◆ Cities with the most ambitious net-zero targets ◆ Record investment in multifamily ◆ Reconnecting supply chains ◆ Why the metaverse matters ◆ Top 15 destinations for executive nomads ◆ Four trends shaping retail

savills

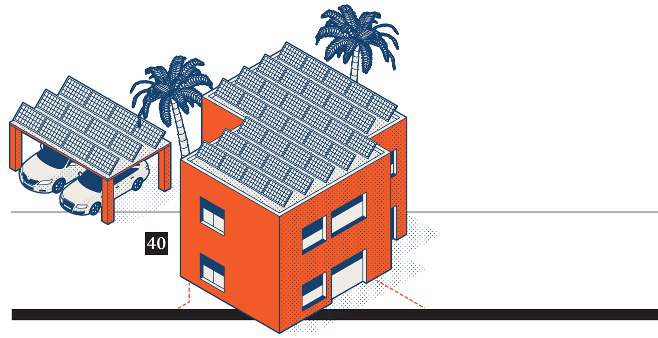
Issue 05. 2022

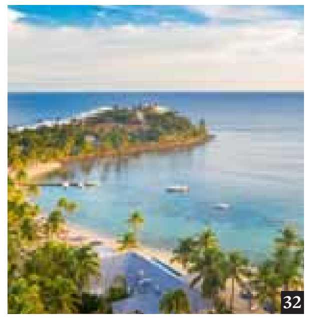
Impacts

THE FUTURE OF GLOBAL REAL ESTATE

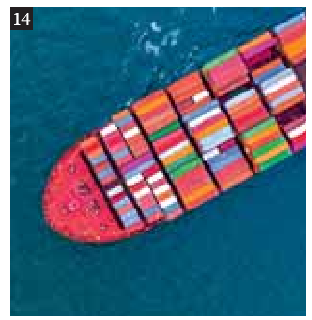
ture / metave
/ space / globa
alent / capital
brid / net zero
s / tech / cities /

◆ Resilient cities react to changing priorities ◆ SpaceTech: the role of real estate ◆ How employers should reconnect with their workforce ◆ Smart cities with a human focus ◆ Six innovations in energy ◆ Investment in life sciences ◆ Mapping the global leaders in green office space ◆ Prime residential markets





Contents



Savills contacts

Jeremy Bates
Executive Director, EMEA Head of Occupational Markets
jbates@savills.com
+44 (0)20 7409 8813

Simon Hope
Executive Director, Head of Global Capital Markets
shope@savills.com
+44 (0)20 7409 8725

Justin Marking
Executive Director, Head of Global Residential
jmarking@savills.com
+44 (0)20 7016 3810

Paul Tostevin
Director, World Research
ptostevin@savills.com
+44 (0)20 7016 3883

Eri Mitsostergiou
Director, World Research
emitso@savills.com
+30 6946500104

Oliver Salmon
Director, World Research
oliver.salmon@savills.com
+44 (0)20 7535 2984

"People are reconnecting in the workplace but demanding more wellness, flexibility and sustainability"

From residential to retail, logistics to offices, Savills has deep links with the people and sectors it serves. Mark Ridley looks forward to the challenges as we continue to reconnect

WORDS MARK RIDLEY, GROUP & GLOBAL CHIEF EXECUTIVE OFFICER, SAVILLS

Photo Greg Funnell

Welcome to the 2022 edition of Impacts. This year, as we emerge from Covid, our theme is Reconnect. It has been a pleasure to reconnect with colleagues and clients around the world; as a 167-year-old business we have deep links with the people and places we serve. This reconnection is happening throughout real estate. Our Resilient Cities Index shows the world's leading cities opening up, although they are by no means back to normal. People are reconnecting in the workplace but demanding more wellness, flexibility and sustainability.

Energy is a key sustainability topic for property and its importance has been proven by the inflation we are seeing worldwide, driven by the tragic war in Ukraine, and global supply chains, which are still disrupted by the pandemic.

Savills plc is committed to net zero across its business by 2030 and in its supply chain by 2040, while the Savills Earth team supports clients' net zero and energy security ambitions. Decarbonising will lower energy and thus living costs, as well as helping to meet the climate challenge.

SUSTAINABLE PORTFOLIOS

We are seeing much greater attention paid to embodied carbon in buildings and farsighted occupiers, who might previously have demanded the best new-build available, are now considering refurbishment to the highest standards as a more sustainable alternative. Refurbishment to Grade A standard will also meet investors' needs for more sustainable portfolios and their demand for prime assets, which provide insulation from inflation and geopolitical uncertainty. We have invested in our project management business so we can support this transformation.

The inflation protection offered by real estate and its safe haven status will be at the forefront of investors' minds this year and we expect continued capital flows into the asset class.

"Savills plc is committed to net zero across its business by 2030 and in its supply chain by 2040, while the Savills Earth team supports clients' net zero and energy security ambitions"

Logistics will remain a prime target, as disrupted supply chains continue to drive the need for more space, located closer to consumers. However, investors should be careful about the pricing of assets in a sector where occupier requirements can change rapidly.

RECONNECTING WITH PEOPLE

The office sector has resisted claims of its demise, and many landlords are now offering more flexible and sustainable space to meet the demands of occupiers and their staff.

Retail, meanwhile, has shown surprising resilience in many markets, as our article on the topic demonstrates. Non-discretionary retail continues to thrive and major shopping districts are also reconnecting with customers as they return to city centres. The recovery of international travel and tourism will further boost retail areas such as Oxford Street, Fifth Avenue and Orchard Road.

LOOKING AHEAD

Wherever I have travelled recently, the shortage of skilled staff has been a topic of conversation. It is a challenge for Savills too, but I am very proud of our graduate and apprenticeship programmes worldwide, which have continued unabated and will nurture talent and support our business.

Looking ahead to the rest of 2022, I hope to reconnect with more staff and clients around the world and see more people in transit, because their movement will drive investment. I also look forward to the continued transition of real estate into a more sustainable industry.

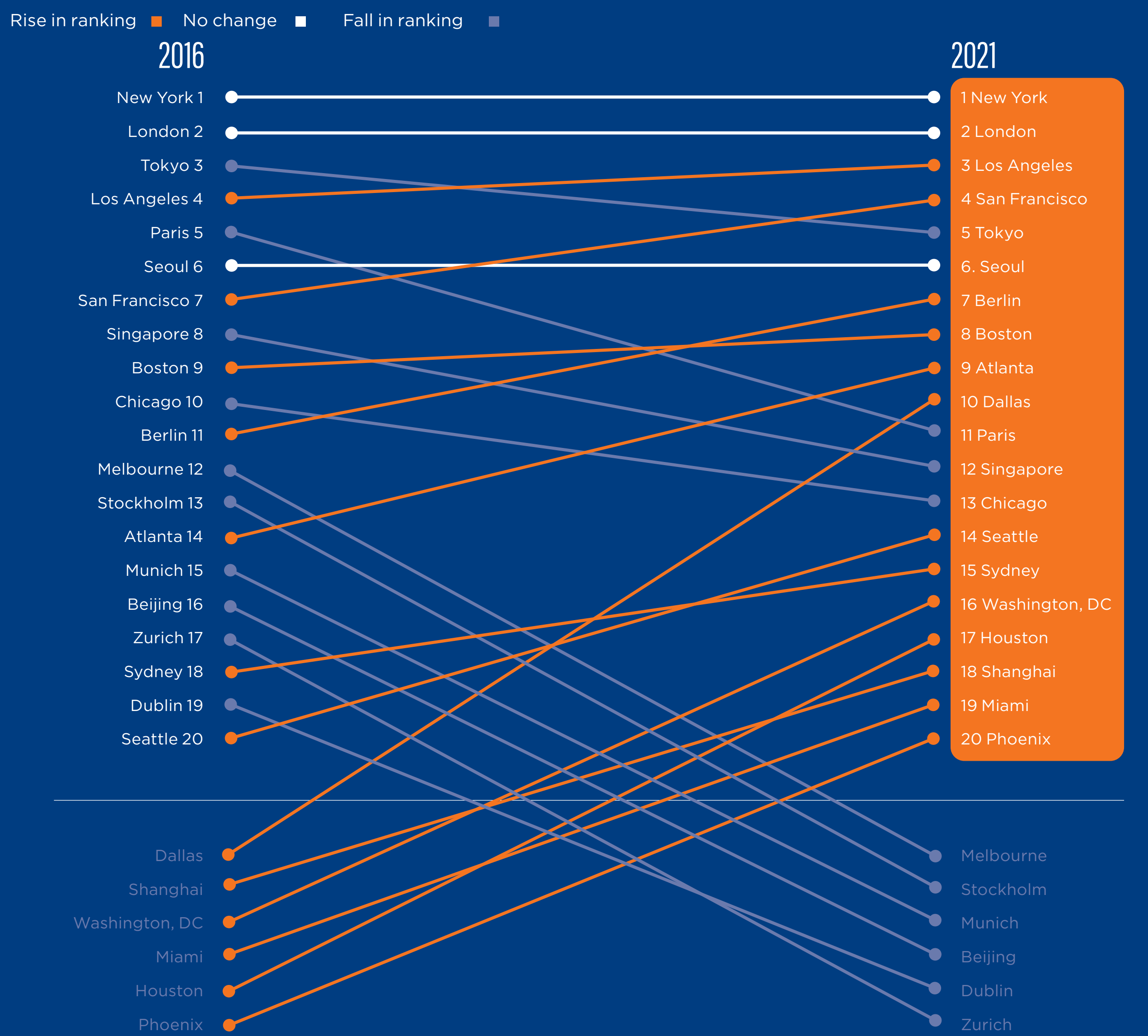
The High Line, New York

Resilient cities

People are reconnecting with cities. But while the top of the Savills Resilient Cities Index has remained relatively unchanged over the past five years, our preferences about what type of city is most desirable are changing significantly

WORDS SAVILLS WORLD RESEARCH

SAVILLS RESILIENT CITIES INDEX: CHANGE IN CITY RANKINGS FROM 2016 TO 2021



What makes a resilient city?
The Savills World Research team has ranked 500 cities on the depth of their real estate market, economic strength, knowledge economy and technology and environmental resilience. The top cities in the index will be best placed to adapt to future economic and environmental challenges.

Real estate investment
A liquid and readily invested real estate market, with security of title.

Knowledge economy & tech
High value-add employment with venture capital funding, quality education and innovation in business.

Economic strength
A secure, dynamic economy of scale with high personal wealth and strong demographics.

Environmental, social and governance
A society that values sustainable environmental practices, has access to good healthcare, is inclusive and fair with sufficient governance.

Source Savills Research

The human preference for the city has scarcely waivered, but preferences about what type of city is most desirable are changing

For a while, the city looked in trouble. The Covid-19 pandemic hit large and densely populated metropolitan areas more dramatically than it did quieter, sparser locations. News footage from around the world showed empty city streets and a remarkable lack of the usual hustle and bustle. Any number of commentators declared that the city was over: work from home was the future and we need to address what to do with all those empty offices.

However, the combination of vaccines and antiviral drugs has reduced the impact of Covid-19 and people all over the world have begun to reconnect with cities. Savills Prime Residential Index showed price growth in 28 out of 30 major cities in 2021 and the highest annual rental growth since 2014.

Office workers have been keen to reconnect with their colleagues and occupiers with their staff. Savills data show City of London office take-up rose 65% year-on-year in 2021, and in January 2022, monthly take-up was the highest since 2018. Similarly, New York saw the highest quarterly take-up for two years in the final quarter of 2021.

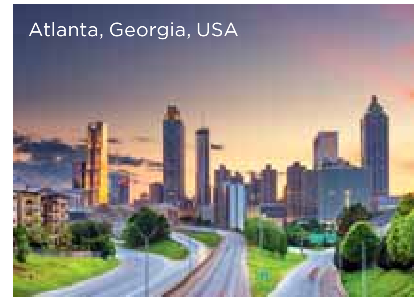
In 2022, the world is facing a new threat. Two years after Covid-19 was declared a pandemic, real estate markets were beginning to return to normal as restrictions on mobility and international travel were eased across many regions. The war in Ukraine brings new headwinds, and may have a negative effect on some investor sentiment and delay recovery – particularly across markets in close proximity to the crisis. The full implications are as yet unknown, but the war's impact on commodity prices has further pushed up inflation, squeezing living costs. In times of heightened uncertainty, the resilience of cities will again be tested.

But cities have survived recessions and previous pandemics by adapting and demonstrating resilience. The Savills Resilient Cities Index assesses 500 cities on their economic strength, demographics, education and the knowledge economy and environmental resilience, as well as the depth of their real estate markets, to rank them on resilience. The top of the index is largely unchanged over the past five years: New York and London retain the top spots, while Los Angeles, San Francisco, Tokyo and Seoul remain in the top 10.

However, while the human preference for the city has scarcely waivered, preferences about what type of city is most desirable are changing. Thanks to fast-growing economies and lower living costs, a number of mid-sized US cities have broken into the top 20 or climbed into the top 10 since 2016. Outside the top 20, the most successful of these cities are driven by fast-growing knowledge industries such as tech and life sciences, and include Copenhagen, Shenzhen, Toronto, Austin, San Diego, Denver, Raleigh and Eindhoven.

The other key driver of change in ranking is technology and the knowledge economy. Cities that host high-tech industries are attracting people and capital. San Francisco, Boston and Shanghai have all climbed the rankings in recent years. Looking ahead, the post-pandemic focus on health and wellness will benefit cities that are walkable, liveable and have lower pollution. The search for wellness is strongly linked with meeting the challenges of climate change, so cities that do well in one of these factors will likely do well in both.

> Cities that host high-tech industries are attracting people and capital. San Francisco, Boston and Shanghai have all climbed the rankings in recent years



REAL ESTATE INVESTMENT

In real estate terms, a resilient city will have a large, liquid market, a good mix of domestic and international investors and strong property rights. Collectively, the world's cities scored very highly, with 2021 investment volumes of more than $1.3 trillion – 59% up on the previous year and 22% ahead of 2019, the last record year.

While Los Angeles and New York have swapped places since 2016, they remain at the top: large, liquid markets attractive to all investors. Less travel in 2021 meant LA, which is less dependent on international capital, overtook New York.

London remains the most international real estate market in the world, with 62% of investment activity involving cross-border capital, equating to $31.9 billion of deals in 2021.

Berlin on the rise

Berlin overtook London to become Europe's largest real estate market in 2021, although this was largely due to a single transaction, a merger between two residential property companies. The German capital's residential market continues to attract investment.

The most significant change in the real estate part of the index has been the rise of US cities beyond the east and west coast giants. Since 2016, Atlanta, Phoenix, Boston and Houston have shot into the top 20 on the back of capital flows due to strong population growth, which has also been the case for Miami. In recent years, Hangzhou, another Chinese tech city, has gained more than 30 places due to its growing and dynamic economy

workers have flocked to these cities because they offer employment opportunities and high quality of life. Both Atlanta and Miami offer good weather and lower house prices than large cities further north. Lower state and city taxes have also attracted footloose US workers.

Where people go, real estate investors will follow, not least because of the popularity of the residential sector, which overtook offices in 2021 to become the largest real estate sector worldwide. Looking forward, this preference will drive more investment in cities that are attracting workers. The difficulty of buying assets in US gateway cities is also pushing investors to look elsewhere. Another prime motivator for real estate investors is ESG considerations. The desire to buy and build more sustainable real estate will determine not just the type of assets that are most attractive, but the cities where buyers prefer to place their capital.

ECONOMIC STRENGTH

When it comes to economic strength and resilience, size matters. Larger and growing populations and higher and growing GDP (both in total and per capita) drive resilience, but so do economic diversity and low risk. The world's largest and richest cities naturally sit at the top: Tokyo and New York have maintained their positions since 2016.

Tokyo stands out for its low risk and highly diversified economy, which still attracts migrants from provincial Japan and keeps the city growing despite the wider demographic challenges in the country. New York's position is based squarely on wealth – it has the largest GDP per capita – double that of Tokyo.

Tokyo stands out for its low risk and highly diversified economy, which still attracts migrants from provincial Japan and keeps the city growing despite the wider demographic challenges in the country

China now has four cities in the top 12, reflecting its burgeoning economic strength. The dynamic tech city of Shenzhen maintains third place, while Shanghai and Hangzhou have burst into the top 10. Hangzhou – another Chinese tech city – has gained more than 30 places due to its growing and dynamic economy. Technology and the wealth it generates also propel San Jose in the tech hub of Silicon Valley, California towards the top of the rankings, despite it being far smaller than the other cities in the top 10.

GDP growth in Delhi

Delhi provides a marked contrast with San Jose, as its GDP per capita is only 1/100th of that in the Californian city. However, it has a growing and youthful population and increasing urbanisation, all of which will combine to bring economic growth.

Arvind Nandan, Head of Research and Consultancy at Savills India, says: "Delhi has a well-developed social, physical and industrial infrastructure. It also has a large percentage of skilled workers relative to other states, which is driving the knowledge economy, particularly in IT, design, R&D and financial services, and thus economic growth. Average GDP growth is forecast to be 8.7% over the next five years."

London has fallen back over the past five years, due to higher risks from its departure from the European Union, but it remains the only European city in the top 12. However, financial stability and low risk are also economic strengths that keep the Swiss cities of Basel and Zurich in the top 20.

In future, large and wealthy cities will continue to dominate this part of the Resilient Cities rankings, while the economic growth of China will move its cities upwards, although this effect is likely to be mitigated by demographics, which will, in contrast, add to the economic resilience of India's large cities.

Worldwide, cities where a large part of the population is of working age, such as Shenzhen (86%), Dubai (83%) and Cairo (69%), should offer real estate opportunities to cater for the rising middle classes and growing business investment.

KNOWLEDGE ECONOMY AND TECHNOLOGY

The world economy is increasingly driven by technology and the knowledge economy, and the most resilient cities are those that can adapt to new technologies and provide an

Beyond GDP

Is GDP the best way to measure a city's success?
Overall GDP is a blunt measure that misses inequalities, and as people favour work-life balance, health and happiness more than money, there is a search for ways to measure a city's less tangible qualities. Furthermore, GDP does not account for the environmental cost of growth, something we take account of through the ESG factors of our index. A number of countries, most notably New Zealand and Iceland, have forward-looking governments who realise that welfare extends beyond GDP. New Zealand's Living Standards Framework is intended to "capture the things that matter for New Zealanders' welfare" and results will drive government spending in certain areas. It seeks to measure the following three metrics:

- Individual and collective wellbeing – factors such as health, knowledge and skills, housing and leisure.
- Institutions and governance, including government, firms and markets and international relations.
- Wealth – financial capital, social cohesion and the natural environment.

THE CHANGE IN RANKING FOR EACH OF OUR FOUR DEFINING FACTORS (2016 TO 2021)

TOP CITIES BY REAL ESTATE

2021	City	2016
1	Los Angeles, US	2
2	New York, US	1
3	Dallas, US	9
4	San Francisco, US	4
5	Berlin, Germany	17
6	Atlanta, US	18
7	London, UK	3
8	Miami, US	19
9	Phoenix, US	36
10	Boston, US	25
11	Washington DC, US	10
12	Houston, US	54

TOP CITIES BY ECONOMIC STRENGTH

2021	City	2016
1	Tokyo, Japan	1
2	New York, US	2
3	Shenzhen, China	3
4	Shanghai, China	11
5	San Jose, US	6
6	Delhi, India	14
7	Guangzhou, China	9
8	London, UK	4
9	San Francisco, US	8
10	Los Angeles, US	5
11	Hangzhou, China	43
12	Osaka-Kyoto, Japan	7

TOP CITIES BY KNOWLEDGE ECONOMY AND TECHNOLOGY

2021	City	2016
1	Seoul, South Korea	1
2	London, UK	5
3	New York, US	6
4	Beijing, China	2
5	Shanghai, China	3
6	San Francisco, US	18
7	Shenzhen, China	13
8	Daejeon, South Korea	9
9	Gwangju, South Korea	10
10	Singapore, Singapore	11
11	Dongguan, China	15
12	Boston, US	8

TOP CITIES BY ESG

2021	City
1	Reykjavik, Iceland
2	Oslo, Norway
3	Bergen, Norway
4	Vienna, Austria
5	Linz, Austria
6	Graz, Austria
7	Helsinki, Finland
8	Copenhagen, Denmark
9	Toronto, Canada
10	Montreal, Canada
11	Aarhus, Denmark
12	Vancouver, Canada

Source Savills Research

Cities rising up the rankings

We take a deeper dive into how the cities of Los Angeles, Berlin and Shanghai are evolving to improve their resilient city ranking

Los Angeles 3rd

(MOVES UP ONE PLACE, RANKED 4TH IN 2016)

In addition to having the world's strongest real estate market, Los Angeles is also a creative and economic powerhouse. Millions of people worldwide aspire to one day move there and make it big.

Of course, the city's success is founded on more than Tinseltown dreams – LA is also home to a myriad of high-tech industries. Nonetheless, the entertainment business is huge and has reconnected with customers in recent years in order to meet demand for streaming entertainment.

"LA continues to appeal to talented workers from around the world who are attracted to the region's climate, amenities, and high quality of life," says Michael Soto, Head of Office Research at Savills in LA. This desirability sent prime residential prices up 19.7% in 2021.

Liveability and emissions are challenges for a city known for its gridlock, but Soto says: "Over the past 15 years, LA County voters have authorised more than $120 billion in taxes to fund long-term transit construction projects. Long notorious for its traffic gridlock, LA has seen the largest transit infrastructure programme of any metropolitan area in the United States."

Berlin 7th

(MOVES UP FOUR PLACES, RANKED 11TH IN 2016)

The German capital's rise in ranking is buoyed by the success of its residential market, which itself thrives because of the city's dynamism. "For the first time ever, Berlin was the city with the highest real estate investment volume in Europe last year, far ahead of London and Paris," says Matthias Pink, Head of Research, Savills Germany. "Due to the large talent pool, it continues to be very attractive for domestic and international companies. We continue to observe many firms relocating their headquarters or company units to Berlin to access these talented people."

While a Covid-19-induced stop to immigration meant population growth was halted, the city did not see inhabitants leave for smaller cities or suburban areas, says Pink, a tribute to its liveability and a factor behind a 9.6% rise in prime residential prices. As the pandemic recedes and Germany reconnects with the world, this growth is expected to be maintained, with Savills predicting 10% growth in 2022.

Shanghai 18th

(MOVES UP SEVEN PLACES, RANKED 25TH IN 2016)

China's financial capital has been climbing the resilience rankings since 2016, its performance driven by economic growth and an expanding real estate market. The city's real estate market is liquid and transparent and attracts more overseas investment than any other mainland city.

Shanghai has also improved in terms of sustainability and liveability, says James Macdonald, Head of China Research, Savills. "It has created new parkland and public space, particularly on the waterfront, and is working to preserve its cultural heritage. Some of China, Singapore and Hong Kong's best developers have built LEED-certified projects for multinational occupiers, and high real estate values encourage retrofitting to upgrade existing stock."

The city is also an intellectual as well as a financial high-flyer, says Macdonald, with a vibrant life science sector and some of the country's best universities attracting talent and companies from China and beyond.

Toronto and Montreal have seen their ESG ranking boosted by Canada's strong social and governance credentials. Additionally, Toronto has also set a 2040 net-zero target date, a decade ahead of the rest of the nation

enticing environment for workers in high-growth tech businesses. Knowledge-driven cities have good universities, a large and youthful working population, attract venture capital investments and produce innovative patents.

South Korea has achieved a unique position in the rankings due to its strong education system and well-known tech conglomerates such as Samsung and LG. Seoul has stayed at the top of the rankings since 2016, while the smaller cities of Daejeon and Gwangju have moved into the top 10.

Elsewhere, large cities with good universities, including London, New York, Beijing and Shanghai, also score well and attract substantial venture capital.

Leaders in life science

Boston maintains its place in the top 12 due to its strength in life sciences, one of the fastest-growing parts of the knowledge economy, buoyed by the pandemic and ageing populations in the developed world.

Steven Lang, Director of Offices and Life Sciences Research, Savills UK, says: "The Covid-19 pandemic has focused the need for funding into all areas of human health, both public and private. Global life science venture capital investment grew by 32% last year, following a 55% increase in 2020 – this shows that many more financial capital providers became comfortable with the life science sector and more aware of the human problems and conditions that need to be addressed today and in the future.

"The companies that attracted this capital are now in hiring mode. For many, this means physically locating in core city locations. This enables their ability to successfully attract the best talent. Those tech labour pools are mainly found in larger cities, which also provide a closer proximity to a larger pool of end-users."

Success breeds success in the life sciences sector and other knowledge industries. Locations that offer a mix of universities, major tech occupiers and the firms that support them – as well as lifestyle options for employees – will see cluster benefits. Sometimes, cities can form a cluster, such as the Golden Triangle of Oxford, Cambridge and London in the UK or the Research Triangle of Raleigh, Durham and Chapel Hill in North Carolina.

Lifestyle and liveability factors

Attracting talent is crucial to the success of knowledge economy businesses, which means that lifestyle and liveability factors will become more important in the future.

Cities that offer great lifestyles, such as Austin, Barcelona and Copenhagen, have benefitted from workers' migration, while the digital nomad phenomenon has knowledge workers who can operate remotely from anywhere in the world choose cities entirely on the basis of lifestyle.

Savills Tech Cities research posits that the presence of cafes that offer good flat whites and vegan burgers could well be a barometer of success as a tech city.

ENVIRONMENTAL, SOCIAL AND GOVERNANCE (ESG)

In cities, as in every other aspect of human life, ESG issues have become a major priority. Not only do most industrialised nations have a net-zero emissions target, but so do many cities and many corporations.

However, most ESG factors are on a country level, which dominates any city characteristics as, naturally, cities within nations that prioritise ESG will tend to outperform. The index rates cities largely at a country level, on factors such as carbon emissions per capita, renewable energy consumption, food security, inequality, democracy and the rule of law. However, it also considers the Energy and Climate Intelligence Unit's net-zero target database at city level (see the Race for Carbon Neutrality on page 42).

The top performers are concentrated in a small number of Northern European countries and Canada. The total population of the cities in the top 10 by ESG is less than seven million, slightly more than a quarter of the population of Shanghai. This highlights the challenge facing larger cities and emerging economies.

