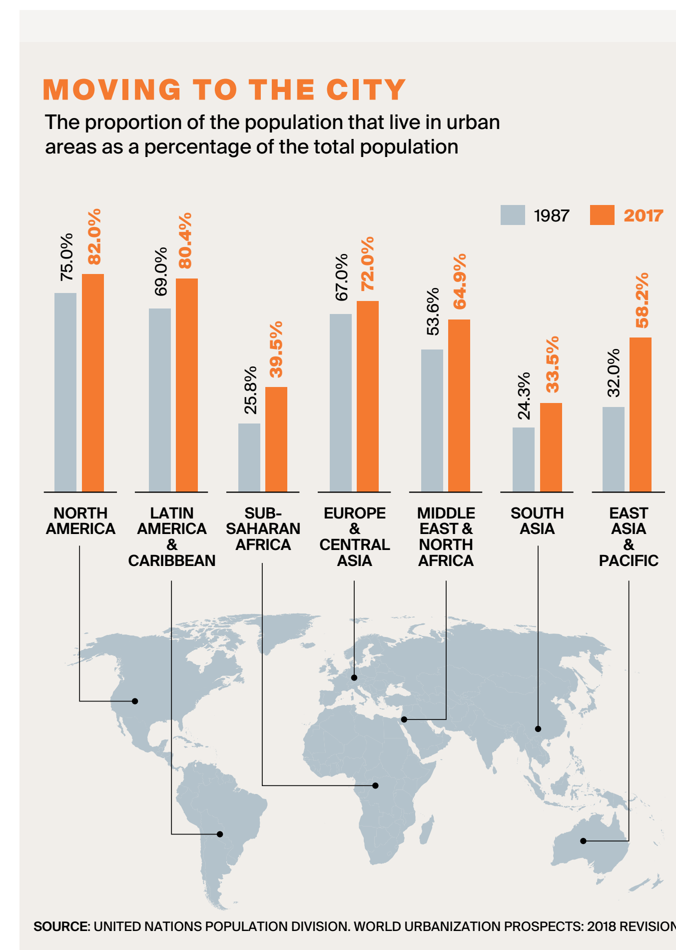
In developed nations, many restrictions and regulations have been put in place over time that are no longer fit for purpose. Indeed, many land supply issues are potentially due to regulatory constraints. There are two main ways to restrict land supply; by not letting a city grow outwards or not allowing 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.

"Zoning restrictions and buildings regulations often mean that urban markets cannot meet the demand for affordable housing," according to Achilles Kallergis, research scholar for the New York University Urban Expansion Programme, which has looked at housing affordability in a representative sample of 200 cities around the world.

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 400 square metres," 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 unresponsive 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 shoehorning people through existing systems and processes, we need to be dynamic and adapt to the ever-changing urban landscape.


## + NOTED

**Urbanisation means many more people are congregating in cities, to access higher wages and greater opportunities.**

**Housing is now seen as a commodity which has bolstered demand.**

**Housing becomes politicised when juggling multiple stakeholder's needs; for affordable housing to work, all stakeholders must be satisfied with proposed new developments.**

**In most major cities, residential supply lags growth in demand.**

## IT'S ALL RELATIVE

*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.


> "ACROSS THE 32 CITIES, THERE WAS AN AVERAGE FIVE-YEAR REAL HOUSE PRICE GROWTH OF 24%, WHILE AVERAGE REAL INCOME GREW BY ONLY 8% OVER THE SAME PERIOD."

BOTTOM LEFT:

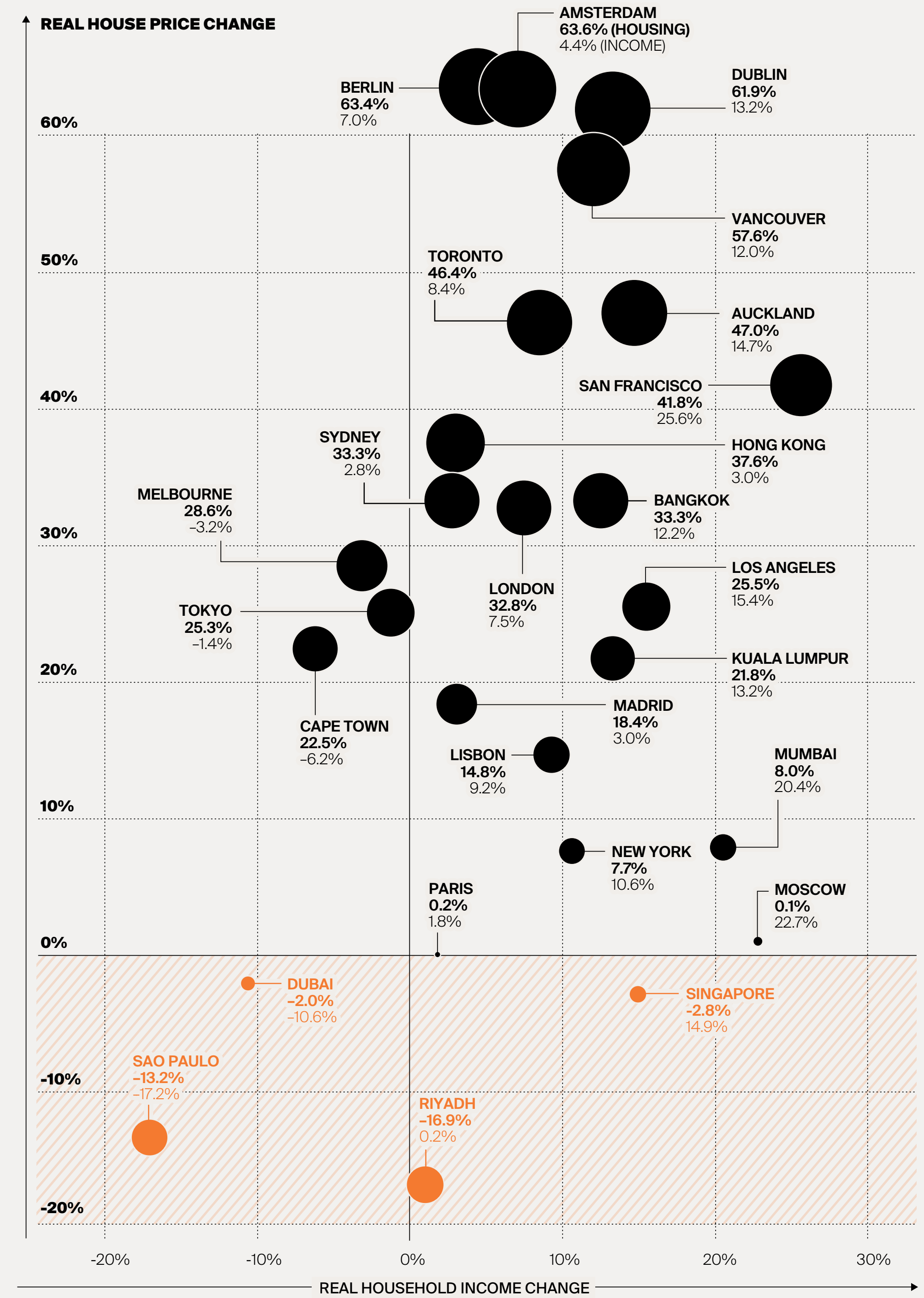
Berlin has seen house prices grow by 63.4% over the past five years

