

A C T I V E

C A P I T A L

Real estate strategies
for volatile times

Welcome to Active Capital

The knowledge of every tremor in the market gives you the power to make smart decisions.



Neil Brookes
Global Head of Capital Markets

Welcome to Active Capital, our unique research perspective on the global real estate investment outlook. From forecasts of capital flows to our analysis of the most pressing strategic considerations, including debt and ESG, this research is designed to help guide you through the complexities, challenges and opportunities that lie ahead, an essential companion to fully understand the myriad forces at play.

Built upon thousands of data points, machine learning, and purpose-built modelling processes, our findings are combined with the 'on the ground' insights of our brokers and advisors from right across our global partnership and network.

As we look towards a forecast period marked by polarised performance, uncertainty and continued volatility, we highlight the data-led strategies that global real estate investors will be pursuing to support resilience. Our aim is simple: to help our clients with unique insights to allow them to make robust decisions over the coming months.

For a deeper dive into the key themes presented in this executive summary, and additional global insights, please visit knightfrank.com/active-capital.



Our aim is simple: to help our clients with unique insights to allow them to make robust decisions over the coming months.

Contents



06 Active Capital in 60 seconds

01 Macro outlook

10 An era in which smart investing matters more than ever

02 Capital gravity forecasts

18 Forecasting global cross-border capital flows

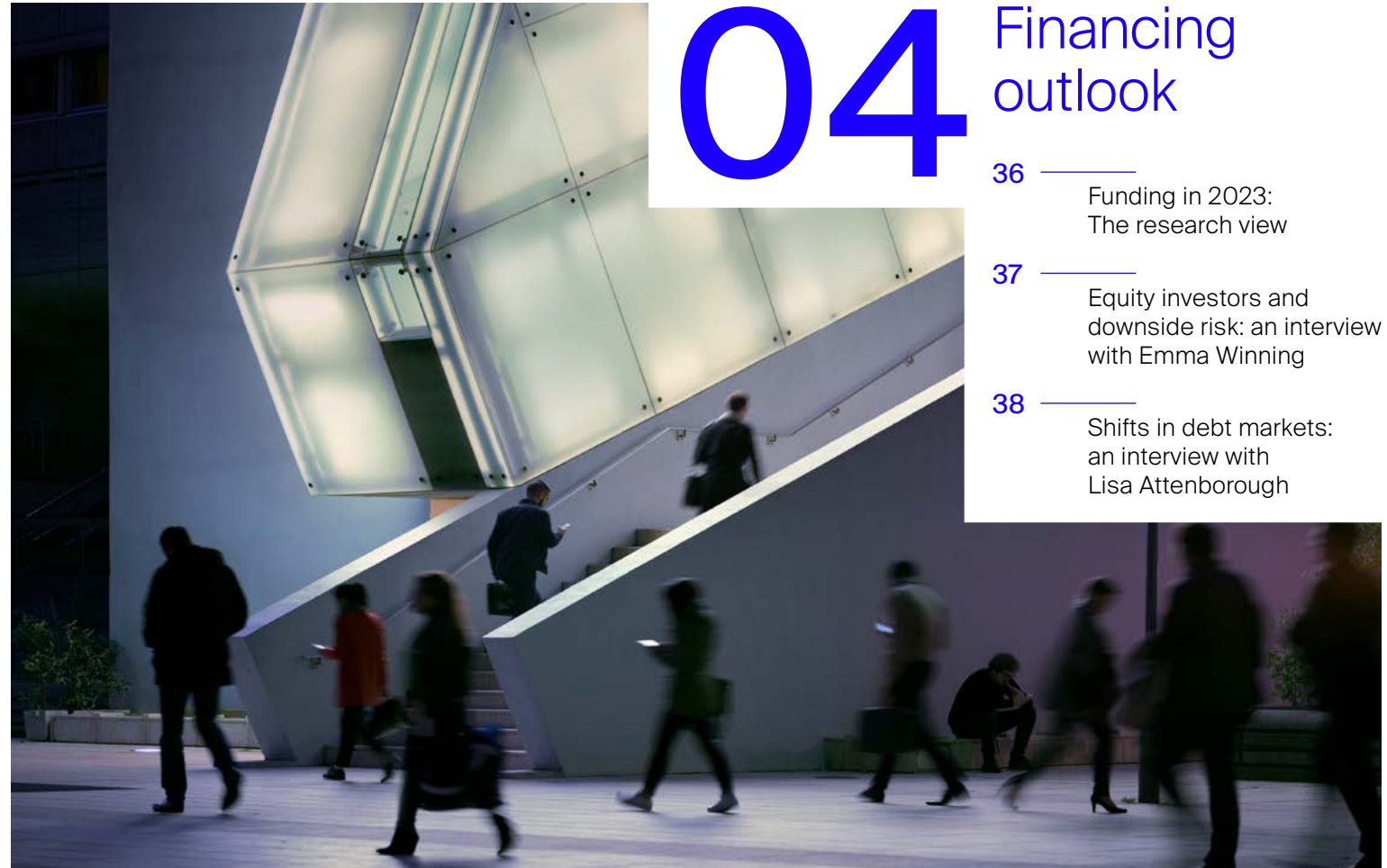
20 Predictions, commentary, drivers and methodology

24 Regional outlooks

03 Looking back to look forward

28 Lessons from the crisis of 2008

32 Innovating new sectors



04 Financing outlook

36 Funding in 2023: The research view

37 Equity investors and downside risk: an interview with Emma Winning

38 Shifts in debt markets: an interview with Lisa Attenborough



05 What's next for ESG?

42 Innovating resilience in a changing world

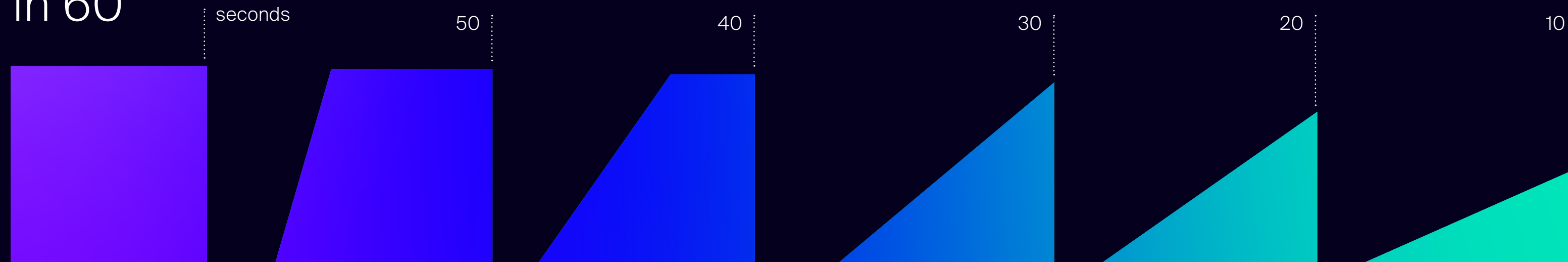
44 Roots in the Sky - Fabrix case study

46 Atelier Gardens - Fabrix case study

48 Global footprint

50 Contacts

Active Capital in 60 seconds



Admst uncertainty and continued volatility in global markets, Active Capital 2022/2023 highlights the data-led strategies that global real estate investors will be pursuing to support resilience.

We will guide you through the complexities and challenges, whilst highlighting the opportunities ahead.

Our latest research explores 5 key themes.

Macro headwinds

- Volatility will remain elevated, peaking in 2023.
- A soft global economic outlook favours innovation-led cities.

Financing

Cost of debt to increase but varied outlook globally. Compared to GFC, lender pool more diverse, if complex.

Outlook for real estate

Flight to quality. Assets which are:

- Core
- Well located
- ESG accredited

Positive case for the right real estate:

- ✓ Diversification benefits
- ✓ Enhanced risk adjusted returns

Cross-border investment

Our capital gravity model predicts a moderation of cross-border investment to levels seen mid-last decade.

Top 5 sources of capital

1. United States
2. Canada
3. Singapore
4. Germany
5. United Kingdom

Top 5 destinations

1. United States
2. United Kingdom
3. Germany
4. Australia
5. France

Look back to look forward

Supported by analysis of previous cycles, we predict investor focus will shift to:

- Local markets
- Private capital
- Individual deals
- <\$100mn lot size

ESG evolution

ESG to support liquidity, financing and occupier demand.

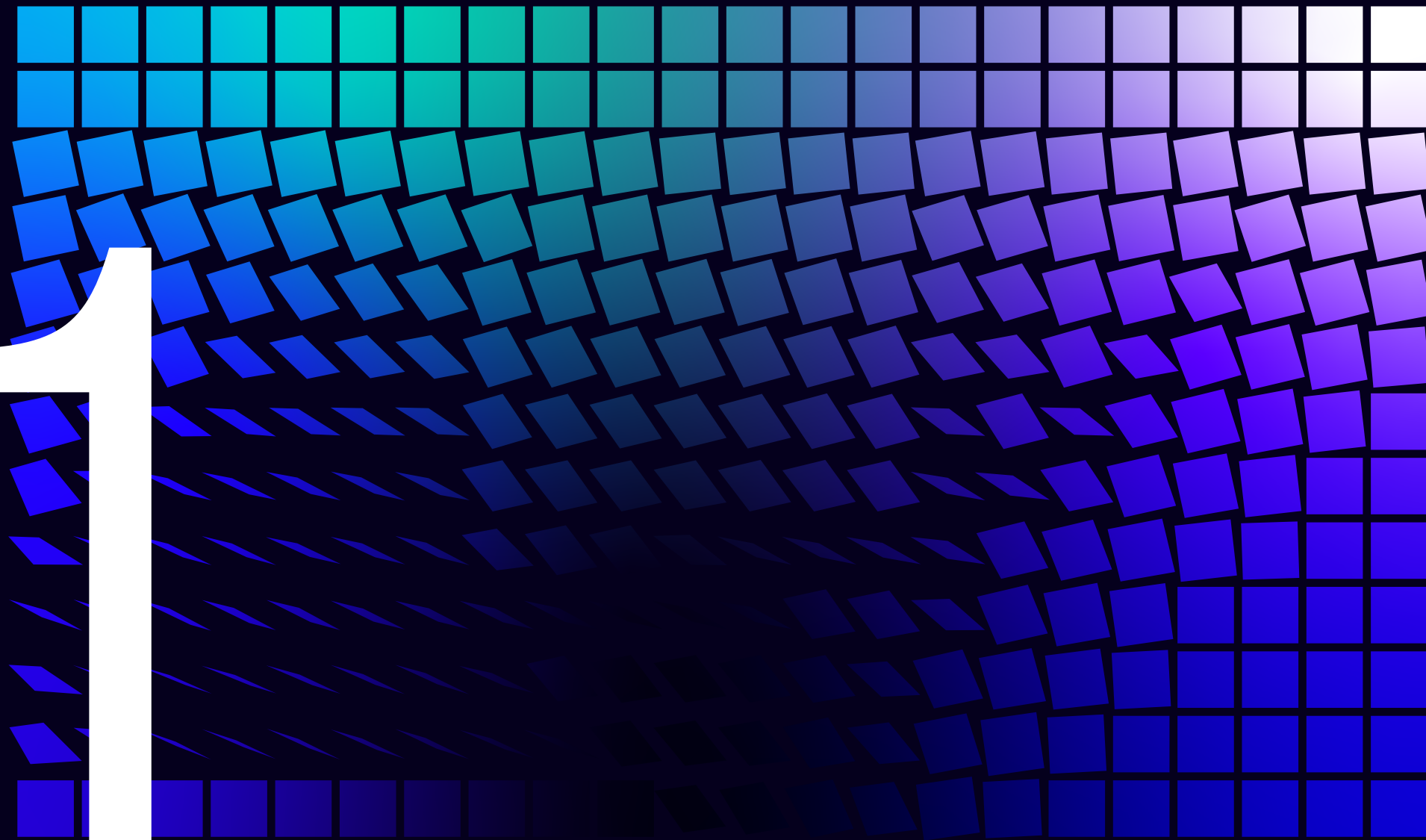
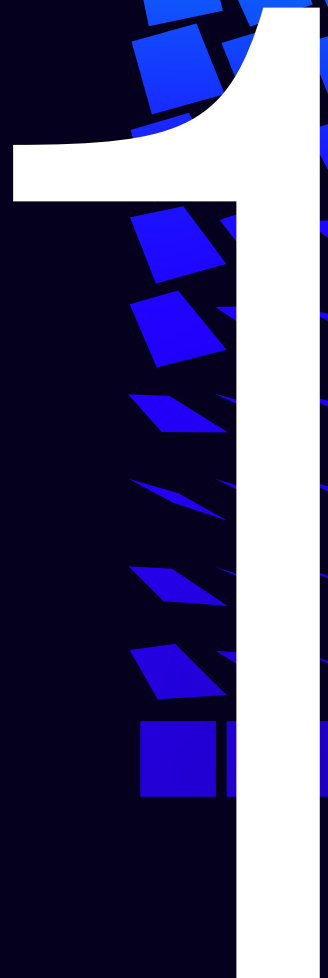
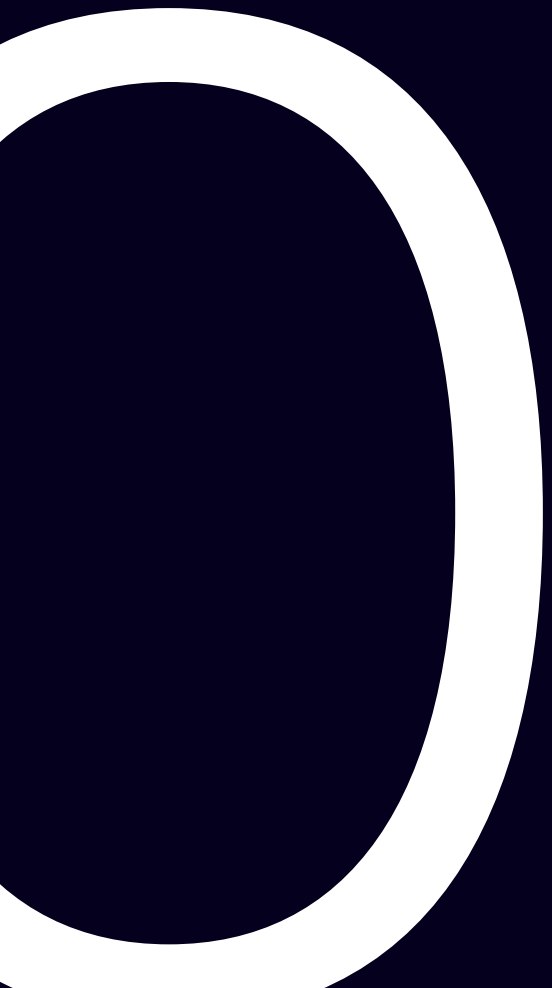
We predict investors will focus on:

- ESG alignment with macro headwinds
- Climate risk mitigation
- Social factors
- Biodiversity

→ You can read more in knightfrank.com/active-capital



With rising interest rates and a volatile economic outlook, investors must think harder about their strategies. Understanding the big picture is key to sustained returns



Macro Outlook

An era in which smart investing matters more

Real estate performance is expected to polarise. In the volatile macro environment, the right real estate may offer through-cycle diversification benefits and favourable risk-adjusted returns. The focus will be on high quality, ESG-focused assets in liquid locations

Roll back to life before Covid-19. The macro-economic scenario was one of cycles extending and the US treasury curve signalling a recession while markets debated higher interest rates, all in an environment of lower, long-term growth. Active Capital posited that while it was too early to worry about a recession, it was not too early to strategise for one, with markets vulnerable to unknown shocks.