Race for net-zero carbon emissions

The Nordics and Iceland dominate the top 12 cities for ESG, as they are prosperous, liberal economies with abundant natural resources and low population densities. Iceland, for example, gets more than three-quarters of its energy from renewable sources, mostly through hydropower and geothermal power.

Austria has three cities in the top 10, including the capital, Vienna. Sebastian Scheufele, Managing Partner at Savills affiliate Modesta Real Estate, says: "The three cities provide an excellent public transport system, which contributes to lower emissions. Furthermore, Vienna has been voted the city with the worldwide highest quality of living several times in a row.

"Additionally, Austria has pledged to reach net-zero carbon emissions by 2040, which is a full decade ahead of the wider EU target. In recent years, ESG has become increasingly important for real estate investors, landlords and tenants in Austria and this trend is likely to continue over the next few years."

Toronto and Montreal have seen their ranking boosted by Canada's social and governance credentials. Toronto has also set a 2040 net-zero target date, a decade ahead of the rest of the nation.

The real estate industry, which is responsible for 40% of global carbon emissions, is more focused on ESG than ever before, with many of the largest investors and asset managers pledging to be net-zero carbon by 2050 or earlier. Technology is at the heart of this process, whether it is using artificial intelligence to run buildings more efficiently or in the use of new construction techniques and materials. However, the challenge in ESG is not so much the best, as the rest. Most of the world's building stock is not new, so more needs to be done to make existing real estate stock more efficient. Similarly, smaller cities in wealthy nations will continue to dominate the ESG section of the research. However, the main challenge in sustainability is getting the same sort of performance from larger, poorer cities, where economic growth remains a priority and a necessity.

WORDS OLIVER SALMON, DIRECTOR, SAVILLS WORLD RESEARCH

STRATEGIES TO UNLOCK THE SUPPLY CHAIN

The just-in-time model of supply has been exposed. But organising global supply chains to reconnect with the consumer, increase resilience and address social and environmental concerns will come at a cost and impact on manufacturing locations, as our Nearshoring Index reveals

Supply chains have been the lifelines of globalisation, delivering lower costs and higher efficiencies to manufacturing, and gains to businesses and individuals across the world.

However, the pandemic, geopolitical tensions and the increasing importance of sustainability and speed to consumers are changing the way we think about globalisation and supply chains. These were previously organised to minimise costs: manufacture where labour is cheapest and maintain the minimum amount of inventory to allow goods to flow – the just-in-time inventory management method. Now, several factors are driving a change of priorities towards resilience, rather than cost. The pandemic has demonstrated that a complex and dispersed supply chain can be disrupted, while the Russian invasion of Ukraine may, in the words of the IMF, “fundamentally alter the economic and geopolitical order” over the longer term. Reconnecting with domestic and regional supply chains is looking more attractive.

The ‘golden age of globalisation’ began with China’s accession to the World Trade Organisation (WTO) in 2001, which gave the world access to one billion cheap workers. The value of global trade rose from $6.5 trillion to $17.6 trillion over the period 2000 to 2020, equivalent to a compound annual growth rate of over 5% per annum, with China’s share of global trade rising from less than 4% in 2000 to nearly 15% by 2020.

However, globalisation peaked prior to the global financial crisis (GFC) and has since plateaued, partially because the major gains from reducing barriers to trade have been realised already, but also because the GFC exposed weaknesses in the global financial system, leading to a retrenchment in cross-border activities.

This retrenchment was accompanied by weak economic growth and rising inequality, the latter also predating the GFC, which fuelled discontent and resentment. This led to the growth of political populism, most notably in the US, where Donald Trump was elected president on an America First policy, which sought to bring manufacturing and jobs to the US.

The Trump administration increased tariffs on Chinese goods, leading to retaliatory levies. However, the US-China conflict over trade was not unique: declining faith in globalisation contributed to tariff actions over steel and aluminium between the US and Europe, the renegotiation of the NAFTA trade agreement and the UK leaving the European Union.

If the GFC exposed the weakness of financial globalisation, the trade war between China and the US exposed political limits, while the pandemic exposed flaws in the globalisation of supply chains. In the beginning, the pandemic was primarily a supply shock: lockdowns in China hit production of key components embedded in global supply chains. This impacted the production of final goods elsewhere, first in Japan and South Korea, later in Europe and North America.

The crisis became something else entirely as the virus spread and global demand collapsed. But as the world economy recovered momentum, it again exposed frailties in global supply chains. Surging demand could not be met, especially where markets chose to deal with the pandemic differently. For example, Taiwan and

South Korea operated a low-tolerance approach to the virus. This hit semiconductor production, which led to shortages of automobiles and electrical goods, particularly in the US.

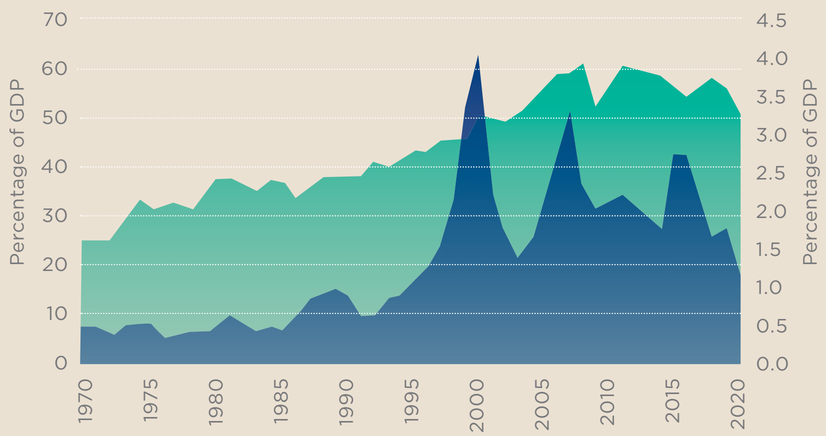
At the same time, disruptions to ports, airports and shipping drove a sharp rise in the cost of moving goods around the world. Prior to Covid-19, it cost $1,500 to ship a single container from China to the West Coast of the US; in September 2021, this rose tenfold to $15,000. Additionally, with the backlog of vessels at the port, total transit times from China quadrupled and were unreliable.

This upheaval has led to increased demand for supply chain resilience, rather than minimising costs and frictions. Resilience can be built into supply chains in three ways: a shift from just-in-time to just-in-case inventory management, the nearshoring or reshoring of manufacturing closer to the final point of retail, and an increase in transparency and monitoring to boost flexibility (see panel below).

Of these three alternatives, the easiest solutions are the first and last, as they make use of existing supply chains. The move to just-in-case inventory management has been a significant driver of warehousing take-up all over the world in the past two years. A McKinsey survey in June 2021 found that, while manufacturers were planning to introduce nearshoring and reshoring in 2020, by 2021, they had been more likely to increase inventory. As a consequence, demand for more warehousing drove average US vacancy rates in the sector to a record low of 4.4% in 2021, Savills data show, while a record 907.6 million sq ft of spaced was leased.

World: the pace of globalisation has plateaued since the global financial crisis

Trade in goods & services (LHS)
Foreign direct investment (RHS)



Source Savills Research using World Bank and UNCTAD data

Strategies to boost supply chain resilience

Resilience can be built into supply chains in three ways: a shift from just-in-time to just-in-case inventory management, the nearshoring or reshoring of manufacturing closer to the final point of retail, and an increase in transparency and monitoring to boost flexibility.

- **Just-in-case inventory management** prioritises risk management over cost, requiring businesses to hold more stock of raw materials, intermediate components, and finished products, and to hold it closer to the final customer.
- **Nearshoring and reshoring production** are similar concepts, representing a situation where businesses locate key operations close to the final point of sale, often at the expense of lower-cost regions that are a greater distance from the home market (the beneficiaries of past offshoring). Nearshoring supply chains also reduce the need for just-in-case inventories.
- A less drastic approach is to deploy **digital technologies** to increase transparency and monitoring across all tiers of suppliers and using flexibility rather than moving operations. For example, a China + 1 strategy gives manufacturers a fallback if there are disruptions in China. Manufacturers are also forging relationships with suppliers, guaranteeing preferential treatment. Ford announced a strategic collaboration with semiconductor manufacturer GlobalFoundries in November 2021, for instance.

When manufacturers prioritise resilience and sustainability rather than cost, there is a new set of winners and losers

ESG concerns will drive nearshoring

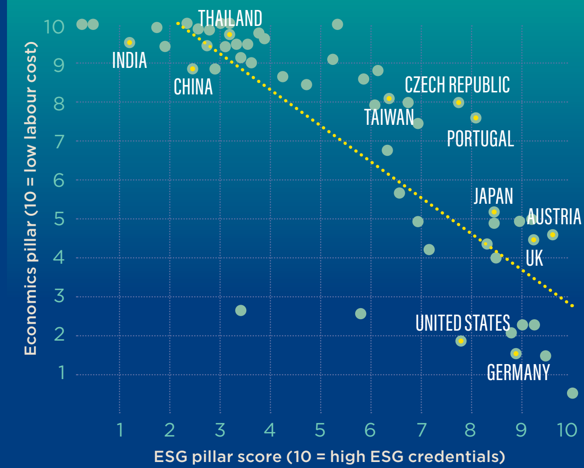
Manufacturers are coming under pressure to improve their ESG performance and this will force them to reconsider globalised supply chains. A PWC survey of asset managers conducted in September 2021 found nearly 80% of investors considered ESG risk as important in investment decision-making and 50% were willing to divest from companies not taking sufficient action on ESG.

Governments, investors, customers and employees are all demanding that companies do better, which is likely to drive a backlash against offshoring to economies with lower worker and environmental protections. Savills Nearshoring Index shows a negative correlation between the cost of labour and the ESG credentials across markets, with traditional low-cost offshoring destinations typically performing poorly across environmental and labour protection standards.

Net-zero targets mean more regulatory pressure for companies to consider the environmental costs of highly fragmented global supply chains. Scope 3 emissions, which consider the full supply chain, can account for 90% of a company's total emissions, the Carbon Trust estimates.

"As more organisations commit to net-zero targets, it is no longer sufficient to only get your own house in order," says Tanya Broadfield, Senior Sustainability Consultant, Savills. "Scope 3 emissions can often represent the bulk of an organisation's overall emissions. Supply chain engagement is a resource and time investment, but it's also an investment in change, to better protect the environment and engage local communities."

Nearshoring index: Low labour cost economies typically underperform on ESG credentials



Source Savills Research

The cost of localising supply chains appears to be a major barrier to making the change. Bank of America estimates that it would cost around $1 trillion in capital expenditure over five years to shift all foreign manufacturing not intended for domestic consumption out of China. Also with a burgeoning middle class in China larger than the population of the US and hungry to consume new products, the Chinese domestic consumption cannot be ignored. Nearshoring will add ongoing expense too, due to the higher cost of labour in developed markets and the higher cost of holding inventory there. The 'first mover disadvantage' favours a wait-and-see approach. All this seems to suggest that nearshoring or offshoring is unlikely to happen. After all, despite President Trump's best efforts, Chinese exports to the US hit a new record in 2021. However, we may be approaching a tipping point, where global megatrends are shifting incentives in favour of nearshoring, and the opportunity cost of not acting to reconnect with consuming markets is growing.

There are four trends underpinning this rise in opportunity cost. First, a combination of rising wages in China and technological advances is increasingly negating the traditional drivers of offshoring. Labour costs have risen by around 250% in China since it joined the WTO in 2001, but have risen less than 30% in the US.

+250%

Labour costs have risen by around 250% in China since it joined the WTO in 2001, whereas they have risen less than 30% in the US

The technologies of the fourth industrial revolution: robotics, 3D printing, machine learning and the internet of things are reducing the labour share in output. A McKinsey report estimates that 87% of the hours on activities performed by workers in production occupations are automatable. ING research estimates that 3D printing could reduce global trade by 40% by 2040, as products and components could be printed on the spot.

Second, while globalisation has plateaued, regionalisation is increasing. The three largest free trade agreements are regional in nature: the European Union single market; the US-Mexico-Canada agreement (USMCA) in North America; and the Regional Comprehensive Economic Partnership (RCEP) in Asia-Pacific.

Third, political pressure is shaping the location decisions of companies, especially those in high-tech or other strategically important sectors. There has been increasing pushback against China's trade policies and not just from the US. In the October 2021 WTO review of China's trade policy, member nations raised more than 2,500 objections to China's 'unfair' trade practices, rising 16% from the 2018 review. Governments are increasingly willing to use industrial policy to encourage domestic production. The 21st century has seen political instability grow around the world, which heightens the risk of supply disruptions, especially as the race to cut costs has increased the share of trade with less stable nations.

Finally, consumers and businesses in developed economies are more focused on environmental, social and governance (ESG) issues than ever before. Offshoring has damaged the environment: largely shifting production to economies with weaker environmental standards, lower energy efficiency and higher fossil fuel consumption. Offshoring production has offshored pollution. And the poor ESG credentials of most low-cost manufacturing locations cannot be mitigated by holding more inventory or by using technology to increase transparency and flexibility in the supply chain.

The preferred locations for manufacturing changes dramatically under a nearshoring strategy. When manufacturers prioritise resilience and sustainability rather than cost, there is a new set of winners and losers. Savills Research has produced the Nearshoring Index which captures the factors that will influence companies seeking to bring production closer to the consumer. The four factors are: resilience (the absence of risks and proximity to future consumers), economics (cost of labour), business environment (the ease of doing business and the quality of trade infrastructure) and ESG (environmental and labour protection).

A typical nearshoring strategy would balance the above factors, while a traditional offshoring strategy would overweigh the cost of labour. This focus on cost often requires a compromise elsewhere – low-cost manufacturing hubs generally perform poorly when benchmarked across other key location criteria, such as stability, ease of doing business and environmental credentials.

The change from an offshoring to a nearshoring model leads to a significant change in the list of most attractive markets. Nearshoring favours stable high-income economies, whereas lower-income nations with poor environmental and labour protections lose out. All but one of the top 20 markets in the Nearshoring Index are considered high-income by the World Bank.

However, there are seven nations which feature in the top 20 locations for nearshoring and offshoring: Czech Republic, Portugal, Taiwan, Poland, Singapore, Hungary and Romania.

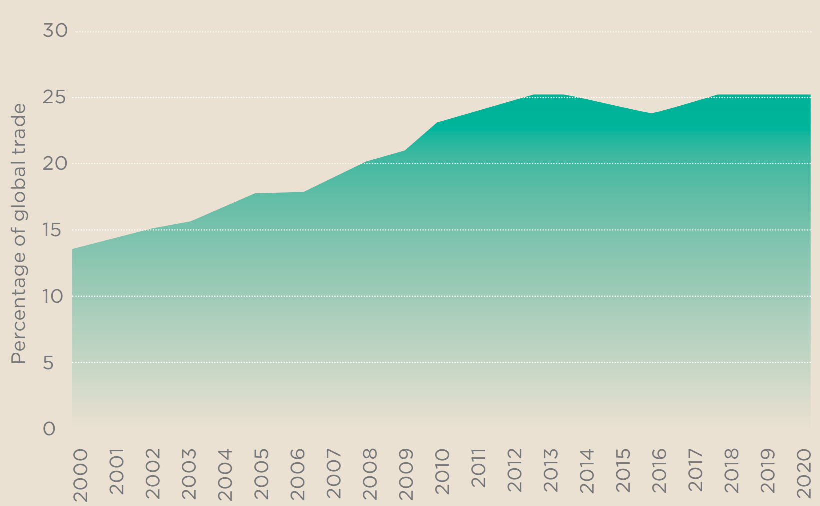
"The Czech Republic offers a combination of lower wages than its Western European neighbours, yet with better ESG credentials than developing economies," says Chris LaRue, Head of Industrial Agency, Czech Republic, Savills. "The country sits in a sweet spot by straddling wealthy European markets in Western Europe such as Germany, and lower cost locations such as Poland and Hungary to the east. It has a long history of manufacturing, good transport links and universities, a highly productive workforce, EU membership, political stability, and a well-developed industrial property market with nearly twice the built-up sq m per capita as Poland."

A reorganising of global supply chains to reconnect with the consumer and increase resilience will come at a cost. OECD simulations suggest global GDP would fall by 5% in a 'localised' scenario where markets are less connected through global supply chains. Nonetheless, the ongoing cost to GDP of disruption may make a 5% drop seem an acceptable price.

+900%

Prior to Covid-19, it cost $1,500 to ship a single container from China to the West Coast of the US; in September 2021 this rose tenfold to $15,000

Trade risk: global trade with higher risk economies has expanded in the last 20 years



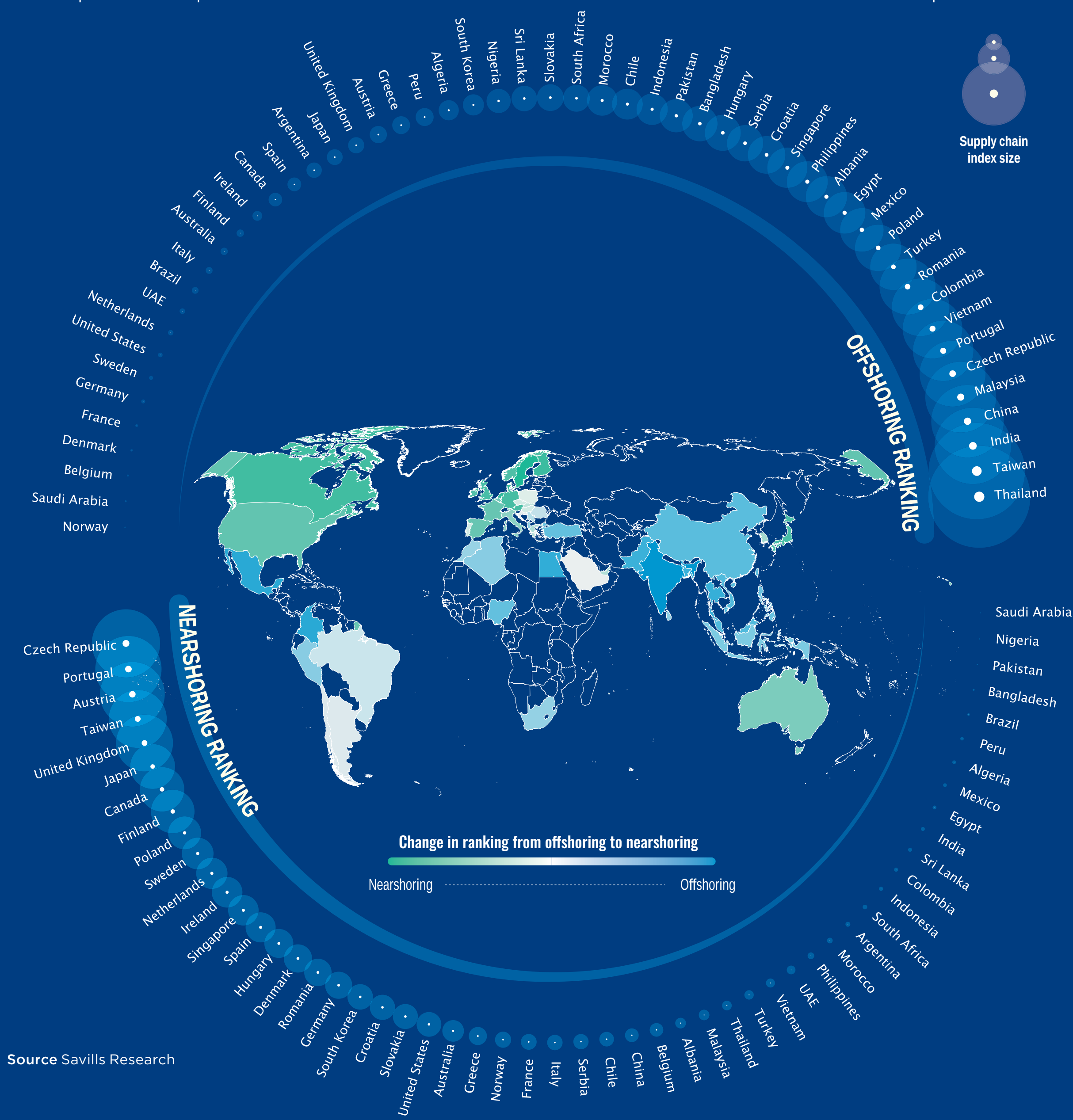
Source Savills Research using World Bank and UNCTAD data, share of global trade with bottom quartile economies ranked by political risk

THE CHANGE FROM AN OFFSHORING TO A NEARSHORING MODEL LEADS TO A SIGNIFICANT CHANGE IN THE MOST ATTRACTIVE MARKETS

To illustrate the potential shift in global supply chains, we developed the Savills Nearshoring Index. It captures the factors that influence the decision of companies on where to locate activities. It is composed of four pillars:

- **Resilience** characterised by domestic stability and proximity to local markets.
- **Economics** primarily driven by the cost of labour.
- **Business environment** underpinned by ease of doing business, quality of infrastructure, and absence of trade barriers.
- **ESG** underpinned by environmental and labour standards.

Offshoring and nearshoring locations are differentiated by the relative weighting assigned to each pillar: the Offshoring Index is primarily driven by economics, whereas the Nearshoring Index gives equal consideration to each pillar.



Source Savills Research

Images Getty Images, Piero Zagami

WORDS KEVIN MOFID, HEAD OF EMEA INDUSTRIAL AND LOGISTICS RESEARCH, SAVILLS UK

Running out of space

With investment and demand for industrial space at an unprecendented high, the logistics sector is turning to technology and multistorey use to meet the challenge

The logistics real estate business has been at the heart of a perfect storm, with long-term megatrends and current events all driving increased demand for warehousing, from both occupiers and investors. And while some short-term factors are set to ameliorate, the sector has the wind behind it for the foreseeable future.

Savills data show record take-up for logistics in 2021 in both Europe (where 38 million sq m of take-up was 28% above the five-year average) and the US, while the average logistics vacancy rate has fallen to 3.5% in Europe and 4.4% in the US.

Meanwhile, logistics yields have fallen 70 basis points during the Covid-19 pandemic, while 2021 saw global logistics investment of £237 billion, according to Real Capital Analytics. This beat the 2020 total, a record at the time, by £81 billion. "The need for additional industrial space is so great that we are even seeing some Class A office space being torn down and converted into industrial sites in the US," says Gregg Healy, Head of Savills Industrial Services, North America. "That is now considered the best use of the space. Warehouse space under construction in the US is more than 700 million sq ft. It won't be enough."

The main driver of growth continues to be e-commerce. It was rising strongly before Covid-19 and then expanded rapidly during the pandemic. Growth has since slowed but Savills still expects European online sales will be 25% of the total in 2025, compared with 15% in 2020. Warehousing specialist Prologis estimates each extra €1 billion of online spending requires a further 77,000 sq m of warehouse space.

Marcus de Minckwitz, Head of EMEA Industrial and Logistics, Savills, says: "E-commerce in the UK was about five years behind the US, and Europe is about five years behind the UK, so we have very strong growth ahead. Amazon is only recently established in Poland and Spain, for example."

Jack Harkness, Director, Industrial & Logistics, Savills Asia-Pacific, adds: "Logistics real estate across Asia-Pacific is still underdeveloped in many countries. This, plus rising e-commerce penetration rates and rising wealth across the region means the sector's foundations are strong."

The pandemic disrupted supply chains across the world, with the US and UK particularly impacted, suffering congested ports and a shortage of lorry drivers. Supply chain uncertainty means retailers and manufacturers are holding more inventory, which requires more warehousing space. "The market has seen the challenges that have been brought about by the global pandemic as an opportunity to integrate a higher level of technology in the industry and although we will continue to see challenges, technological solutions will emerge to attack future supply chain challenges," says Healy.

Technology and innovation will be needed to help meet the market's prime challenge: supply. Savills European Logistics and Industrial Real Estate Census 2021 found lack of supply and zoning for new supply were the key challenges for market participants. There is little chance of this changing, which supports continued rental growth.

Looking at the UK, for example, industrial and logistic rental growth ceases when the vacancy rate hits 12% and the balance of power shifts toward occupiers. For the UK vacancy rate to hit 12%, the market would need an injection of 7 million sq m of unoccupied space. This is practically impossible, as the record for the most UK warehousing space delivered in a year is 2 million sq m.

Even in Asian markets, where supply can be added rapidly, the market is expected to remain short of space. Harkness says: "There may be very localised examples of temporary oversupply, but most markets remained undersupplied with large modern logistics facilities, and land constraints in most markets mean this is unlikely to change."

With such a gap between supply and demand, strong rental growth can be expected across the world and occupiers are likely to tolerate this, says de Minckwitz. "Rising rents are a concern for warehousing occupiers, however they are only a small part of their overall costs, at an average of 5% of their overheads – transport and labour are far more significant. A small saving in these costs would more than balance out substantial rent rises.

"The pressure on supply will force both occupiers and developers to innovate. We will see more multistorey warehousing in Europe, especially in the best sites close to major cities. Occupiers will use automation to boost efficiency and reduce labour costs."

A potential cloud on the horizon for rental growth is the possibility of falling demand driven by declining consumer confidence from higher inflation or from a global recession, perhaps triggered by the escalating conflict in Ukraine, or geopolitical crises elsewhere. However, in the longer term, even this could be outweighed by a reorganisation of global supply chains to bring them closer to the consumer and a change from just-in-time to just-in-case inventory management. Indeed, as this supply chain evolution was driven by the upheaval of Covid-19, it seems likely that further geopolitical conflict would accelerate change.

A move to nearshoring production would benefit industrial markets in developed nations, while continued GDP growth and e-commerce penetration in developing nations means demand for warehousing will increase even if manufacturing declines. There is little sign of the perfect storm clearing.

We will see more multistorey warehousing in Europe, especially in the best sites close to major cities

Constraints on land and planning will support rents

The logistics real estate sector has been breaking records in rental growth, development, take-up and supply in the past few years, with only supply constraints seeming to hold it back. Savills EMEA Head of Industrial and Logistics Research Kevin Mofid talks to **PAUL WESTON**, regional head, UK at global logistics specialist Prologis about the short and long term outlook

Q The logistics real estate market has been growing at a breakneck pace; can it continue?

