EMEA | November 2021

The Future of Cities

Shaping the future of urban ecosystems

Contents

Introduction

Post-pandemic regeneration and renewal

The pandemic has had an enduring impact on our urban environment and changed the way we live, work and play.

As we plan for a post-pandemic future, many are assessing the permanency of the change, what has changed, and what will remain the same.

The coming years are likely to see significant evolution within the built environment, not only as a consequence of the pandemic but also due to changing workforce and consumer preferences, intensifying sustainability pressures and the transformation of real estate by technology.

Climate change and the rise of ESG are set to be some of the most transformative drivers of change. As the seriousness of the climate crisis increasingly pervades social consciousness, organisations face unprecedented and elevated expectations from their employees, tenants and clients, as well as from society at large.

At JLL, we anticipate a period of accelerated change with implications at city, asset and user levels as the urban ecosystem evolves and assets are repositioned to respond to the drivers of transformation.
The post-pandemic environment will provide a once-in-a-lifetime opportunity for real estate to regenerate the built environment in a sustainable and responsible manner.

Regeneration will require taking inspiration from fresh thinking and developing innovative plans that have a positive impact – adding sustainable value for cities, businesses and wider community stakeholders. At the asset level, regeneration will entail sustainable transformation of assets with agility and innovation to deliver financial and social value. For the people that occupy and use the built environment, regeneration will mean delivering a renewed sense of place with strong sustainability credentials and one that offers users a positive experience wherever they live, work and play.

The new value-creation paradigm will necessitate a holistic approach that combines financial, environmental and social factors. This creates the need to repurpose the built environment in sustainable and responsible ways and requires a shift in the criteria for assessing return on invested capital to include 'environmental' as well as 'social' impact. This report explores the drivers of change across a range of asset classes and the implications for the built environment.

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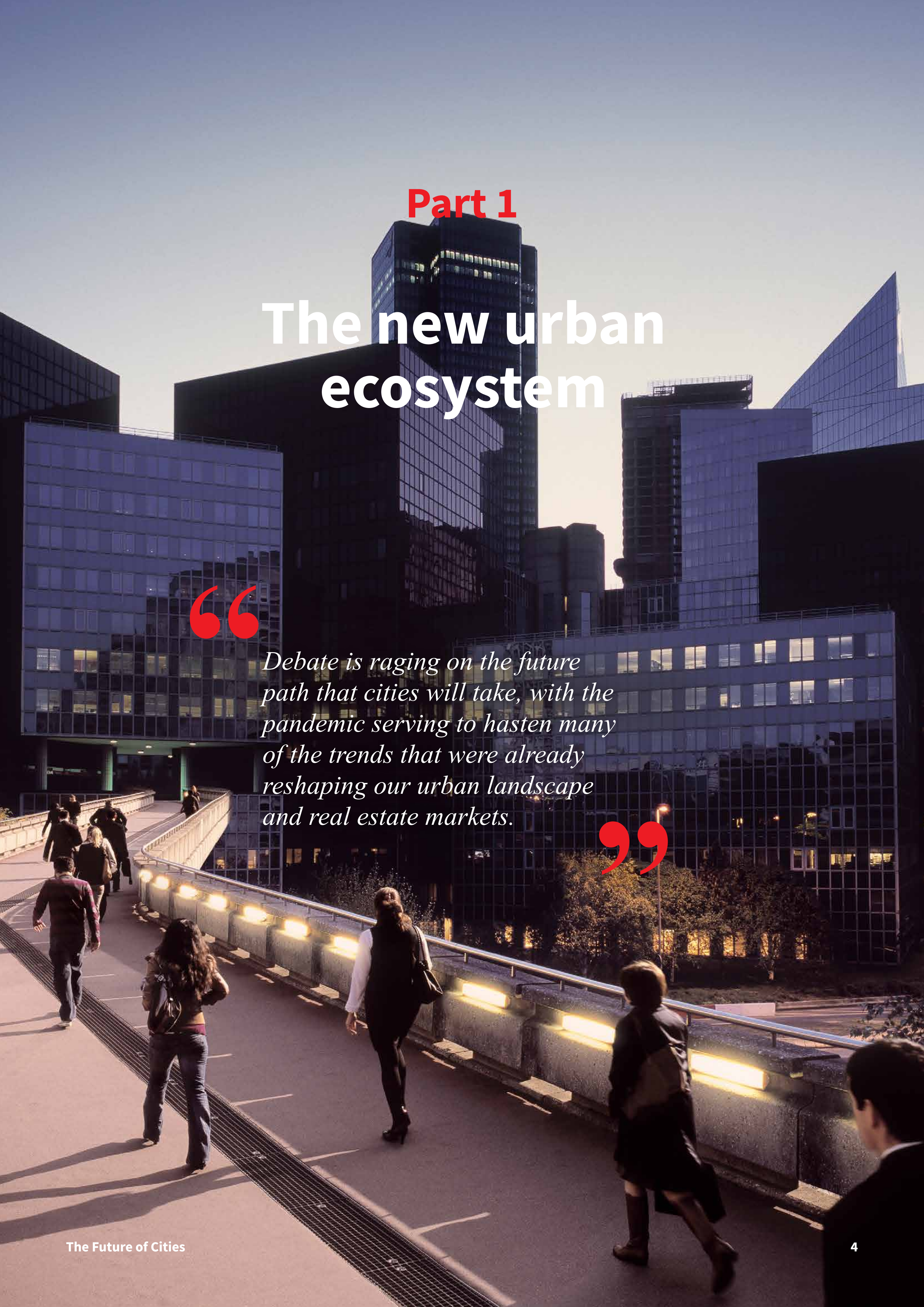