Fast forward through two further editions of Active Capital - the 'Covid-19 editions' - and that unknown shock has revealed itself. While Covid-19 has not yet disappeared, the economy and commercial real estate performance have increasingly dislocated from the health effects of the pandemic.

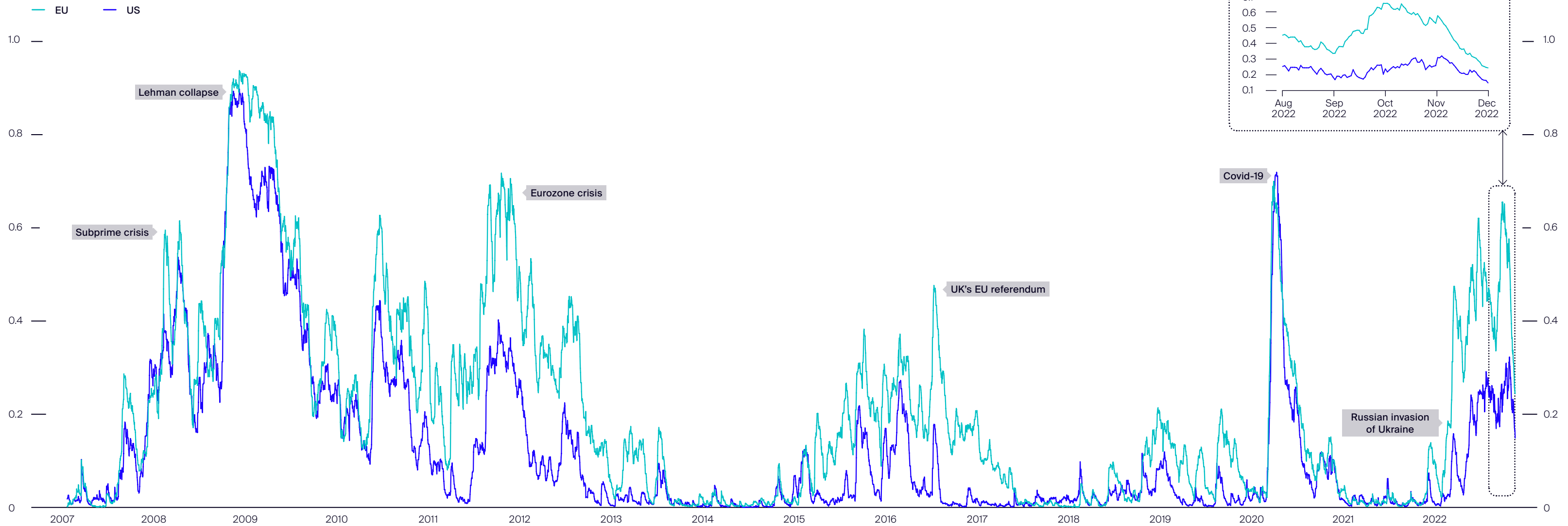
The world then faced a second significant shock; the Ukraine / Russia crisis. This presented a conundrum for governments and central banks: how to stabilise a predominantly supply-led inflation problem when the usual lever of interest rates is, at best, only weak in taming pricing. The result is significant volatility across equity, bonds and currency markets, as forecasting houses diverge significantly in their outlook on rates.

Economics are forecast to deteriorate before they get better, and, for the next 18 to 24 months, global interest rates are expected to peak before falling back in some locations. There is, however, significant variation in these forecasts.

▶ — Continued on following page

FIGURE 1: FINANCIAL MARKET STRESS AND VOLATILITY
European Central Bank composite indicator of systemic stress (New CISS)

Source: Knight Frank Research, European Central Bank, Macrobond



Continued

With real estate highly leveraged, all eyes are on the cost of debt. To what degree will banks and non-bank lenders adjust margins to offset rising swap rates? Will lenders refocus their lending? What will borrowers needing to refinance plan to do? How will real estate react to ongoing economic and financial conditions? These are among the questions Active Capital 2022 / 23 seeks to answer.

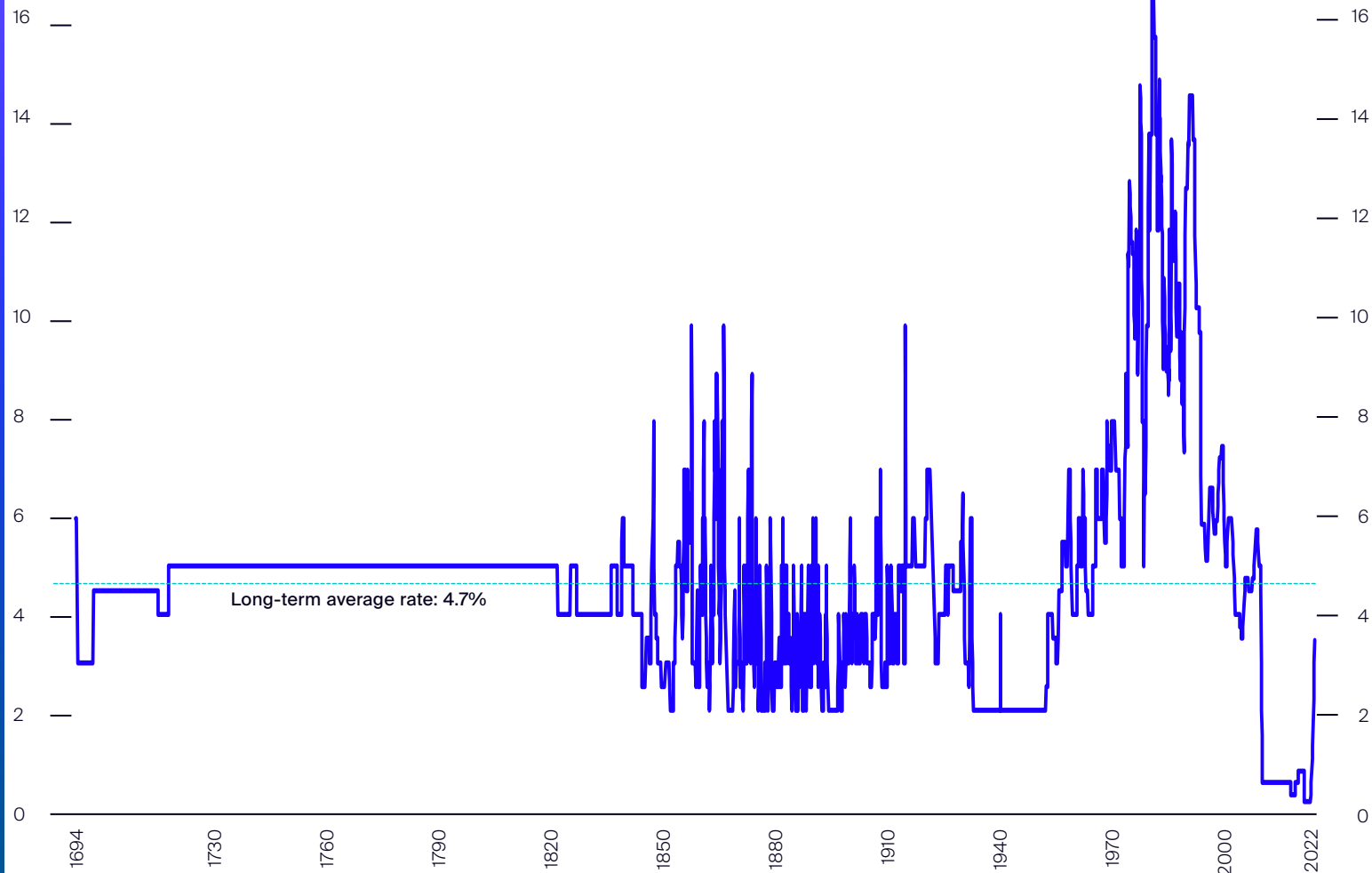
It's worth keeping in mind that while interest rates have increased, in many locations, at the time of writing they remain below their long-term averages even though they are significantly elevated compared to recent history. Refer to Figure 2.

Against this uncertainty, there remains a case for the right real estate. Real estate continues to offer diversification - refer to Figure 3.

Previous cycles have also demonstrated that risk-adjusted returns outperform those of indirect real estate as evidenced in Figure 4. Not all real estate will perform equally, and investors will need strategies to position for resilience amid choppy waters.

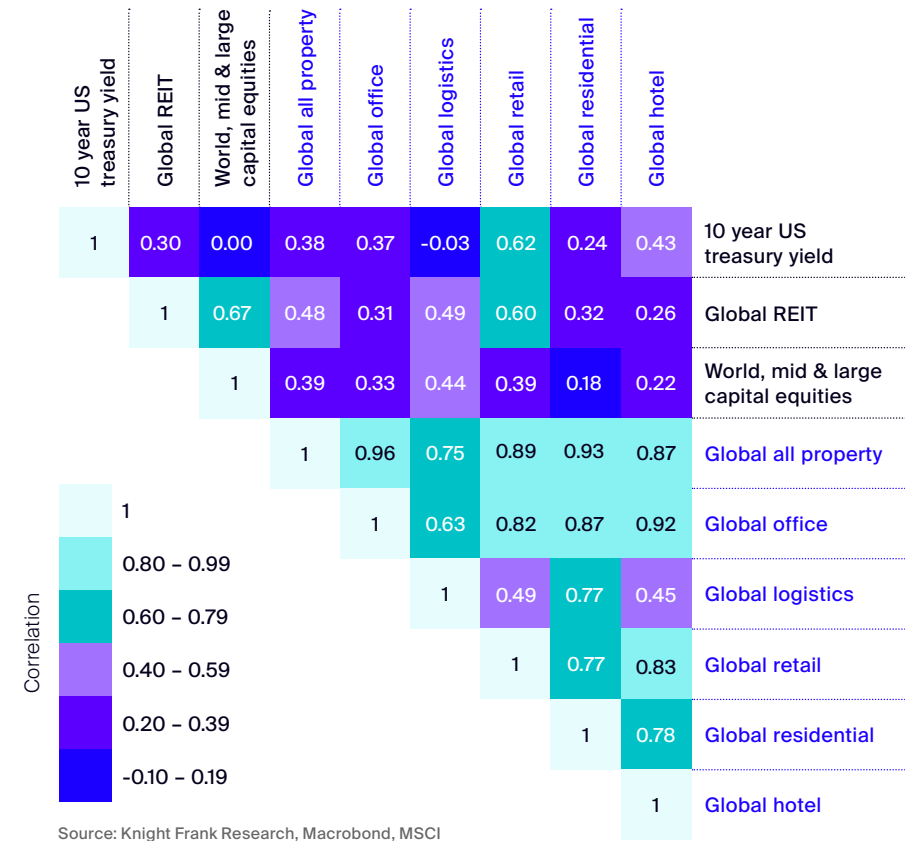
Within sectors, we are likely to see polarisation in performance. Increased investor demand combined with the financing landscape may mean that the spread between prime and non-prime yields widens, with some non-prime assets potentially repricing to levels which become economical for repositioning or repurposing.