A I have been in this sector for nearly 30 years and in the early days, rents would move up or down 25 basis points depending on whether it was boom or bust! Today, we can't get enough product out to satisfy demand and that is really kicking into rental growth, like we've never seen before. On the negative side, if the cost of living rises and wages don't keep up then people will reduce spending. However, the big question is whether that would be enough of a headwind to stop the tailwinds of growing e-commerce and the desire to hold larger inventories. Based on the lack of supply and decent levels of demand, I think the market has further to go.

Q Do you think the type of buildings you develop will change over the next decade?

A Definitely. In London it is going to have to go multistorey in some way. We've been building multistorey in Japan since 2002 and while that sort of land constraint does not apply in the rest of the UK, it is getting more difficult in London. We are also seeing a split between demands for large out-of-town warehousing and smaller last-mile facilities. There will also be alternative uses for warehousing space: life sciences for example. I think we will see more pharmaceutical manufacturing in the UK, not just R&D. We don't see much demand from manufacturing, but recent supply chain problems will make people keep business closer to home.

We are also changing the way we interact with our customers. The old landlord and tenant system is ripe for disruption. People are looking for more flexibility and services. We have a line called Prologis Essential, where we provide forklifts, racking and lighting to customers, so they can get on with operations.

Q How important are ESG factors for the Prologis business and logistics more generally?

A ESG became investor's number one priority around five years ago. Prologis was ahead of this curve, building net-zero carbon buildings from the 2000s and more recently going 'beyond net zero' at our warehouse in Daventry, UK that absorbs more carbon than it emits. We're also finding that our ESG efforts are helping to drive deeper customer relationships – where we work collaboratively to enhance their sustainability performance in an efficient & cost-effective manner. For Prologis, our focus on environmental stewardship and social responsibility informs decision making from the boardroom to all markets we operate in.

Q What are the biggest risks over the next five years; is inflation the main worry?

A Inflation isn't necessarily a bad thing for us, as long as rental growth keeps us ahead of rising construction and land costs. The constraints on land and planning, which apply everywhere, will keep supply under control and support rents in the absence of a big drop in demand. Warehousing has become surprisingly high-tech and disruption from automation and technology is a risk, but also a positive. We have a unit called Prologis Ventures, which invests in tech and tech companies in our sector. It's another way of helping our customers with their pain points and, like Essentials, is changing our relationship with them for the better.

WORDS KELCIE SELLERS, ASSOCIATE, SAVILLS WORLD RESEARCH

Savills predicts an average 8-10% decrease in demand for offices across Europe due to new ways of working

A new era of work

New technologies, demographic changes and the impact of Covid-19 have transformed our views on where and how we work. We highlight the value of technology, talent and diversity, and how the work environment can nurture wellbeing and productivity

The Covid-19 pandemic is the event to have recently caused a seismic shift to office life, but this will be just one of many challenges ahead for the world of work, as well as the role and design of the office.

Over the coming decades, business will have to manage an ageing demographic, changing worker profiles through diversity, increasing worker powers and plateauing productivity.

Ageing is a major long-term challenge. Most countries – especially those categorised as developed – are experiencing a shrinking labour supply as they fail to meet their population replacement rate. Without in-migration, populations will decline, causing an imbalance of workers compared with the number of pensioners needing support in the relatively near future.

After decades of the one-child policy, China has one of the lowest fertility rates in the world with 1.3 children per woman. While the policy has been dropped, one-child families are still the cultural norm. In Italy, families commonly had more than four children, but now average fewer than two. The US is an outlier with positive youth growth – mainly through migration – despite the country's fertility rate falling steadily since 1950.

Only in developing countries is it a different story. Populations of more than half of Africa's 54 nations will double, or more, by 2050, on the back of sustained high fertility and improving mortality rates.

THE NEED FOR TALENT AND DIVERSITY

Firms will also need to step up to attract and retain talent, with diversity already a high priority for most employers. There is a practical need to increase the entry of people from marginalised and underrepresented groups in the workforce, and to attract more women and older workers. This will be about processes – blind recruitment practices to level the playing field, and closing wage and benefit gaps. Companies will need to accept flexible working to win the war for talent and to increase participation from parents, more women, and caregivers of all types. The reality will be more employee-focused: blended working arrangements (hybrid or remote), more annual leave and more flexible or fewer hours.

THE GREAT RESIGNATION

Meanwhile, the pandemic has instilled a greater sense of power among workers. Where new demands around working patterns and flexibility have not been met, or individuals have been prompted to rethink their career paths, there has been a swathe of departures in some jurisdictions, which has become known as 'the great resignation'.

Increased worker power has seen a drive for unionisation, particularly in the US, where membership was on the decline. This collective bargaining power is largely about reconnecting wages to productivity after decades of output gains in output not being translated into higher real wages for workers.

Present in the background of these other changes is slowing productivity. Growth in productivity has run almost 3.5 times ahead of real wage growth since 1949 but is now stagnating, even with a rise in technology. Some countries, such as Iceland, trialled a four-day working week in order to boost productivity and worker happiness. The UAE has moved to a Monday-to-Friday working week, to bring it in line with Western and Asian markets.

Companies will turn to technology, particularly the increased use of robotics and automation, with more individual tasks able to be automated through artificial intelligence and sophisticated algorithms. This will alter both the types of jobs available, their number and their perceived value.

By replacing workers doing routine, methodical tasks (in professional services industries), machines can amplify the comparative advantage of workers with problem-solving, leadership and creativity skills. However, in manufacturing and service industries, there is a risk of worker displacement and the hollowing out of the labour force as the need for large numbers of workers is removed.

All these trends will filter down to changes to the office, which must now prove its worth. The pre-pandemic emergence of the gig economy and the consequent rise in flexible office

Annual global productivity growth

1.7% 2001-2007

GLOBAL FINANCIAL CRISIS

0.5% 2008-2021

space is now likely to embed in the working culture. Savills Office FiT 2021 survey says that 12% of workers would be interested in co-working space compared with 3% one year prior.

The type of flexible space on offer is expected to become more diverse, with locations both in city centres and suburban areas. With Savills Landlord Flex Survey saying that coffee shops, hotels and client offices were also popular locations for home working, flexible offices may start to sit between office and home – an office environment without the commute.

Overall, demand for flexible space is also likely to increase with the great resignation seeing more people opt for freelance work. In the UK, enquiries for flexible office space are up 82% on pre-pandemic levels.

Savills Research predicts an average 8-10% decrease overall in demand for offices across Europe as companies adapt to new ways of working. Some of this space could switch to flexible space while others could be repurposed into alternative uses such as residential.

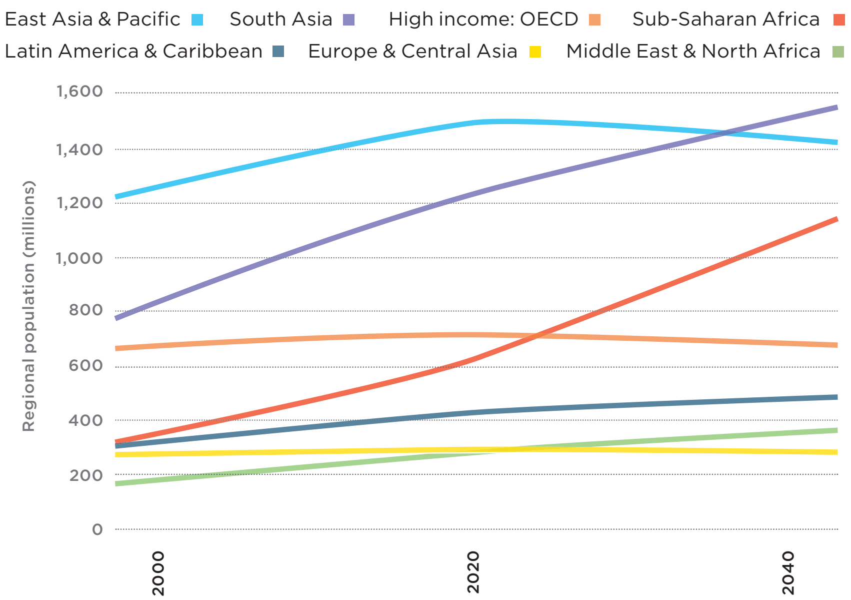
Location-wise, city centres are expected to retain their appeal for offices. In the US, the hub-and-spoke model is likely to prevail, with flexible offices supporting locations close to residential areas.

Near term, shortfalls in local or domestic workers can be filled by positive net migration. In the long term, some companies may choose more emerging cities to seek out larger working-age populations, as is being seen in Egypt and Saudi Arabia for Middle Eastern operations.

Inside the office, culture and branding will need to become integral to designing companies' headquarters to reflect the value of diversity, as employers try to win employees back. Office life is finding favour again: the 2021 Savills Office FiT survey reported that 63% believed colleague collaboration is best achieved at the office, while 25% (up from 16% a year earlier) said they concentrate best in the office.

After a prolonged period of working from home, an increased number – 28% versus 18% – also thought the office best facilitates mental health. Space to enhance this needs to be consciously designed and inclusive; offices will be places to meet and build connections, and they need to engage all five senses to increase productivity and worker wellbeing.

Change in global working-age population by region 2000–2040



Source Savills Research using Oxford Economics

NORTH AMERICA

Connect your employees

ANN DUNCAN, VICE CHAIRMAN, CHIEF STRATEGY OFFICER & CHIEF DIVERSITY OFFICER OF SAVILLS NORTH AMERICA

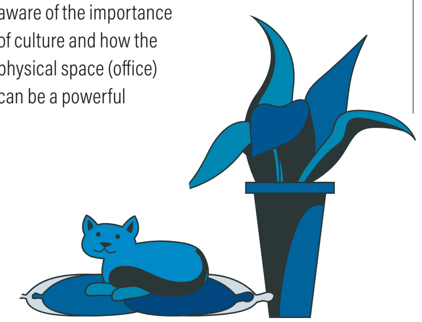
New-found flexibility due to the pandemic is starting to individualise people's experience of working life in the US and Canada," says Ann Duncan, Savills North America. "For many, it's been two years of working from home. During this time, we've changed – employees have high expectations of work and flexibility."

According to the 2022 Microsoft Workplace Trend Index, 73% of employees hope that flex will stay, yet more than 50% of leaders want employees back in the office full-time. "Many organisations here are creating and testing workplace strategies that will work for their organisation and culture while allowing them to still compete for talent," says Duncan.

"Leaders are also aware of the importance of culture and how the physical space (office) can be a powerful container and expression of the culture," she says. "Creating an office that is healthy, comfortable and safe is fundamental, but providing a variety of space types for people to choose from will help employees thrive."

Understanding your workforce and its diversity is essential. "You might think older people want to go back to the traditional work model, but that's not the case. It's our young people who want to be mentored and coached."

"People need to feel included regardless of where they are working," says Duncan. "Update collaborative technology and create new norms to ensure everyone is seen and heard. With the right intention and focus, it could create a better way of working for many organisations."



MIDDLE EAST

Reconfigure space for new needs

PAULA WALSHE, HEAD OF INTERNATIONAL CORPORATE SERVICES, SAVILLS DUBAI

A younger, well-educated workforce is increasing the appeal of emerging Middle Eastern corporate office locations in Cairo and Riyadh. "Both of these markets have a very high youth population. They have an increasingly educated workforce, particularly among younger people. I think that corporate companies are seeing opportunity there," says Paula Walshe of Savills Dubai.

There is significant growth in sectors such as tech, pharmaceutical and professional services. "If you're a manufacturer or a tech developer, then those markets are really attractive to you as the next generation, the next place to be," says Walshe.

Saudi Arabia has ambitious plans for growth and to diversify away from oil and gas. In addition, corporate companies looking to carry out business with the government from 2024 will need to be headquartered in the country.

In more traditional office locations such as the UAE, the lack of prolonged pandemic lockdowns meant the mindset shift towards hybrid and flexible working is not a homegrown trend. Instead, it has emanated from the presence of international corporate occupiers putting in place global policies for staff.

Many international companies have remained in the same space but reconfigured it to hybrid working standards. "They are reorganising to include more collaboration areas, space for people to come in and engage with their colleagues rather than just sit at a desk," says Walshe. Offices are also being reconfigured for video meeting rooms in the UAE, which, prior to the pandemic, had restricted access to video conferencing.

Other companies have upgraded to better quality space, a move led by the war for talent and ESG considerations.

ASIA-PACIFIC

Serviced offices: an intermediate space?

SIMON SMITH, REGIONAL HEAD, RESEARCH & CONSULTANCY, SAVILLS ASIA-PACIFIC

While Asia-Pacific is too large to generalise, in many of the advanced office markets, Singapore, Hong Kong, Tokyo and Shanghai, there are few drivers to shift companies out of the office.

All these cities tend to be significant service sector employment hubs with fast commutes through modern transportation systems.

In addition, culturally, life is not conducive to working from home: houses are small by global standards, residential areas are often densely populated (lots of noise, often from new construction) and there is much more multi-generational living. In the summer, air-conditioned offices also offer a welcome refuge for workers.

Multinationals are most likely to consider hybrid working and have also led a wider change in workspace design: flexible desk space, breakout areas and pantries are now more commonplace.

"There is a greater focus on amenity these days and more open-planning," says Simon Smith of Savills Asia Pacific. "Traditionally there have been more glassed-in offices for senior staff but these are becoming much less common."

Another beneficiary for those trialling hybrid working has been the serviced office sector in the region, which, Smith says, is providing a good intermediate space in between the office and home.

There may also still be a long tail to the hybrid trend because of the economic implications. "In Asia's most expensive office markets, you can save a great deal of cost by cutting out office space, which makes the flexible working model suddenly much more appealing. In the more expensive markets, office costs are quite a significant proportion of total operational costs, so that for many is quite a lure," says Smith.

GLOBAL

Please your employees to keep your culture

KATRINA KOSTIC SAMEN, DIRECTOR, HEAD OF WORKPLACE STRATEGY & DESIGN AT KKS SAVILLS

"Emotive reasoning is entering decision-making for companies as they think about their working relationships with their employees, as well as their office space," says Katrina Kostic Samen, KKS Savills. "It's not just about class A buildings or floor-to-ceiling glass, but 'does this space really value the experience of me and my staff?'"

That understanding is now more relevant because of the equal discussion that needs to happen to find the sweet spot between employees' demands for flexibility and a company's need to get the right value from its team.

"The pendulum was always in the employer's favour, and it definitely has swung in the past 12 months to the employee, but I do think there will be a shift back to somewhere in between," she says.

"There is clearly a shift in taking account of employee expectations and workplace experience returning to the office," says Kostic Samen.

There are quick wins, especially those that are tactile and appeal to the senses: paint walls to add colour, hang some art and include plants for greenery. Reorganising space to create smaller meeting areas for video calls, or even bigger spaces for collaboration, might be harder than expected as they often require a shift in acoustic provision and mechanical air flow.

And, even if working patterns are still in a state of flux, the main piece of advice is to get started.

"You just get on with it and you keep it very flexible, you design it really well and have an inclusive process on the work strategy and design," says Kostic Samen. "If you wait for the perfect moment to design the perfect office, you'll have missed the opportunity to keep your culture together."

WORDS PAUL TOSTEVIN, DIRECTOR, & KELCIE SELLERS, ASSOCIATE, SAVILLS WORLD RESEARCH

> On average, 28% of total stock in the top 20 cities is green certified, meaning that over 70% of existing stock will need to be retrofitted or repurposed in the coming years to meet strengthening environmental standards

The rise of green offices

Investors and occupiers face the challenge of bringing office stock up to new environmental standards. But who is leading by example? We examine regional legislation and initiatives, and rank global cities by their number and share of green certified offices

In cities across the world, office stock is being reassessed as environmental, social and governance (ESG) commitments grow in importance for organisations and investors alike. Our analysis of the global distribution of LEED, BREEAM and WELL office buildings shines a light on the most progressive cities in terms of adopting green certification. Here, the US is well represented in our top 20 cities by number of green certified offices, as are commercial hotspots such as London, Paris, Beijing and Shanghai. "We are seeing big increases in demand for in-use certification," says Brad Johnson, Principal Sustainability Consultant, Savills. "In terms of other benchmarks, we cannot ignore GRESB as an international reporting tool."

Savills Research also examined the data in terms of cities with green certified office space as a share of total stock (see page 28). Again, many US cities feature strongly, with comparatively high proportions of green certified offices, often as a result of national and state legislation. However, many cities analysed have opportunities for growth in green certified office stock. On average, 28% of total stock in the top 20 cities is green certified, meaning that more than 70% of existing stock will need to be retrofitted.

This future upgrade of office stock will be driven both by occupiers and investors. There is strong competition in the investment market for office buildings with high green credentials and pricing for these assets is keen. On the other hand, interest in value-add opportunities – buildings in good locations that can be retrofitted – is also rising, but pricing needs to reflect the capital expenditure required for upgrading. Local conditions and market dynamics mean solutions can be highly localised and tailored.

And there's one more thing. "Bringing office stock up to standard is not just about building certifications, it's also about management," says Tanya Broadfield, Director of Sustainability, Savills. "Particularly relevant are ISO 14001 in Environmental Management and ISO 50001 in Energy Management (an extremely useful tool for net-zero pathways). For example, BREEAM/LEED would give you a great score if you had a solar panel on the roof, even if the solar panel was broken and no one knew how to use it. ISO focuses on the actual operational management of a site and requires performance improvement."

UNITED STATES

With companies trying to win the war for talent, a greener office is now an important part of the mix in the US. "Companies are trying to earn back the commute," says Sarah Dreyer, Senior Vice President, Head of Americas Research, Savills. "They want to get employees back to the office, collaborating, and using space in a different way. Sustainability is one of those factors."

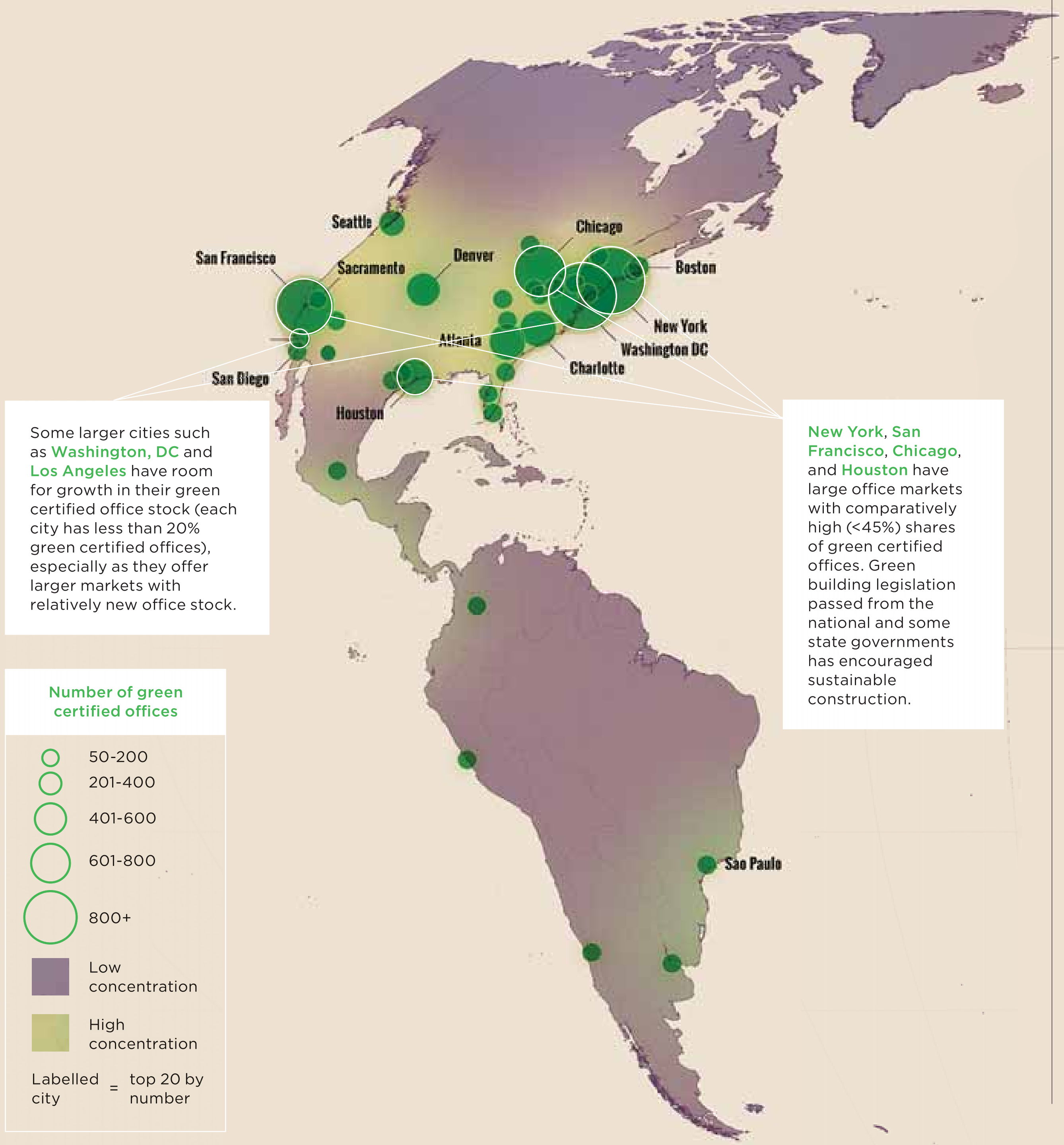
It's difficult to separate out the trend as it's wrapped up in lots of other drivers, such as softer markets post-pandemic that have allowed companies to seek out amenity-rich locations with better green credentials. But there is no doubt that the pandemic has ratcheted up the requirement.

Occupiers will consider new buildings, as well as those that have been well retrofitted. However, upgrading space is a tough ask for owners in a market with rising construction costs. For many, that means delaying environmental upgrades until some of the risk is mitigated. "Some are going out to market to see if they can get a big anchor tenant to help with that pre-lease activity," says Amanda Thomas, Senior Director, Project Management, Savills US. "Others are getting in their permits and then using that time as their marketing time." For types of offices that are now less favoured, repurposing has become an option.

In Orange County, California, 2.4 million sq ft of office space across nine buildings was sold in 2021 to industrial developers to be converted to last-mile fulfilment space. The same trend is now being seen in Los Angeles for office properties in heavily industrial-zoned areas.

TOP 20 CITIES BY NUMBER OF GREEN CERTIFIED OFFICES

The distribution of LEED, BREEAM and WELL offices globally
Labelled cities = top 20 by number of green certified offices



MORE THAN 40% GREEN CERTIFIED OFFICE SPACE*

Chicago, US · **Houston, US** · **New York, US** · **San Francisco, US** · Warsaw, PL

20% TO 40% GREEN CERTIFIED OFFICE SPACE*

Bengaluru, IN · Bucharest, RO · Budapest, HU · **Charlotte, US** · **Denver, US** · Frankfurt, DE · **Madrid, ES** · Minneapolis, US · **Sacramento, US** · San Antonio, US · **São Paulo, BR** · **Seattle, US** · Singapore, SG · Tampa, US · **Washington DC, US**

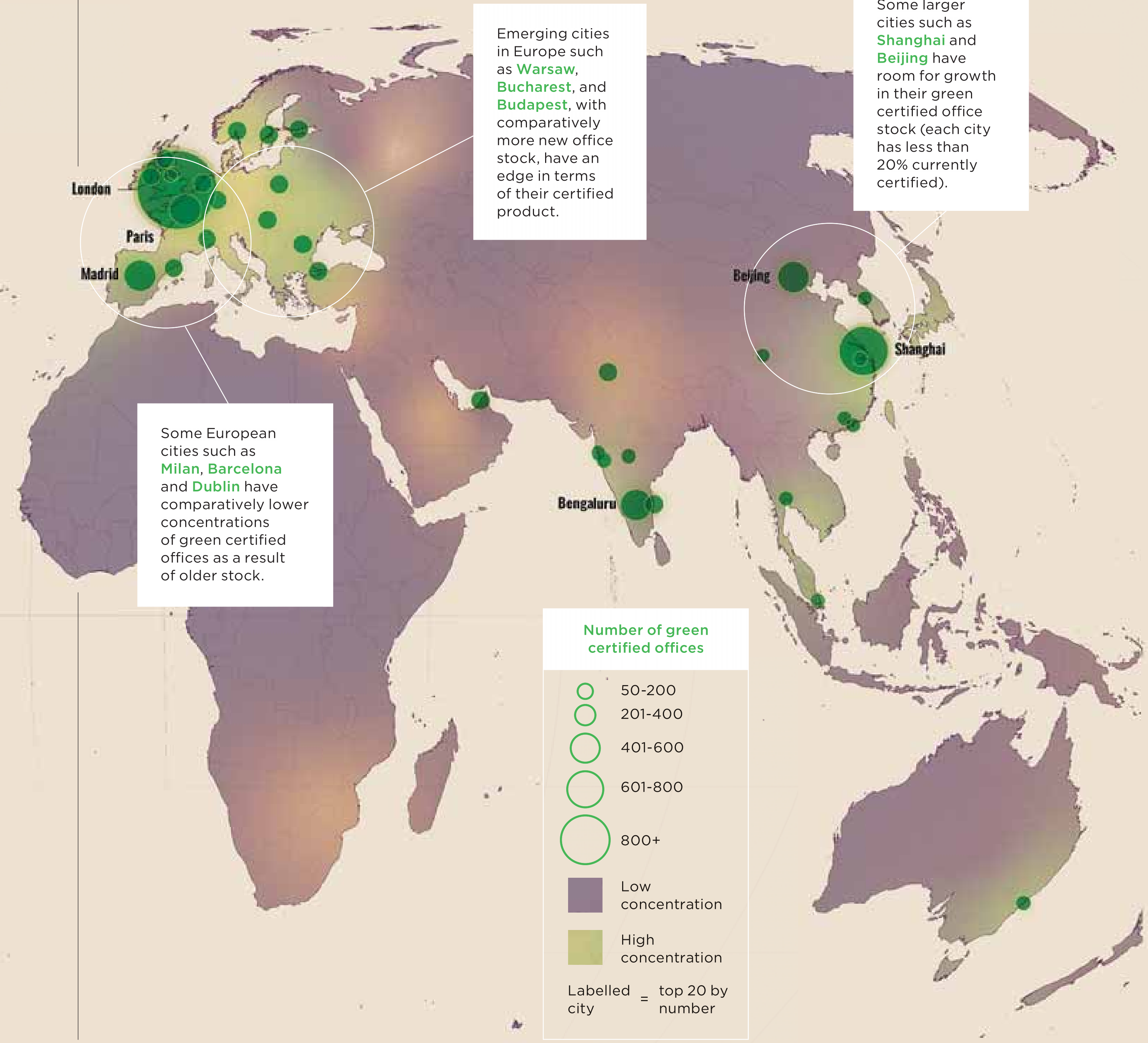
LESS THAN 20% GREEN CERTIFIED OFFICE SPACE*

Atlanta, US · Austin, US · Barcelona, ES · **Beijing, CN** · **Boston, US** · Dallas, US · Dubai, AE · Dublin, IE · Guangzhou, CN · Hong Kong, HK · **London, UK** · **Los Angeles, US** · Miami, US · Milan, IT · Mumbai, IN · Nashville, US · Oakland, US · Oslo, NO · **Paris, FR** · Philadelphia, US · **San Diego, US** · San Jose, US · Seoul, KR · **Shanghai, CN** · Shenzhen, CN · Stockholm, SE

* As a percentage of total office stock. Cities in **bold** are top 20 cities by *number* of green certified offices

TOP 20 CITIES BY NUMBER OF GREEN CERTIFIED OFFICES

The distribution of LEED, BREEAM and WELL offices globally
Labelled cities = top 20 by number of green certified offices



Images Getty Images, Piero Zagami
Source Savills, LEED, BREEAM & WELL

EUROPE

Existing and upcoming regulation is a strong driver for environmental upgrades of buildings across Europe, with Energy Performance Certificates (EPCs) being one of the main metrics for change. From 2023, landlords will be unable to let buildings in the Netherlands with an EPC rating below a C. In the UK, landlords will likely have until 2030 to ensure all their buildings hit a B rating, although there are some exemptions. EPCs derive from European legislation but were enacted differently at country levels.