Part 1

The new urban ecosystem

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Over the coming years, our cities and built environment will continue to face significant disruption due to:

Changes to **work and workplaces** and changes to **lifestyle preferences** which, combined with technological advancement, have the potential to radically alter how our cities and buildings are used. It will shift patterns of real estate demand between and within our cities.

Pressures to move to a **low-carbon, climate-resilient economy** and to build a more equitable society, requiring fast-track routes to producing sustainable, inclusive and resilient buildings.

This is an unprecedented opportunity for the real estate industry **to lead the regeneration of our cities and to build back better**. The proactive contribution of real estate investors in shaping more human-centric, sustainable and innovative cities will be essential not only in long-term asset value creation, but also in future-proofing assets and in value preservation. At the same time, investors will have to honour their expanding commitments to environmental and social goals.

A shift in focus on experience, habitat and innovation

The future of urban ecosystems can be viewed through three lenses. A successful urban ecosystem needs a blend of three elements to reflect a shift in city focus on experience, habitat and innovation:

The '**Human City**' is one that delivers a high and fulfilling quality of life for its citizens, with an emphasis on health and safety, enriching experiences, life opportunities, culture and amenities. A human-centric city also nurtures thriving, equitable and prosperous communities that add sustainable value for society.

The '**Ecological City**' is one that has set out to deliver a significantly decarbonised economy, which embraces the circular economy, promotes mass sustainable mobility and nurtures biodiversity.

The '**Innovative City**' is one that is home to vibrant high-value activities and one which cultivates creativity and innovation, leverages technology and has deep talent pools that boost productivity, fuel new patterns of growth and drive up living standards.

The Human City

An urban renaissance

Many of our city cores have struggled to remain relevant during the depths of the pandemic, with some commentators speculating that urbanisation will go into reverse. The reality is that we will continue to live in an age of urbanisation, with the inherent attractions of cities ensuring that they will move into a new phase of urban renaissance. The ‘Human City’ is emerging, one which delivers a high and fulfilling quality of life for its citizens, with a focus on health and safety, enriching experiences, life opportunities, culture and amenities.