BOTTOM CENTRE:

Winding up, Amsterdam is facing growing affordability pressures

## MIND THE GAP

Real house price growth and real disposable household income growth over the past five years for 25 key cities, percentage change to September 2018*




*or latest available

**SOURCES:** KNIGHT FRANK RESEARCH, MACROBOND, AUSTRALIAN BUREAU OF STATISTICS, BRAZILIAN FOUNDATION INSTITUTE OF ECONOMIC RESEARCH (FIPE), TERANET, FRENCH NATIONAL INSTITUTE OF STATISTICS & ECONOMIC STUDIES (INSEE), VDP RESEARCH, HONG KONG RATING & VALUATION DEPARTMENT, INDIAN NATIONAL HOUSING BANK (NHB), IRISH CENTRAL STATISTICS OFFICE (CSO), JAPANESE MINISTRY OF LAND, INFRASTRUCTURE, TRANSPORT AND TOURISM, National Property Information Centre (NAPIC), STATISTICS NETHERLANDS (CBS), QUOTABLE VALUE, PORTUGUESE NATIONAL STATISTICS INSTITUTE (INE), RUSSIAN FEDERAL STATE STATISTICS SERVICE (ROSSTAT), SINGAPORE URBAN REDEVELOPMENT AUTHORITY, FIRST NATIONAL BANK, SPANISH MINISTRY OF DEVELOPMENT, BANK FOR INTERNATIONAL SETTLEMENTS, REIDIN, U.K. LAND REGISTRY, S&P CASE SHILLER, OXFORD ECONOMICS, GENERAL AUTHORITY FOR STATISTICS KINGDOM OF SAUDI ARABIA

## The Knight Frank Global Affordability Monitor 2019

### Key Findings

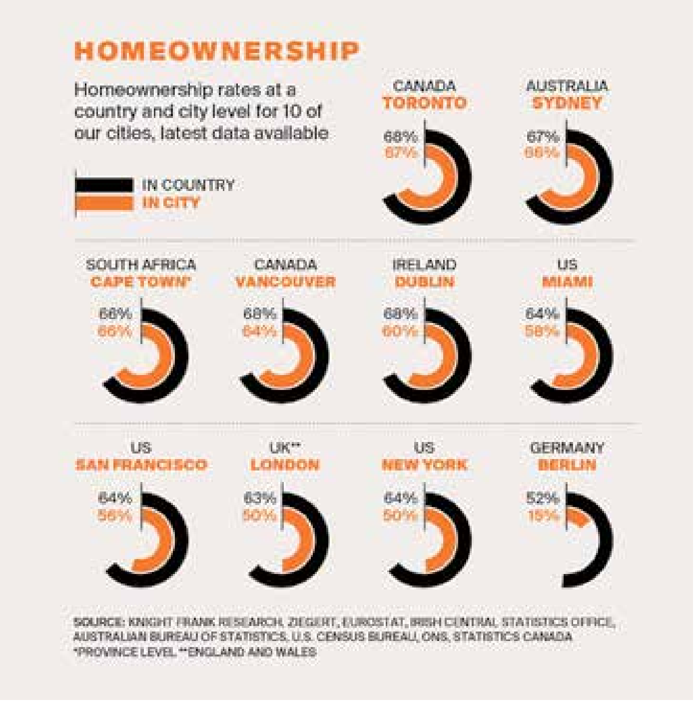
There is a growing global disparity between house prices and income. Across the 32 cities covered, there was an average five-year real house price growth of 24%, while average real income grew by only 8% over the same period.

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 59%, 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 are helping to address development viability issues. And, while Ireland's macroprudential measures may have supressed 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$3.4 billion) to €5 billion (US$ 5.7 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 3.3%.

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.

TOP CENTRE:

Swooping in to the 'most affordable' quadrant is Istanbul

TOP RIGHT:

High supply is helping to maintain Kuala Lumpur's affordability

### THE KNIGHT FRANK GLOBAL AFFORDABILITY MONITOR**

| LEAST AFFORDABLE | SECOND LEAST | SECOND MOST | MOST AFFORDABLE |
|---|---|---|---|
| AMSTERDAM | BANGKOK | BRUSSELS | DUBAI |
| AUCKLAND | BERLIN | CAPE TOWN | ISTANBUL |
| HONG KONG | DUBLIN | MADRID | JAKARTA |
| LOS ANGELES | LONDON | MIAMI | KUALA LUMPUR |
| SAN FRANCISCO | MELBOURNE | MOSCOW | LISBON |
| SYDNEY | NEW YORK | MUMBAI | MANILA |
| TORONTO | SINGAPORE* | PARIS | RIYADH |
| VANCOUVER | TOKYO | STOCKHOLM | ROME |

*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. ** Cities in the different categories are ranked by alphabetical order.*

**SOURCES:** Knight Frank Research, Macrobond, Oxford Economics, Expatistan (expatistan.com), Numbeo (numbeo.com), APM, Statistics Belgium, Toronto Real Estate Board, Real Estate Board of Greater Vancouver, Paris Chamber of Notaries, Gutachterausschuss für Grundstückwerte in Berlin, Empirica Systeme, Indian National Housing Bank, Irish Central Statistics Office, Provincial Syndicate of Real Estate Agents of Rome and Province, Statistics Netherlands, Land Institute of Japan, National Property Information Centre (NAPIC), Quotable Value, Portuguese National Statistics Institute (INE), Confidencial Imobiliário, Rosstat, First National Bank, Statistics Sweden, Zingtat Istanbul, Property Monitor, HM Land Registry, Rightmove, Zillow, Zumper, S&P Case Shiller, US Department of Housing and Urban Development, National sources were used for inflation figures

## 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 global economic pull of neighbouring Silicon Valley has contributed to San Francisco seeing price growth of 70% in the last 10 years. This growth has resulted in a range of innovations such as: the expansion of co-living concepts; corporates creating staff housing; and a new movement that encourages development, YIMBYism (Yes In My Backyard). These innovations are aimed at alleviating affordability pressures in the city for homeowners and renters alike.