These ambitious targets support net-zero goals but require major investment by


Rotterdam, the Netherlands

owners in the intervening period. Currently, more than 11% of the office stock in the Netherlands does not meet the legislation criteria set for 2023, while more than 32% has no energy label at all yet. In the UK's major cities, that figure is starker, with 87% of office stock predicted to become unlettable as it doesn't currently meet a B rating. Savills Research estimates that the cost to get the entire commercial office stock in England's six largest cities to an EPC B rating could be as high as £63bn ($82bn)

Other metrics point to greening being the only direction of travel. "Across all European offices, on those that have a BREEAM rating of very good or above, the yields have compressed by an additional 44 basis points in the past 12 months," says Mike Barnes, Associate Director, Savills European Research. For buildings not making the cut, repurposing is being seen most strongly in Europe. "We are seeing house prices rise, so there could be potential for conversion to residential in the right locations to create more mixed-used environments," he adds.

MIDDLE EAST

The Middle East may have a relatively young office stock, with most of the space built in the past two decades, but this is not making the environmental challenge any easier. A desire to replicate established international markets has left the region with many energy-intensive, glass façade skyscrapers struggling with heat retention and cooling issues in Middle Eastern climes.

However, there are efforts to improve. In the UAE, for example, governments are promoting more environmentally friendly space, while in Abu Dhabi, all government entities must take space in buildings certified by the Pearl Rating System, a region-specific framework to evaluate sustainable building development.

The Kingdom of Saudi Arabia is the largest construction market in the MENA region and sustainability is at the heart of activity. The office market, in particular, is on the cusp of strong growth, with many international corporates set to enter. As a result, most of the recently completed and upcoming developments are built on sustainable principles, to ensure global compliance and set new benchmarks on sustainable development.

In Egypt, host of the 2022 UN Climate Change Conference, authorities are keen to showcase the nation's green credentials after it was selected in recognition of its progress on climate adaption. LEED is the most commonly adopted certificate with around a dozen office buildings rated.

International occupiers now insist on environmental standards instead of accepting market norms.

"We're seeing more corporates either push their landlords to make sure they're retrofitting the building to meet the basic global standards, or they are moving out of their building completely and looking at new developments," says Swapnil Pillai, Associate Director in Savills Middle East research team.

This focus on prime is expected to cause problems for lower-grade buildings. For


Beijing central business district

owners of grade C and D buildings, the high levels of vacancy in the region – 30% in some locations – means that even with a costly retrofit, there is no guarantee of a tenant.

ASIA-PACIFIC

Premiums are starting to be seen in the Asia-Pacific market for highly rated green buildings, whether that is in rent or capital uplift. "We hear of transactions that have not gone ahead because environmental ratings weren't met," says Sam Crispin, Regional Head of Sustainability and ESG, Savills Asia-Pacific. "We see that as an opportunity for investors with the expertise to come in, upgrade a building and then achieve the premium when they exit their investment." Crispin adds that the rental premium for a newly built, highly rated sustainable building is likely between 5% and 10%.

Environmental improvements are being driven by a range of factors: the business case for reducing operational costs, occupier pressure, and mandatory reporting measures, most commonly for the listed sector. For example, Hong Kong now has mandatory ESG reporting, which drives change as "the expectation is that there's continuous improvement," says Crispin.

One significant challenge that remains is the lack of renewable energy sources, which are not as readily accessible as in other regions. In addition, smaller mid-cap property companies are finding it difficult to implement change without the same access to resources and education on the topic.

WORDS PAUL TOSTEVIN, DIRECTOR, & ERI MITSOSTERGIOU, DIRECTOR, SAVILLS WORLD RESEARCH

Life sciences in the spotlight

The pandemic shone a light on the importance of the life sciences sector. But as the industry continues to grow, what does the future hold – and what role will real estate play? We examine three key trends

1 THE US, CHINA AND THE UK ARE HOME TO THE LEADING CITIES FOR LIFE SCIENCES

In the world of life science locations, the US and China continue to dominate. The two countries take 10 of the top 20 places for Savills Science Cities based on important factors for the life sciences sector, such as human capital, investment into health and R&D, and the cost of property in each market.

While the pandemic has demonstrated the importance of the life sciences industry worldwide, the weight of global venture capital is targeted at the innovation and ideas emerging from top US cities such as Boston, San Francisco, Seattle and San Diego, as well as Shanghai, Beijing and Suzhou in China.

What these cities offer is the clustering of leading universities, science parks and research institutes, coupled with strong hospital infrastructure critical to R&D, as well as pools of skilled professionals either domestically or attracted through in-migration. On top of that, there is a healthy private funding environment through venture capital as well as government support.

Louisa Luo, Head of Industrial and Logistics, Savills China, says, "The Chinese government is investing increasing amounts into research and development in order to build up scientific and technological self-reliance. The home market is large and growing rapidly – a result of the ageing population, increases in lifestyle diseases, rising affluence and a willingness to spend more on health and wellness."

While cities in the US and China dominate, other locations such as the UK, Japan, Germany, Switzerland, France, Singapore, Australia and Ireland are all major players.

Tom Mellows, Head of Science, Savills, says the UK has seen a leap in Series A funding, a jumping-off point for companies towards bigger space requirements.

"Just in London alone, we've seen a 300% rise in the number of companies hitting that more mature funding round or getting beyond it," he says. "As a result, we've seen a real increase in the number of companies wanting those bigger amounts of space and wanting to do R&D." This includes AstraZeneca increasing its office space at the King's Cross cluster and GSK in the market with a large requirement for West London.

TOP 20 SAVILLS SCIENCE CITIES

1 Boston
2 San Francisco, Bay Area
3 Seattle
4 San Diego
5 New York
6 Shanghai
7 Philadelphia
8 Research Triangle, NC
9 Oxford
10 Cambridge
11 Beijing
12 Tokyo
13 London
14 Mainz
15 Singapore
16 Basel
17 Paris
18 Sydney
19 Dublin
20 Suzhou

Source Savills Research

Image Getty Images

140,000 square feet Every $1 billion of Series A venture capital funding into life sciences equates to approximately 140,000 sq ft of demand for space created

2 LIFE SCIENCES VC FUNDING SURGE DRIVES TAKE UP

In 2021, annual total global venture capital funding into life sciences crossed the $100 billion mark for the first time, with the growing scale of individual raises feeding directly into real estate requirements. According to PitchBook, around 18.4% of the total $102 billion raised globally was Series A funding, capital that signals the company is ready to scale and take a longer-term view.

"The seed rounds are what used to be your Series A – usually $20 to $30 million. Series A funding right now is typically $60 to $100 million," says Austin Barrett, Executive Vice President, Head of Life Sciences, Savills US. "Investors have such ambitious goals in terms of hiring and research. Science is thus translating to more space – 15 people are leasing 40,000 square feet."

Every $1 billion of Series A venture capital funding into life sciences equates to approximately 140,000 sq ft of demand for space created. Based on the 2021 totals of $18.9 billion for Series A capital, the market should anticipate approximately 2.6 million sq ft of new life sciences requirements across the major life sciences hubs globally.

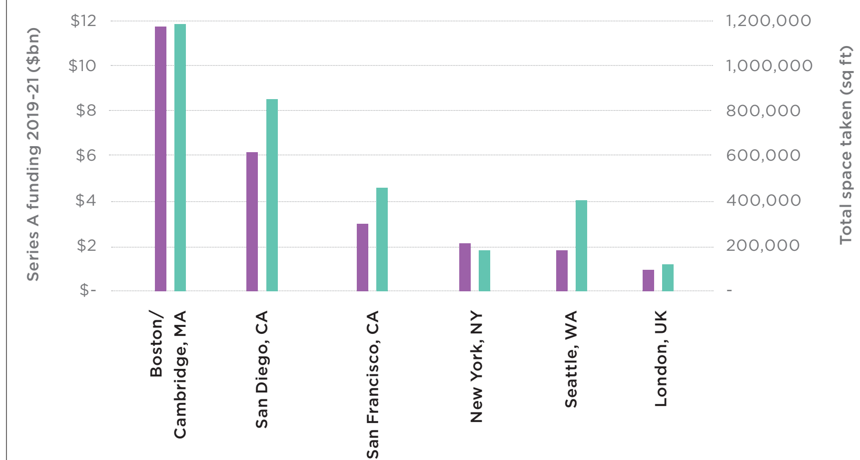
Larger space needs support strategies from companies to condense expensive time-to-market, building in flexibility to grow as well as pivot based on changing science and clinical trials. Demand is also being predominantly driven by lab requirements, which are now 60/40 in favour of labs in terms of proportions of space, up from 40/60.

Real estate investors in the US have responded with major programmes of buying up offices to convert to lab buildings. Boston's lab rents, at $103 per sq ft, are at a 50% premium over offices in the city. "They're underwriting big rents, assuming lab users," says Barratt. "That is driving the growth in the market and a massive surge in rental price, which in turn requires companies to raise more money to take on more space than they need."

This space will be concentrated in the knowledge hubs of Boston, San Diego, Seattle and San Francisco. However, needs are spreading to emerging locations as the sector grows and expands such as Raleigh-Durham, Houston and Atlanta.

Series A funding into life science companies fuels take-up in knowledge hubs

Series A funding into life science companies (2019-21)
Approximate sq ft of space occupied following Series A funding



Source Savills Research, PitchBook Data, Inc. Data has not been reviewed by PitchBook analysts

3 PANDEMIC SPURS RESHORING OF MANUFACTURING

While the focus on health and vaccine development during the pandemic was a boon for life sciences, it was also a disruptive time that exposed the medical sector's vulnerabilities.

Demand for medication and critical care equipment coupled with global supply chain issues led to shortages of supplies and pharmaceuticals, even resulting in non-medical industries stepping into manufacturing roles. The experience has renewed the sector's plans to strengthen the resilience of its supply chains, including reshoring manufacturing facilities.

"One thing that came out in the pandemic was that the UK had all this great science, but it didn't have the ability to manufacture it," says Tom Mellows, Head of Science, Savills UK. "This is why Oxford partnered with AstraZeneca – they had the platform to manufacture."

Government funding, tax incentives and regulation are expected to play an important role in supporting the transition to bring manufacturing closer to the science, particularly due to the high levels of capital expenditure required.

While reshoring is considered a good way to achieve more resilient supply chains, complexities will slow down the process. In the mid term, demand for manufacturing space from major companies is expected to grow in existing hubs such as the US and UK, and in the long term with growing requirements in emerging markets with skilled and cheaper labour such as Southern and Eastern Europe and locations such as Houston and Atlanta in the US.

Reshoring strategies are also expected to lead to more partnerships including mergers and acquisitions with new office/lab space requirements as a result of consolidation, rationalisation and upgrade of existing facilities.

WORDS PAUL TOSTEVIN, DIRECTOR, & LUCY PALK, ANALYST, SAVILLS WORLD RESEARCH

Fresh horizons for hybrid work

High-speed internet: check. Great climate: check. Quality of life: check. Untethered from the office, executive nomads are spending larger parts of their year working in locations such as these

As parts of the world loosen Covid-19 restrictions, offices and schools re-open and families return to their homes in the city, it appears that some pandemic-era innovations – contactless retail, to-go cocktails, greater flexibility in the workplace – will occupy a more enduring place in our culture. Over the course of the pandemic, with platforms such as Zoom and Microsoft Teams facilitating everything from virtual meetings, screenings, signings and launches, even high-level executives have been able to adopt a more flexible lifestyle.

The modern executive nomad – a distant cousin of the freelance creative working from a cafe in Bali or Costa Rica – splits their time between London and a villa in the Algarve, where they attend Zoom calls from an airy home office and replace the evening commute with a jog on the beach.

According to the Savills Executive Nomad Index, which examines the appeal of destinations for long-term remote workers, executive nomads are seeking out prime residential markets from the Caribbean to Portugal, and turning what were previously holiday-home markets into year-round ones.

Providing flight connections are good and high-speed internet is reliable, agents say that many individuals and families are motivated to spend at least part of their year away, particularly in locations with balmy year-round climates.

Key factors guiding the rankings, which include overall quality of life and quality and cost of rental stock, put cities such as Lisbon, Miami and Dubai at the top of the list. Notably absent from the index are cities in Asia where Covid-19 has not resulted in a similar migration to lifestyle hubs in the region.

As the pandemic enters a new phase, mandates like masks and travel restrictions might eventually fade from our collective memory, but the workplace has evolved from an office where employees largely sit in front of screens to a new, more adaptable model that focuses on promoting human connection, wellbeing and creativity to advance productivity and generate new opportunities.

Lisbon

EXECUTIVE NOMAD INDEX: 1

Prior to the pandemic, Lisbon was already a mecca for digital nomads drawn by the sunny climate, relaxed beach vibe and low cost of living. This trend has only intensified with an influx of residents newly able to work remotely.

"Here's a good example," says Ricardo Garcia, Director of Residential at Savills in Lisbon. "I was at the beach recently and the couple beside me both work for an IT firm in Ireland. They had visited Lisbon, loved it here, and now they've moved and work remotely."

Young professionals typically rent one- to two-bedroom apartments in the city centre, Garcia says, while families look for larger homes in Lisbon or Cascais, a beachfront community close to the best international schools.

Garcia says tech executives and entrepreneurs are also drawn by Lisbon's burgeoning status as a tech hub. "We have seen an increasing number of executive nomads from the US as well as those based in the main European cities," he adds.

He cites low real estate costs, the ease of setting up a company, and a strong local talent pool as factors driving the startup scene.

"Companies are moving their headquarters to Portugal, says Garcia. "The area is becoming more and more international so I don't see Lisbon or Portugal slowing down any time soon."

Executive nomads are turning what were previously holiday-home markets into year-round ones

Lisbon, Miami and Dubai offer executive nomads connectivity, favourable climates and a high quality of life

Miami

EXECUTIVE NOMAD INDEX: 2

Beaches, yacht clubs and golf courses, plus a lack of state income tax, have long made Miami a popular destination for buyers relocating from America's Northeastern states and beyond. Remote working policies have only boosted sales.

Over the pandemic double-digit growth was seen in the condo and house markets in South Florida, with sales driven mostly by executives from the finance and tech industries who took advantage of low interest rates and work-from-home policies.

"These nomads are purchasing or renting in the best neighbourhoods," says Edgardo Defortuna, CEO and President of Fortune International Group, Savills associate in Miami. Families typically settle in residential areas like Miami Beach, Coconut Grove and Coral Gables, he says, while renters prefer Brickell or Downtown.

With tech investors and financial service companies like Goldman Sachs and Blumberg Capital building presence in South Florida, Miami has become a major hub for finance and technology companies.

Dubai

EXECUTIVE NOMAD INDEX: 3

Dubai has long hoped to attract the world's wealthy through a mix of lifestyle perks and tax incentives. Over the pandemic it seems the strategy clicked. "Remote working enabled business owners from abroad to make Dubai their main hub," says Helen Tatham, Head of Residential Community Sales & Leasing, Savills. In 2021, rents and sales volumes saw increases not witnessed since 2014, driven by existing renters who wanted to make Dubai their permanent home, and by an influx of new residents.

UK nationals have long favoured Dubai, but the market also benefited from French, German, Swedish and Swiss buyers. Palm Jumeirah, Dubai Marina, Emirates Living, Arabian Ranches and Downtown saw high demand, particularly large villas and apartments. "Any waterfront location with good facilities or villa communities," says Tatham.

And she doesn't see Dubai's trajectory changing course any time soon. "It has an amazing lifestyle, good schools and restaurants and is one of the best-connected cities."

The Algarve

EXECUTIVE NOMAD INDEX: 4

Jamie Robinson, Director of Sales at QP Savills, has been based in Portugal's southern coast for nearly 30 years. The last two have been notable. "Priorities have changed," he says. "People are making their holiday homes more permanent."

The Algarve's climate and beaches have long made it a popular second-home destination but, increasingly, buyers are purchasing homes to use year-round. "Clients are looking for office space, which wasn't even on the agenda before, and high-speed internet, which we have here."

Buyers are also younger. When Robinson began selling homes in the region, the average age was in the high 60s, now it's the mid-50s. "We see a lot of younger families, people swapping a two or three-bedroom flat in London for a five-bedroom house." Schools have improved, while Faro airport accommodates flight times of two to three hours to most European cities. "I can't see people going back to working as before," says Robinson. "Many are looking to take advantage of the lifestyle improvement, if they can."

Barbados

EXECUTIVE NOMAD INDEX: 5

Barbados, the highest-ranked Caribbean island on the list, was among the first to leverage the potential of mobile living and working created by the pandemic. By July 2020, the government had introduced a 'welcome stamp' that allowed overseas individuals or families to work remotely on the island for a maximum of 12 months. While visitors initially rented, many fell in love with the island and began purchasing properties. Eventually, many people who initially came as guests skipped the rental step altogether and moved directly to purchasing, explains James Burdess, Head of Caribbean Sales, Savills. "Barbados has traditionally been the island of choice in the Caribbean for vacations. Now this has turned into home purchases."

Burdess says it's the superior amenities, such as high-speed internet, that set Barbados apart from neighbouring islands. Beachfront locations are the most sought-after, though prices there are at least 50% higher. Meanwhile, the redevelopment and new development of waterfront towns such as Bridgetown, Holetown and Speightstown are specifically targeting digital nomads with a 'Live, Work and Play' theme. "This build-up of product to satisfy a growing demand should see an increase of property sales over the next few years," Burdess says.

Barcelona

EXECUTIVE NOMAD INDEX: 6

Barcelona's digital nomads have been known to frequent the city's co-working spaces, beaches and parties with equal gusto. But over the pandemic, agents also noted an uptick in inquiries from senior level executives with greater flexibility.

"There's been a change of mindset," says Mohammad Butt, Lucas Fox, Savills associate in Spain. "With Zoom and Skype, people realise they can be as productive, if not more productive,

and at the same time have a better quality of life."

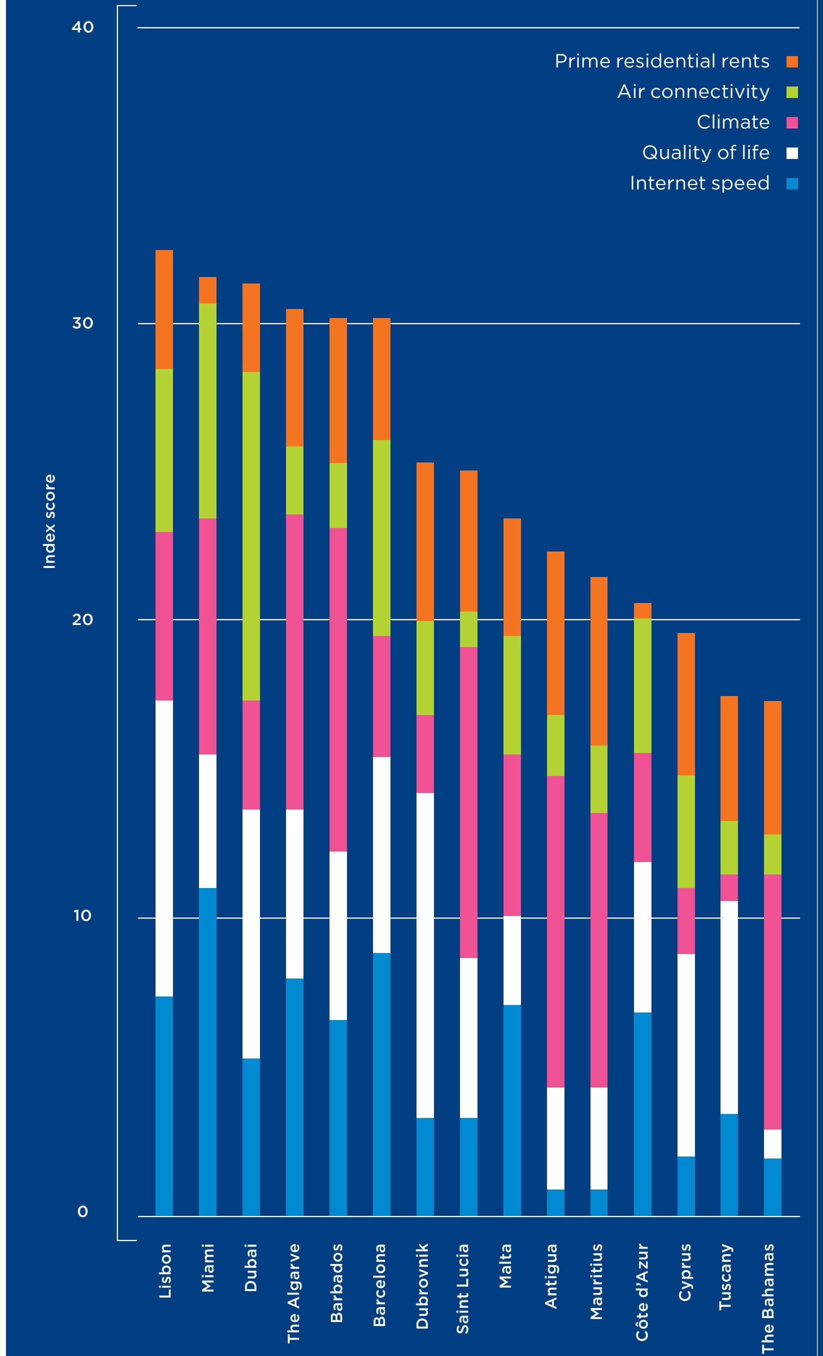
"Barcelona is a beach town but it's also cosmopolitan," says Butt, and he believes this, along with sizeable investment in tech and infrastructure, distinguishes it from other European cities.

Inquiries have come from executives as far afield as North America, though he says the majority of nomads are relocating from northern Europe, the UK and Scandinavia. Generally those relocating full time seek out two- to three-bedroom apartments with outdoor space in the city centre.

Images Getty Images

Savills Executive Nomad Index

We analysed 15 destinations based on their appeal and ease of access for long-term remote workers. They have then been ranked for their connectivity, climate, prime residential rental markets and quality of life



Note Prime residential rents receive half weighting **Source** Savills Research

6.3% Rental markets made a staggering recovery in the second half of 2021. New York, for example, saw rental value growth of 6.3% over the course of the year

WORDS LUCIAN COOK, HEAD OF UK RESIDENTIAL RESEARCH, SAVILLS UK

New city heights

As Covid-19 restrictions on daily life and travel ease, cities around the world are springing back to life. **LUCIAN COOK** looks at how we will reconnect with our prime urban housing markets

When the pandemic hit, the world's cities fell quiet and the skies were notably empty of the planes that usually drone with steady frequency overhead, their flight paths like spools of yarn connecting us as they lace the globe.

The pandemic's abrupt, initial impact was comparable everywhere, from Hong Kong to London, but how individual cities have performed in the wake of the initial lockdowns is complex and varied, shaped by factors such as liveability, public policy (e.g. travel restrictions), and the extent to which local wealth generation has continued to support demand. More recently, the war in Ukraine has brought renewed geopolitical uncertainty, contributing to inflationary pressures and rising living costs.

What is certain, is that the events of the past few years have prompted people to re-examine their priorities, particularly when it comes to how and where they live.

"The pandemic allowed everyone to re-evaluate both what and who is important to them," says Kane Manera, an agent at Corcoran, Savills affiliate in New York. "An overwhelming part of that became a recalibration of home. Upsizing, downsizing, or seeking out multiple homes across different locations."

How cities have performed in the wake of the initial lockdowns is complex and varied, shaped by factors such as liveability, public policy and local wealth generation

Affluent residents of cities like New York and London retreated to second homes in Connecticut or the Cotswolds. "Wealthy buyers who didn't already own a place in the country bought one," says Jonathan Hewlett, Head of London Residential, Savills UK.

But many who remained in the city also decided it was time for a change. Families sought out private outdoor space or proximity to parks, as well as larger properties with room for a home office. "It became quickly apparent to people on Zoom that sitting at the foot of the bed wasn't very practical," says Hewlett.

For a time, Hewlett's strongest markets were not prime central London neighbourhoods like Chelsea and Knightsbridge, popular among international buyers, but rather domestic areas like Islington or Battersea. And what initially appeared to be pent-up demand from the lockdowns continued. "I've never seen such high-value sales take place [in this market]," says Hewlett. "People were spending £5 million to £20 million. Thirty of those deals were done last year; normally we would see a third of that."