We expect urban cores to re-emerge with renewed energy and purpose. Their scale, pulling power and legacy attributes will ultimately support their resurgence. Urban cores will be reimagined to reflect their changing role in the urban ecosystem, a transformation that may extend over more than one cycle:

Urban cores will see more **mixed-use development** that appeals to urban living. Urban transformation in the 2020s may be different from the bold, large-scale projects of the 2010s, bringing in new approaches to placemaking that combine digitisation, inclusiveness and ‘whole of place’ governance over larger areas.

Urban cores will increasingly pivot towards being places of **collaboration, innovation, creative energy, conviviality and in-person social and business interaction.** They will be a focal point for education, learning and life experience, and will leverage their cultural and amenity legacy to attract people.

Inclusiveness will be an essential ingredient of a successful reimagined urban core, able to foster diverse communities that share common goals and supported by equitable urban policies.

The principles of **good densification** will be applied in urban cores. While the pandemic has cast a shadow over densification, good density will continue to be a compelling and sustainable option, defined in terms of creative design, human scale and height, reimagined use of public spaces, and multifunctional spaces that encourage interaction, collaboration and micromobility.

Distributed living

The mass adoption of technology and increase in hybrid working has opened up opportunities for better 'distributed urbanisation' – the dispersal of people and activities over a wider geographical area, typically within the hinterland of a major city – creating digitally connected networks of suburbs and second and third-tier cities and towns.

There will be winners and losers from this shift in activity. Suburbs and smaller cities will be assessed on their quality-of-life offer, their amenities, access to recreation and connectivity to the main urban core. The successful locations will attract families and a mid-life demographic that value high-quality residential and education infrastructure, with the emphasis on health and wellness in a risk averse environment.

Localisation

We are seeing the rise in appeal of localisation and the '15-minute city' based on four major principles: proximity, diversity, density and ubiquity. The 'live, work, play' model will become more prominent – locally-oriented projects that foster community, improve liveability and offer a variety of accessible amenities (e.g., work, healthcare, leisure and basic supplies).

This model could transform the way we interact with our cities, enhancing the urban experience, providing convenience and re-establishing social connections within the community. It can also offer an effective strategy to revitalise distressed and underdeveloped areas.

The affordability challenge

The provision of fair access to quality space in which to live and do business is essential to the overall health of a city. City governments have a responsibility for ensuring that its citizens are suitably housed; and they will need to partner with the real estate industry to double down in solving chronic housing shortages. Affordability must comprise both financial access and access to the appropriate standard of assets in terms of space, health, location and basic services.

Delivering a Human City

Real estate has a key role to play in improving liveability and nurturing communities, based on more human-centric and inclusive designs (for people of all ages and abilities) and social, community and recreational facilities that meet the needs of citizens in tandem with real estate development.

Partnerships: The pandemic will push institutional change in cities, with a new social contract and more partnerships/alliances between city stakeholders – government, investors, businesses, universities, anchor institutions and community organisations. By way of example, the Paris Construction Pact[2] advocates a partnership approach between all real estate stakeholders, including the citizens, to create an inclusive, harmonious and sustainable city for tomorrow.

Stewardships: Some institutional investors are rethinking how they invest in cities. They are looking to create concentrations of mutually reinforcing investments in certain locations – with some investors moving away from single-building ownership to 'neighbourhood stewardship'.

Proximity: There will be growing demand for 'live, work, play' models that embrace shared services, coworking, community spaces, convenience retail, urban logistics and micromobility.

Authenticity: Every city has its own 'brand and story' which should be reflected in real estate assets that cultivate a positive psychology.

2. Paris, France

The Ecological City

The race to net zero

The greater awareness of the fragility of our environment and urgency for climate action will mean that cities will double down on sustainability and zero-carbon initiatives. Real estate investors, developers and occupiers therefore have a major part to play in the race to net zero. The environmental impact of real estate assets is highlighted by the fact that buildings account for 40% of global greenhouse gas emissions, and as much as 60%-70% in urban areas.