### Corporates step in

The tech boom has 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 resulting high price growth.

This has forced the tech giants to step into the fray to provide new housing for workers. In 2017, Facebook was offering staff incentives of up to US$10,000 to move closer to its headquarters but was still struggling to solve the issue. Its solution: creating a US$300 million campus for its workers 45 miles south of San Francisco. The Menlo Park development consists of 1,500 housing units and will be open to anyone, not just Facebook employees.

Google announced in 2017 that it was spending as much as US$30 million 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 traditional 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 earning 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 shorter-term rentals, aimed at all ages and lifestyles. Start-up Roam was originally designed for 'traveller 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 78 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 Brooksville Company and joint venture partner Rockpoint Group spent US$905 million on Starrett City, a 5,581-unit affordable multifamily housing complex in Brooklyn, New York.

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

"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 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 now boasts 2,000 members in San Francisco, and their lobbying is starting to bear fruit. According to the San Francisco Planning Commission's Housing Needs and Trends Report, the city produced an average 1,900 new units per year since 1990, but this figure rose to 4,000 a year between 2014 and 2017.

OPPOSITE PAGE:
Bridging the gap, Facebook is enticing staff with incentives of up to US$10,000 to move closer to its headquarters

THIS PAGE:
Roaming around, affordability pressures have led to the rise of co-living start ups such as Roam

**+ NOTED**

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

**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 tenure rules. This concept will also require governments, globally, to adjust existing zoning regulations.**

## LONDON SPOTLIGHT

*Senior property development manager at Transport for London, Peter Elliott, discusses some of the ways in which TfL is addressing housing affordability in 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 5,500 acres of sites in and around the city. 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 these, he says, some 43,500 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 part-rent, part-buy their homes.

The different typographies of affordable housing, as defined by the London Plan, can be seen to 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 £60,000 (US$78,196).

THIS PAGE:
TfL are getting creative with the ways in which they are delivering affordable homes

OPPOSITE PAGE:
Tim Lowe founder of Lowe Guardians

### 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, to ensure rents in London are genuinely affordable, the Mayor stated in the Affordable Homes Programme 2016-21 Funding Guidance that he expects rents to be set at benchmarks 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 targets and the need to diversify its own 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 50% affordable housing across all sites. How are you approaching this?***

We have looked at our portfolio to prioritise 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 it 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-rent or multihousing units. The focus is delivering these tenures where we perceive the market need to be. We are building products that the growth of the private rented sector is telling us that London needs.

***What are the important considerations for what to build and where?***

TfL don't just want to build "dormitories". We have so many opportunities around London to invigorate places. Big schemes are good in terms of housing numbers but how do you stitch those into the fabric of London to make it a city for the 22nd century instead of the 21st?

***With the number of developments and units being brought forward, there needs to be vibrancy and place-making elements to each scheme. How does it feel? Is it a destination? Do people want to come to, live in or work in that location?***

You need to consider the right mix of residential, amenity and retail. Then more detailed questions need to be considered, such as what does the retail on the ground floor look like? How does public transport interface with it all? What about childcare, do we need to build crèches next to schemes?

We need to ensure that we make developments that are self-contained locations. If you don't do this then you are unable to create longevity and people won't want to live there. You may create supply, but the demand will be elsewhere.

The great thing about London is that many of the places we are looking at already have a history, amenities and idiosyncrasies that make them unique. What we want to do is enhance their identity and sense of place to make them more desirable.

***What does the future look like for development in London?***

It's all about people and energy. Residential development has the potential to be the battery to drive London. New residential schemes now often have renewable energy elements, be it wind, photovoltaics or ground source heat pumps, enabling them to generate power.

There is no reason why this power could not then be used to electrically charge buses, ambulances, taxis, as well as residents' vehicles.

We are then not just producing homes for people; we are producing homes for people to produce electricity to power transport and connectivity for the people of London, that's an interesting vision for this great city.

## NOTED +

**TfL, as one of the largest landowners in the UK capital, aims to play an integral role in delivering affordable housing that prioritises quick delivery and multi-tenure options.**

**Residential development has the potential to power London's future using energy created through solar panels and other methods to charge vehicles.**

**An emerging temporary and cheaper rental solution is to become a 'guardian' of a building that is changing use or being developed. This option provides both the owner and occupier unrivalled flexibility with short notice periods.**

## LOWE COST LIVING

Ever wondered what options are available for someone wanting to live in central London for less than £500 (US$652) per month? Tim Lowe, of Lowe Guardians, spent four months finding out. Over that time, he lived in a variety of places including:

- an abandoned office building as a property guardian;
- a house of multiple occupants;
- a house boat;
- a Y:Cube*;
- a housing co-operative scheme; and
- an empty horsebox

From this experiment Tim was inspired by his time as a guardian but wanted to improve the guardian experience, leading him to establish Lowe Guardians. The concept is becoming increasingly popular, with Lowe Guardians housing 450 people across London and the south-east, with the expectation that this will double by next year as they expand into other locations such as Brighton, Bournemouth, Bristol and Winchester.

Property guardianship offers a lower rental alternative with rents typically being 50% below market rate, ranging from £250 to £600 (US$326 - US$782) per month. Being a guardian means typically living in a building which is undergoing development, or one that is changing use. These are temporary arrangements and 28 days' notice can be served at any time to end the arrangements. However, with properties ranging from three occupants to almost 60, and an average of 10, there are a range of social benefits. There is a strong sense of community with many occupants sharing their talents including teaching yoga, cooking and photography as well as community events such as BBQs and cinema nights.

Y:Cube units are 26 square metre, factory-constructed, one-bed studios developed by Rogers Stirk Harbour + Partners together with YMCA London South West.

## HONG KONG SPOTLIGHT

*Often cited as one of the most expensive housing markets in the world, Hong Kong's government is trying a number of measures to cool the market.*

"Housing is the most important, most complicated and most serious problem the city is facing," says Carrie Lam Cheng Yuet-ngor, the chief executive of Hong Kong. The drivers of this crisis are primarily historically low borrowing costs; a lack of supply due to the city's island geography, its restrictive zoning laws and robust interest from both local and foreign buyers. Record low unemployment, coupled with a booming stock market, continue to drive prices even higher. Would-be solutions include cooling measures, micro-homes and reclaiming land to create new islands.

### 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 mass zoned for residential use, almost three-quarters is earmarked for public housing, with the government planning to build 280,000 units over the next 10 years. This will include 20,000 public rental units and 8,000 subsidised flats for sale. These new flats will be made available under subsidy to young couples and middle-class families, at a 50% discount.