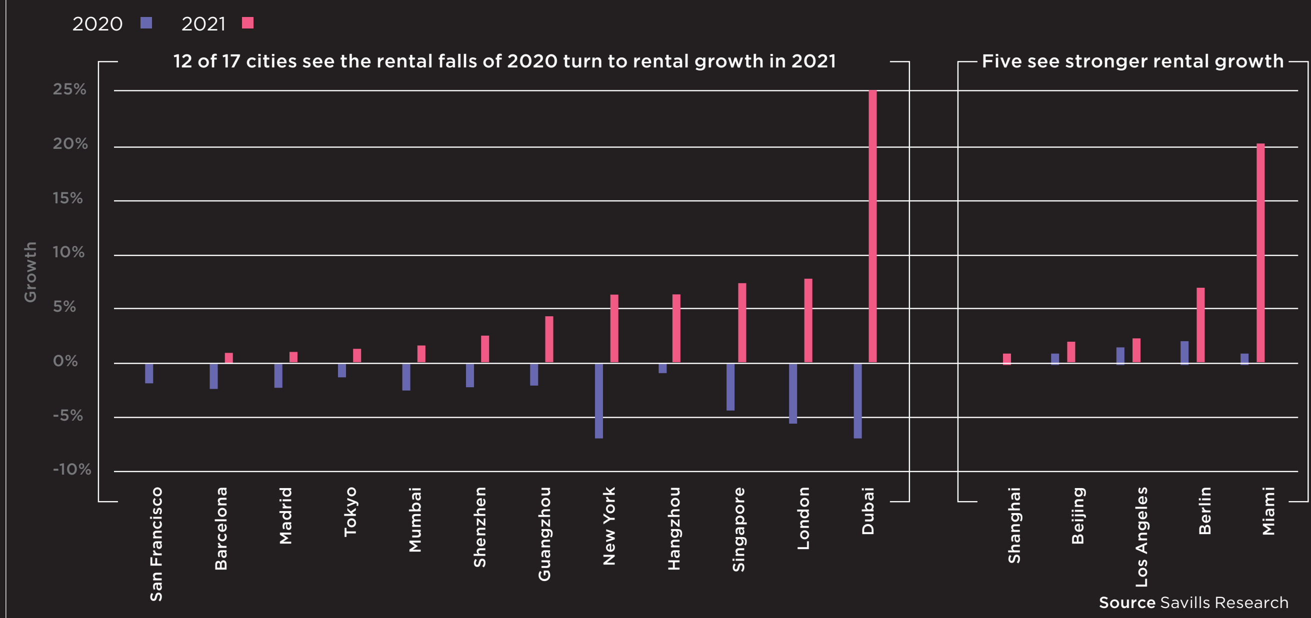
RESIDENTIAL REBOUND

With 2021's vaccine rollout opening many borders and injecting new confidence into urban living, buyer activity also resumed at the top end of the London market. "People realised London was not a ghost town, and that people would go back to working in offices. It's human nature, wanting to connect personally," says Hewlett.

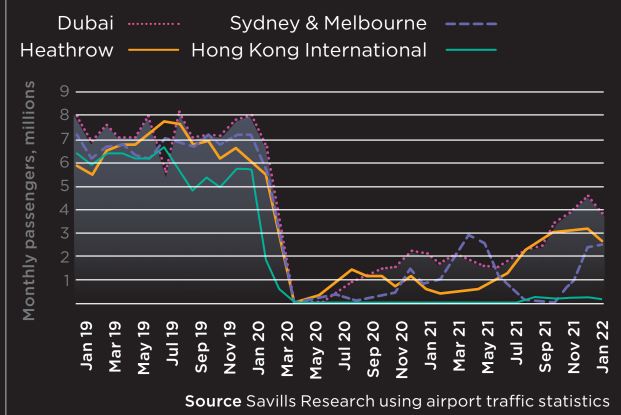
Apple mobility data, which tracks people on foot using their phones – for example, for directions on their way to dinner – showed a surge in user activity in Europe and North America

Singapore city skyline

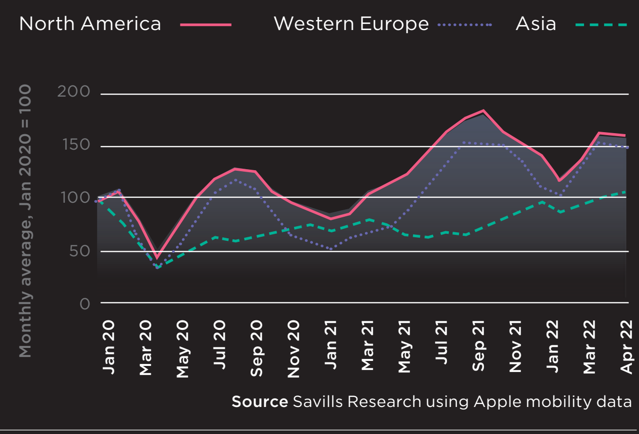
Prime residential rental values performance



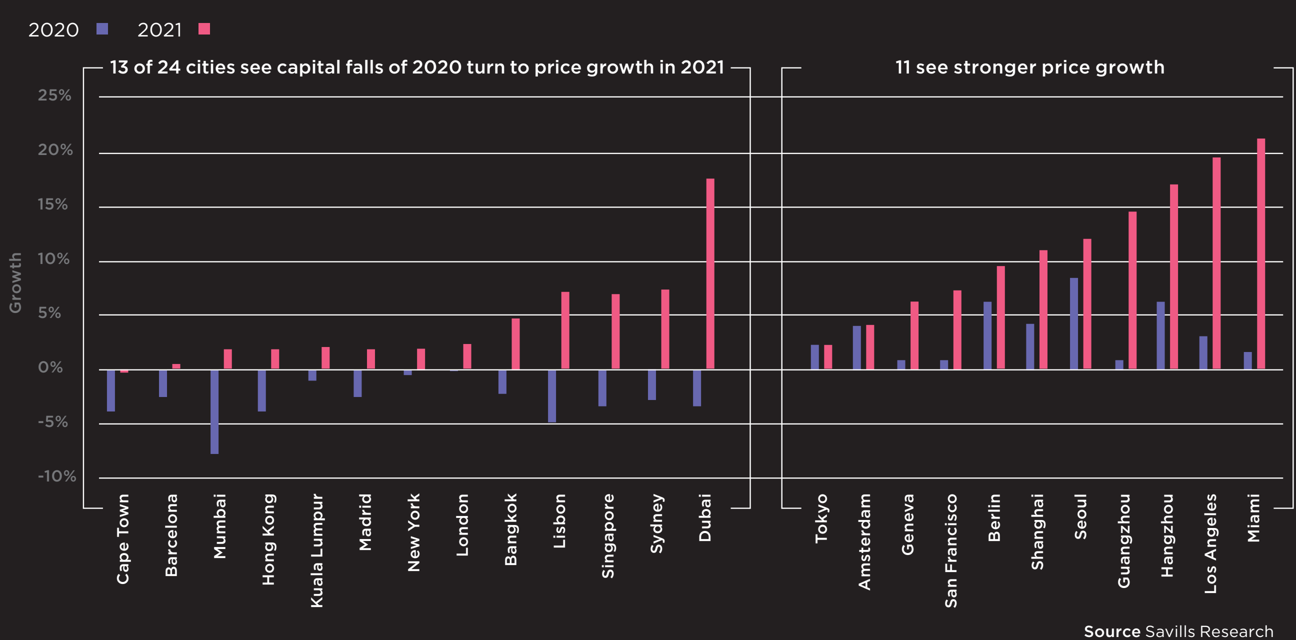
Airport passenger numbers



Walking in cities, comparison to January 2020



Prime residential capital values performance



4.3% Average prime property price growth is projected at 4.3% in 2022, though the positive outlook will vary from city to city

in 2021. And overall, where a sense of vibrancy has returned to urban centres, residential markets have rebounded too.

Rental markets in particular made a staggering recovery in the second half of 2021, the strongest six-month performance in seven years. In New York, for example, more leases were signed during this period than ever recorded, resulting in 6.3% rental value growth over the course of the year.

In Berlin, where a housing shortage and growing population have long kept rents and capital values rising, the pandemic added further pressure. "Even people who have a flat are now looking for change and new opportunities, especially properties with private outdoor space," says Thomas Zabel, Managing Director of Savills Residential Agency Germany. He estimates that the supply shortage combined with increasing construction costs led to a 20% price-per-square-metre increase in 2021.

A HEALTHY RESET

The pandemic also brought health and lifestyle to the fore. For some buyers this has meant a focus on properties with wellness facilities and 'health features' such as purified air, natural materials or resort-style amenities. For others, a healthy reset has involved relocating altogether.

"Aside from the need for space and ability to work away from the traditional office… the pandemic has been a time [for clients] to reassess their properties and work-life balance, spurring a number to relocate to a different country while continuing with their work remotely," says Jelena Cvjetkovic, Director, Savills Global Residential.

Lifestyle markets such as Lisbon and Miami have fared particularly well. Miami's favourable climate, low tax rate and quality of life drove prime capital values and rents up 20% in 2021, and the city is projected for upwards of 10% growth in 2022.

Dubai also attracted its share of nomads (see page 32). Residential transaction volumes grew by 74% in 2021, activity led by villa and townhouse developments. "Remote working enabled business owners from abroad to make Dubai their main hub and enjoy the tax-free living that it offered," says Helen Tatham, Head of Residential Community Sales & Leasing, Savills Dubai. The trend continued into 2021, she says, as affluent buyers identified Dubai as an ideal winter destination to buy second homes. Residential prices in Dubai's prime sector increased by 17.4% in 2021.

LIVING WITH UNCERTAINTY

Meanwhile, growth in China and Asia-Pacific has remained mixed as a result of government cooling measures and pandemic-related uncertainty. While Seoul, Sydney and Singapore all performed well in 2021, mainland China and Hong Kong in particular continued to experience pandemic-induced uncertainty and restrictions.

Controls on movement of wealth in China have supported growth in first-tier cities such as Shanghai, however, where wealth has funnelled into a limited supply of prime stock. Shirley Tang, Senior Director of Residential Sales, Savills Shanghai, says that more than 40,000 high-end properties priced in excess of RMB 10 million were sold in 2021, setting a new record for China's prime residential market. "The public showed much more interest in buying properties to protect personal assets," she says.

Monthly airport passenger numbers reveal steadily climbing figures at Heathrow, Dubai, Sydney and Melbourne, while numbers at Hong Kong International Airport flatline

RECONNECTING GLOBALLY

As nations learn to live with Covid-19 and economies recover, growth in the prime residential sector is forecast to continue. Average prime property price growth is projected at 4.3% in 2022, though the positive outlook will vary from city to city.

Which markets benefit will depend in part on the return of international travel, and in particular the return of Asian travellers and buyers to key urban centres. The next phase will be a truly international market comeback.

Our chart of monthly airport passenger numbers reveals steadily climbing figures at Heathrow, Dubai, Sydney and Melbourne, while numbers at Hong Kong International Airport flatline. Would-be buyers from Asia have adopted a 'wait and see' attitude, says Shirley Tang, as restrictions continue to stunt a usual flow of travel.

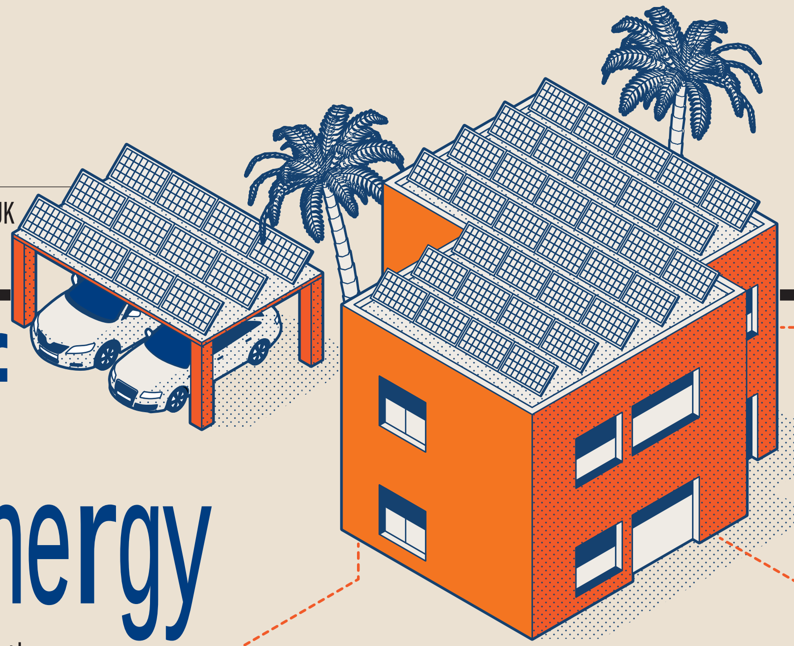
But there are signs of global ties reconnecting. Loosening travel restrictions in the US and the UK have already led to an increase in cross-border transactions, and with prices in prime central London still circa 20% off their 2014 peak, Jonathan Hewlett says his clients strongly believe that "now is the time to get in".

When the travel ban was lifted in the United States in November 2021, buyers from the UK and Europe were quick to seize on parts of Manhattan where prices had softened, says Kane Manera. And while international travel challenges remain, he says India has quickly taken the mantle as the foreign market with the most purchasing power.

Manera believes looming inflation and interest rate hikes, plus a desire to get back into the thrill of city life, means buyers are clear about what they want: best-in-class buildings, staff and services, all with heightened health and safety. "In 2022 everyone will be wishing they bought in 2021, because everyone in 2021 wished they bought in 2020," he says.

Image Getty Images

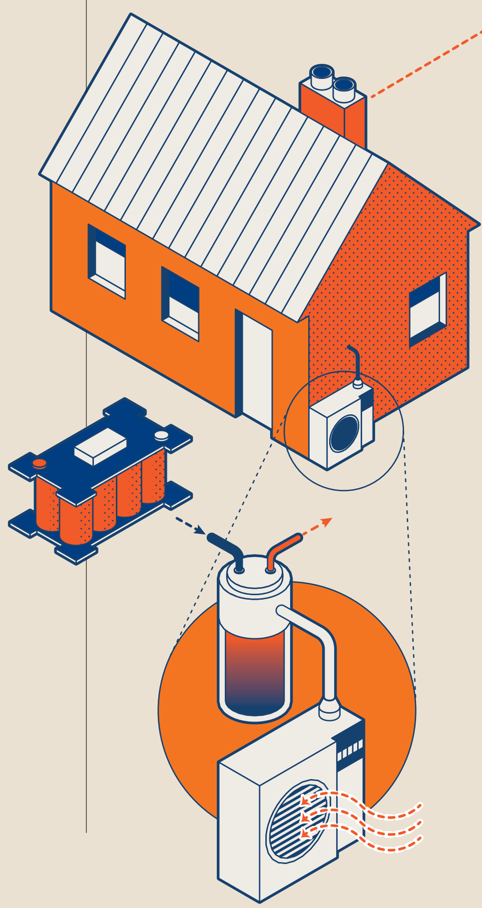
WORDS JOE LLOYD, ASSOCIATE, RURAL RESEARCH, SAVILLS UK



Six models of renewable energy

How some of the world's most remote locations have reconnected their energy generation to align with a more sustainable future

Being off grid is a necessity rather than a choice for most communities, one fraught with difficulty and uncertainty. However, thanks to the ingenuity of some of the world's harder-to-reach places, the prospect of providing for our own energy demands is not only becoming palatable, it is becoming preferable. We look at how some of the world's most remote locations have transformed their energy mix to one for the net zero world.



1 DESTINATION **ISLE AU HAUT, USA**
POPULATION **92** (2020)

THE PROBLEM **The Isle au Haut, part of the state of Maine, is currently connected to the US mainland by an underwater cable installed by local lobstermen in 1983. It has more than surpassed its intended lifetime and could fail at any time, rendering the island community unexpectedly off grid.**

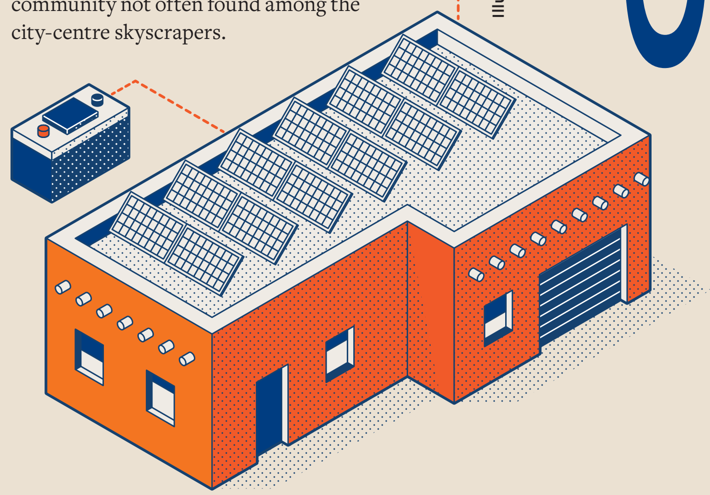
THE SOLUTION A microgrid, independent from the mainland power supply, is being created on the island. Although Maine's climate is characterised by cold winters and mild summers, solar is to be the technology of choice. Solar struggles with intermittent supply, which has led to another unconventional choice: instead of lithium-ion battery storage, supercapacitors – devices that store and release energy at a rapid rate without degrading in the way batteries do – will be used. Air to water heat pump systems will also be installed in buildings to transform excess electricity into hot water for local buildings.

2 DESTINATION **THE SUSTAINABLE CITY, DUBAI, UAE** | POPULATION **3,000** (2019)

THE PROBLEM **Amongst the luxury and glamour of Dubai, it is easy to forget that the city sits on the edge of the fifth-largest desert in the world. Both the luxury and the extreme conditions mean the UAE has the some of the highest emission rates per capita in the world.**

THE SOLUTION Twelve miles from the glittering skyscrapers, within a wall of trees, the aptly named Sustainable City looks to take emissions per capita from some of the highest in the world to net zero. The main issue to tackle is buildings: 75% of all electricity produced in the UAE is consumed by them. All buildings and parking spaces are therefore topped by solar panels to offset their energy demand. Residential buildings are designed to avoid exposure to the sun and are covered in a paint that reflects sunlight and keeps heat out. This reduces the need to cool the units and therefore the need to consume electricity. Besides sustainability, the low-rise villas provide a sense of community not often found among the city-centre skyscrapers.

Illustration Carlos Coelho / Debut Art

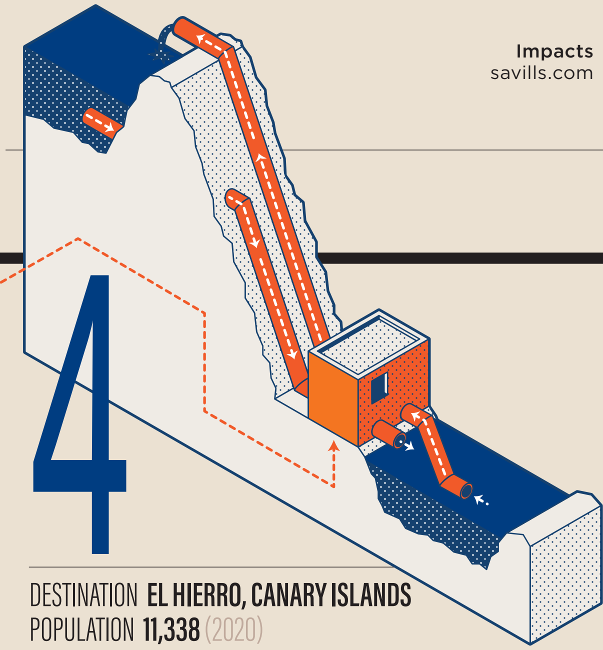


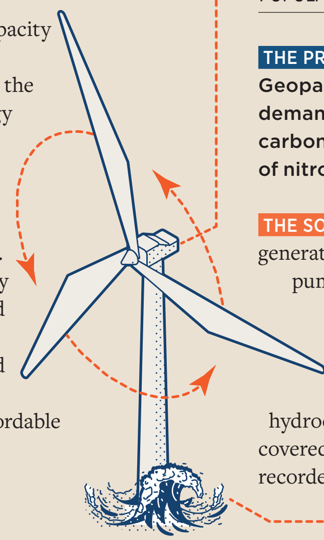
42% In 2020, the turbine system covered 42% of El Hierro's energy needs from renewable sources

3 DESTINATION **ORKNEY, UNITED KINGDOM**
POPULATION **22,055** (2019)

THE PROBLEM **Pinned between the North Sea and Atlantic Ocean, the Orkney isles have one of the most energy-rich climates in the world. With abundant wind and wave power, they have becomethe home of renewable energy innovation. Yet the energy richness is the problem – the grid cannot handle the excess.**

THE SOLUTION Active Network Management matches output to capacity in real time, allowing an additional 22MW of generation to be added to the 'full' grid in 2009. Even then, energy generation had to be curtailed. ReFLEX Orkney looks to combine electricity, transport and heat networks into one digitally connected and controllable system. As a result, more of Orkney's energy potential can be brought online and new technologies such as electric transport, or green hydrogen, could be introduced. The system will ensure higher quality and more affordable energy services while reducing the islands' carbon footprint.





4 DESTINATION **EL HIERRO, CANARY ISLANDS**
POPULATION **11,338** (2020)

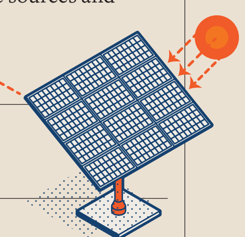
THE PROBLEM **El Hierro is a UNESCO Biosphere Reserve and Geopark, where biodiversity must coexist with the energy demands of some 11,000 people. That meant 18,700 tonnes of carbon dioxide, 100 tonnes of sulphur dioxide and 400 tonnes of nitrogen oxides were emitted each year from burning diesel.**

THE SOLUTION Five wind turbines are now the main power generators. To smooth out peaks and troughs in supply, a pumped-storage hydropower system was created. A volcanic caldera at an elevation of 715m forms an upper reservoir with a capacity of 500,000m³ and is linked to a lower man-made reservoir of 226,000m³. Excess power is used to pump water uphill, which can then be released to generate hydroelectric power when there is no wind. In 2020, the system covered 42% of the island's energy from renewable sources and recorded 25 days of using 100% renewable energy.

5 DESTINATION **ONSLOW, AUSTRALIA**
POPULATION **848** (2016)

THE PROBLEM **Onslow clings to the west coast of Australia, surrounded by desert and rarely visited by rain. Solar photovoltaics is the obvious solution to the energy needs of the isolated community, but relying on a single source of energy is risky.**

THE SOLUTION Onslow possesses approximately 700kW of domestic rooftop solar and 600kW of utility solar. Those assets are supported by a grid-scale battery storage system and solar smoothing, where the output balances over a set period. Western Australia's electricity provider, Horizon Power, partnered with Californian technology company PXiSE to develop a technology that coordinates all the assets and better predicts incoming weather to ensure the grid can respond to changes in solar output. Early trials have shown that Onslow can now run at 100% renewable energy for limited periods, meaning residents barely pay a cent to keep the air con running throughout the year.

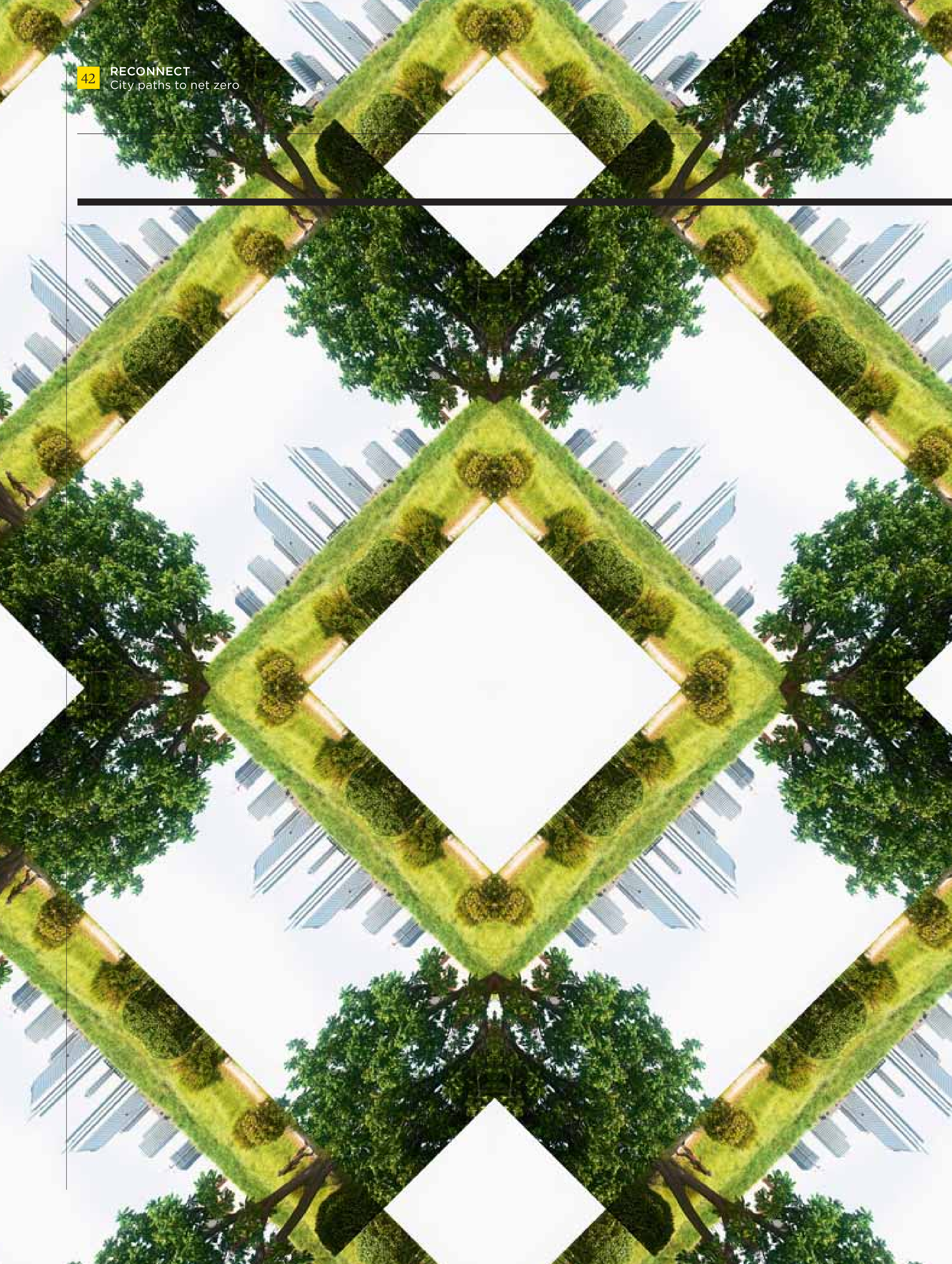


6 DESTINATION **TOKELAU, TERRITORY OF NEW ZEALAND** | POPULATION **1,647** (2019)

THE PROBLEM **In 2005, Tokelau was devastated by Cyclone Percy. Climate change means extreme weather events are going to become more frequent, so energy systems need to be made resilient and able to survive such events.**

THE SOLUTION In 2012, the 1MW Tokelau Renewable Energy Project began. Twelve months later, 4,032 photovoltaic panels, 392 inverters and 1,344 batteries had been installed across the three atolls. The island nation had gone from burning around 200 litres of fuel daily on each atoll, to being 100% self-sufficient and even generating excess energy.