> *If cities are to meet their net-zero carbon goals, they will have to accelerate large-scale energy retrofits of older existing buildings. New buildings will not get us to decarbonisation and the emphasis will need to shift to renovation or repurposing of buildings, rather than demolition, that promotes good densification, urban recycling, micromobility and reduced artificialisation.*

Creating resilience

The pandemic has thrust 'resilience' front and centre of the debate on the future of our cities. There is an increasing focus by city governments on mitigating the effects of unforeseen natural and man-made events, such as climate, financial and health crises. The built environment will need to be adapted to withstand a variety of unpredictable shocks as well as chronic events like rising sea levels. Real estate will have to play a more proactive role in creating resilience through adopting design principles that help to reverse the impacts of climate change – such as reducing flooding and extreme heat and taming weather events.

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Green spaces, biodiversity and zero artificialisation

Cities are putting a greater value on green spaces - for example, some cities are now restricting the amount of 'soil sealing' - an emerging priority that will help increase carbon capture while improving overall liveability. We are seeing greater use and flexibility of open and green spaces that can be adapted for different uses depending on the time of the day, day of the week or time of the year, such as outdoor gyms, skateboarding parks and pop-up art galleries. More and more, cities are recognising the role of biodiversity in regeneration, resilience, recreation and resource. Biodiversity is viewed as a key measure of the health of a city and is now becoming part of the investor conversation.

Partnering to deliver an Ecological City

Investors are increasingly pivoting towards cities with strong environmental credentials that align with their ESG priorities. In JLL's Decarbonizing the Built Environment research (2021), 65% of investors said that they will prioritise investing in cities that are climate change progressive.

Stakeholder partnerships: No single stakeholder group, whether in the public or private sector, has the resources or capabilities to accomplish decarbonisation on its own. As we tackle the decarbonisation challenge, an ecosystem of partnerships will emerge between the various city stakeholders that work together towards common sustainable targets.

Collaboration: Leading investors and building owners will progressively need to become collaborative stewards in the race to zero, leading by example and sitting alongside city governments. The Better Building Partnership's (BPP) Climate Commitment, for example, is a collaboration of the UK's leading commercial property owners who are working together to improve the sustainability of commercial building stock.

Set the goals: Investors will have to familiarise themselves with the environmental aspirations, actions and challenges of the cities in which they have assets, so that they can contribute both directly and indirectly to making a city's environment goals achievable. Cities' environmental goals are becoming more ambitious, and investors should seek to partner with city governments to set attainable targets and define regulatory frameworks.

Retrofitting a city's existing building stock to net-zero carbon is going to be central to decarbonising a city's economy. The retrofitting challenge for cities is huge but, encouragingly, leading investors are beginning to realise the tremendous potential in unlocking the retrofit challenge.

Share the wisdom: Leading investors, in partnership with city governments, universities and local Green Building Councils, have an important role to fulfil in educating and disseminating know-how, particularly to smaller companies and individual owners.

The Innovative City

Innovation leads to outperformance

Innovation is crucial to city resilience and success. Innovation ecosystems within cities are key to driving productivity and in turn lead to economic growth and, by implication, demand for real estate, particularly when combined with a high concentration of human capital.

JLL's Innovation Geographies research (2021) confirms that cities which combine strong innovation and talent concentrations have not only outperformed in economic terms over the last couple of decades but also in terms of real estate performance. The top-performing cities in JLL's Innovation and Talent Concentration indices recorded the strongest office rental growth over the past decade and attracted a higher proportion of real estate capital.

Innovation hotspots

During the 2010s we saw the emergence of new innovation geographies, with high concentrations of innovation-oriented activities in hotspots such as London's Shoreditch, Barcelona's 22@, Boston's Kendall Square and Tokyo's Shibuya. With the rise of the hyperconnected polycentric region, economies of scale will facilitate the further clustering of innovation-based activities in emerging hotspots that offer a compelling cocktail of the four 'A's – affordability, amenity, accessibility and anchor institutions. Urban cores will be fertile ground for innovation-based activities.