### Creating more land

In addition to the reallocation 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$500 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 590 hectares for residential use, creating homes for 300,000 people, according to Heung Yee 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 these 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 9.3 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$391) a month.

The micro unit concept is not unique to Hong Kong. Patrick Kennedy, founder of Panoramic Interests, has created more than 689 new units of housing across Berkeley and San Francisco. In other cities, such as New York, micro housing schemes can be found through the market at all price points. For example, a micro apartment in Caesura, a development in Fort Greene, which opened in 2018, costs rents for nearly US$2,600 a month for the furnished version.

Micro homes are also springing up across 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 Vivek 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).

+

## NOTED

**Cooling measures implemented to slow down the property market in Hong Kong have had some impact on prices, the recent implementation of higher interest rates, may accelerate this.**

**The Hong Kong government is actively trying to extend the amount of land they have to build on by reclaiming land to create new islands.**

**Sustainable micro homes are are increasing in popularity, where Hong Kong leads other cities are following.**

TOP LEFT:
Switching off, the government has implemented a slew of cooling measures since 2009

BOTTOM LEFT:
With land supply constrained, Hong Kong's government are looking to build new islands

BOTTOM RIGHT:
In a jam, mounting affordability pressures have resulted in micro housing units

## NEW YORK SPOTLIGHT

*With a fast-rising population, housing affordability in New York is is becoming a political priority as well as opening up new sectors.*

The 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 rose by 11%, while its 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 help both tenants and small landlords preserve the quality and affordability of their homes.

In New York, many new developments are subject to inclusionary zoning; they must include a portion of social or affordable housing in order to be given the green light. If the demand is clear, a new development that includes 100 subsidised apartments, may receive up to 90,000 applications.

In an attempt to boost the availability of affordable housing, de Blasio has embarked on a rezoning process, which is revitalising areas like East Harlem and Far Rockaway. The administration has also committed US$250 million to help shore up the Mitchell-Lama programme. This 65-year-old scheme, helped to create new buildings using low-interest mortgages and tax breaks in exchange for low rental prices in perpetuity. Some 15,000 Mitchell-Lama units will be repaired and renovated.

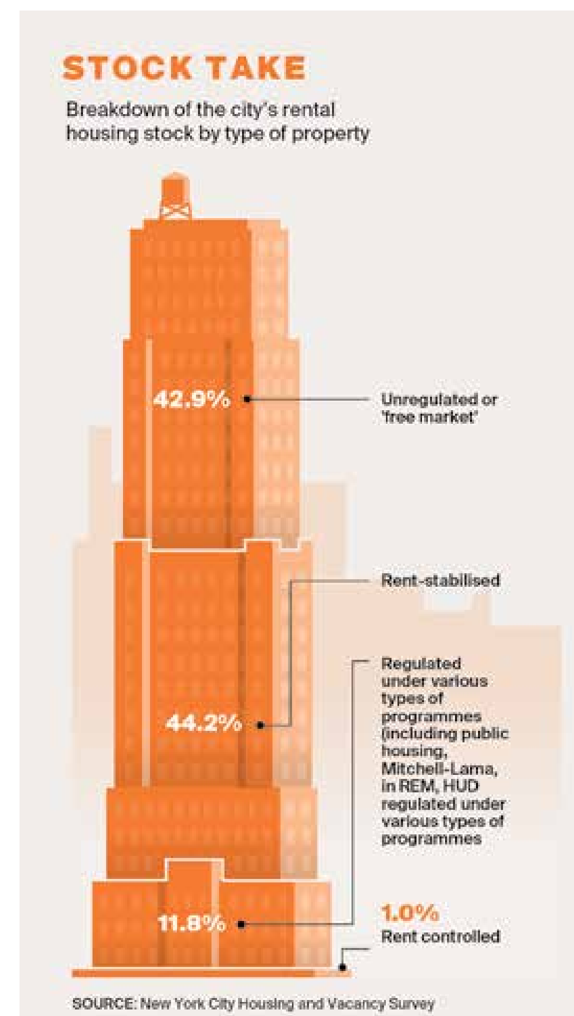

The de Blasio administration has also created two initiatives that will help New Yorkers own their home. One scheme, Open Door, aims to boost construction on apartments for families earning between US$69,000 and US$112,000 per year. A second, HomeFix, will provide low-interest loans for residents seeking to renovate dilapidated housing.

### 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 2,183,064 occupied and vacant rental units, less than half (42.9%) were unregulated, or "free market" with the remaining units rent-regulated in some way.

TOP LEFT:
No escape, less than half of the city's rental stock is unregulated

BOTTOM LEFT:
A bite of the big apple, Blockchain technology is enabling a new model of ownership




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-stabilised, or, if it is in a building with less than six units, typically removed from regulation altogether. Rent-stabilised 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 1.5% for one-year leases and 2.5% for two-year leases.

Rent control has benefits to current tenants, providing insurance against increases and potentially limiting displacement. However, according to economists Diamond, Quade and Qian at Stanford University, it may decrease affordability and create negative spillovers on the surrounding neighbourhood in the long run. Rent controlled apartments 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 accredited investors, but plan to scale to public offerings next year. This fractional ownership model will allow anyone to get into real estate, even on a relatively small 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.

"It should be as easy to invest in a property you pass on the street as it is to buy stocks and shares," said Shaikh. "We can use this model for any kind of property, from multifamily housing to retail, office, or student accommodation." It makes the rental process more rewarding as you can receive dividends from the shares you hold.

Meridio uses Blockchain technology to power the model, creating a clear ledger for ownership and ensuring the asset remains liquid and easily tradable. Meridio's proof of concept project was unveiled in Brooklyn and is currently focused on the US, but Shaikh is partnering with investment organisations in London and Germany who are keen to trial the initiative in Europe.

## NOTED +

**Housing is a political priority. However, even with more and more affordable homes delivered, schemes are incredibly oversubscribed and therefore have a limited impact.**

**Whilst rent control may have benefits to current tenants, by providing insurance against rent increases and potentially limiting displacement, in the long run the policy tends to worsen the position of new households.**

**Blockchain technology is acting to enable the fractionalisation of real estate ownership. This is allowing tenants to buy into a portion of a building and receive a return in the form of dividends – ending the 'empty money' of rent.**

## 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.*

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.