FIGURE 2: INTEREST RATES, WHILE INCREASING, REMAIN BELOW THE LONG-TERM AVERAGE, AT LEAST FOR NOW
Bank of England base rate (%)



Source: Knight Frank Research, Bank of England

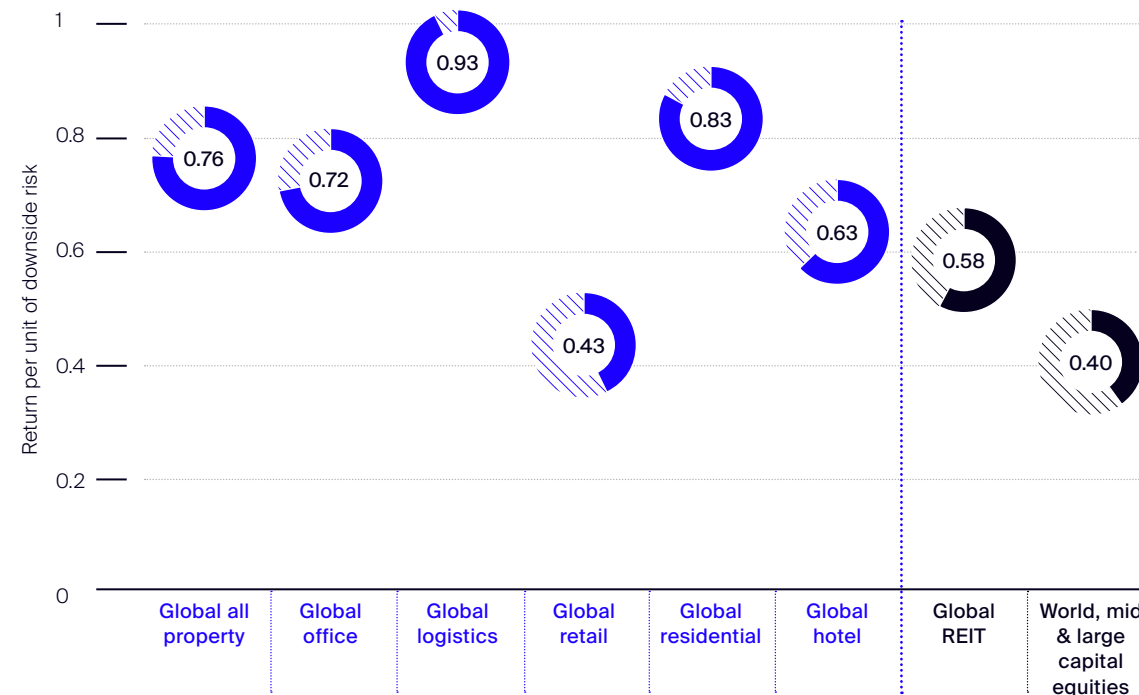
FIGURE 3: THE RIGHT REAL ESTATE OFFERS DIVERSIFICATION BENEFITS
Correlation of returns



Source: Knight Frank Research, Macrobond, MSCI

“ Real estate continues to offer diversification.”

FIGURE 4: REAL ESTATE DEMONSTRATES FAVOURABLE RISK-ADJUSTED RETURNS
Annualised Sortino ratio based on desmoothed returns



Source: Knight Frank Research, Macrobond, MSCI

Sample: 2001-2021
*Based on desmoothed real estate returns using Brown and Matsiak's time varying method. Sortino ratios for unadjusted global real estate returns are even higher (All property 0.98, Office 0.87, Logistics 1.18, Retail, 0.70, Residential 1.02, Hotel 0.81)

RISK VS RETURN
The resilience of asset returns in relation to downside risk is particularly important in times of heightened uncertainty, and can be approximated using the Sortino ratio.
A higher Sortino ratio indicates higher returns relative to downside risk and is therefore preferable. Using data from the past two decades, direct real estate records a stronger Sortino ratio than REITs or global large and mid-cap equities.

Continued on following page

Continued

Previous editions of Active Capital set out the following aims for investors:

- Focus on local market dynamics
- Examine market liquidity
- Explore asset classes that align with structural changes, such as an ageing population
- Consider accessing real estate lower down the capital stack through debt
- Consider ESG targeted assets

In the coming months, these strategies will become even more important. We have already highlighted the expectation of polarisation between best-in-class, ESG-targeted assets in well-understood, liquid locations and everything else. We expect investors to focus particularly on those core, liquid assets and locations with attractive yields relative to the cost of debt, following either the movement in pricing or where yields were relatively attractive on a comparative basis to begin with; London's office sector, for example.

There remains a case for those assets that benefit from changing ways of living, in terms of both demographics and technology. Logistics saw a significant increase in demand through the pandemic and still has a role to play. As we highlighted in Active Capital 2019, the residential sector benefits from structural changes throughout its lifecycle. Demand for student living typically increases during economic dislocations, while other residential offerings will continue to face an excess of demand to supply, particularly in evolving markets such as Spain and the UK. In areas with an ageing population, demand for senior housing will continue to grow, while affordable housing is counter-cyclical and often undersupplied.

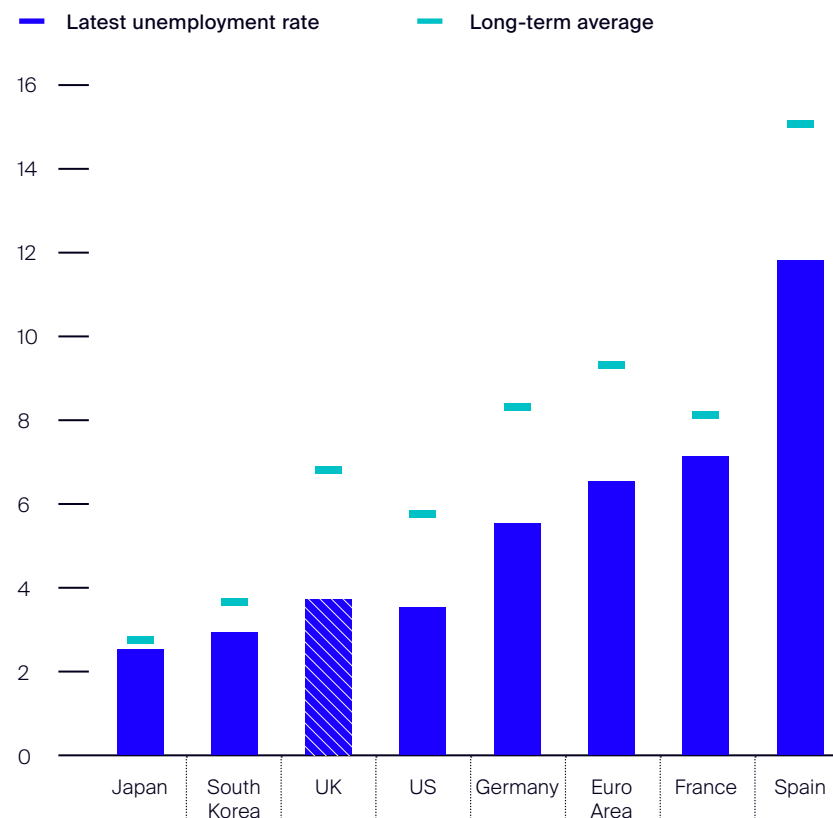
“ There is a strong investment case for assets that benefit from changing ways of living.

Development could prove challenging in the year ahead in some markets due to significant increases in construction material costs as well as materials and labour shortages. This may support pricing in markets with undersupply, for example, PRS in the UK where the tap is turned off for new builds. We expect novel ways to overcome some of these challenges, particularly with factory-built housing and using recycled development materials such as steel, increased interest in embodied carbon, and more focus on refurbishments over the short to medium-term.

Counter-cyclical sectors such as discounters and lower beta food stores are expected to continue to hold demand.

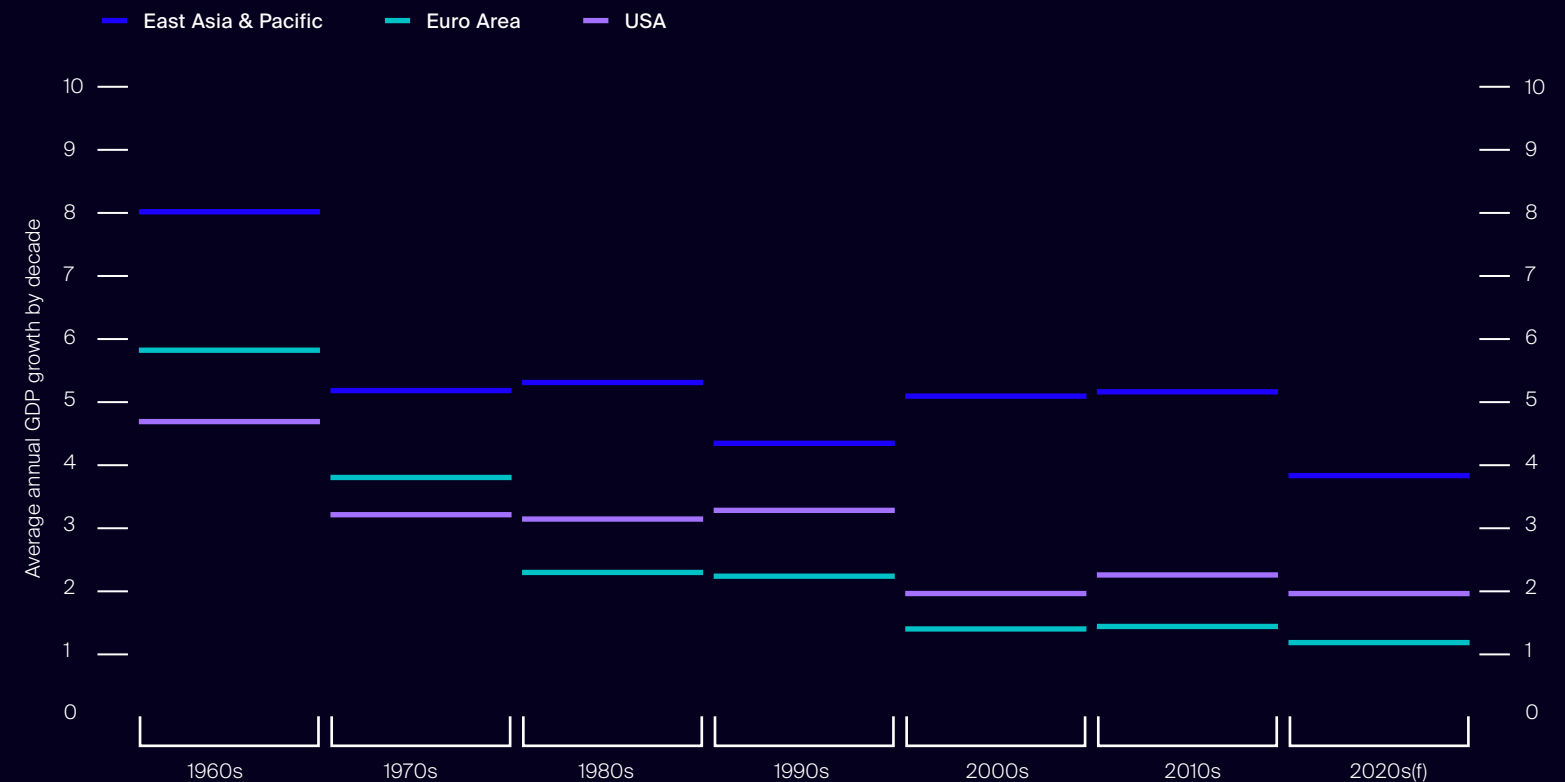
The diverse retail sector has largely adjusted its dislocations. Shopping behaviours are changing in varying ways and at different speeds globally but have now rightsized across many markets.

FIGURE 5: TIGHT GLOBAL LABOUR MARKETS
Unemployment rate, %



Source: Knight Frank Research, Macrobond


FIGURE 6: LONG-TERM GDP GROWTH IS TRENDING DOWNWARDS
Average GDP growth by decade (%)



Source: Knight Frank Research, Oxford Economics, World Bank

There is still a case for the office sector despite the 'great global workplace experiment' as referenced in [MOUR SPACE](#). Focus will be on those most global, liquid, safe haven locations such as London, UK, key German and Japanese cities and Amsterdam, Netherlands to name just a few. While unemployment shows upward intent over the next 18 months, in many locations it is currently at record lows with above average job vacancy levels - see Figure 5. The great workplace debate remains, but varied working practices were a theme well before the pandemic with no adverse effect on yields. According to Eurostat, in 2019 around 37% of employees in the Netherlands and Sweden and more than 25% in the UK, "sometimes or usually" worked from home. Investors must look through the noise in these uncertain times.

In a long-term lower-growth environment as evidenced in Figure 6, our analysis on innovation-led cities with the underpinning to support local growth and relative resilience from down cycles becomes increasingly relevant. Innovation is a key driver of growth, supporting the population and wealth required for well-functioning real estate markets. Previous analysis of innovation-led cities is available in our [archives](#), with cities such as London, Tokyo, New York, Paris, Boston, Seoul, and many others, small and large, attracting innovation through funding availability, research institutions, universities, the culture of start-ups and enterprise.



Cross-border flows are slowing, but don't expect a rerun of the global financial crisis. Investors remain keen on international diversification, especially those with strong currencies

Capital gravity
forecasts

Forecasting global cross-border capital flows

Outlook for 2023

Now in its sixth year, we've used the latest machine learning and regression techniques alongside unique datasets to predict the flow of real estate capital in 2023 and beyond, using our Knight Frank Capital Gravity model.

The current base case scenario for 2023 is that we could see cross-border capital flows at similar levels to the middle of the last decade. Here we highlight the key trends predicted for the year ahead. Here, we highlight the key trends predicted for the year ahead.

Investor types

HNWI (high-net-worth individuals)

Combined with growth in the number of ultra high-net-worth-individuals, as set out in [The Wealth Report](#), activity is expected to increase in 2023, as cash-rich investors take advantage of currency benefits, and potentially less competition by larger institutional capital, to target the UK and US amongst other locations across Europe and beyond. All sectors will benefit but we could see particular focus on the office sector. We forecast a wide geographical spread of HNWI activity from Europe, including Germany, Spain and Switzerland; Middle East (ME); Brazil and the US.

Institutions

Our model suggests that institutions will look to the office, industrial and retail sectors in 2023, with a particular focus on EMEA. We forecast a mixed

picture with the US and ME institutions likely to increase their activity, accompanied by some moderation of interest worldwide.

Investment managers

Historically, global cross-border transactions by investment Managers have remained steady with peaks of activity in 'recovery' years. Investment levels are forecast to be moderately muted as moves in the equity and bond market may have led to 'accidental' increases in the relative weightings of real estate. We expect EMEA to remain the dominant target, with activity holding steady in the Americas and Asia Pacific.

Listed / REITs

We forecast increased interest in Asia Pacific, targeting the office and industrial sectors in Australia and the office sector in Japan and Singapore. Investors from Singapore, the US, Canada, and Japan are expected to lead global cross-border interest.

Private equity

We could see slightly moderated activity, compared to recent years from private equity investors over 2023, although significant weight of money, dollar strength and pricing is likely to lead to a flow of US capital and a possible increase in Singaporean investor interest.