Smart-city solutions

Cities are increasingly looking to technology and data platforms to support the creation of more productive, liveable, sustainable and resilient cities. The pandemic has accelerated the adoption of technology solutions – with expanding demand for accurate and just-in-time data to keep track of activity and sentiment. Urban tech is likely to be the single biggest catalyst for green progress.

The real estate industry has a key role to play as it goes through a technological leap which has the potential to revolutionise cities' digital ecosystems and to harvest vast amounts of real-time data on space usage, mobility, health and energy efficiency as buildings gradually become smarter.

Innovation in urban supply chains

The pandemic has quickened the shift from physical retail to online and upended city supply chains. This is resulting in huge challenges for cities in how they repurpose downtown retailing and Grade B/C shopping malls. Conversely, logistics has seen a huge boost to demand, particularly for urban logistics to service last-mile delivery. City governments will be looking for new innovations in supply chain management and space rationalisation (e.g., multistorey facilities) that will lean heavily on technology.

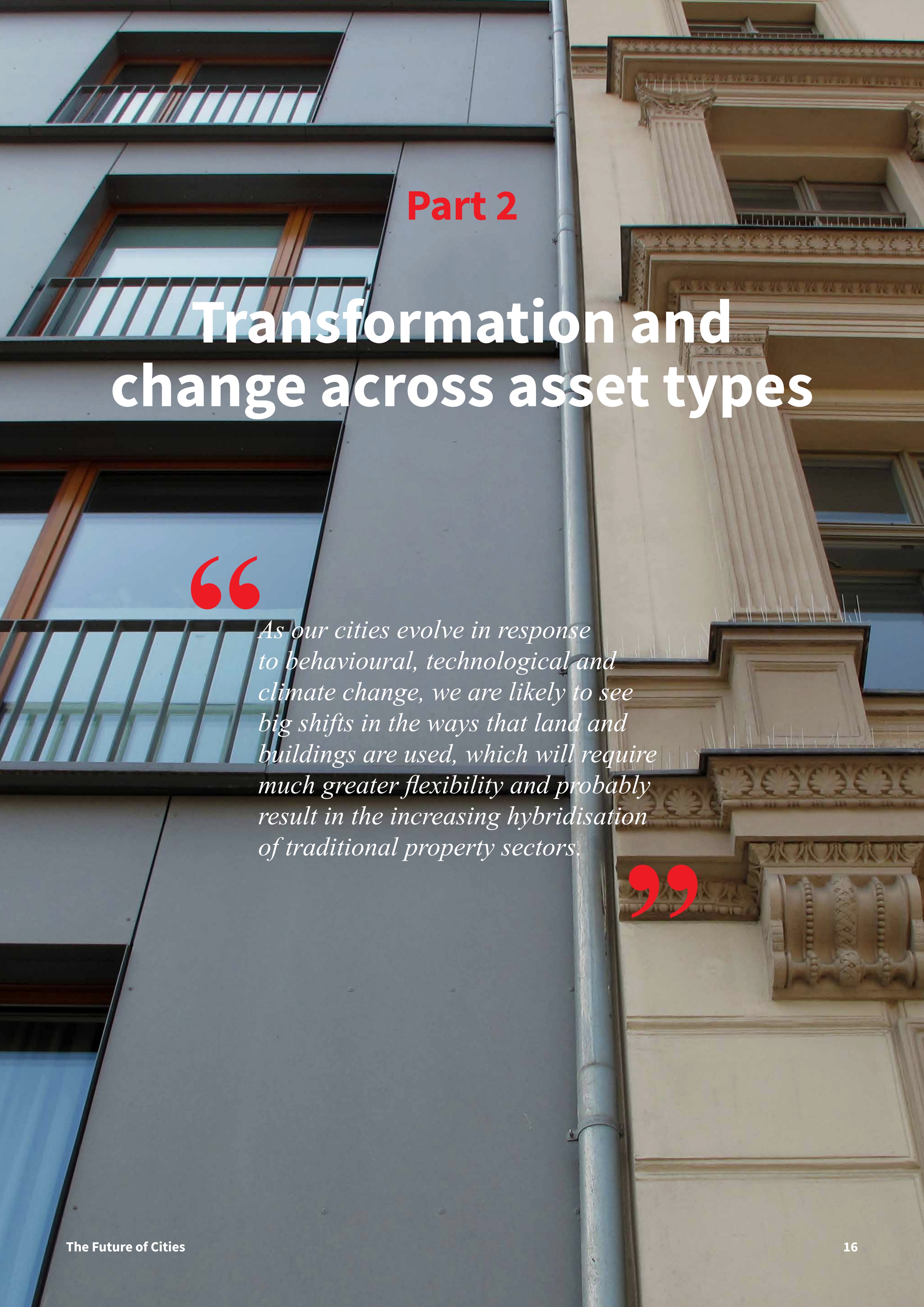
Being part of an Innovative City

Real estate will play an important part in knitting together successful innovation hotspots – with space that attracts talent, boosts productivity, encourages collaboration and supports the creation of the new 'regenerators' in the post-COVID-19 city.