—
OPPOSITE PAGE:
Balancing act, more and more homes will be needed with the population expected to rise to 28 million by 2030

## NOTED +

**The Indian government is implementing programmes, including the credit-linked subsidy scheme, incentivising residents to get on the property ladder.**

**The ambitious national "Pradhan Mantri Awas Yojana" (PMAY) scheme aims to ensure 20 million affordable homes by 2022.**

**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.**

### 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 accomodating more people into an already densely-populated area will place extra pressure on local transport and infrastructure.



## RIYADH SPOTLIGHT

*With a growing population, housing affordability in Riyadh is becoming more challenging. The Ministry of housing has launched the Sakani program to respond to rising affordability pressures.*

Saudi Arabia's rapid population growth over the last half-century, an almost six fold increase, has seen with it a corresponding increase in urbanisation. The United Nations currently estimates that 84% of the Kingdom's population reside in urban centres, up from 45% five decades earlier – in numerical terms this equates to 28.1 million urban residents in 2018 compared to 2.4 million in 1968.

### Demographic and generational shifts

Arguably, no city in the Kingdom has seen this trend in a more concentrated form than its capital, Riyadh. Not only has the city's population more than doubled over the last two decades, the demographic makeup of the city has changed rapidly, where currently almost half of the city's population is below the age of 29.

Despite this younger and more urban demographic, the nature of the city's housing supply has not seen any noticeable change in the recent past. Developers have continued to focus on developments which lie more in the luxury segment of the market where historically the largest margins have been found. This type of product is one which the new demographic cohort will struggle to afford, despite prices softening since 2016.

Overall, Riyadh appears to be an affordable city based on Knight Frank's rankings. However, if we delve deeper we begin to realise that the reality is very different.

Historically, it was not unusual for generations of the same family to be living in a sizeable family home. This in turn has meant that average household incomes are recorded as questionably high and therefore metrics, such as the house price to income ratio, are marginally higher than some recognised affordability benchmarks. This in turn somewhat helps mask the affordability issue not only in Riyadh but the wider Kingdom.

This younger generation now exhibits a desire to move away from the aforementioned multi-generational household structure. However, due to the lack of suitable product this generation will continue to face an acute challenge to enter the housing market.

As a result of these growing challenges, we have seen affordability come to the forefront of the agenda particularly as cultural and social attitudes change at a rapid pace.

If we consider average salaries rather than multi-generational household salaries, the affordability of Riyadh's residential market changes dramatically (see page 15) and instead of lying in the most affordable quadrant the city moves into the second most affordable.

Using conventional affordability metrics, average affordability lies within SAR 400,000 and SAR 500,000 in comparison to average city wide prices of SAR 970,000. To this end, affordability coupled with falling household sizes, will underpin demand for higher density development which provides smaller, more efficient units that are affordable due to a reduction in size rather than build quality.

## NOTED +

**House prices have softened in Riyadh over the past few years, leading to alleviating affordability pressures.**

**Housing affordability remains a key issue despite the city's 'most affordable' quadrant status.**

**The issue of affordability is set to exacerbate in conjunction with the rising attractiveness of Riyadh and its ability to attract workers and students from all over the Kingdom.**

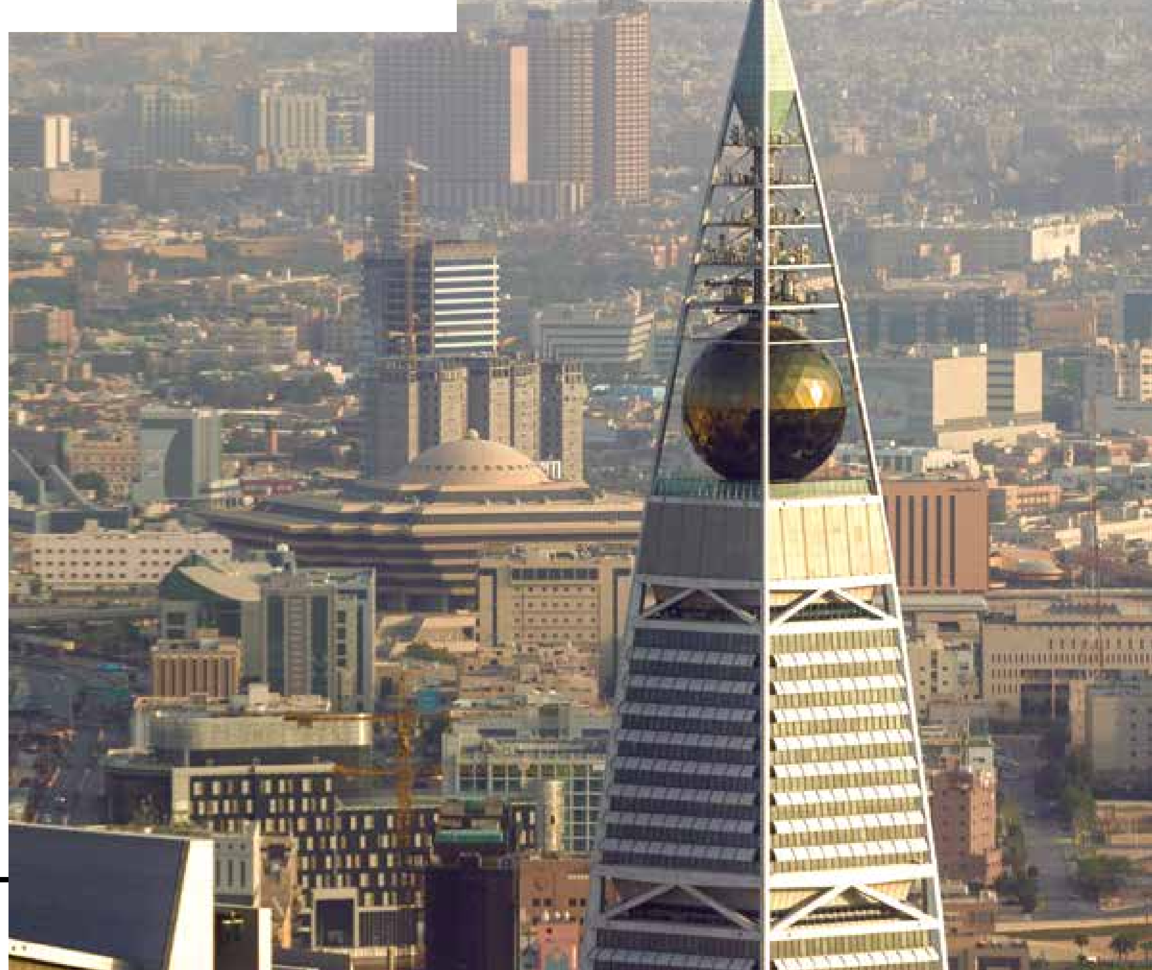
**The ambitious Sakani program scheme has allocated c. 580,000 housing and financing products in 2017 and 2018 and is expected to allocate 200,000 additional products in 2019.**

### Building a sustainable future

To help tackle the growing affordability pressures, the Saudi Arabian government has launched the "Sakani" program, a scheme by the Ministry of Housing that aims to ensure housing for all, through the distribution of affordable housing and financing products. Saudi Arabia is now in the third year of the program, which was launched in February 2017.