The US, Germany, UK, Japan and Netherlands are expected to top the interest list, with a focus on the office, industrial and residential sectors.

Other investor types

Banks, sovereign wealth funds, and corporates are collectively forecast to maintain similar levels of investment to the last two years.

Capital is expected to flow from broad sources across the US, Canada, Germany, Singapore, France, Sweden and the UK, targeting the full suite of sectors.

EMEA and the Americas are expected to remain the top two regions for Capital flows but APAC is forecast to see a notable increase in activity. In particular, that includes the office sector in Japan, Australia, Singapore and South Korea and the industrial sector in Australia, Singapore and Japan along with the residential and hotel sectors in select locations.



Weight of money, dollar strength and pricing are likely to lead to a flow of US capital.

Sector outlook for 2023

Hotels

After the challenging pandemic years, hotel sector activity is forecast to see a significant step up in activity, even if not quite a return to pre-pandemic levels. The US, UK, Germany, Australia and Japan are forecast to be target destinations, with capital flowing from US private equity and investment managers, Singaporean REITs and Canadian investment managers.

Logistics

After two years of record activity, we forecast the logistics sector to remain the second most invested sector in 2023, although cross-border volumes could moderate to just above 2019 levels globally. Here too, investors will be increasingly diverse, with capital flowing from the US, Singapore, Canada and the UK to target the US, Germany, UK, Australia, France and Japan.

Offices

The office sector is forecast to be the most active sector worldwide in 2023, targeted by an increasingly diverse range of investors and in particular, private investors looking at the UK and US.



Living sectors in America last year were the largest investible asset class and within the next decade they will be the largest investible asset class globally.

James Mannix,
Partner, Head of Residential Development and Investment

The top destinations in 2023 are expected to be well understood and relatively more liquid locations in the UK, US, Germany, Netherlands, Australia, France, Japan and Singapore.

Residential

Residential is likely to remain at the top of the shopping list for globally mobile capital. Robust rental performance through historic downturns makes it a good hold for the current period.

Retail

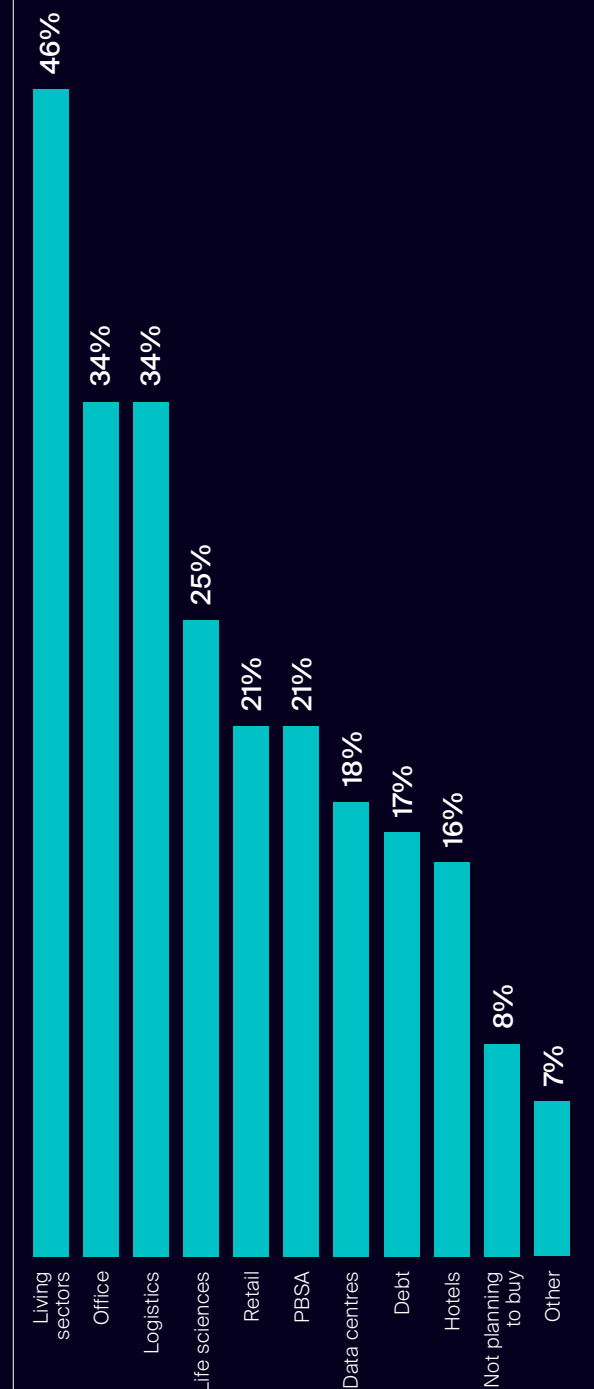
This wide wide-ranging sector may benefit from its recent history of right sizing, rebasing and repricing in many locations. The steady recovery in retail activity will continue over 2023 as this 'battle hardened' sector benefits from structural changes post-Covid and artificial pandemic-induced trends normalise. The rebasing of the retail sector could now provide opportunity for forward thinking investors. In particular, investors from the US, Canada, the UAE and Singapore are expected to focus their interest across the US, UK, Germany and France.

Student housing (PBSA)

Cross-border activity in this sector is forecast to continue its recovery next year, returning to 2017 levels. We forecast increased interest from the US, Canada, Singapore and South Korea with institutional investors in particular targeting the US, UK and Germany.

In our latest [launch webinar](#), we asked our 600 attendees which top 3 sectors they were targeting over the next 18 months

(% represents the proportion of respondents who selected a given sector in their top three.)



Source: Knight Frank, Active Capital: Real estate strategies for volatile times webinar October 2022

Predictions, commentary, drivers and methodology

[2023 predictions at a glance](#)

We predict that cross-border flows in 2023 will moderate, returning to the levels seen in the mid-2010s. However, should the residential sector continue along the same trajectory as in recent years, that could bring potential upside to the overall numbers.

The US, UK, Germany, Australia and France are expected to be the top destinations for global cross-border capital. We forecast that the list for the largest sources of cross-border capital will be headed by the US, Canada, Singapore, Germany and UK with their principal targets predicted to be the office, industrial, residential and retail sectors.



We forecast that the list for the largest sources of cross-border capital will be headed by the US, Canada, Singapore, Germany and the UK.

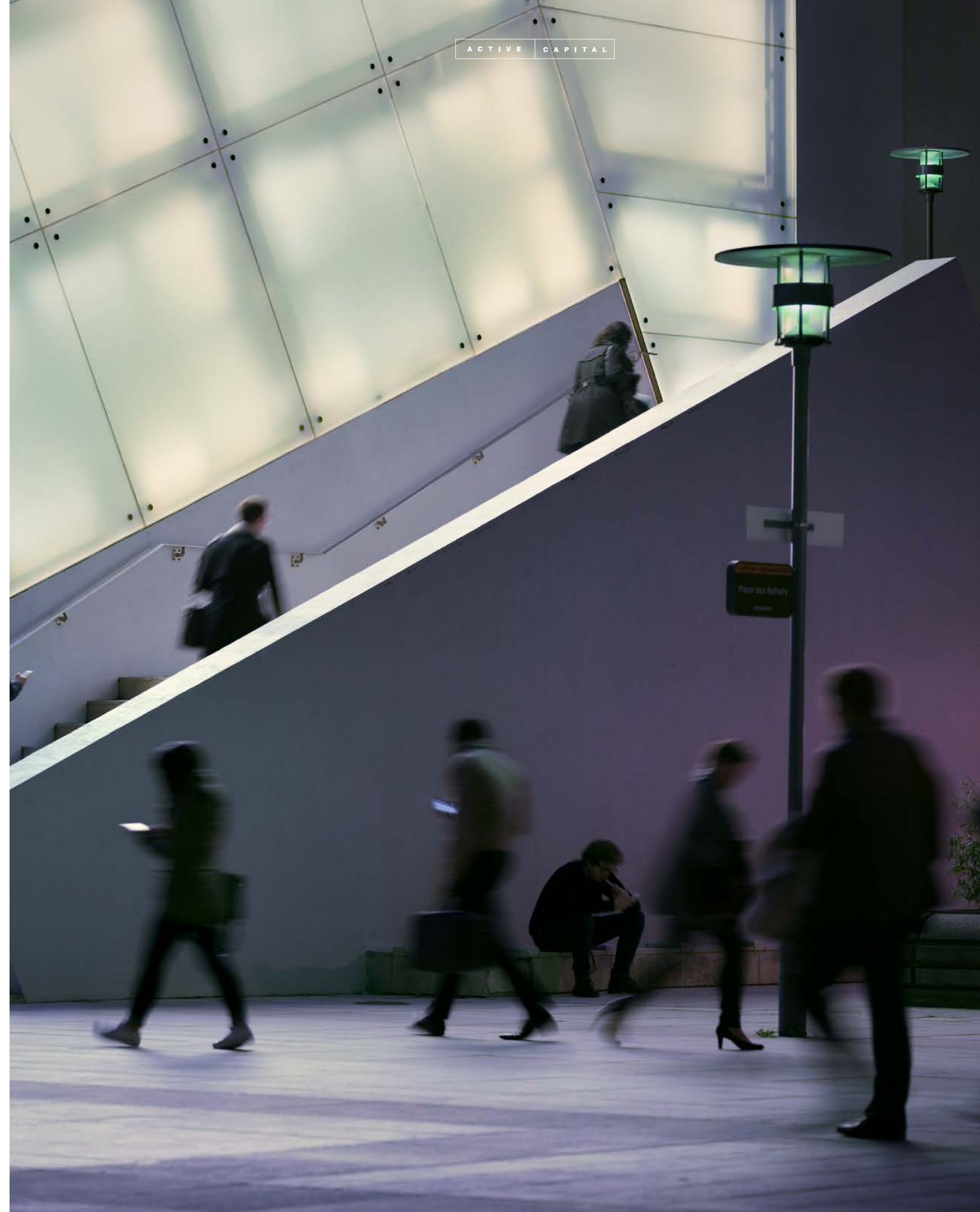
[How did our model hold up in 2022?](#)

Last year our [Capital Gravity](#) model forecast the US as the top destination for global cross-border real estate capital in 2022, followed by the UK, Germany, France, and the Netherlands. Amid a difficult year, with a significant geo-political shock that has led to economic and financial shockwaves, we predicted four out of the five top correctly, with Australia replacing the Netherlands. At the time of writing, the UK, the US, Germany, Australia and France are indeed the top-spots for cross-border capital. The fact that three European locations remain in the top five destinations speaks to the resilience and safe haven qualities of these locations.

Last year we predicted that years of pent-up demand from investors unable to properly transact during the pandemic, combined with a 'roaring twenties' sentiment as markets re-opened, would lead to record activity in 2022, followed by a moderation.

The shock of the Russia-Ukraine crisis and the impact from sanctions and energy security has curtailed some cross-border activity, though not equally across all sectors. As Active Capital goes to press, cross-border global logistics and residential volumes have both reached the second highest Q1-Q3 levels, according to RCA. Pent-up demand can also be seen in domestic activity, which after being muted initially during the pandemic, has seen record Q1-Q3 global volumes.

▶ — Continued on following page



What other factors could influence capital flows this year?

Volatility and uncertainty

We are in a period of exceptional volatility, predicated by geopolitics and exacerbated by uncertainty over fiscal and monetary responses. Volatility not only makes it difficult to price deals, but variations in equity and bond prices can lead to significant 'accidental' allocations of real estate for investors. Those investors able to look beyond near-term volatility and swings in sentiment to sector and local area fundamentals are likely to find opportunities.

Currency

2023 is expected to see ongoing fluctuations in currency as energy prices, interest expectations, and inflation continue to vary. Currency outlooks remain wide-ranging, although the consensus is that weaker currencies against the US dollar, such as the euro, sterling and Australian dollar could see some appreciation, especially in the second half of 2023. The start of next year particularly could see relatively competitively priced real estate assets in these locations for US dollar denominated investors, and we could see more use of currency collars, caps or floors by cross-border cross-currency investors.

Monetary policy

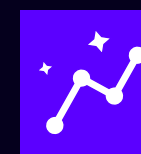
Many forecasters expect inflation to peak around the start of 2023, but there's less of a consensus around central banks' monetary policy responses. Central banks must trade off inflation targeting, and 2023 GDP growth worldwide has been downgraded over the last year, while low levels of unemployment provide a case against lowering rates should global GDP growth wane. Plans for Quantitative Tightening (QT) should also be watched closely. Many central banks were planning to unwind over a decade of Quantitative Easing through QT, which could put upward pressure on government bond yields, although the exact effects are unknown. Sustained upwards pressure on government bond yields could in turn lead to upward shifts in the risk-free rate element of real estate yields, putting pressure on the yield gap and ultimately reducing prices. Monetary policy will also impact on lending which we delve into later in the report.

ESG

While some investors may focus on a back-to-basics real estate policy, we expect real estate interest in ESG to continue to grow, albeit alongside a heightened understanding of the risks of greenwashing. The right ESG-focused real estate may offer more efficient energy use, lower energy costs, and mitigate climate risk all while being more attractive to occupiers and therefore benefiting from more resilient rental income. Lenders are increasingly likely to look at ESG buildings favourably as they shift their balance sheets towards greener exposures.



Lenders are increasingly likely to look at ESG buildings favourably.



The story behind the data

Each year, we enhance our modelling to reflect the most cutting-edge methods. We have employed the same Extreme Gradient Boosting methodology to forecast capital movements as last year, enhancing the model this year by adopting a multi-level model strategy through a two-step process to predict more of the most likely flows rather than simply the largest ones. We started with a classification model to calculate the probability of a flow between an investor type in one country and a specific property type in a destination country before subsequently using a regression model to calculate the likely value of the resulting capital flows.