Strong innovation ecosystems are attracting international investment. Investors will increasingly draw on innovation and talent metrics when assessing a city's real estate potential, combining them with the traditional measures of city and real estate dynamism relating to GDP, employment and population.

The innovation economy requires real estate space which is smart, agile and flexible, with adaptive reuse that enables hybrid uses. This means cheaper, more flexible building methods; modular construction; more flex space; adaptive reuse; and, importantly, greater flexibility in planning/zoning - close space and regulations – to reflect a growing hybridisation of property uses.

Many cities have struggled to scale **urban tech**. The real estate industry holds the key to creating scalable smart-city solutions by developing networks of truly connected buildings that drive large-scale, city-wide energy efficiency and resource usage. Investors need to realise that the best smart-city solutions sit within their domain to deliver meaningful business, community and environmental benefits.



Part 2

Transformation and change across asset types

> *"As our cities evolve in response to behavioural, technological and climate change, we are likely to see big shifts in the ways that land and buildings are used, which will require much greater flexibility and probably result in the increasing hybridisation of traditional property sectors."*

Transformation and change across asset types

As our cities evolve in response to behavioural, technological and climate change, we are likely to see big shifts in the ways that land and buildings are used, which will require much greater flexibility and probably result in the increasing hybridisation of traditional property sectors.