Around 580,000 products were allocated in 2017 and 2018 including mortgage loans, cost-free land plots, under-construction residential units and residential units. In 2019, the target is to allocate 200,000 additional products to a number of beneficiaries across the different regions.

Whilst the program is in its early stages, waiting lists for products have reduced significantly over the past two years. Challenges still remain around suitable locations for land plots, quality of development and the bankability of beneficiaries, we foresee more progress being made in the coming years as the government continue to focus on the provision of affordable housing stock for the Kingdom's burgeoning population.



TOP LEFT:

Transport is viewed as a key component for building an affordable ecosystem. The implementation of the Riyadh Metro falls in line with this requirement.

BOTTOM LEFT:

The Ministry of Housing is implementing programmes to get Saudi residents on the property ladder.

BOTTOM RIGHT:

More and more homes will be needed in Riyadh with the population expected to rise to c. 9 million by 2030.

# SOCIAL INFRASTRUCTURE – A KEY TO AFFORDABLE LIVING

*The establishment of healthcare and education facilities in Riyadh is viewed as inherent to the development of the appropriate affordable ecosystem. The private sector is anticipated to play a key role in this process.*

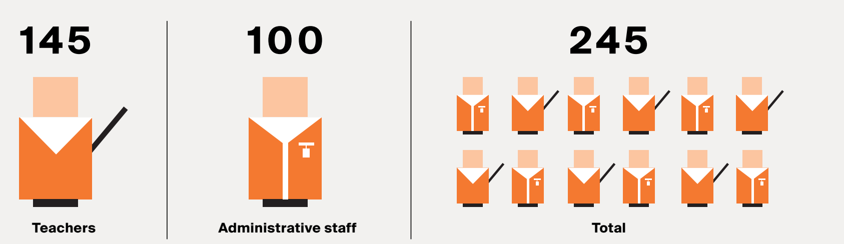
Healthcare and education assets act as anchors to developments as they meet the basic needs of the population who would consider these locations as their prospective places of residence. An important consideration for this cohort for which affordable housing is being constructed is the ease of access to these education and healthcare facilitates, particularly from a monetary and distance, preferably walking distance, perspective. More so, the inclusion of these assets would create direct employment.

## Economic implications

To put this into perspective, a single school with 2,000 students and a 100 bed hospital has the potential to create 800 to 900 additional jobs. The charts below show the breakdown of employment created by inclusion of such facilities in these developments.

Empirical studies suggest that employees of such organisations such as doctors, nurses, teachers and school staff prefer to stay close to their places of employment. If we consider them along with their families, a significant proportion of the dwellings being developed are more likely to be occupied.

### NUMBER OF EMPLOYEES REQUIRED FOR 2,000 STUDENT SCHOOL




**SOURCE:** KNIGHT FRANK RESEARCH

### NUMBER OF EMPLOYEES REQUIRED FOR 100 BED HOSPITAL


**SOURCE:** KNIGHT FRANK RESEARCH

TOP LEFT:
The Kingdom of Saudi Arabia has set out an ambitious road map for education in the country as part of the ongoing reforms.

BOTTOM RIGHT:
Healthcare is one of the main focus areas of the Vision 2030 and the National Transformation Plan.

## The case for Riyadh

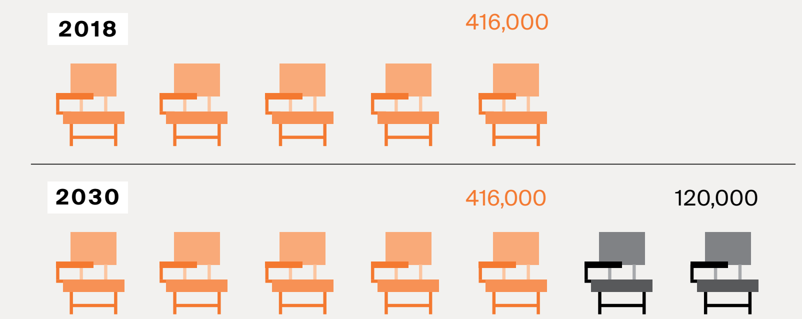
With the governme nt initiative under the National Transformation Plan (NTP), which is looking towards the private sector to help fill the void in the spheres of education and healthcare, careful planning is required as to the type of operator and allocation of space to ensure that the overall goal of affordability is met and such facilities are financially viable to keep the private sector incentivised to contribute.

The business case for the private sector to contribute in these asset classes is clear, as Riyadh has a hospital bed capacity gap of almost 4,200 beds (based on global average benchmarking) as at 2018 and the incremental number of student seats required by 2030 is circa 120,000 seats.

With Riyadh's fast pace of growth and the objective to create affordable housing, we need to be cognizant of the lessons from an international perspective. Providing affordable housing which has both healthcare and education woven well within its ecosystem will ensure the success of these developments by way of:

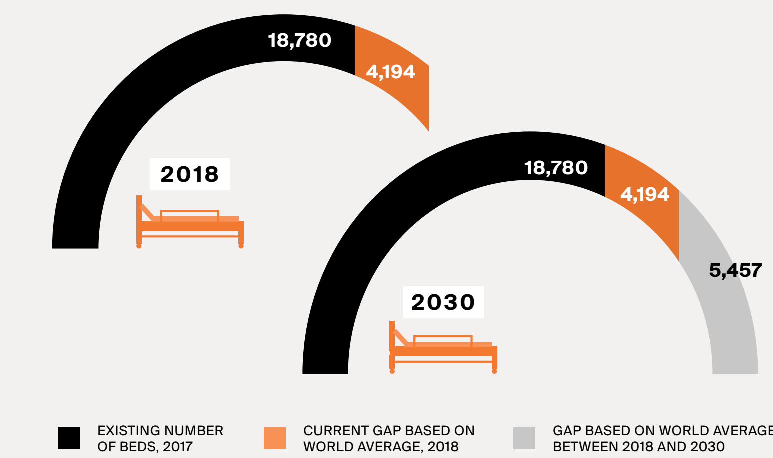
- Creating a sense of community
- Maintaining higher residential occupancy levels as basic life provisions are catered to and economic activity is created
- Value creation for the population residing in these areas in the long run