The methodology builds upon classic Decision Tree Regression techniques through boosting, where new models are added to correct the errors made by existing models. These models are built sequentially until a new model offers no further improvement. By using this updated methodology, we have been able to distil our forecast capital flows down into major investor types and sectors of interest for the first time. This enhances the model's ability to provide insight into demand and pricing and offers further insight into buy, develop, hold and sell strategies.

The algorithm draws on a number of properties, economic and geographical inputs, including interest rates, GDP, FDI (Foreign Direct Investment), share prices, exchange rates, the geographical distance between countries, shared borders and common languages. This is calibrated through historical investment data, including data from Real Capital Analytics, to predict the largest global cross-border real estate flows for the year ahead.

Regional outlooks

Global capital flows will be heavily influenced by US investors seeking diversification, buoyed by a strong dollar. Europe and APAC will both benefit

NORTH AMERICA

The US and Canada are forecast to be the main sources of capital in 2023. Both feature a strengthened currency and a broad range of investors eager to diversify their portfolios and target liquidity across a wide geographical and sector range. The UK, Germany, Netherlands, France and Japan are forecast to be top destinations for US capital, particularly institutional, as well as HNWI's, investment managers, Listed / REITs and private equity. The top two sectors of UK interest by the US are expected to be the office and residential (including student accommodation) sectors, each with a 29% share, followed by the retail, industrial and hotel sectors. In France, we expect US activity to be led by private equity flowing predominantly into the office and industrial sectors, while in Germany, institutional capital could focus on the office, retail, residential and industrial sectors.

We expect 56% of Canadian capital to head to the US, of which the office and residential sectors, each receive 24%, followed by 19% to both the retail and industrial sectors, 9% to the hotel sector and the remainder to the student accommodation sector. This deployment will be led by Canadian institutions, Listed / REITs and investment managers. The UK, Germany, Australia and France are also in the top five destinations for Canadian capital and among the broad range of sectors to benefit, we anticipate a focus on the UK office and residential sectors.



EMEA

Europe, the Middle East and Africa (EMEA) contributes 15% of outbound capital but is the top draw for inbound capital in 2023, some 55% of the total. The office sector could account for 48% of interest, followed by the industrial, retail and residential sectors. Just under half of all activity is forecast to be from within the region, in particular from German institutions and investment managers, Swedish investment managers and UK investment managers with the UK, France and Germany being notable targets.

While overall inward volumes might moderate to the UK, the overall investment focus on relatively liquid, safe haven markets means that along with France and Germany, the UK is well placed for inward capital in 2023 and forecast to remain the top EMEA destination. In all three countries, the office sector is expected to dominate but a broad range of sectors should attract interest.



APAC

We forecast 23% of global cross-border flows will originate from Asia Pacific in 2023. 22% of global cross-border capital is expected to flow into the region. Almost half of outbound investment activity is expected to remain in the region, dominated by Singapore Listed / REITs, institutional capital, investment managers, banks, SWF and private equity flowing into Greater China, Japan, South Korea, Australia and India. The office sector is expected to be the focus of Singaporean capital (44%) followed by the industrial, hotel and retail sectors. Of APAC's additional outbound volumes, 30% are expected to flow into EMEA, notably into the office, industrial and residential sectors across the UK, Germany, Netherlands and France, and 23% of activity into a broad range of sectors across the US.

Half of the overall volumes of inbound capital will come from within APAC, 35% from the US and Canada and 15% from EMEA. The office sector is expected to attract more than half of overall inbound capital followed by the industrial sector. The top five destinations for capital are expected to be Australia, Japan, Greater China, South Korea and Singapore.



OCBS

Today's real estate industry draws on a long history of innovation, stress-tested in highly variable market conditions. A historical perspective can provide vital insights into tomorrow's trends

Looking back
to look forward

Lessons from the crisis of 2008

Examining how the market reacted to the global financial crisis can give signposts for any future downturn

1 Smaller lot sizes were resilient

During the global financial crisis (GFC), most liquidity was in \$10-100m lot sizes. Smaller transaction activity (sub \$100m) declined by the smallest percentage (60%) from the peak to trough of transactions. The \$10-\$100m also continued to be the largest proportion of transaction activity during 2008 and 2009. Conversely, the largest transaction sizes of \$750m+ declined from record activity of \$150bn in 2007 to just \$18bn by 2009. In 2021, investment activity in this largest size bracket had its most active year since 2007, with predominantly office and residential assets traded. From looking back to the GFC we expect less activity at this size in 2023.

\$10-100m

lot sizes continued to be the largest proportion of transaction activity during 2008 and 2009

Sources: Knight Frank Research, RCA

2 Domestic activity dominated

EMEA based investors increasingly stayed at home in 2009, recording a decline of 81% in cross-border activity from 2007 versus a relatively more muted decline of 52% in domestic activity. While cross-border activity was the modus operandi for EMEA based investors in 2007, by the 2009 trough, domestic activity (\$81bn) was more than twice that of outbound capital (\$35bn). APAC cross-border capital was relatively nascent on the global scene prior to the GFC.

In 2007 APAC outbound capital was less than half of the outflows seen in the recent 2017 peak of activity. While we may therefore see a reduction in activity from APAC, it is unlikely to revert back to GFC levels. Relative cost of debt advantages, such as enjoyed by Japan as well strengthening of APAC currencies, particularly against the euro and sterling could also support west-bound flows over the coming year.

US investors largely closed shop during the GFC with both domestic and cross-border activity registering an 86% decline from peak to trough in the GFC. However, the strong US dollar and evidence of dry powder to deploy means that we are likely to see certain US cross-border investors more active over the coming year compared to during the GFC.

3 Focus was on individual rather than portfolio deals

Recent record levels of portfolio deals could be replaced by a focus on individual asset transactions. \$546bn of portfolio deals were transacted in 2007 declining to \$70bn in 2009 with a switch to individual asset activity. 2021 recently saw the second highest period for portfolio activity at \$541bn. Again, the focus of the coming year will likely revert to individual deals although we may see an increase in regional M&A activity in some locations.

4 Private capital and the third sector were relatively resilient

Private (HNWI) capital, third sector investors and owner occupiers rose to the fore during the GFC. Institutional activity declined by over 90% during the GFC with domestic private buyers most active during the 2009 trough. We expect private capital to be an important source of demand over the year ahead. While a small overall proportion of transactional activity, other investors for example owner occupier, but also the third sector – charities and educational establishments, showed largely unique inertia in activity between 2007 and 2008 followed by a relatively small decline in activity of 20% going into 2009. We could see similar activity in the year ahead. Private equity actors are also likely to be waiting to deploy capital opportunistically.

▶ — Continued on following page

\$541bn

portfolio activity in 2021, the second highest period in history

Continued

5 What it all means now

The outlook for the lending markets will be particularly key to activity levels next year. Currently we don't foresee something akin to the shock of the Lehman collapse, which is what precipitated the more significant GFC commercial real estate re-pricing.

The lending market is more diverse, if complex than prior to the GFC. Elevated swap rates are challenging and will likely contribute to polarisation of real estate performance as debt financed in 2018, or extended through the pandemic, comes to maturity. In this environment, there will also be opportunities for solutions such as equity injection / JV's as well as new debt funds.

Over previous cycles, significant shifts in real estate pricing and demand were driven historically by one or more of the following:

- Undercapitalised banks**
 Banks are now much better capitalised. While we have seen an increase in non-bank lenders, they have yet to become a majority of the market.
- Over-leverage**
 Compared to the sometimes 100%+ LTV loans seen before the GFC, typical leverage is lower. With potential for correction in pricing in some markets, LTV's could lift. However, based on a survey from Prequin, only circa 15% of investors surveyed foresee a significant price correction, with the most common answer being that there is only 'some' room for a correction, which has already been seen in many global markets.
- Over-supply**
 Increasing uncertainty and material cost inflation has reduced development across many locations, which could reduce supply in the medium-term. However, investors should be aware of local potential over-supply imbalances in local markets.
- Sentiment**
 Double-digit inflation, slowing growth and energy disruptions could see sentiment wane, driving markets into a self-fulfilling prophecy. Investors able to look beyond this sentiment may find thinner markets offering upside.

Overall, 2023 is likely to see increased focus on smaller lot sizes, domestic activity, and a refocus on private and other investors. However, institutions, particularly private equity, will still be waiting in the wings. Many investors have also not yet reached their target real estate allocations. Private sector pension funds have a shortfall of around \$29bn (source Prequin), US Endowment plans have an estimated shortfall of \$5.5bn, Chinese wealth managers \$1bn and asset managers in the Netherlands an estimated \$16bn. Some may use the next 18 months to increase their allocations.

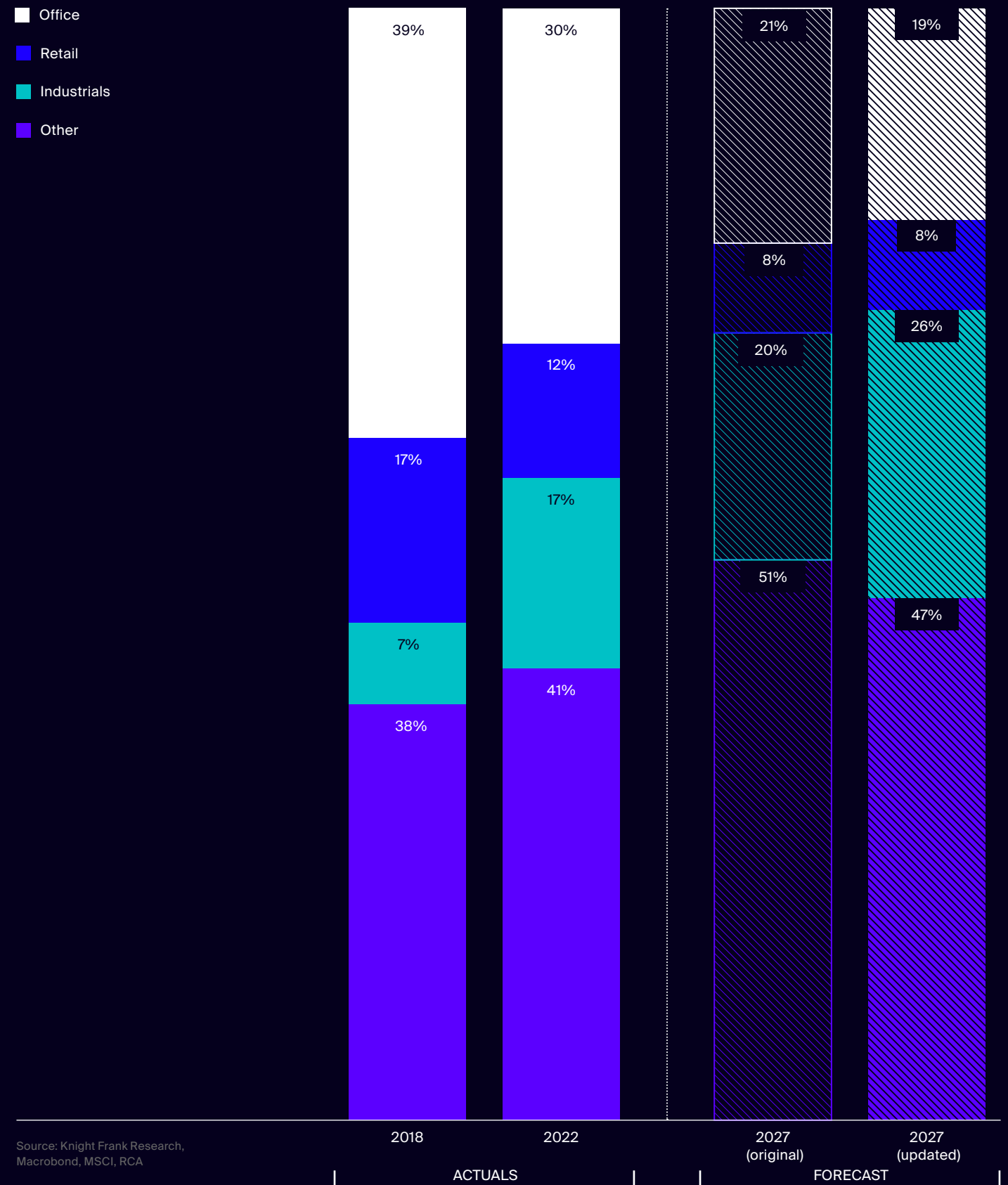
How are investor allocations changing?

Private equity is a leading indicator of how other investors may change their allocations, and in Active Capital 2019/2020 we forecast potential market changes.

As Figure 7 shows, we forecast an increase in 'other' (residential) non-traditional sectors (c.47%) for global private equity portfolios. 2022 has already seen a 10% increase in the industrial sector and a decline in office and retail sectors.

Re-running our allocation forecasts we see minimal changes to our predictions of office and 'other' sector allocations, but we now forecast that the industrial sector could make up one quarter rather than one fifth of global private equity allocations by 2027.

FIGURE 7: HOW ARE GLOBAL PRIVATE EQUITY ALLOCATIONS CHANGING?
Global private equity portfolio allocations by sector



Innovating new sectors

Investors must be primed for the sixth innovation wave.
From data centres to flexible working spaces, opportunities abound

Creative destruction, first identified by Austrian economist Joseph Schumpeter, promotes the idea that new waves of innovation disrupt and shape the business cycle, making previous systems obsolete. Real estate is certainly not immune to these waves of innovation, in many cases, it has been shaped by them. The sixth innovation wave, digitalisation, should bring rapid change, potentially through only a few real estate cycles. While many investors may go back to basics in search of liquidity and risk-off investing over the next 18 months, it is worthwhile not just examining the past but also to look forward to the cycles that lie ahead.

The rapid growth of new technologies and key challenges around issues, including energy and food security as well as climate change means we are already seeing change and will continue to do so at rapid pace going forwards. Investors need to be primed to react to these changes.