But what would the isolated atolls do if another cyclone tears across the land? The new solar power system has been designed to be able to survive cyclone-force winds of 230km per hour, equivalent to those generated by Cyclone Percy.



WORDS PAUL TOSTEVIN, DIRECTOR, & LUCY PALK, ANALYST, SAVILLS WORLD RESEARCH

Berlin hosted the first-ever UN Conference of the Parties (COP) in 1995 and is a frontrunner in the race to carbon neutrality

The race for carbon neutrality

Cities have a vital role to play in achieving the UN's stated objective of a carbon neutral world by 2050. Savills World Research examines how cities, local governments, organisations, citizens and the real estate industry are planning to implement change and identifies the cities with the most ambitious net-zero goals

CITIES SET THEIR SIGHTS ON NET ZERO

By 2030, approximately 60% of the world's population will live in cities, according to the UN's World Cities Report 2020. It is therefore vital that these urban centres play a leading role in the quest for a net-zero future.

Cities currently consume 78% of the world's energy and produce more than 60% of greenhouse gas emissions. Recognising the need for immediate change, cities initially led countries in setting net-zero carbon targets. The built environment is at the heart of achieving this. The World Green Building Council comprises more than 70 members around the globe, focused on making the building and construction sector more sustainable. This demonstrates the real estate industry's commitment to creating cleaner, greener and smarter cities.

Data compiled by Savills World Research show that, prior to 2019, a greater proportion of cities were setting net-zero targets in comparison with countries. Since the COP26 climate conference in November 2021, countries have overtaken cities as more nations were encouraged to set their own targets. However, many cities continue to develop more ambitious targets than the countries in which they are located. New York City, for example, remained committed to the principles of the Paris Agreement when the United States withdrew in 2017, while Barcelona's Municipal Council approved an ambitious plan to reduce the city's greenhouse gas emissions by 45% by 2030, four years before Spain's congress approved the country's overall roadmap to carbon neutrality.

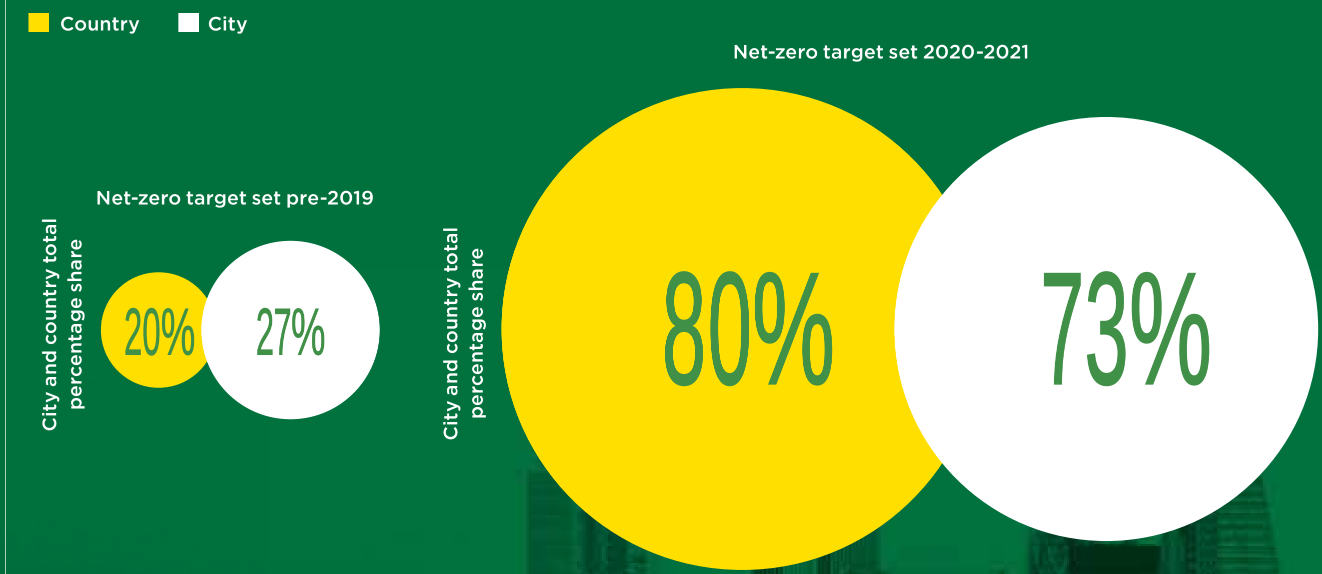
NORTH AMERICAN AND EUROPEAN CITIES ARE LEADING THE WAY

Historically, European and North American cities have been some of the biggest net contributors of carbon. North American and European cities are now leading the way to net zero, with a greater proportion of cities in these regions setting definitive end targets than elsewhere in the world. The data outlines that 38% of North American and European cities have net-zero targets, compared with 18% in Latin America, 17% in Sub-Saharan Africa, 14% in Asia Pacific, and just 4% in the Middle East and North Africa.

In less mature real estate markets, notably those in the Middle East, Africa and India, there is potential to add new, environmentally compliant stock from the outset. By contrast, mature real estate markets must focus on retrofitting to reach carbon neutral goals. This challenge is particularly acute in Europe, which has a rate of just 1-2% of new construction, resulting in the need to upgrade large amounts of historic building stock.

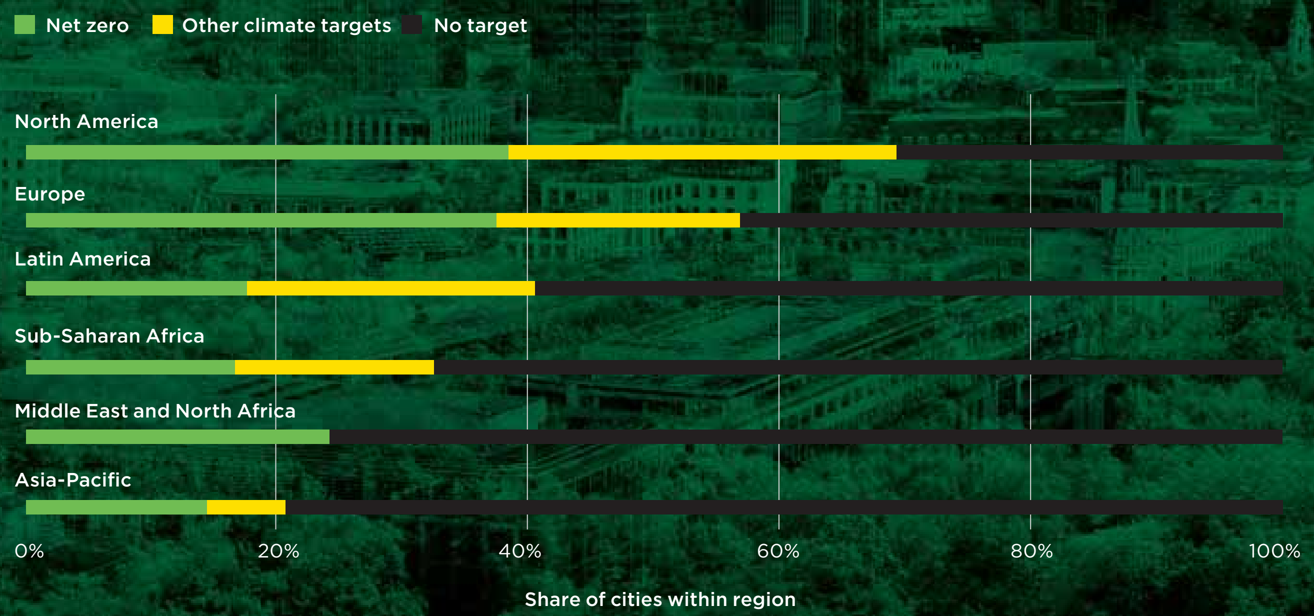
> The EU Mission on Climate-Neutral and Smart Cities has developed a NetZeroCities platform to support local authorities by sharing tools, resources, expertise and capabilities

PRIOR TO 2019, A GREATER PROPORTION OF CITIES WERE SETTING NET-ZERO TARGETS



Source: Savills Research using Energy & Climate Intelligence Unit Net Zero Tracker (cities with populations greater than 500,000)

CITIES BY REGION AND TYPE OF END TARGET GOAL



Source: Savills Research using Energy & Climate Intelligence Unit Net Zero Tracker (cities with populations greater than 500,000)

INNOVATION, COLLABORATION, REGULATION: How cities are leading the net-zero charge to meet targets

1 Collaboration is key

It is vital for local and national governments to work alongside commercial organisations and citizens to develop cohesive strategies for reducing emissions that can be implemented across all levels of society. Barcelona, for example, has invested €1.2 million into a climate action plan focused on raising public awareness of climate change and 'building together' to confront the issues.

"Carbon neutrality cannot be prescribed; it can only be achieved if we perceive it as a shared effort, a joint mission for all of us to change the face of our cities and the future of the planet," says Maria Vassilakou, urban strategist and former deputy mayor of Vienna. "Local governments should take the lead and steer our efforts involving citizens, businesses, real estate, local and national stakeholders, facilitating broad and innovative local partnerships and bottom-up action. Climate-neutrality at city level is the world's biggest public-private partnership."

2 City councils lead by example

City governments are setting an example for others to follow by 'greening' their own real estate. In 2020, all city-owned properties in Sydney were run using 100% renewable energy for the first time, while Cape Town has set out a roadmap for making all its municipal buildings operate to net-zero standards by 2030. Toronto City Council has also implemented its TorontoTO strategy, aimed at reducing community-wide greenhouse gas emissions to net zero by 2050, while recent updates to the Toronto Green Standard aim to achieve net-zero emissions for new buildings by 2030.

3 Local governments and mayors taking action

Cities with active local governments, particularly those with engaged mayors, have been the most proactive in furthering their net-zero agendas. Published net-zero plans offer the clearest indication of the steps municipal governments are taking. The EU Mission on Climate-Neutral and Smart Cities has developed a NetZeroCities platform to support local authorities by sharing tools, resources, expertise and capabilities. Cities participating in the mission will formulate a climate neutral contract outlining how they intend to implement the European Green Deal at a local level. Leuven in Belgium has been heralded as a 'standout' city for its climate plan, Leuven 2030, which includes involvement from citizens and economic actors, as well as national authorities. In the US, Los Angeles' Green New Deal, which calls for a zero-carbon electrical grid, transportation system, and buildings by 2050, claims to have created 35,000 green jobs so far.

4 Incentives versus regulation

City governments are adopting various 'carrot and stick' initiatives to achieve their net-zero goals, ranging from funding programmes and tax relief to tighter regulation and initiatives such as low emission zones. In 2019, the San Francisco mayor's office introduced legislation requiring all private commercial buildings larger than 50,000 sq ft to transition to 100% renewable energy. The Australian city of Adelaide's Sustainability Incentives Scheme (SIS) provides financial incentives to install sustainable technology in houses, apartments and commercial buildings to improve their energy and water performance. Meanwhile, in the UK, London has introduced the world's first Ultra Low Emission Zone (ULEZ), and other UK cities have announced plans for their own low emission or clean air zones in line with the country's 'Build Back Greener' net-zero strategy.

THE ROLE OF REAL ESTATE

Real estate is responsible for 40% of global greenhouse gas emissions and is therefore an important sector for cities to consider when planning their paths to net zero. Real estate emits carbon in two forms: embedded and operational (the latter having the greatest impact). Measures must therefore be taken to limit carbon emissions at each stage of real estate projects, from conceptualisation and design, through to planning and completion.

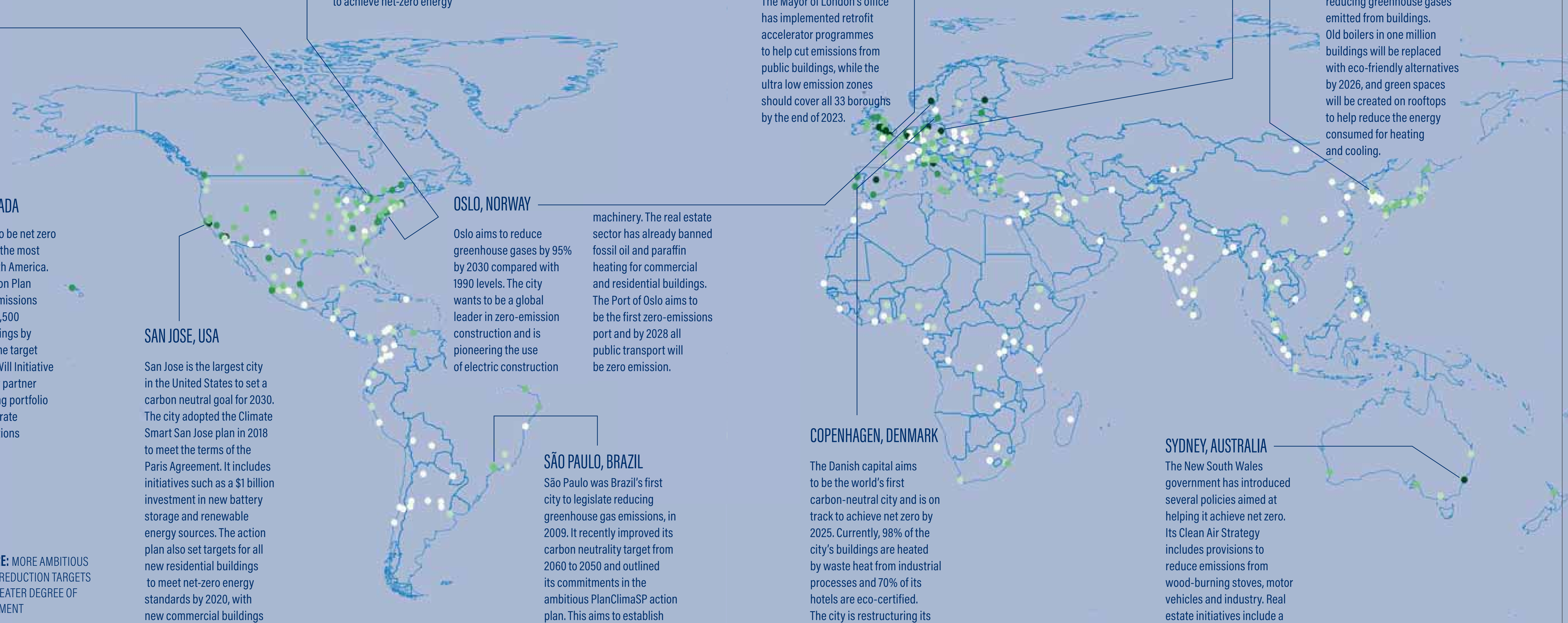
"For existing buildings, the focus is first on improving operational building efficiency, eliminating energy waste and then moving away from the use of fossil fuels for heating, cooling and power," says Sarune Ringelyte, Principal Sustainability Consultant, Savills UK. "For new construction and refurbishments, that includes switching to lower carbon materials."

Proptech and smart building systems, as well as renewable and low energy technologies, can all help to improve a project's green credentials. Research, development and property technologies will be crucial in helping to reduce emissions from the built environment as cities set their sights on net zero. Construction will therefore be at the forefront of this green building revolution, with forecasting and data analytics firm Oxford Economics suggesting that global construction output could reach $15.2 trillion by 2030, up 42% from its 2020 level. The International Financial Cooperation estimates that green buildings represent a $24.7 trillion investment opportunity by 2030 across cities in emerging markets.

"Technology for net-zero buildings in operation is already there," says Ringelyte. "The challenge for cities is deploying that technology at scale, cost effectively and fast across all new developments and the existing building stock, along with tackling the embodied carbon emissions."

PATHWAYS TO NET ZERO: CITY-BY-CITY TARGETS

Distribution of cities and how they scored based on criteria including the type of net-zero targets being set, the end target year, percentage reduction of emissions, and how legally binding these targets are.



WASHINGTON, DC, USA

The Clean Energy DC plan set out by Mayor Muriel Bowser provides a roadmap to 2032 that would see greenhouse gas emissions cut by 50% from 2006 levels. The plan calls for all new construction to achieve net-zero energy beginning in 2026. The District government has implemented initiatives such as DC PACE, a financing programme for commercial and multifamily buildings to make energy improvements.

LONDON, UK

The UK capital aims to be net zero by 2030. Borough councils and the private sector have key roles in transforming the city's carbon footprint, due to the fragmented private ownership of its real estate. The Mayor of London's office has implemented retrofit accelerator programmes to help cut emissions from public buildings, while the ultra low emission zones should cover all 33 boroughs by the end of 2023.

BERLIN, GERMANY

Berlin hosted the first UN Conference of the Parties (COP) and is a frontrunner in the race to carbon neutrality. The city achieved its climate protection target for 2020 ahead of schedule and has committed to becoming climate neutral by 2045. The Berlin Energy and Climate Protection Programme contains some 100 measures focused on climate protection, including phasing out coal and improving public transport.

SEOUL, SOUTH KOREA

Seoul's Comprehensive Plan for Climate Action outlines how the city plans to achieve carbon neutrality by 2050. The Seoul Metropolitan Government will invest KRW10 trillion over the next five years, with a focus on reducing greenhouse gases emitted from buildings. Old boilers in one million buildings will be replaced with eco-friendly alternatives by 2026, and green spaces will be created on rooftops to help reduce the energy consumed for heating and cooling.

TORONTO, CANADA

Toronto's target to be net zero by 2040 is one of the most ambitious in North America. Its Net Zero Carbon Plan aims to reduce emissions from more than 2,500 city-owned buildings by at least 80% by the target date. The Green Will Initiative also sees the city partner with large building portfolio owners to accelerate emissions reductions from buildings.

OSLO, NORWAY

Oslo aims to reduce greenhouse gases by 95% by 2030 compared with 1990 levels. The city wants to be a global leader in zero-emission construction and is pioneering the use of electric construction machinery. The real estate sector has already banned fossil oil and paraffin heating for commercial and residential buildings. The Port of Oslo aims to be the first zero-emissions port and by 2028 all public transport will be zero emission.

SAN JOSE, USA

San Jose is the largest city in the United States to set a carbon neutral goal for 2030. The city adopted the Climate Smart San Jose plan in 2018 to meet the terms of the Paris Agreement. It includes initiatives such as a $1 billion investment in new battery storage and renewable energy sources. The action plan also set targets for all new residential buildings to meet net-zero energy standards by 2020, with new commercial buildings given until 2030.

SÃO PAULO, BRAZIL

São Paulo was Brazil's first city to legislate reducing greenhouse gas emissions, in 2009. It recently improved its carbon neutrality target from 2060 to 2050 and outlined its commitments in the ambitious PlanClimaSP action plan. This aims to establish a zero emissions zone and expand cycling infrastructure. Its Reflloresta SP programme aims to reforest 1.5 million hectares of native vegetation by 2050, which will contribute to the reduction of flooding.

COPENHAGEN, DENMARK

The Danish capital aims to be the world's first carbon-neutral city and is on track to achieve net zero by 2025. Currently, 98% of the city's buildings are heated by waste heat from industrial processes and 70% of its hotels are eco-certified. The city is restructuring its transportation infrastructure so that at least 75% of all trips will be possible by foot, bike or public transport by 2025.

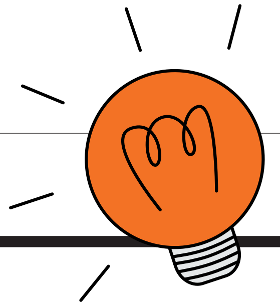
SYDNEY, AUSTRALIA

The New South Wales government has introduced several policies aimed at helping it achieve net zero. Its Clean Air Strategy includes provisions to reduce emissions from wood-burning stoves, motor vehicles and industry. Real estate initiatives include a AU$50 million Home Energy Action Program, forecast to reduce domestic residential CO_2 emissions by 32,000 tonnes by 2030.

HIGH SCORE: MORE AMBITIOUS EMISSION REDUCTION TARGETS WITH A GREATER DEGREE OF ENSHRINEMENT

LOW SCORE: EMISSION REDUCTION TARGET EXISTS BUT LESS AMBITIOUS OR ENTRENCHED

Source: Savills research using Energy & Climate Intelligence Unit Net Zero Tracker (cities with populations greater than 500,000)



Q&A The metaverse and why it matters

NICKY WIGHTMAN, Director of Emerging Trends, Savills UK, talks to Simon Benson, virtual reality expert and technology consultant at Talent for Tech, about how the metaverse will change our lives at work and leisure

Simon, tell us about your experience with immersive technologies.
After a period as a software engineer in military R&D, I moved into the games industry, working at PlayStation, pioneering 3D gaming and virtual reality technologies. I'm now a consultant, including at HOST (the Home of Skills & Technology at Media City in Salford, UK), which is particularly active in the immersive space.

This is a game-changing time with the rise of the metaverse. How would you define it?
The metaverse is a connected digital space. It can be a virtual space where everything is digital – this is virtual reality (VR). Or it can be a virtual layer overlaid on the real world, which is augmented reality (AR).

For those who are new to it, how will people access the metaverse?
Our smartphones will be replaced by smart glasses as the metaverse develops. It makes more sense for notifications we get from our smartphones to be within our field of view. With 5G, we can deliver higher volumes of data to more people, and everything can be delivered by the cloud, so the glasses do not need powerful processors. The infrastructure is very much on the horizon so we can traverse the world with low-cost smart glasses.

> Smartphones will be replaced by smart glasses as the metaverse develops. It makes more sense for notifications we get from our smartphones to be within our field of view

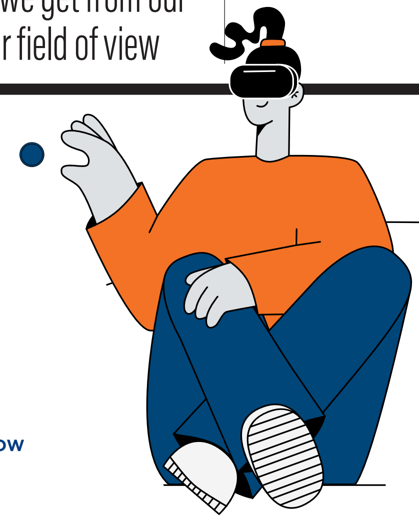
This will have interesting consequences for our sense of identity in this digital space.
Yes, I think we'll have a different identity for traversing the metaverse and maybe it will be our avatar, the digital representation of ourselves.

In this expanding world of the 'phygital', what's your view on how this alters our need for 'things'?
Once we have glasses on our faces, it no longer constrains things to be two-dimensional or a certain size. I could log into my work computer from a coffee shop, and not need my laptop as my smart glasses would put a laptop on the table in front of me.

Retail and leisure is already experiential, what do you think the metaverse will add?
You might go to a VR experience that lets you feel like you're in an action movie, for example, and they can add extra sensory things: the right smells, real heat. Not everyone will own an immersive set-up at home so will visit them on the high street, whether that be socially or to book in at a facility to view virtual properties.

We've also seen digital ownership becoming highly valued, how do you see that playing out?
Children brought up with online experiences might actually rate buying a pair of trainers for their in-game character far more than if they had the trainers in the real world. Imagine those same children as adults with that understanding of the value of digital ownership.

We've been thinking a lot about the impact on offices. What's your vision for this?
Headsets on, our virtual offices will open up before us. Interestingly, the physical size of this space will depend on how much movement is needed in day-to-day life. If I work with cars, I might have a room that would give me a good degree of walk-around space. If I make toy robots, I would need a smaller physical space.



In a world where technology is integrated into all areas of our lives, we need to reconcile the effect on our environment. What's your take on the environmental impact?
Taking people's workspaces and reducing them to something experienced through headsets reduces power consumption significantly. Couple that with cloud delivery and digital assets – a television will no longer be a physical item – then you effectively have the power of centralisation so data centres can be more efficient.

The metaverse will require a new landscape of expertise. The games industry must be a first stop for skills.
Many of the businesses that are embracing immersive technology have gone to the games industry as they have been doing this type of work for 20 years. However, in the next few years, these skills will be the norm across businesses; people will almost forget its heritage to the games industry. It will just be real-time interactive technology.

Finally, this is a whole new digital space so there must be a power play. Will someone own the metaverse?
There has definitely been a land grab. Microsoft moved early with its AR glasses, HoloLens, and Facebook renamed as Meta to immerse themselves in this space. It's going to mirror the way that internet companies each had their little corner of the internet. It will become a collection – a xenoverse – of metaverses with no single winner. Either way, it's going to be very influential. Soon, every business will be operating in some way in the metaverse.

Physical meets digital in the metaverse

10,000
Number of jobs Facebook plans to create in the EU over the next five years to help build its metaverse.

$41 billion
The size of the non-fungible token (NFT) market in 2021; digital tokens fixed in a blockchain that can represent real world items, and are key to commerce in the metaverse.

27.7 million
Number of players who attended Travis Scott's 2020 concert live in online game Fortnite.