### INCREMENTAL NUMBER OF PRIVATE SCHOOL SEATS REQUIRED BY 2030




**SOURCE:** KNIGHT FRANK RESEARCH

### HOSPITAL BEDS REQUIRED BY 2030




**SOURCE:** KNIGHT FRANK RESEARCH

## + NOTED

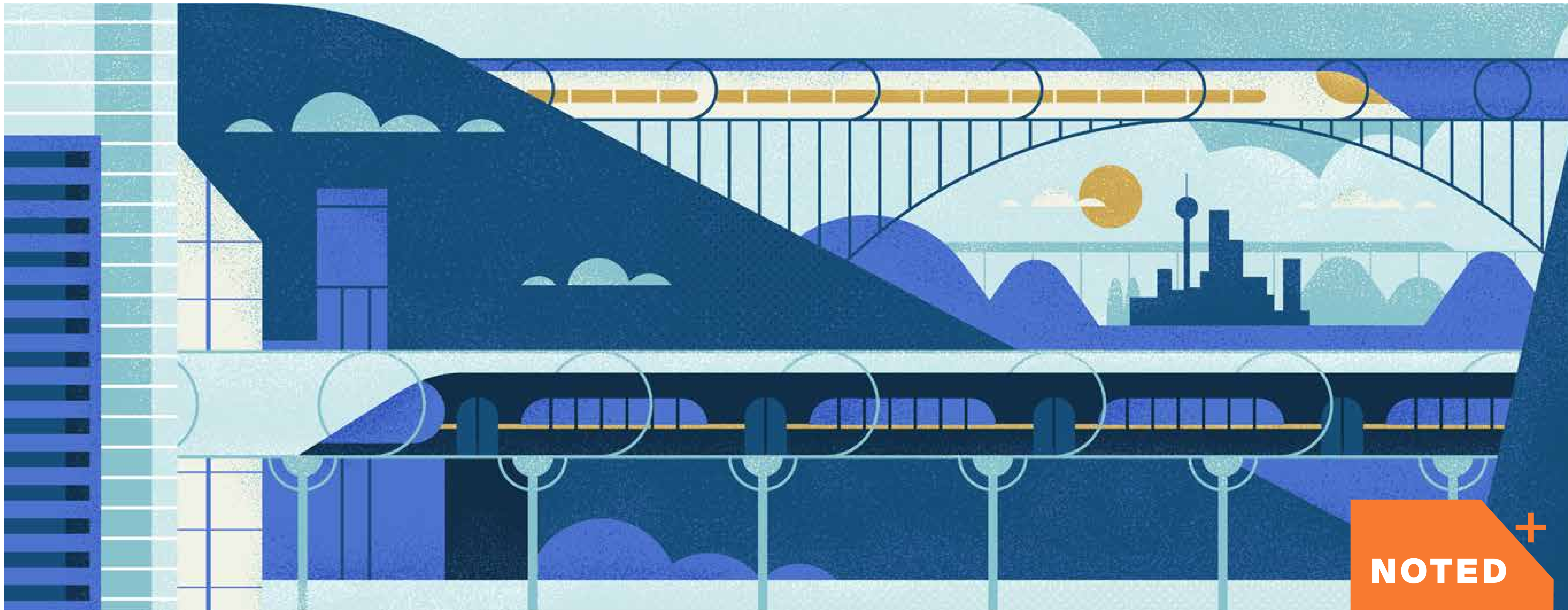
**To ensure longevity and future value creation of affordable housing schemes, components that create a synergistic ecosystem must be included such as education, healthcare and recreation.**

**The inclusion of healthcare and education assets in Riyadh would have a direct impact on the socio-economic environment by creating employment.**

**High requirements for private sector investments in education and healthcare are supported by the government initiatives under the National Transformation Plan.**

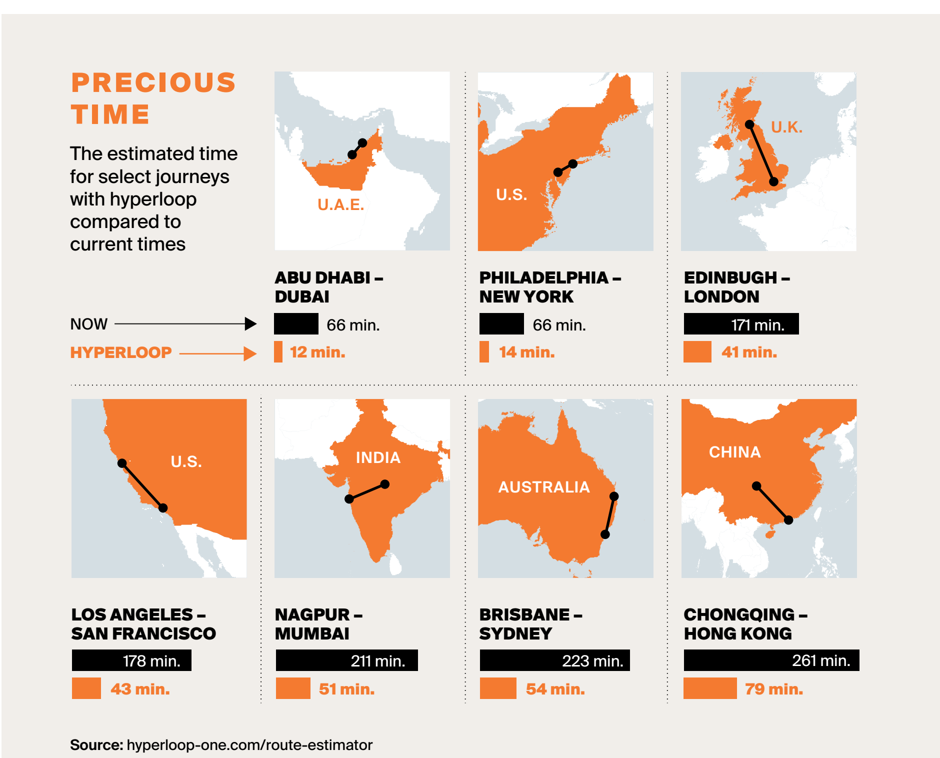
# THE NEXT MODE OF TRANSPORT

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



Whilst there is an abundance of land available for development outside cities, the difficulty lies in convincing populations to move there. The ability to travel easily from your home to your place of work, ease of access to shops, entertainment and other amenities, can have an impact on the quality of life. Linking satellite towns and cities with more established ones via a fast and efficient transport network could reduce demand in high-price areas and increase the standard of living for commuters.