Demand for data centres is expected to continue to grow, with an increased focus on energy procurement, considering increased 'off-grid' green energy sources for example. As energy becomes increasingly scarce, planners may become more discerning about granting permissions for new data centre development, which will present new opportunities and challenges. The rapid evolution of technology and infrastructure also means investors must be conscious of changing trends and obsolescence risks as well.

Demand for electric vehicles will also continue to grow, bringing opportunities for charging stations and repurposing. In a lower long-term growth environment, investors may look for ways to make existing assets work harder. A more flexible use of space, as we are seeing with, for example, hotels offering office space is likely to grow. Working assets harder through external space used for energy generation or communications towers, particularly with the continuing rollout of 5G is also likely to occur.

While well established in some locations, the potential densification and commercialisation of residential space may also lead to increased demand and growth in self-storage solutions.

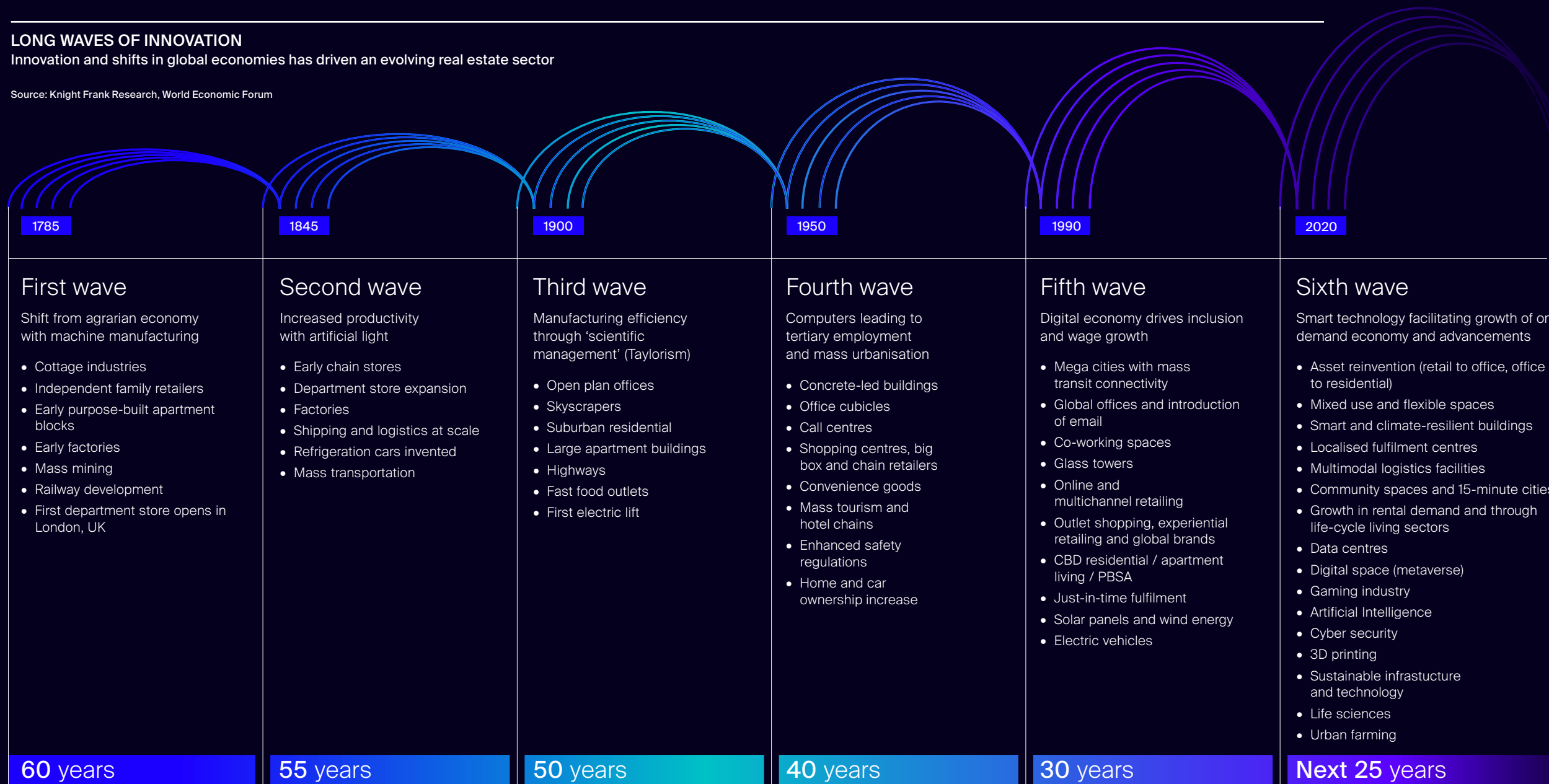
Long-income focused investors may turn increasingly to infrastructure. Investment is often incentivised by governments in waning macro-economic environments to drive forward long-term growth and recovery. We will likely see rapid innovation in 'clean technology' and environmental solutions, creating opportunities from carbon capture for land-based investments to alternative methods of generating and storing energy.

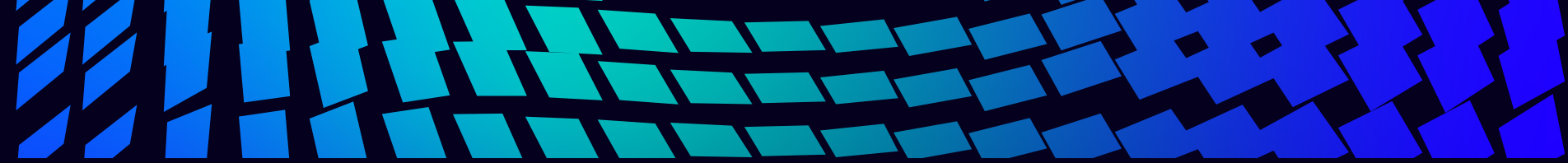
Lastly, while still nascent, urban and aeroponic farming has seen growth worldwide, from Singapore to the US sites spearheaded by Kimbal Musk, offering additional uses for warehouses and other urban real estate locations in the future.

LONG WAVES OF INNOVATION

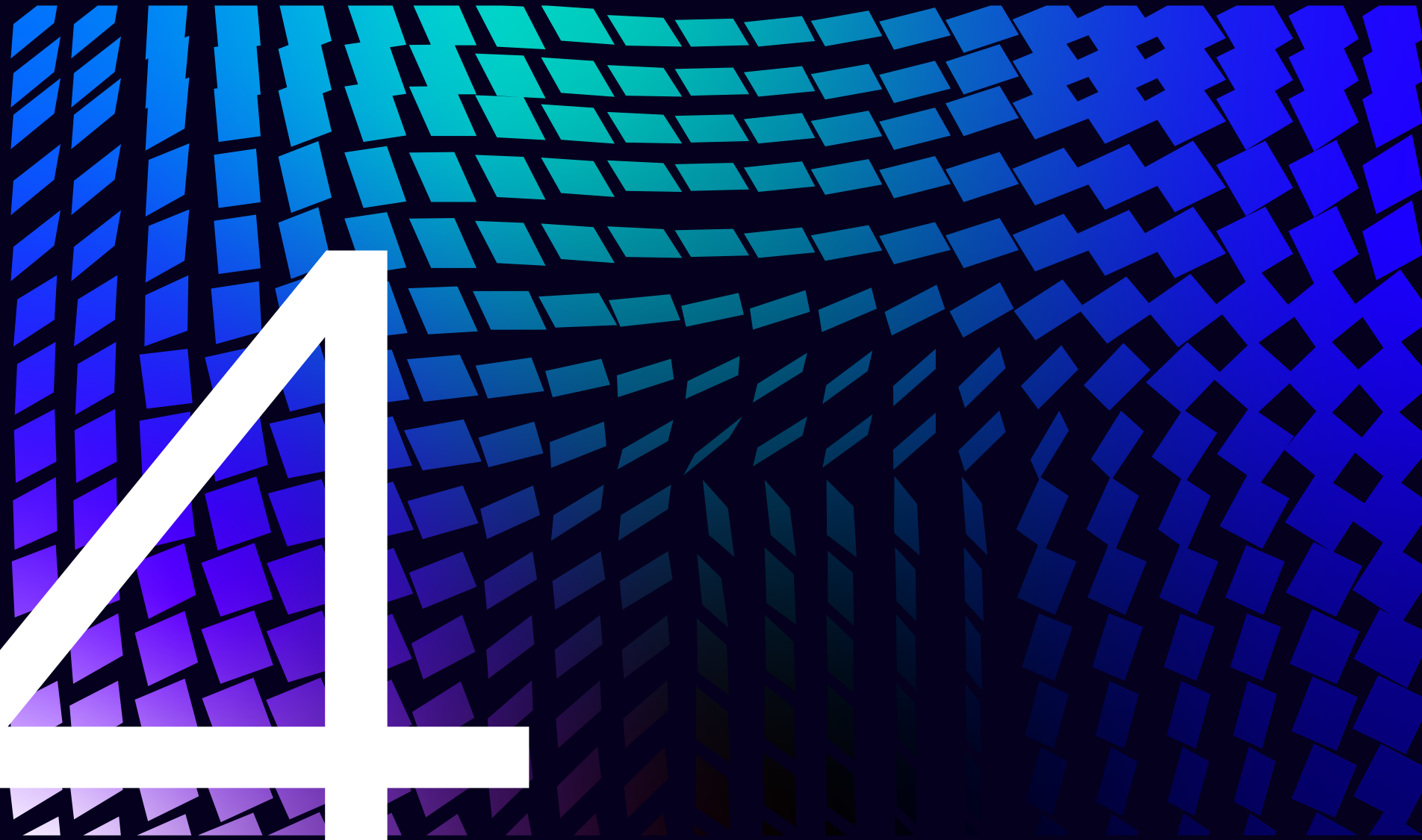
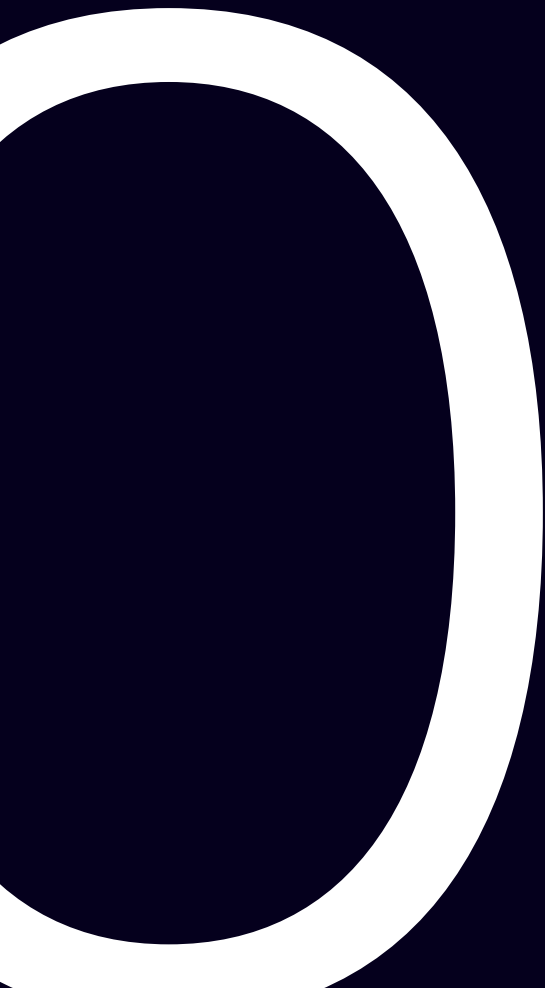
Innovation and shifts in global economies has driven an evolving real estate sector

Source: Knight Frank Research, World Economic Forum





Equity and debt markets are getting tighter, but remain open for the right assets. And as with all times of disruption, there are also opportunities



Financing

outlook



Funding in 2023: The research view

Funding is tightening and rates rising, although increased competition among lenders is reducing the impact. Funds will flow to higher-quality assets

Victoria Ormond, CFA
Partner, Head of Capital Markets Research

Lenders are likely to become more discerning about the asset classes they lend against in the coming year, with quality, location, liquidity and ESG credentials becoming more important than ever. However, in many locations, we have seen an increase in competition and lender type, which may provide some degree of counterbalance to the increasing risks and rising interest rates. For banks, regulatory capital rules have tempered loan-to-value ratios and the riskiness of lending, shoring up capital and consequently placing us in a better position than in the run-up to the global financial crisis.

Lenders are also more aware of reputational considerations when deliberating on actions where actual interest and leverage covenants drift towards their contracted limits.

The real estate sector is highly dependent on lending markets. At the time of writing, Basel regulatory counter-cyclical buffers are due to be increased in 2023 in some countries,

and this could encourage a refocus on core investment. However, the expected economic turbulence could delay some of these buffer increases.

Over \$1.1trn of real estate assets were traded globally in 2018, and many of those with leverage will be due for refinancing. In locations including Europe, where swap rates have seen marked increases from 0.31% average in 2018 to 2.75% at the time of writing for a 5-year swap, this could lead to some increase in disposals, as well as equity injections and potentially new lenders to the market.

What follows are the expert opinions on the financing outlook for the year ahead from Emma Winning, Partner, Knight Frank Capital Advisory and Lisa Attenborough, Partner, Head of Knight Frank Debt Advisory.

>\$1.1trn

of real estate assets were traded globally in 2018 and many of those with leverage will be due for refinancing in 2023

Sources: Knight Frank, Macrobond, RCA, BIS



Equity investors become more vigilant on downside risk

Emma Winning
Partner, Knight Frank Capital Advisory

Q How does the equity market compare to the debt market?

A Trends in the equity market tend to mirror those across the debt market and this remains true at present. Equity will be the first loss piece on any investment, making vigilance around underwriting and stress testing more critical than ever in uncertain times.

What should investors be doing to protect their investments?

Ensuring equity investments are protected from downside risk is key; requiring careful review of business plans, models and stress testing.

Q What trends are you currently seeing which are expected to continue into 2023?