SEVEN
The number of trademark applications by Nike for 'downloadable virtual goods' under the Nike and Jordan brands, including shoes and apparel.

$68.7 billion
The amount that Microsoft is paying to acquire interactive entertainment developer Activision Blizzard, to provide the building blocks for its metaverse.

WORDS PAUL TOSTEVIN, DIRECTOR, & ERI MITSOSTERGIOU, DIRECTOR, SAVILLS WORLD RESEARCH

HOW TO BUILD A SMARTER CITY (DON'T FORGET THE HUMANS)

While data, artificial intelligence and the internet of things are the brains of a smart city, we need human-centred solutions to create sustainable cities for the future

Until recently, the concept of a smart city was primarily of a place where services were made more efficient and responsive for the benefit of its inhabitants. It referred to a framework, composed of the internet of things and cloud computing that collects, manages and analyses data.

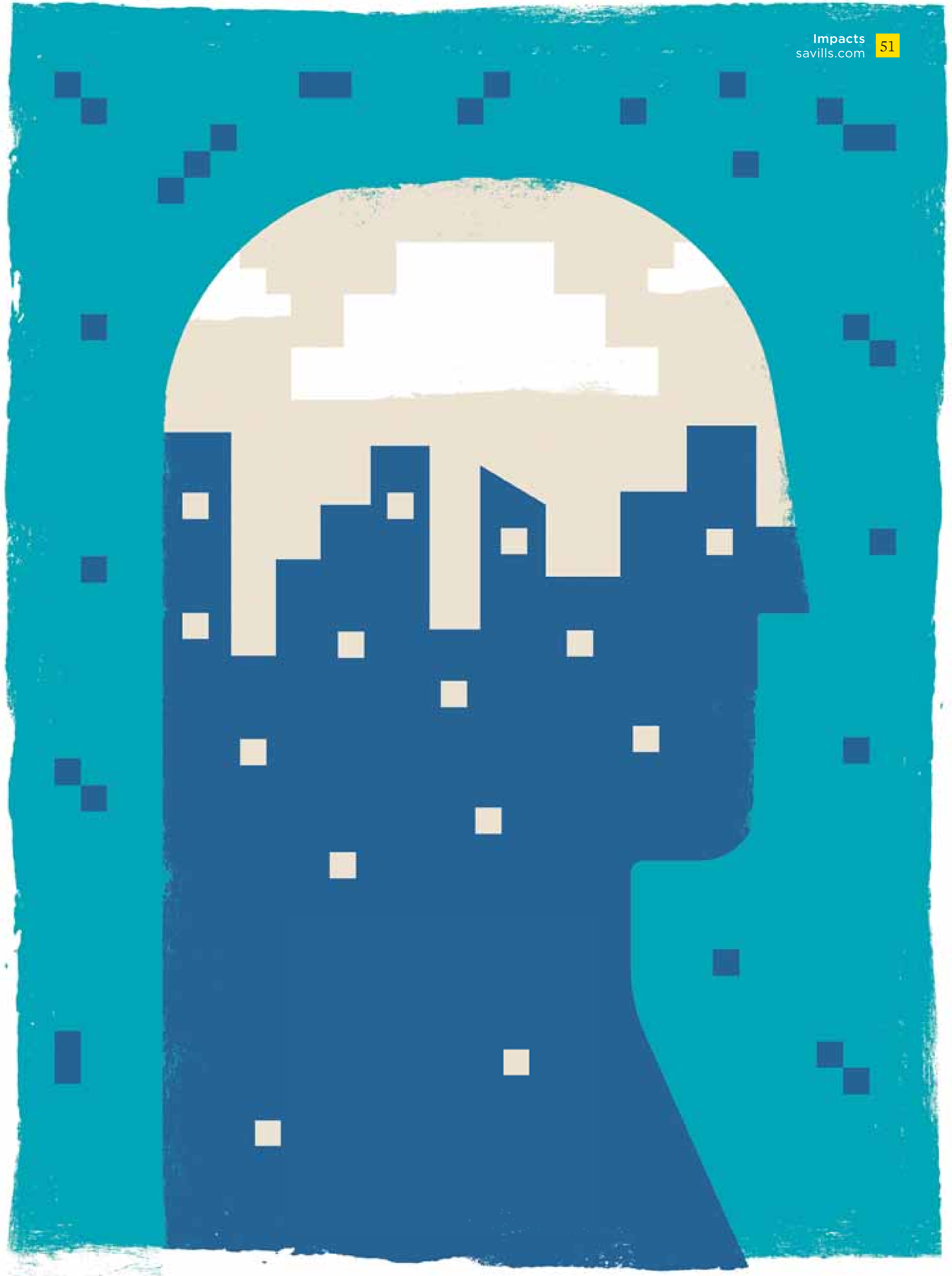
Now, the smart city agenda is broader than ever. For one, there is an elevated focus on the wellbeing of individuals and social value for urban communities. The health crisis has coincided with an increase in extreme weather events, such as wildfires, storms and floods, that have focused the need to deal with climate change. This has heightened awareness of the threats to our lifestyle and the realisation that we need to imminently change habits to minimise our negative impact on the environment.

In response, today's smart cities employ technology that embraces sustainability, liveability, inclusivity and resilience. Supporting this is a drive from people demanding that policymakers, technologists and urban developers deliver improvements to the cities they manage and build.

REAL-TIME DATA KEEPS CITIES MOVING

The potential applications of smart-city tech are varied. Some use real-time data to monitor and manage traffic flows, air quality, streetlights or waste collection. This technology can be crucial to creating solutions, as a study by McKinsey reported: cities that use technology improve quality of life indicators by between 10% and 30%, helping them make progress towards the UN's Sustainable Development Goals.

Today, the ability of tech to provide intelligence on environmental conditions is being applied across the globe, allowing cities to use real-time data that highlights problems so they can be addressed.



Take Las Vegas, for example. Earlier this year, a digital twin was launched for a 7 sq km section of the city's downtown district to support its move towards greater sustainability. This virtual, computerised model uses street level, real-time data to show what is happening in the city at a given point in time. It logs data to measure air quality, noise and carbon emissions – a process that will help the city make more precise and directed policies around climate challenges, as well as fix issues quickly. The data will also be shared with building and business owners to reduce operating costs and emissions.

TECH THAT MAKES CITIES LIVEABLE AND RESILIENT

Technology is also helping urban regeneration projects be more social, vibrant, diverse and resilient. Low-traffic areas, green civic spaces and mixed-use quarters where walkability, cycling and scooters are prioritised are central to this, but technology supports the creation of safer and healthier spaces.

"We need to think hard about how we use the limited space available in cities," says Giles Bailey, director of Stratageeb, which works with organisations on transport and information. "The starting point should be a consideration of what makes a space pleasant to be in, safe to walk through. How we make cities better, cleaner and less carbon intensive needs to begin with the question of the human experience: what makes a good place?"

Argent, the developer at King's Cross in London, answered by dedicating 26 of the site's 67 acres to traffic-free streets, parks, gardens, water features and open public spaces. It includes Bagley Walk, a park built on a former railway viaduct filled with seasonal plants, much like the High Line on Manhattan's West Side.

Supporting the value of those green spaces is a network of sensors that continuously monitor the air quality around the King's Cross estate. They report hyper-local air quality data street-by-street to map levels in real time, measuring a wide range of airborne particulate matter and toxic gases. The data generated will help the public to map their walking routes through less-polluted spaces and transform public health in urban spaces.

While ground-up projects have the scope to create wholesale solutions, technology is also helping existing cities. Smart street lighting in Paris allows light levels to be adjusted to meet public safety needs, while traffic management and smart parking systems in Egypt's New Administrative Capital aim to reduce stress, improve air quality and support greater use of public transport.

Detroit is trying to reduce its carbon footprint through its Smart Parking Lab, which has been set up as a test site for emerging parking technology to help smart infrastructure and mobility companies deliver better parking technology, driven by the fact that parking issues can account for up to 30% of vehicle emissions.

In Taiwan, app technology is helping to resolve a chronic waste issue. Once known as Garbage Island, Taiwan now has an integrated waste management system that includes 4,000 pickup spots in Taipei. Mobile apps allow users to track pickup trucks and alert them when one is nearby. Technology is supporting a 'trash-doesn't-touch-the-ground' system that makes each person responsible for their consumption and has enabled the Taiwanese government to slash daily household waste accumulation. Between 1997 and 2015, waste generation fell by 31% according to Rapid Transition Alliance. Taipei now has one of the world's most efficient recycling systems.

> Supporting the value of those green spaces is a dense network of sensors that continuously monitor the air quality around the King's Cross estate

CLEVER AND THOUGHTFUL

The ability to quantify and measure progress is the holy grail for those involved in more socially orientated urban design and development, as it is for the people that use cities daily.

Mobility data offer significant benefits to urban planners as they show where people are going and why. Data providers such as Huq Industries can gather information on how long people stay in one place, and how quickly they are walking. Not only does it show how spaces are being used, it could also provide a way to measure social value. The data sets can tell if people are finding pleasure in their surroundings, and if placemaking strategies are working.

Chris Choa, urban strategist and founder at OUTCOMIST, explains: "Sometimes we need to define and measure proxies of values we are interested in. If I claim that a new neighbourhood is socially engaging, how can we prove that? If mobile phone signals show that people are walking slower in a certain place, we can understand that something has caught their attention; perhaps they are looking at the public art we have installed, trying out the new shops we have opened then chatting more and enjoying themselves. That's proof of engagement and suggests that investment has paid off."

Thus far, the concept of a smart city has been hard to pin down, but with shifts in how we create spaces of the future – and as technology comes on stream to better communicate what humans actually want and need – that simple feedback loop has the potential to change the definition of a smart city from a place that is not just clever, but thoughtful too.

> Climate change is a wide-ranging problem. So we need to include everyone in the task, otherwise we only come up with partial solutions

DIVERSE TEAMS, SMARTER DECISIONS

NICKY WIGHTMAN,
DIRECTOR OF EMERGING TRENDS, SAVILLS

Illustration The Project Twins / Synergy Art

Diversity, inclusion and social value are now part of how to re-imagine cities and the way to create smart solutions – tech-driven or otherwise

The real estate industry is engaging more widely with communities impacted by development. This cultural shift is underway at Grosvenor, where Andy Doyle, innovation director, Grosvenor Property UK, has been working to embed employee-led innovation. "It is about a culture of curiosity across the whole business, questioning, evolving and pursuing new thinking as the industry rapidly transforms," says Doyle. "Our staff know us best, they know all our pain points and the challenges of daily life faced by those we support – retailers, residents, office workers, visitors. They can help us decipher the problems and find better ways to work with our customers, partners and stakeholders."

This decentralisation of problem-solving has led to a change to staff appraisals. "It is important not to regret something we try out," says Doyle. "We trial things at low costs and are not afraid of it failing because that helps us improve next time. That is a massive change for people."

This philosophy has prompted Grosvenor Group into new ventures. "For example, we are working with Demand Logic to obtain greater insight into the energy consumption of our buildings and to provide actionable insights that allow us to change how those buildings operate and ensure they are as energy efficient as possible." The 340-year-old Grosvenor Group is also working on ways to channel renewable energy from solar farms to its London Estate tenants and exploring opportunities in early-stage businesses that directly benefit the portfolio and help accelerate attainment of its business goals.

"We can't achieve our environmental goals on our own; we need others to get there and help us change things for the better," says Doyle.

Diversity and inclusion is also baked into the founding principles of Carbon13, established to help build start-ups that address the climate emergency. Nurturing diverse teams is fundamental to its mission to create 200 ventures that will have the combined capacity to reduce carbon emissions by 400 million tonnes – or 1% of global emissions.

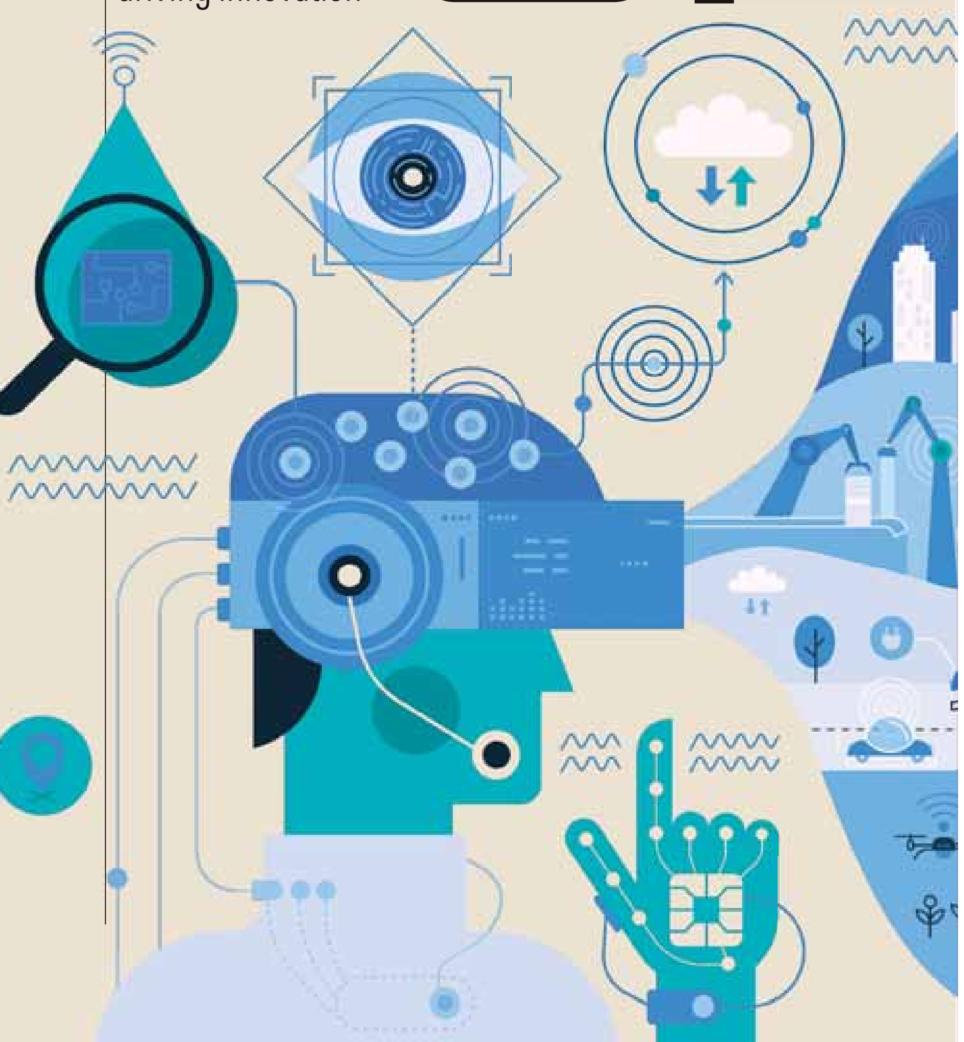
The brainchild of CEO Liv Andersson, BioZeroc uses biotechnology to create carbon-neutral construction materials. It's one of many female-led businesses being supported by Carbon13.

The venture builder is also working with innovators who are tackling food waste, clean energy, green supply chains and urban street safety. And, as well as gender, Carbon 13 is striving for a more inclusive approach to other under-represented groups.

"The design flaw in many of the solutions being proposed around the challenges we face, not just in cities but globally, is that we are not talking to everyone," says Dr Nicky Dee, co-founder and chief sustainability and innovation officer at Carbon13. "Climate change is a wide-ranging problem, so we need to include everyone in that task," she says. "Otherwise, we only come up with partial solutions."

SMART CITY TECH

From self-sufficient energy systems and solar parks to superfast digital infrastructures and gamified street mapping, cities are driving innovation



> In Shanghai, a dual gigabit city infrastructure is providing extremely fast download speeds, enabling high-definition video streaming and applications such as augmented reality and virtual reality

MAKING CITIES MORE RESILIENT

THE HUDSON YARDS MICROGRID, NEW YORK

The developers of Hudson Yards, the largest private real estate development in US history, have provided large commercial tenants with a microgrid – a self-sufficient energy system that can operate independently from the wider grid. Related Companies and Oxford Properties are supplying heat and power at Eastern Rail Yards from one energy source, known as a cogeneration plant. The system also has breakers that will open to isolate Hudson Yards from the rest of the grid in the event of a power failure, delivering power directly to the buildings.

Cogeneration power plants are between 50% and 70% more efficient than single-generation facilities. The other advantage of this solution is that it can account for the variety of energy demands across the commercial, retail and residential spaces: office buildings peak in the afternoon, residential buildings peak in the morning and evening, and the retail and cultural facilities are busiest over the weekend.

CITIZEN CLOUD PLATFORMS, SHANGHAI

The Smart Shanghai – People-Oriented Smart City project developed digital infrastructure, e-government services, and a City Brain – an AI system that uses data to solve transport, security, construction and urban planning issues.

Its Suishenban Citizen Cloud platform provides access to over a thousand services, with around 10 million people – half the city's population – using the system to register births and marriages and access social security, medical treatment, legal services and transportation.

The city has also stolen a march in 5G coverage across key districts and is rolling out a broadband gigabit network. A dual gigabit city infrastructure is providing extremely fast download speeds, enabling high-definition video streaming and applications such as augmented reality and virtual reality. It will also improve the operation of IoT technology and enable remote working and public Wi-Fi networks.

Illustration Getty

MAKING CITIES MORE MOBILE

TECHNOLOGY FOR A CAR-LESS CITY, SEOUL

The Hopeful Seoul Monitoring System is a public-private partnership that involves a city-wide monitoring system that tracks vehicle and pedestrian traffic around the city to help prevent traffic congestion. Free public bicycle programmes and attractive public transport services are helping Seoul evolve into a car-less city, with aims for private car ownership to be unnecessary by as soon as 2030.

Meanwhile, Seoul Innovation Park is a social innovation platform where people develop creative initiatives to solve social problems and help build a "safe and sustainable" society. Across 100,000 sq m, there are 235 organisations, companies and cooperatives and 1,200 innovators doing social experiments covering fields such as social economy, art, culture, education, human rights and fair trade. There are also spaces where citizens can collaborate, as well as experience virtual and augmented reality.

CYCLISTS AND SMARTPHONES MONITOR STREETS, HELSINKI

In 2021, Helsinki called on its residents to map out 300km of cycling paths to identify and repair any damage to them. Cyclists attached a smartphone loaded with a specialised app to their handlebars to gather the data. The app, Crowdchupa, is a game for crowdsourcing data collection that navigates cyclists via objects to "collect". Each item collected translates into money that is paid to the cyclists.

Cycling is an important part of the city commute in Helsinki, with 1,500km of well-maintained cycling paths to support it; biking's modal share of city traffic is 11%. Health benefits accrued from this have resulted in a €3.6 billion gain for every €1 billion invested in the pathways, according to a 2021 study released by Handshake, an EU initiative that is pioneering cycling infrastructure across European capitals.

MAKING CITIES MORE GREEN

THE WORLD'S LARGEST SINGLE-SITE SOLAR PARK, DUBAI

The Mohammed bin Rashid Al Maktoum Solar Park is a single-site solar park in Dubai that aims to be the largest in the world. It has planned production capacity of 5,000MW by 2030, with a mission to save more than 6.5 million tonnes of carbon emissions every year.

The project is part of Dubai's strategy to increase the share of clean power in its energy mix over the short term, and fits into the UAE's desire to become carbon neutral by 2050, with clean and renewable energy investment worth DH 600 billion planned over the next three decades.

The first phase became operational in 2013 and has already contributed to a major reduction of carbon emissions. The project is made up of 153,000 photovoltaic cells and covers a surface area of 280,000 sq m.

HIGH-SPEED, SOLAR-POWERED TRANSPORT, RIYADH

Virgin Hyperloop is currently developing a freight transportation system that will dramatically cut land-based travel times. The solar-powered transport system, which uses vacuum tubes and magnetic railways, could potentially transport passengers at speeds equivalent to that of an aeroplane within a decade. Top speeds are estimated to be 1,123km/h (760mph), with average speeds ranging between 800 and 965km/h.

The company has recently announced it is focusing on a freight-only version of the technology to better respond to global supply chain challenges. Its first route, which it aims to deliver in four years, may be a link between the western port city of Jeddah with Riyadh and beyond to the Gulf states on the east of the Arabian Peninsula.

Virgin Hyperloop is the only company to have completed a successful test run with passengers using the technology. With zero direct emissions and very little noise pollution, the system has potential to move 45 million passengers per year around the Gulf.

WORDS MARIE HICKEY, DIRECTOR, COMMERCIAL RESEARCH, SAVILLS UK

Retail reimagined

Physical retail remains a key tool for brands to reconnect with their customers. From creative experiences to emerging markets, **Marie Hickey** examines four global trends that will shape the future of prime retail destination cities

The pandemic undoubtedly created major challenges for prime retail spots in cities all over the world. Grappling with a series of domestic lockdowns and international travel bans, many major destination cities struggled to sustain demand throughout 2020 and 2021.

Footfall fell. Retailers took a close look at existing store networks. And rising vacancies led landlords to reconsider rental terms in some markets.

But with 2022 being the year that the world seems to be reopening, as restrictions lift and tourists return, how might we see these prime retail destinations recover?

As our retailer attractiveness city ranking illustrates (see page 58) both the pace and shape of how destination cities recover is deeply nuanced. Those destination cities that benefit from a strong domestic market, such as New York and Shanghai, have already demonstrated far higher levels of resilience in the past 18 months, and look set for a far quicker bounce back.

Take New York, where the combination of the scale of its retail market and the affluence of its domestic consumers have pushed it to the top of our ranking, narrowly ahead of Paris and London.

In contrast, those cities dependent on a steady stream of inbound tourism have faced sharper declines, and are likely to face a longer road to recovery. In Hong Kong, for example, where tourism forms a key pillar of the city's economy, rents fell steeply from Q4 2019 to Q3 2021.

By sparking this mixed recovery among key destination cities, the pandemic has highlighted a number of emerging markets that present exciting opportunities for retailers in the years ahead, primarily across the Middle East and China.

Despite the migration to e-commerce in many markets, the resilience of many of these destination cities serves to illustrate a broader point: that physical retail remains a key tool for both brands and retailers when it comes to reconnecting with their consumers, enhancing exposure and ultimately driving retail sales.

Yes, Covid-19 created inevitable challenges. But rather than result in a material shift in prime retail areas, it served more to accelerate previous trends – the rationalisation of store footprints by mass-market fashion brands, the emergence of experiential brand spaces, and a refocusing on key streets and city centres – rather than diminish the critical role played by physical retail.

Here are four global trends that we predict will shape the future outlook of key retail destination cities.

TREND 1: PRIME GLOBAL CITIES WILL RETAIN THEIR STATUS

Though all major global cities faced challenges as a result of the pandemic, the key fundamentals of a successful prime retail destination don't look set to change. That's why New York, Paris and London remain top of our ranking – albeit all for slightly different reasons.

In New York, a large, reliable domestic spend from its relatively wealthy population helped shelter it from the temporary closure of international tourism, as did a robust domestic tourism market. In central Paris too, its prime retail locations continued to benefit from its population of 2.1 million, as well as a lower penetration of e-commerce spend compared with other markets. And in London, forecasts of a return to pre-pandemic traveller numbers by 2023 look set to underpin a swift recovery, with many retailers already reactivating their requirements in the capital.

Changes in consumer shopping habits, in particular the growth in online and declining department store spend, have seen some challenges around the vacancies of large retail units in a number of markets, as brands recalibrate the size and type of store they require, but this doesn't undermine the fact that the fundamental appeal of prime destinations hasn't changed.

Moving up the ranking is Shanghai, with significant growth prospects alongside the scale of its retail market. Its resilience is down to a few key drivers, explains Nick Bradstreet, Head of Asia Pacific Retail, Savills. These include "the lack of outbound travel fuelling luxury spend, the emphasis on government on supporting domestic consumption and also the emergence of new retail sectors gaining traction, including more demand for sport and outdoor retailers and new energy vehicles (NEVs)."

In fact, Shanghai secured 16 new major retail projects in 2021, including Swire's Qiantan Taikoo Li, Jiuguang in Zhabei and CapitaLand's Raffles City.

TREND 2: KEY EMERGING MARKETS SET TO CREATE EXPANSION OPPORTUNITIES FOR RETAILERS

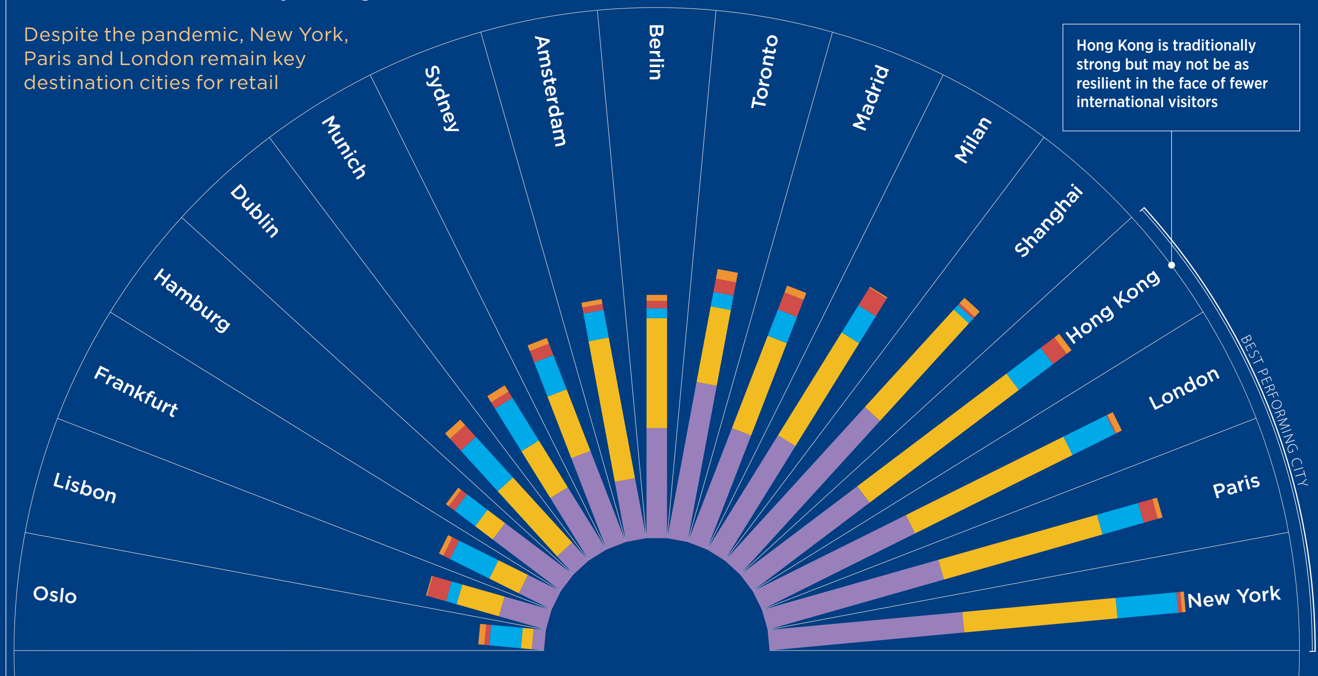
For those retailers looking to expand their global footprints, the new normal also looks set to elevate some key emerging markets up the ranking.