The virtual expansion of a city is not a new idea. Many governments work on large-scale infrastructure projects to help reduce travel times between destinations and enable citizens to commute from further afield without adding time. For example, Crossrail in London is expected to bring an additional 1.5 million people within a 45-minute journey time of central London. 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.




## Hyperloop

Originally it was conceived to help Californians cross the distance between San Francisco and Los Angeles in half an hour. The project was first mooted in 2012, when Musk called for a "fifth" mode of transport to add to car, plane, boat, and train. He announced that this new innovation would be called "Hyperloop", and would shoot travellers through vacuum tubes at 1,000 kilometres per hour. It will be "a cross between Concorde, a railgun, and an air hockey table," he said.

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 expanding the commuter belt 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 forecast 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 result 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-centre 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 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. Musk has created Boring Brick, which will sell bricks made from the dirt to the construction industry for 10 cents each. They will be free for developers of affordable housing.

Hyperloop is not a direct fix for housing's affordability crisis. Whilst it may not bring down the cost of living in cities like San Francisco, it could help to reduce demand in popular markets and give citizens commuting from satellite towns and cities a better quality of life.

## + NOTED

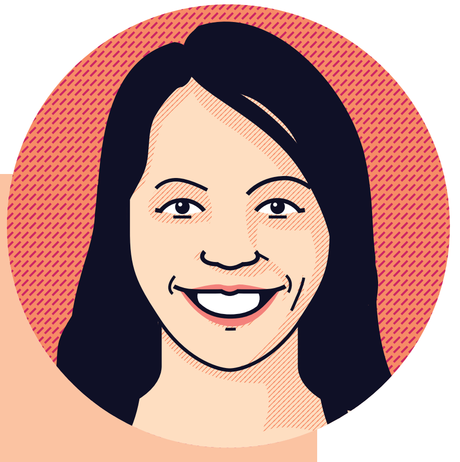
**Hyperloop aims to project commuters through a vacuum at 1,000km per hour, thus acting to considerably ease commuter congestion on other modes of transport.**

**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 its 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 INDUSTRY VIEW

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



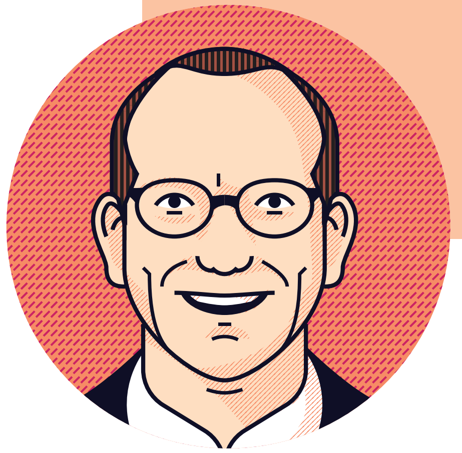
*Singapore property expert* **Debra Ma** *is Senior Development Manager at international property and infrastructure group, Lendlease.*

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 1965, 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 household wealth and more residents upgrading to private property. To ensure a stable and sustainable market, the Singapore government sets aside billions of the national budget on public housing. When private home prices rose appreciably over the past decade, the government implemented a series of cooling measures, one of which is the Additional Buyer's Stamp Duty where foreign buyers and second-time local buyers must pay more stamp duties. These measures brought private home prices down by 12% in four years.

> "AFFORDABLE HOUSING HAS TO START AT POLICY LEVEL."

> "POLITICS IS THE FRAMEWORK ON WHICH CITIES ARE BUILT."



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Rising land prices are an inevitable by-product of urbanisation. But one effective way of bringing down the cost of housing is the use of 'building information modelling' (BIM) systems. This technology means that you combine 'design and build' within a single system, which allows developers to optimise project costs by up to 85%. When you combine this technological ability with modular building, the fact that we can create homes in factories and then ship to site has a significant impact on the ability to build affordable housing.

Building homes from wood also brings down cost. It is a sustainable material that can be transported easily, which makes it the ideal material to support modular developments. Hybrid buildings, which use cement or steel for structural elements, combined with wood, are likely to become more and more commonplace.

We are also seeing major changes to the way that commercial and residential property interact. We predict that we will see more of a blend in future; shopping centres or petrol stations that currently boast just two or three floors could evolve to have a portion of residential housing on top.

Outside of these trends, the onus is on governments to prioritise affordable housing. Politics is the framework on which cities are built. The world could learn a lot from the likes of Vienna and Amsterdam, which have been very forward thinking. In Germany in the late 80s social housing became less important and in many cities, especially in the capital city, Berlin, big portfolios were brought to the private market. Through selling social apartments it was possible to reduce the budget deficit. However, the government is now trying to buy back social housing at high prices. As a result, it is now mandated that 30% of all new residential units built must be social housing. But there have been notable successes; Germany's rental price break, which was adopted by 313 cities back in 2015 and improved in 2018, ensures that people on the lowest incomes are not stung by rental price increases.

Illustration: MUTI

> "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 and have not done so for decades. 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 bid.

England's Green Belt has more than doubled since 1979; at 13% 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. 42% of non-environmentally protected Green Belt land in London is within 2km 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 reform, six planning acts and two editions of the NPPF have led to a complex, costly and slow planning system. Elements of the planning system could be refined but fundamentally the planning system is the same everywhere but the experience varies markedly. Rather than further system change, let's focus on the culture of planning, making it about enabling rather than regulating.

> "THE MORE YOU CAN REDUCE UPFRONT AND OPERATING COST, THE EASIER IT IS TO BUILD AFFORDABLE PROJECTS"

**Nnenna Lynch** *is founder & CEO of Xylem LLC, formerly a senior advisor to New York City 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 ensure 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 harnessed more efficiently, it would go a long way to making a dent in the crisis.

Another interesting area of potential innovation is to rethink 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 cost, 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.

# HEALTHCARE & EDUCATION

*Shehzad Jamal*
PARTNER, HEALTHCARE & EDUCATION

Affordable housing schemes are best developed alongside typologies with varying socioeconomic profiles. We believe healthcare and education assets provide an excellent opportunity for cities to partner with the private sector to both service their communities and build economically diverse neighbourhoods.

In Saudi Arabia, rising demand for education and healthcare services coupled with government initiatives that call for increased private sector participation presents an invaluable opportunity for the private sector to drive the expansion in these sectors. With the government permitting foreign ownership in the healthcare and education sector, international companies that previously chose to remain at bay are now actively looking to enter the Saudi market. With their entry in the country, the level of competition is bound to augment and in the long run will benefit consumers who will have choices available to them.

Keeping the above into perspective, it is becoming increasingly important for healthcare and education companies to invest heavily in undertaking market due diligence, analysing the requirements of their target market and developing offerings that create an affordable value proposition.





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