A Where investors are able to price investments and there is a positive growth angle (such as in the rental sector) there is still investment activity, with a drive for higher returns. We are seeing more interest in newer asset classes from investors diversifying their residential investments into specialist sectors such as seniors housing for that increased return.

There is still demand from APAC / Middle Eastern investors for trophy assets: quality assets in prime locations, assisted by the weak pound and potential for repricing already seen in some markets in the UK.

Demand continues for assets with strong ESG credentials, with an increased focus on the social aspect.

The evolving ESG landscape remains vital. With longer-term holds, investors must ensure assets comply with upcoming environmental legislation requirements, but we have also noted opportunities to acquire non-compliant stock and refurb to future standards across the UK and Europe.

Q Are there opportunities for equity?

A The increase in all-in debt costs provides opportunities for equity to plug any funding gaps and both asset owners and investors are being creative in structuring transactions to achieve this.

In previous times of dislocation, deal opportunities have been created, and that's currently the case. A surge of M&A activity in the housebuilder space has seen new market entrants seeking to capitalise on cheap sterling and land banking of housebuilders, including overseas housebuilders looking for a foothold in the UK market.

“
In previous times of dislocation, deal opportunities have been created, and that's currently the case.”



Debt markets have seen a vast shift. It's time to alter the mindset on coverage ratios

Lisa Attenborough
Partner, Head of Debt Advisory

Q What impact are volatile swap rates and the changing economic landscape having on lending to commercial real estate and how will this change over the coming year?

A Over the past six months, driven by economic uncertainty following the war in Ukraine and near record high levels of inflation, the lending market has experienced broad change. The most notable impact of this uncertainty has undoubtedly been the sharp increase in interest rates and corresponding volatility in the swap markets.

After benefitting from over a decade of historically low interest rates, many borrowers are now seeing swap rates at an all-time high. This brings the corresponding ripple effect of

increased execution risk for deals already in documentation and also, due to the increased cost of financing, means that a number of high-profile transactions have been put on hold as bids fall short of expectations.

Looking to the future, both borrowers and lenders must shift their mindset on interest cover ratios. Instead of aiming to achieve the previously healthy ratios, upwards of 2.50x for example, tighter ratios of 1.25x and above should be considered the norm.

In the coming year we expect rates to continue to rise, requiring lenders to work closely with borrowers in order to find suitable debt structures, particularly as it relates to refinancing.

Q How do you envisage lender appetite evolving over the coming year and which types of lenders will be most active?

A We expect lender appetite to remain resilient in the coming year, albeit on a more selective basis. It's important to note that unlike in previous economic downturns, lenders remain incredibly well capitalised and willing to make funds available for the right opportunities.

Historically, in volatile times, non-bank lenders have out-performed traditional lenders. They are able to offer greater flexibility on terms and often have a more streamlined – although also more costly – credit approval process. As banks tighten their lending requirements over the next year, borrowers will have the choice of procuring debt at a higher cost or deploying greater amounts of equity into a given transaction, and this should present opportunities to alternative lenders.

“The sustainability of an asset has become a crucial component of every funding transaction.

Q Which specific property types will lenders be more willing to lend against over the coming 18 months?

A A further feature of unsettled times is that lenders are more risk averse about the assets they're willing to lend against and we're certainly seeing the start of a flight to quality in the market. Lenders have increased their due diligence and are being more selective on which assets they take forward.

Real estate sectors that have performed well in recent years, particularly those which have demonstrated resilient income streams over the course of the pandemic, will remain a focus to all lenders. Logistics, build-to-rent and the counter-cyclical PBSA market are among the sectors well positioned to deliver strong income in the medium term.

We also expect best-in-class assets with generous cashflows in less core sectors, retail and hotels for example, to continue their recovery in the lending market.

Q How is lender appetite varying across regions?

A Lenders are increasingly focused on locations with solid economic fundamentals and a good depth of investor activity. These include the major European cities sought after for their office and residential sectors alongside strategic hubs for industrial and logistics sectors.

In the UK, we've seen a number of senior lenders pull back from established regional cities. Instead, they are focusing in the short-term on London and the South-East, viewing the capital as a safe haven in uncertain times.

Across Europe, appetite remains strongest in mature markets. Germany, the Netherlands, Spain and France all offer a resilient range of domestic lenders alongside international banks and alternative lenders.

Q What impact is sustainability having on access to commercial real estate financing? How do you expect this to evolve over the coming year?

A The sustainability of an asset has become a crucial component of every funding transaction. In recent years, the ability to demonstrate appropriate green credentials has enabled borrowers to benefit from preferential margins and receive more favourable terms. While this arguably remains the case for a proportion of lenders, increasingly the most competitive lenders in the market demand that all new deals meet a minimum suitability requirement before offering terms.

Looking to the future, assets with insufficient sustainability credentials are going to be increasingly difficult and costly to finance unless a suitable business plan with clear performance indicators is agreed with a lender to upgrade the asset.

“Real estate sectors that have performed well in recent years, particularly those which have demonstrated resilient income streams over the course of the pandemic, will remain a focus to all lenders. Logistics, build-to-rent and the counter-cyclical PBSA market are among the sectors well positioned.

Q&A

Real estate investment has the power to forge a more sustainable future for the planet. Two trailblazing case studies highlight the new thinking

What's next
for ESG?

Innovating resilience in a changing world

Even in today's tougher economic times, ESG will remain a priority. Pressure from lenders is a big factor

Investing in ESG has continued to become more mainstream over the past year, with more than \$200trn of financial assets, not just real estate, now managed by firms signed up to the Taskforce on Climate-related Financial Disclosures (TCFD). In Asian real estate markets too, the importance of ESG is gaining traction.

At the same time increases in material and energy costs combined with potential affordability pressure on businesses could pressure some governments to pause moves towards meeting Carbon Neutral 2050. We are also seeing heightened awareness of 'greenwashing' and investors applying greater governance to ESG attributes of an asset.

Despite these potential headwinds, much of the sea change in focus on ESG in the real estate sector comes from those largest forces of change, the investors' investors. Therefore, even if some governments do pause planned regulations, the real estate

sector is likely to continue to forge ahead with a focus on ESG.

In a time of materials shortages and increased costs, some may argue we will see a 'back to basics' approach to buildings. However, the challenging economic situations could also accelerate demand for ESG buildings. Increases in material costs could favour refurbishments over new builds or, where new builds are constructed, encourage increased use of recycled materials, supporting the mitigation of embodied carbon in the sector as a by-product of responding to economic challenges.

Energy costs may also put pressure on some occupiers requiring new space to focus on lower-energy use, smarter, sustainable buildings which are also attractive to talent in an environment of tight labour markets. Alongside the short-term economic and geopolitical disruption, the longer-term necessity for energy-efficient buildings driven by climate

change remains constant. Increasingly volatile weather will require building design to apply ever greater attention to withstand the effects of climate change - escalating extremes of temperature, wind and precipitation - and the best buildings will also mitigate local climate risks.

We highlight two examples of novel construction design and best practice demonstrating superior ESG considerations. These buildings are designed to combat climate risks to themselves and also to help protect the local environment. They use forward-thinking methods to help occupiers achieve their own CSR requirements within the building and also encourage biodiversity. This is a key tenet of the increasingly important Taskforce on Nature-related Financial Disclosures (TNFD) which supports the movement of financial flows from investments which impede nature and biodiversity, to those that support it.

ESG isn't a cost, it's an opportunity to embed value

 **Debbie Whitfield**
Impact Director, Fabrix

"ESG" certainly remains the buzz word of the moment - and in lots of ways rightly so - but at Fabrix we have always been a little sceptical of the usefulness of lumping together the diverse considerations of environmental sustainability, social value and ethical governance in a single acronym. It hides the complexity and individual importance of each pillar, in the process creating fertile ground for 'green-washing' to go unchecked.

This is even more of an issue during times of economic headwinds and political turbulence, when the first targets for cutbacks, both in government and business, are often those priorities that fall under the blunt heading of 'The ESG Agenda'. We don't see these as costs to be value engineered but as opportunities to embed value. It's critically important we recognise that the value chain isn't just economic - it encompasses all those aspects that are important for making society more prosperous.

In the UK we have seen 'green premiums' for several years, but 'brown discounts' are quickly becoming the reality and this trend will

only increase. With a chronic undersupply of environmentally sustainable buildings across the UK, developers able to deliver projects that address this need are attracting smart investors who can see the way the wind is blowing.

Ultimately, not addressing the pressing environmental and social issues that we face today will exacerbate those problems and we all lose out - society, the planet, and of course the economy. So, it's more important than ever that, as an industry, we find ways to persuade others of the long-term benefits of progressive solutions to those real and escalating issues facing the industry and society at large.

There are still some who see the principles embedded in ESG as an extra, or more worryingly as something to push back on. Whilst impact investing may be in part trying to change the world for the better, it also amounts to a de-risked strategy to create value over the long-term. And is a better world such a bad price to pay?

Who is Fabrix?

Founded in 2016, Fabrix is a London-based vertically integrated real estate investment, development and management company striving to shape a more sustainable world through the intelligent application of finance, technology, and architecture.

Fabrix employs a hybrid top-down thematic and bottom-up fundamental value approach to real estate investing. We specialize in bringing value to underutilised and overlooked urban spaces, focussing on complex asset transformations and turnarounds, as well as building scalable businesses in high conviction investment themes.

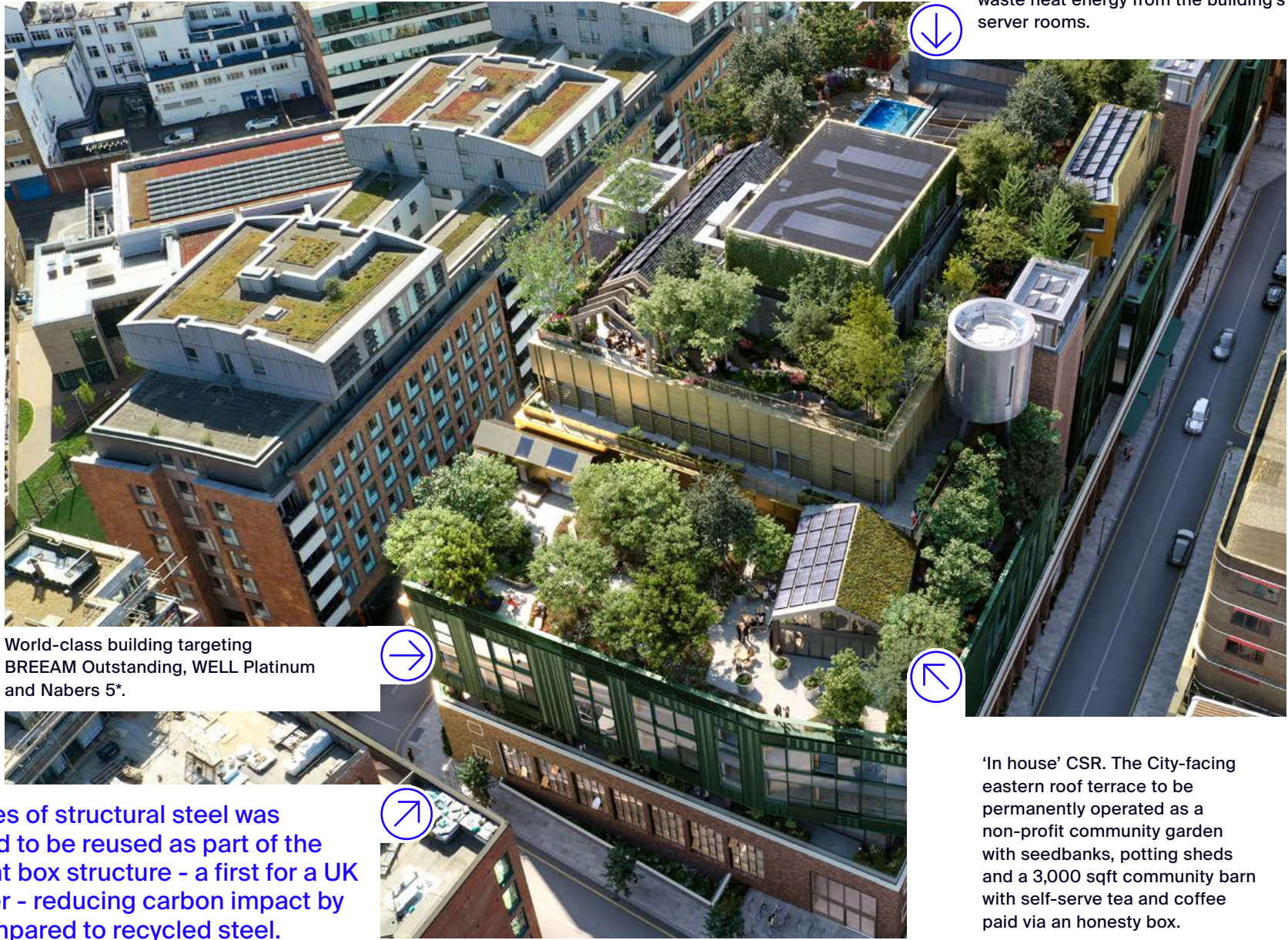
Nature, society and culture are at the heart of our projects and actions. Our ethos is to make sophisticated investments in buildings that help shape a more sustainable and equitable world.