The Middle East is a prime example, where already there are clear signs of retailer demand, with a shift away from purely franchises to brand-owned stores in key locations, and a strong focus on luxury. In this regard, Dubai is leading the way.

"Dubai is one of the most cosmopolitan cities in the world, home to more than 200 nationalities," says Kenny Lam, Savills Associate Director in the region. "The majority of luxury brands are represented by mono-brand stores through local franchises/partners, but with the change in government policies we are starting to see international brands come in directly." Cairo, Saudi Arabia and Bahrain represent growing opportunities too, he adds.

Retailer attractiveness city ranking (selected cities)

Despite the pandemic, New York, Paris and London remain key destination cities for retail



Size of retail market · International visitor appeal · Domestic affluence · Online penetration* · Growth prospects

Note *Lower online penetration = higher score **Source** Savills Research

> Shanghai has significant growth prospects due to the scale of its retail market

In Saudi Arabia, luxury brands are buying back businesses and establishing larger teams on the ground, able to coordinate events and activations to build their brand.

In China, alongside growth from cities such as Shanghai, there lies a significant opportunity across its non-top-tier cities. "A stringent Covid-19 containment policy has fuelled domestic tourism and subsequently the emergence of new retail hotspots," says Bradstreet. In particular, luxury brands will follow the lead of top developers, he adds, which are expanding into Chengdu, Hangzhou, Kunming and Ningbo, among others. "We see the most potential in Hainan, with the full island set to be a duty-free zone by 2025."

TREND 3: RETAILERS THAT SUSTAINED GROWTH DURING THE PANDEMIC WILL FUEL FUTURE DEMAND

While those retail sectors that struggled during the pandemic will likely use the next year to recalibrate and reconsider store expansion strategies, those that sustained or even grew sales during the same period look set to accelerate store expansion, benefitting from a rebasing in rents in some markets.

Success stories during the pandemic include athleisure, homeware, wellness, food and beverage and electric vehicles (EVs). All continued to trade well both online and offline, when able to trade physically, over the past 18 months, and will move ahead capitalising on strong revenues and attractive store opportunities in the wake of the pandemic. For those sectors, now is a prime moment to acquire new sites and grow their physical footprints, as great units in great locations may be available at far cheaper rents than in 2019.

Athleisure brand Gymshark, for example, is set to open its first bricks-and-mortar outlet on Regent Street in London following meteoric sales growth during the pandemic. The three-floor, 18,000 sq ft space, formerly home to J Crew, will act as a flagship outlet for the upmarket brand, firmly cementing its status in the sector with a spot at one of the world's top retail destinations, despite being less than 10 years old. EV manufacturer Polestar too has opened a string of new physical retail spaces, doubling its global presence from nine to 18 markets, and increasing its physical locations to 100 in 2021.

For luxury brands, meanwhile, the dynamics of the current market may make it possible to relocate existing stores to larger units in stronger locations, as well as providing opportunities for new luxury entrants.

Illustration Nazario Graziano / agencyrush.com, Getty Images, Piero Zagami

> THE ROLE OF PHYSICAL STORES IN AN INCREASINGLY DIGITISED COMMERCE LANDSCAPE IS CHANGING, TURNING STORES INTO ASPIRATIONAL DESTINATIONS THAT STRADDLE LEISURE AND ENTERTAINMENT

TREND 4: FROM TRANSACTIONAL TO EXPERIENTIAL STORES

A trend prior to the pandemic – and one set to continue – is the evolution of physical retail from a transactional space into an experiential, brand-building one. This reflects the changing role of physical stores in an increasingly digitised commerce landscape, turning them into aspirational destinations that straddle leisure and entertainment.

On the one hand, we're seeing this as a trend leveraged by traditional retailers. In 2021, shoe brand Vans – which saw digital revenues grow by 53% in 2020 – announced it would open a permanent 'House of Vans' location in Mexico City. Part skatepark, part music venue and part art gallery, the space is a community hub for street culture rather than a transactional space, with other locations in Chicago and London.

Upmarket US furniture retailer RH has also seen "phenomenal success" by merging retail and hospitality in its galleries, says Sam Foyle, Director of Retail, Savills. "They have merged retail and hospitality in a unique way. Their restaurant offer is within their galleries. When you go into their stores, you can sit on their furniture and have a glass of wine. They don't look at property as a sales tool, it's about how it can showcase and elevate their brand. The galleries are an expression."

Brands that don't classically rely on physical retail stores are experimenting with brand-building spaces too. Netflix is set to open its first physical store in Tokyo. It will host experiential features that cement its foothold in the entertainment and tech space, with merchandise and installations from popular shows and a deep dive into its artificial intelligence algorithm.

The appetite for experiential spaces serves a key need for physical connection with consumers in an online world. "When retailers are taking ultra-prime locations in global cities now, the financials are part of the conversation, but it's also about, 'What does this do for our brand?'" says Foyle.

WORDS ERI MITSOSTERGIOU, DIRECTOR, SAVILLS WORLD RESEARCH AND RICHARD VALENTINE-SELSEY, DIRECTOR, SAVILLS RESIDENTIAL RESEARCH

$6.8 trillion The total value of the residential sector of 13 key European cities is more than $6.8trn

Multifamily attracts record global investment

Institutional investment shifts to large-scale rental housing in search of stable yields and reliable income – and overtakes office investment in the process

INSTITUTIONAL OWNERSHIP OF MULTIFAMILY

40%	13%	6%	3%	3%	3%
United States	Germany	Spain	France	Japan	UK

The past couple of years, people have focused on the concept of home like never before – and the same is true for investors. Global investment in apartments hit a record high of more than $478 billion in 2021 and in Q3 investment exceeded offices for the first time. By the end of last year, investment volumes were 30% above offices.

This is in large part because residential property has performed well during the pandemic compared with office and retail, which had to manage rent collection difficulties due to lockdowns and remote working. In most countries, total returns for residential in 2020 were 5.5%-8.3%, with only the industrial sector faring better.

The surge in investment in professionally managed apartment blocks, known as multifamily housing or build to rent, has driven prime net yields to record lows of 3% or less in most geographies. Even though multifamily is considered to have the highest value metrics, the yield spread over long-term bond yields remains attractive. This means prime yields may remain unchanged or even harden slightly further, despite interest rate hikes in the US and Europe, before starting to adjust upwards.

Crucially, sectors with defensive characteristics that benefit from macro factors such as demographic trends look increasingly attractive to investors seeking safe havens. During times of economic turbulence, demand for rental properties rises and multifamily housing provides investors with an attractive opportunity to diversify away from more cyclical real estate sectors and to continue to receive secure, inflation-hedged income streams in regions where residential rents are index-linked – typically in Europe.

THE MULTIFAMILY SECTOR NOW

In North America and parts of Europe, the sector is large and mature. In Germany, multifamily accounted for 46% of property investment in 2021, 39% in the US and Ireland, 34% in Sweden and 30% in Canada.

Market size and liquidity depend on the share of the rental market that is institutionally owned. In the US, institutional ownership is around 40%, making it the world's largest market. The biggest owner of multifamily blocks, MAA, has more than 100,000 homes.

In Germany, roughly 13% of the rental apartment market is in the hands of large professional private owners, although this share rises, for example, to 29% in Berlin. In France, about 3% of the private rented sector (PRS) is institutionally owned; in Spain, it is 6%, underpinned by the recent entry of specialist players developing new multifamily products in response to rising demand from renters.

The UK has a small but growing market, with 3% of the PRS owned by institutions and a build to rent pipeline totalling 212,200 units complete, under construction or in planning.

Japan, where institutions own around 3% of the PRS, or around 450,000 homes, has been seeing a steady rise in international investment. The country's residential sector has shown stable returns through the past 10 years, including a resilient performance during the global financial crisis – this was the driver for Blackstone to invest over $1.5 billion in 2014, which started the wave of international interest.

"Japan's multifamily sector, which used to be unfashionable, is gaining more interest among institutional investors seeking markets where they can harbour capital for the long term with lower risk," says Tetsuya Kaneko, Head of Research, Savills Japan. "Potential rental increases supported with positive demographic changes – i.e. urbanisation – are particularly attractive."

WHAT ARE THE OPPORTUNITIES AND RISKS?

Housing is a basic need. The demand for rental housing, especially affordable housing, can rise during periods of uncertainty, notably if stricter lending criteria slows demand in the sales market. Many markets in Europe and the US are also chronically undersupplied.

There are other strong demographic trends supporting the sector. The demand for rental accommodation has been driven by young people moving to urban centres for work and study and this is unlikely to be altered by Covid-19 in the long term. Even some cities such as Tokyo, which experienced population decline during the pandemic, saw occupancy rates start to increase again by the end of 2021. Barriers to home ownership, changing cultural norms and a better quality of housing product also mean renting has become a more desirable option for all age groups.

Yet the sector is not without risks, one of which is a more stringent regulatory environment designed to protect households from rising rents. "Many cities in Europe have introduced rent caps, which limit rental growth prospects for landlords," says Marcus Roberts, Director, Operational Capital Markets, Savills. "However, rent caps also help investors by reducing the risk of frequent tenant turnover and providing higher income security."

The share of average earnings spent on rent was already at historically high levels in the US and Europe before the pandemic and the squeeze on consumer incomes due to rising inflation and energy prices may have a further impact on rent affordability, limiting the extent to which landlords can increase rents. In the US, the consultancy Capital Economics forecasts effective rental growth to slow from 12.5% year-on-year at the end of 2021 to 4.0% by Q4 2022 and 1.5% by end-2025.

A further challenge for investors is the increasing operational intensity of rental assets. Post-pandemic, occupiers are spending more time at home and are focusing on wellness and convenience, with separate home office space now essential for some tenants. Following the lockdown experience, outdoor spaces and larger, operable windows have become a prerequisite, while heightened interest in safety and sanitation is likely to continue, leading to increased demand for touch-free technologies and more spacious communal areas.

WHERE COULD WE GO FROM HERE?

The low penetration rates of institutional ownership mean there is huge potential for institutions seeking stable income streams to grow their exposure to the sector, especially in Europe, where demand for rental is rising. We estimate the total value of the residential sector of 13 key European cities is more than $6.8trn. About 37% of this is rented and the majority is in apartment blocks.

Nascent markets such as Australia, which is expected to see strong growth over the next five years, also present opportunities. Recent research by Savills Australia found almost 70% of Local Government Authorities had fewer apartments available to rent in Q4 2021 compared with two years prior. This is pushing rental growth far above historic levels, while supply of new residential units is declining and property prices have soared, rising by a record average of 24% nationally in 2021.

Conal Newland, Head of Operational Capital Markets, Savills Australia, says: "The attention that build to rent is gaining is a direct result of increasing housing unaffordability, a slowdown in residential construction and the rapid expected bounce-back in migration, which is being encouraged by the federal government to stimulate economic growth and satisfy current skills shortages," he says. "A number of major players such as Greystar are now investing in the market, with strong near-term rental growth prospects across the main capital cities a key investment driver."

CREATING SUSTAINABLE COMMUNITIES

Investors targeting affordable homes can also help tackle the housing crisis. Offering energy-efficient and accessible housing promotes equality and creates sustainable communities, at the same time helping investors meet their impact investing goals – even more so if this involves the refurbishment and reuse of obsolete buildings in central locations.

The pandemic has highlighted the importance of the quality of our homes for our personal wellbeing, yet, at the same time, housing costs continue to outstrip wage increases. There is a significant opportunity for the public and private sectors to come together to increase the supply of affordable housing, improve public infrastructure, expand green spaces, renovate old buildings and adopt smart city solutions. Ultimately, investing in multifamily housing can be a force for good as well as a sound investment.

Image Getty Images

WORDS STEVEN LANG, DIRECTOR, COMMERCIAL RESEARCH, SAVILLS UK

THE NEW RACE FOR SPACE

From tourism to satellites, mining to manufacturing, public and private investment is driving growth in space technologies – all of which have distinct real estate requirements and development of specific clusters

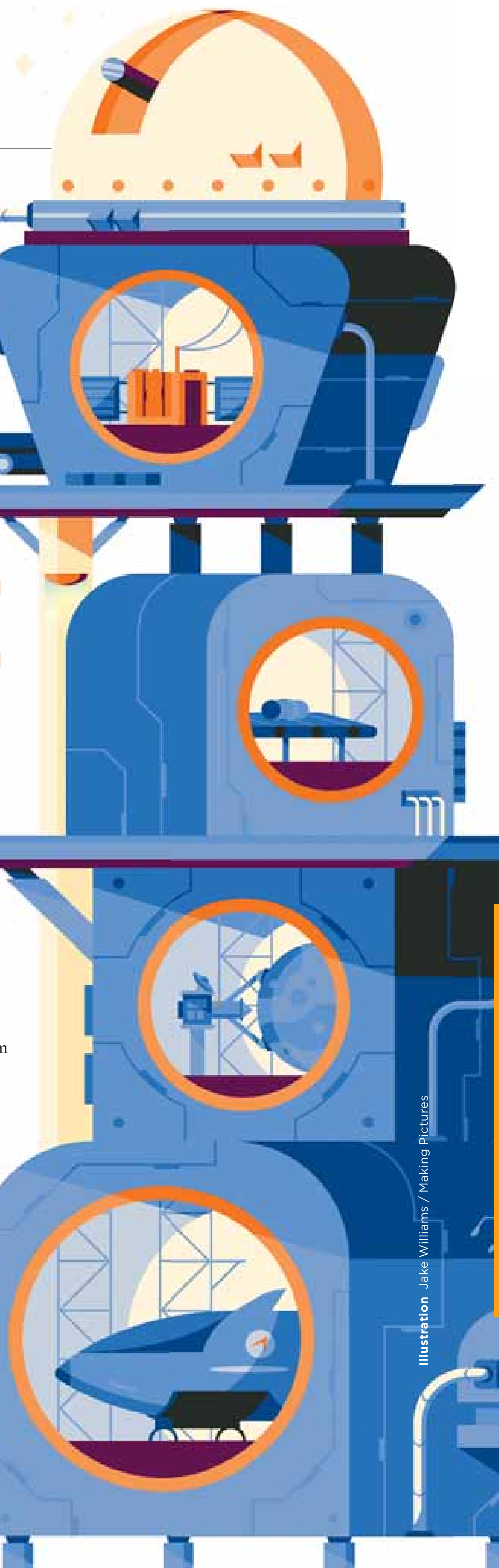


Illustration Jake Williams / Making Pictures

AMBITIONS FOR SPACE

Space is around 100km from the Earth's surface – about an hour in a car. But getting there has always been a barrier to entry – and re-entry. However, the lower cost of launch 'vehicles' into space presents an opportunity for companies to deliver commercial products and services. The stories that grab the headlines usually require investment from a billionaire, but there are many sub-sectors of the space market to investigate, all of which employ thousands of people and have specific and significant real estate needs. In recent years, there has been a spate of white papers outlining countries' aspirations for this sector. This government ambition will also drive the space ecosystem and increase the demand for real estate, from HQ offices to R&D/production and high-value manufacturing facilities.

LEVELS OF INVESTMENT

How do we measure the growth of the space sector? Capital investment is a good start. Our review of investment into three broad areas of SpaceTech – spaceflight, satellites and exploration – highlights significant growth in the venture capital (VC) world. During the five years to 2021, around \$21 billion of VC was raised by companies that identify as being in the SpaceTech sector. Putting this into context, the pharmaceutical and biotechnology sector has seen \$227 billion of VC raised in the past five years. However, the SpaceTech sector has seen VC grow by 67% per annum for the past three years.

INDUSTRY SECTORS AND APPLICATIONS

The future of funding is increasingly in the private sector. There are many sub-sectors of the space market, such as small satellites, in-space manufacturing and space tourism (see graphic above).

Science fiction notions of asteroid mining are also becoming credible. Goldman Sachs commented that the psychological barriers of funding a mission to an asteroid are higher than the technological barriers. Perhaps more acceptable targets for space are around satellite technology and the delivery of commercial services for observing Earth and providing locational services. In 2021, hyper-accurate positioning was one of MIT Technology Review magazine's top 10 breakthrough technologies to watch. Drone delivery, logistics, ride hailing and precision agriculture will all rely on hyper-accuracy, and there is a race to provide the satellites to boost accuracy from several metres down to a few centimetres.

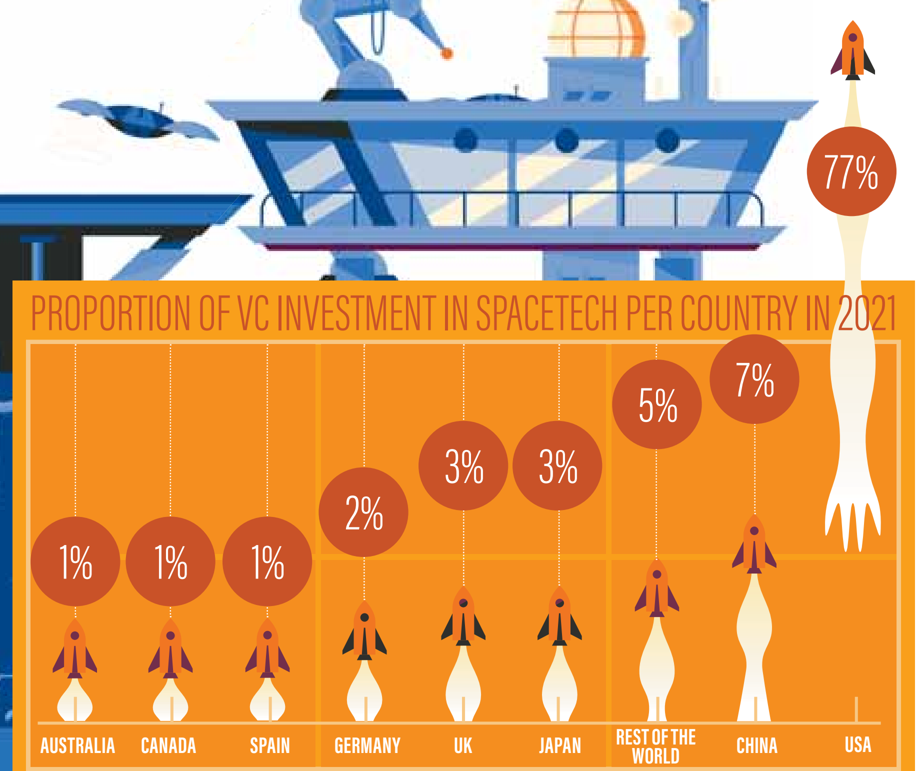
THE TRADITIONAL PLAYERS

Companies headquartered in the US, China, Japan and the UK have been at the forefront of the sector in recent years. Unsurprisingly, the US has dominated, but China is accounting for an increasing share of companies headquartered in the country and attracting VC funding.

China has set out ambitious goals for its space programme for the next five years, with missions to the Moon and Mars in progress or already completed. VC raised by China-headquartered companies has risen sharply in the past few years.

China has built space cities in the country, and has committed to developing a space port in Ningbo to rival other global locations, covering 67 sq km, 32 sq km of which will be for support facilities. This includes a wider industrial base including R&D, manufacturing, and satellite data application centres – but also a significant residential offering. The development and launch of satellite 'constellations' will assist with remote sensing, communications and navigation enhancement – the reconnection aspirations are massive.

China may also aspire to create a space colony, which would develop a new form of real estate that Savills will write about in this publication sometime in the 2030s (or beyond).



Source Savills Research using PitchBook Data, Inc. Data has not been reviewed by PitchBook analysts

WE HAVE LIFT OFF: EMERGING LOCATIONS

This new age of the space sector is also seeing alternative locations emerge, which is very exciting for the global real estate market. In terms of launch sites, the real estate need is very specialised, but possibly something that an infrastructure fund could invest in. However, there are R&D, academic-linked and corporate locations that will emerge as the ecosystem grows, akin to the life science sector.

In Finland, microsatellite manufacturer ICEYE raised \$136 million in February 2022. The company provides radar satellite imaging services intended to offer access to near-real-time imagery from space. Employee numbers have increased from 11 in 2015 to 400 in 2022, with offices now in Warsaw, Poland; Irvine, California, USA; Oxfordshire in the UK, and Murcia in Spain.

The UAE, meanwhile, has developed its first economic zone in Masdar City to boost SpaceTech start-ups. As seen within the life science sector, the delivery of world-class infrastructure would have been out of reach for start-ups given their limited capital. This will drive company formation. To deliver this, the 'four pillars' of the new economic zone include an accelerator, workspace, government support and space labs.

DELIVERING SOCIAL VALUE: THE NEXT STEP FOR REAL ESTATE

Creating social value means taking into consideration not just market value, but also the benefits that property brings to society says **Sarah Forster**, CEO and co-founder of The Good Economy

The Good Economy is an impact advisory firm that helps investors measure, improve and report their impact with a focus on the 'S' in ESG

Social value creation has moved to the centre of conversation in business and financial circles in recent years. While environmental challenges and what it takes to reach net zero are still priority concerns, social issues, including poverty and inequality, as well as racial and gender equity, are receiving more attention.

We are witnessing this trend first hand, with more organisations, including those in the real estate industry, wanting to know how to understand, measure and enhance their social value.

> While the pandemic has brought challenges, it has also opened up opportunities to think how to reconnect development to local, place-based needs

At its heart, social value refers to what is in the best interests of society as a whole. In the context of real estate, it is concerned with the extent to which the built environment supports environmental, economic and social wellbeing, and in doing so improves the quality of life of people. Real estate is an enabler of inclusive and sustainable development. Its social value is derived from the use of land and property.

The financialisation and globalisation of real estate markets has led to a disconnect between property and social value creation. In the real estate and financial markets, property is commodified as a financial asset with value viewed from the perspective of its monetary value and income or profit-earning potential. An uplift in land value and property prices can be seen positively from a market perspective, however from a social value perspective, the reality on the ground may be unaffordable.

Covid-19 has been a wake-up call for the industry. While the pandemic has brought risks and challenges, it has also opened up opportunities to think how to reconnect development to local, place-based needs and priorities and to consider the industry's role in helping tackle social and spatial inequalities. This will need to focus on how the public and private sector can co-create social value and how to develop it beyond business as usual.

Social value creation requires putting local people at the heart of decision-making. How do we create housing, shopping centres, offices and science parks that best serve the needs of local communities and the wider economy?

There are real estate projects that are looking to maximise social value creation. We are seeing increasing investment flows to affordable housing, benefitting people on low incomes or with specific housing needs. These can have a high social impact. This can also be achieved by investing in social infrastructure, such as care centres, health facilities and creative space, and place-based regeneration projects that focus on the needs of local residents.

The real estate sector has the potential to bring major social benefits given the strong relationship between the quality of housing and the built environment with the health and wellbeing of people and communities.

Context is everything when reconnecting real estate to people and place. It requires asking questions, such as 'who benefits?' and 'what actions would improve the quality of life for the people affected by this project?'

Ultimately, there is a need for a shared understanding of social value across real estate actors and a shared commitment to maximising social value across the lifecycle from planning to occupancy. This requires defining shared social impact objectives and then using appropriate metrics and measurement approaches. The industry needs to build its knowledge and develop common methods of measurement and reporting, as well as improving its skills in stakeholder engagement and listening.

What does that boil down to? As one head of real estate in a major firm said: "We want to move from investing in big shiny assets to socially useful buildings and social change."

To achieve this goal requires a shift to a long-term dynamic of positive social creation, which should also enhance the value of the investment. With this comes new opportunities to invest in more sustainable and inclusive communities – integrating housing, commercial real estate, social infrastructure, clean energy and natural capital investments. It's about an increased focus on the design and quality of places that support happier and healthier lives for everyone.

Savills plc is a global real estate services provider listed on the London Stock Exchange. We have an international network of more than 600 offices and associates throughout the Americas, the UK, continental Europe, Asia-Pacific, Africa, India and the Middle East, offering a broad range of specialist advisory, management and transactional services to clients all over the world.

For Savills Paul Tostevin, Eri Mitsostergiou, Oliver Salmon, Mike Barnes, Austin Barrett, Nick Bradstreet, Tanya Broadfield, James Burdess, Lucian Cook, Sam Crispin, Marcus de Minckwitz, Emma Kennedy-Cooke, Sarah Dreyer, Ann Duncan, Laura Flatley, Sam Foyle, Ricardo Garcia, Jack Harkness, Gregg Healy, Jonathan Hewlett, Marie Hickey, Lizzie Jones, Tetsuya Kaneko, Katrina Kostic Samen, Kenny Lam, Steve Lang, Chris LaRue, Joe Lloyd, Louisa Lou, James Macdonald, Stuart May, Tom Mellows, Kevin Mofid, Arvind Nandan, Conal Newland, Emily Norton, Lucy Palk, Swapnil Pillai, Sarune Ringelyte, Marcus Roberts, Kelcie Sellers, Simon Smith, Helen Tatham, Amanda Thomas, Richard Valentine-Selsey, Paula Walshe, Nicky Wightman.
Repro F1 Colour. **Impacts is produced for Savills by Sunday** 207 Union Street, London SE1 0LN. wearesunday.com

"Priorities and preferences have changed. But people across the world are reconnecting – with their cities, their workplace and a sustainable way of living"

savills

savills.com/impacts

Scan the code to sign up for regular Impacts updates