Roots in the Sky

- Fabrix case study

Roots in the Sky, UK is a highly sustainable office building and is the UK's first rooftop urban forest under construction on the site of the former Blackfriars Crown Court in London

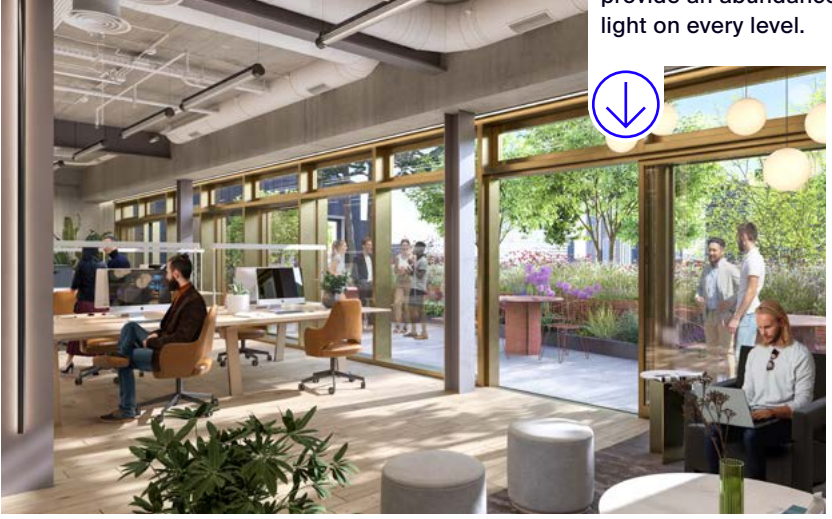
The building is envisioned as a 'vehicle for change' and a net zero carbon space. Built speculatively by Fabrix, it is the type of building usually associated with an owner occupier, designed throughout to meet modern urban challenges. The 430,000 square foot building is flexible, sustainable, optimised for health and reprioritises nature. Roots in the Sky aims to put wellbeing and community alongside the needs of its occupiers.



World-class building targeting BREEAM Outstanding, WELL Platinum and Nabers 5*.

139 tonnes of structural steel was reclaimed to be reused as part of the basement box structure - a first for a UK developer - reducing carbon impact by 80% compared to recycled steel.

Occupants enjoy all the amenities of a landmark building: restaurant and bar, gym and fitness suite, ride-in parking for 550 bikes, and a rooftop swimming pool warmed only by waste heat energy from the building's server rooms.



45,000 sq ft floorplates with generous floor-to-ceiling heights combined with external terraces provide an abundance of natural light on every level.

London's largest rooftop garden (1.4 acres) designed by Chelsea Flower Show gold medal landscape architects Harris Bugg Studio.

Special lighting will attract moths and insects, in turn attracting birds. A colony of European stag beetles, propagated off-site in advance, will help seed a biodiverse environment.



A passive rainwater capture irrigation system running alongside the deep soil beds will reduce storm run-off by at least 30% and help protect its local area from flash floods.

23% canopy coverage; 125 trees, 10,000 plants and over 1,000 tonnes of soil make this roof London's first rooftop urban forest.

Atelier Gardens

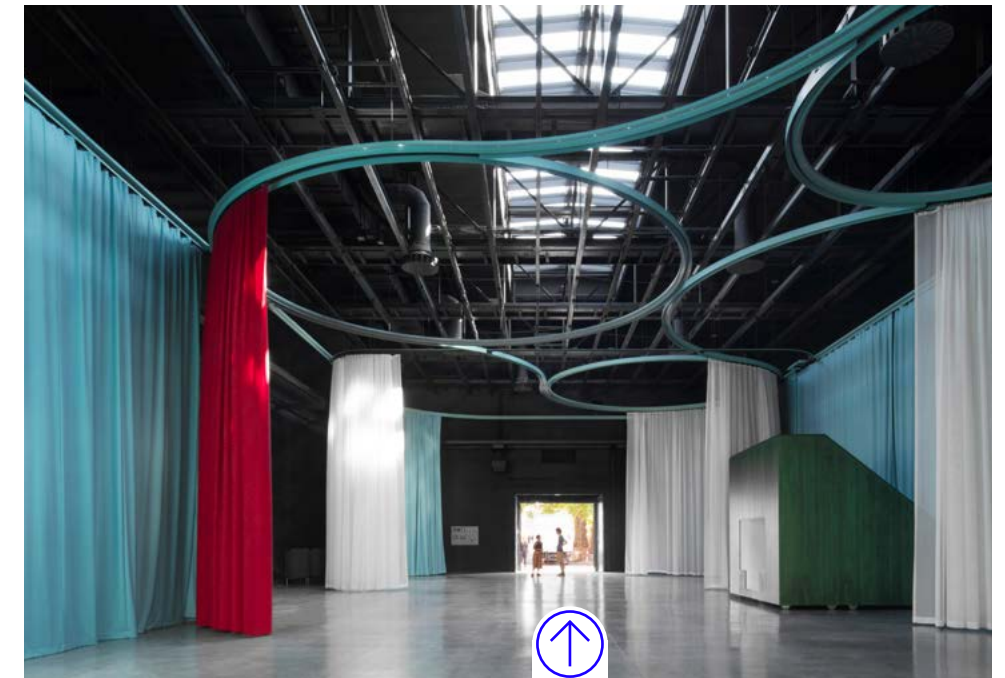
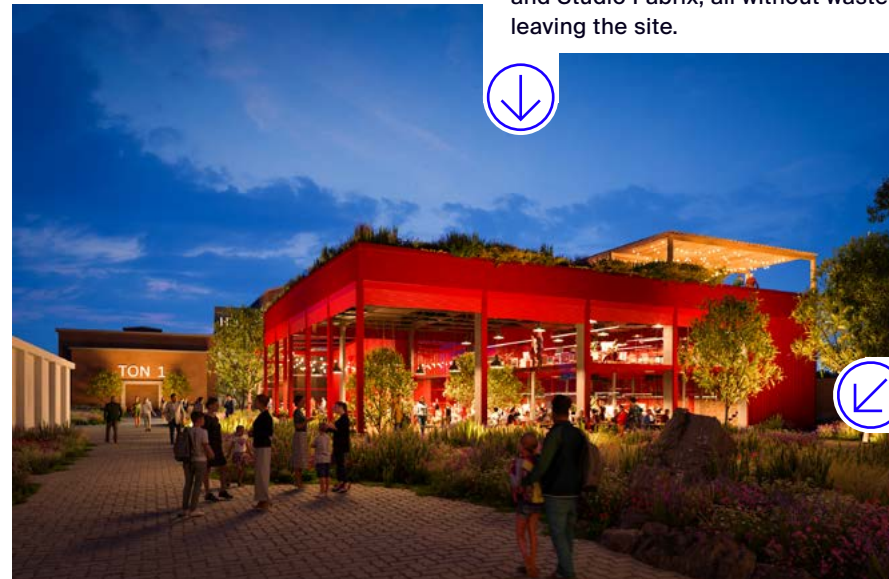
- Fabrix case study

Atelier Gardens, Berlin, Germany is transforming one of the oldest film studios in Europe into a campus where flexible work and event spaces connect to nature and the community

This six-acre film studio in Berlin was the legendary home of German cinema. The Oscar-winning Cabaret was shot here. Even Walt Disney used it. And now it has become a testbed for many of the principles that guide Fabrix as a developer and investor, building a community through reuse, flexibility, and reprioritising nature.

Film studios are essentially large sheds, often built pragmatically over time, with a transient population of production companies moving in and out of the site. The site appears suitable for conventional campus development. But these tend to be siloed around specific sectors such as tech, science, and education. Fabrix felt an opportunity to forge something new and different - a cross-disciplinary campus for social and regenerative entrepreneurship that draws on the site's storytelling roots.

A sensitive masterplan was developed with Dutch architects MVRDV to recalibrate the campus, into a flexible mix of work and event space for organisations with a focus on human and planetary wellbeing. Redundant studio buildings and other existing structures are being repurposed to designs by MVRDV and Studio Fabrix, all without waste leaving the site.



The project works hard to embed itself in its neighbourhood, forging connections through programs such as theatre clubs for kindergarten children and their parents as well as a local authority hub designed to bring the community together.

One of the site's listed, 100-year-old, studio buildings has been transformed into a flexible, state-of-the-art event space through the introduction of an intricate system of overhead lights and curtain railings, whilst preserving its historic character.



Nature is being gradually healed and reintroduced, utilising a longer-term approach by specifying plants with the ability to thrive in harsh environments and therefore decontaminating the soil over time and avoiding it going to the landfill.



New uses are being introduced including extensive refurbishment of dated office buildings to create contemporary workspaces including rooftop gardens and pavilions.



Circular composting utilises food waste from the restaurant as well as invites locals to bring their food waste and take away the compost they need.



Other sustainability measures include rainwater collection, water recycling and eco-toilets.



456 offices

53 territories
over 18,000 people



Contacts

Neil Brookes

Global Head of Capital Markets

neil.brookes@asia.knightfrank.com

Victoria Ormond, CFA

Partner, Head of Capital Markets Research

victoria.ormond@knightfrank.com

William Matthews

Partner, Head of Commercial Research

william.matthews@knightfrank.com

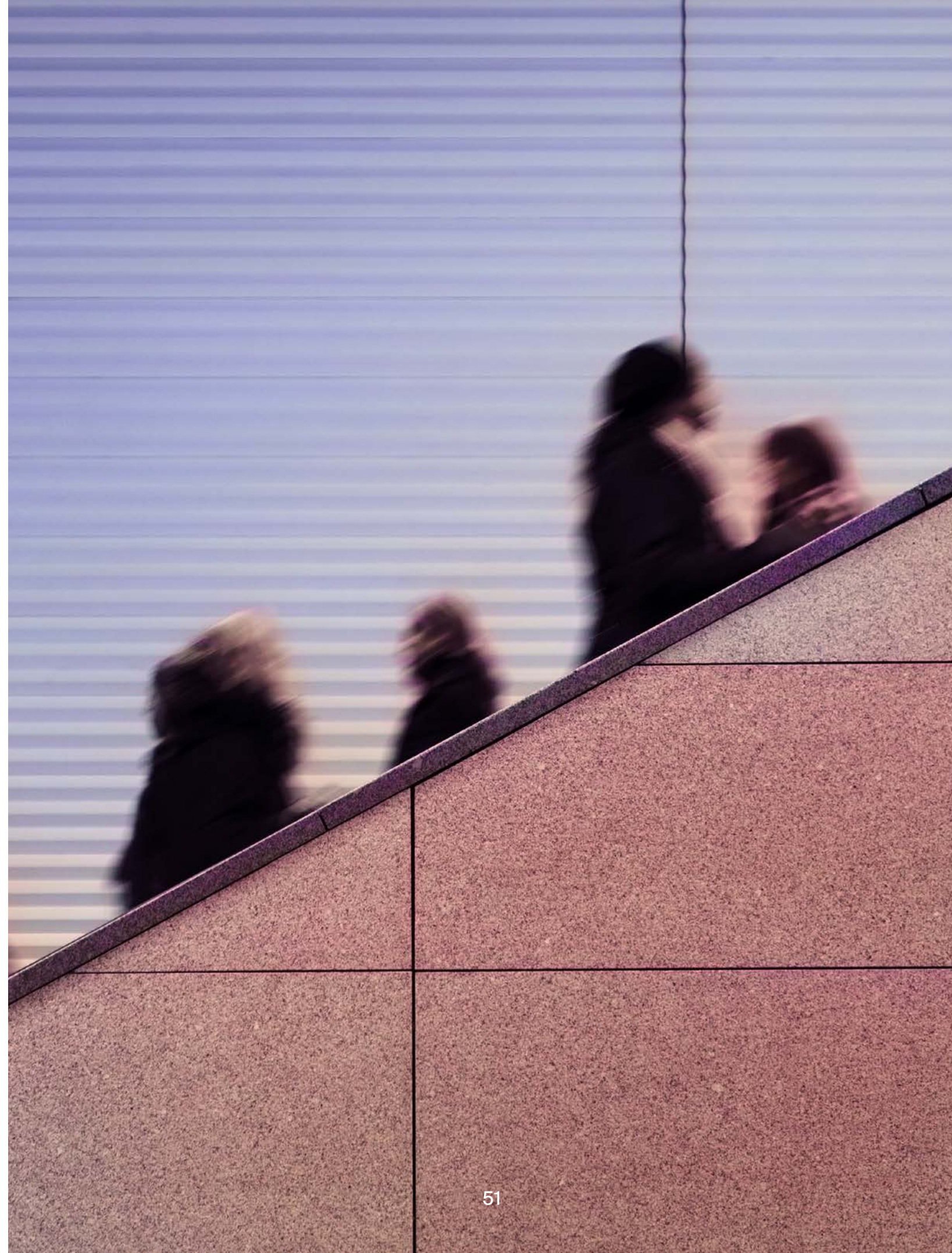
ABOUT KNIGHT FRANK

At Knight Frank, we build long-term relationships which allow us to provide personalised, clear and considered advice on all areas of property in all key markets. We believe personal interaction is a crucial part of ensuring every client is matched to the property that suits their needs best – be it commercial or residential. Operating in locations where our clients need us to be, we provide a worldwide service that's locally expert and globally connected. As a partnership, we are independent, debt free and not beholden to external shareholders.

GLOBAL CAPITAL MARKETS AT KNIGHT FRANK

Our Global Capital Markets Group acts on the most high-profile property transactions around the world. The group works with institutional, private equity, family offices, sovereign wealth and real estate companies in the cross-border acquisitions and disposal of international property. We cover the office, residential, retail, industrial, leisure, hotel, student property, healthcare and data centres sectors.

To find out more go to knightfrank.com/globalcapitalmarkets





Your partners in property

knightfrank.com/active-capital

Knight Frank Research provides strategic advice, consultancy services and forecasting to a wide range of clients worldwide including developers, investors, funding organisations, corporate institutions and the public sector. All our clients recognise the need for expert independent advice customised to their specific needs. Important Notice: © Knight Frank LLP 2023 This report is published for general information only and not to be relied upon in any way. Although high standards have been used in the preparation of the information, analysis, views and projections presented in this report, no responsibility or liability whatsoever can be accepted by Knight Frank LLP for any loss or damage resultant from any use of, reliance on or reference to the contents of this document. As a general report, this material does not necessarily represent the view of Knight Frank LLP in relation to particular properties or projects. Reproduction of this report in whole or in part is not allowed without prior written approval of Knight Frank LLP to the form and content within which it appears. Knight Frank LLP is a limited liability partnership registered in England with registered number OC305934. Our registered office is 55 Baker Street, London, W1U 8AN, where you may look at a list of members' names.