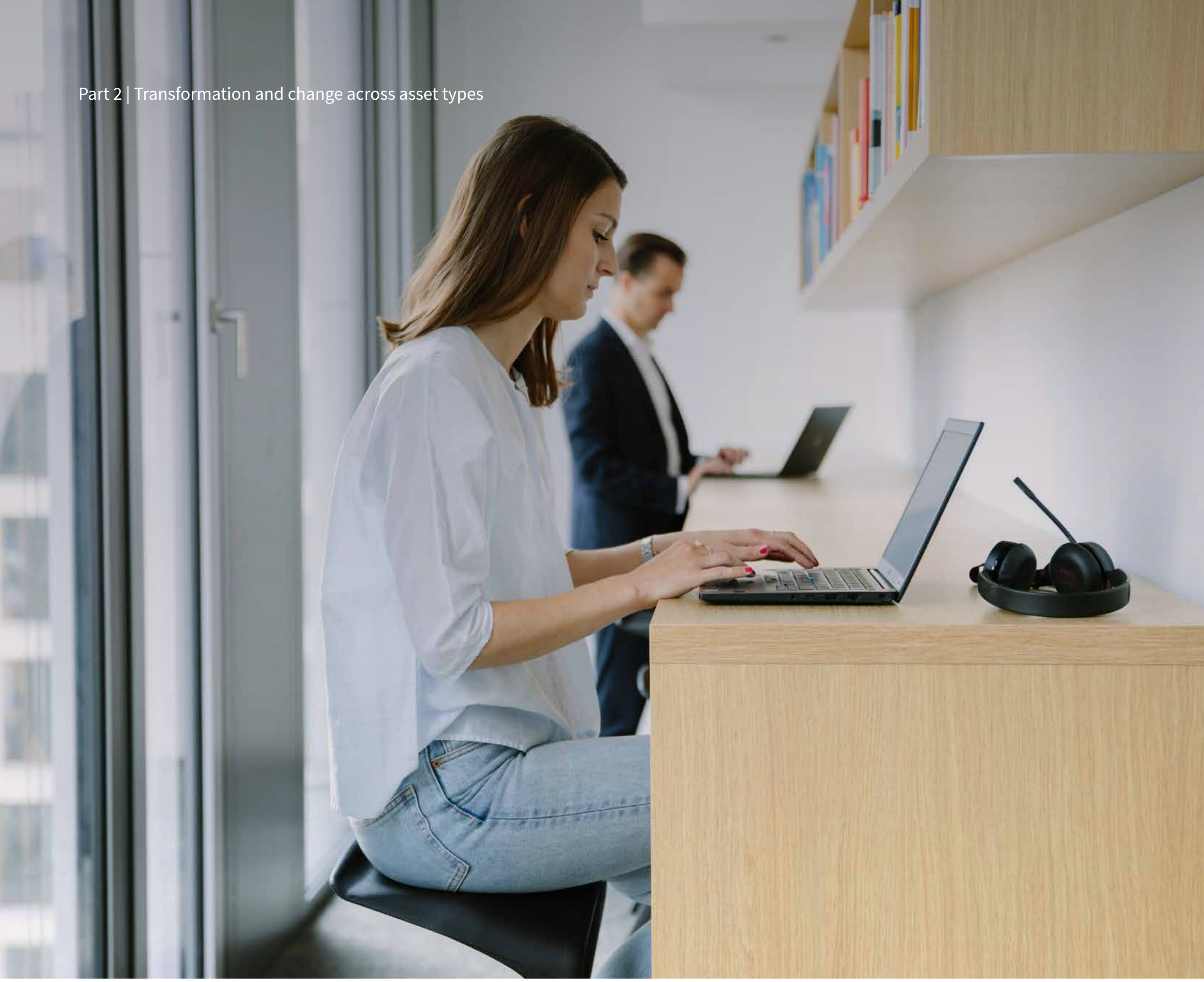
Understanding the dynamics of, and the interplay between, the different sectors will be crucial to asset value creation, enhancement and best-use strategies. Layering on ESG commitments and imperatives will create a complex mosaic of opportunities and challenges within the urban environment:

For **offices**, this could mean updating ageing office space to accommodate new modes of working, such as hub & club business centres, hybrid working and flexspace, and addressing the retrofitting challenge to ensure assets are meeting more stringent carbon emission and energy standards.

For **retail**, it is about responding to fast-paced changes from the rapid growth of e-commerce, changing tenant mix and the rise of experiential and ultra-convenience retailing.

For **industrial and logistics**, it means leveraging the tremendous growth in urban logistics that is evolving to meet the demands for ‘last-mile’ and even ‘last-hour’ delivery and witnessing rising levels of automation, but which is being constrained by land supply shortages and the imperative to embrace sustainability.

And in the **living** sector, the rapid rise of hybrid working is opening up new location choices, resulting in new approaches to apartment design and the essential requirement for reliable high-capacity digital connectivity. More critically, it is about collaborating to find solutions to the shortage of affordable housing in many cities.



Offices

Changes to work, workplaces and lifestyle preferences, combined with technological advancement, will radically alter how offices are designed and used in a post-pandemic world. In a future of work that is more and more worker-centric, organisations will seek to create safe and inspiring spaces that are human-centric, resilient and responsible for people to collaborate and innovate, and drive culture and meaningful change wherever work is performed.

Drivers of change

Hybrid working

As we reach the early stages of a return to normalcy post-pandemic, the 'hybrid' working model is emerging to be a favourable choice for many organisations.

Organisations will need to incorporate flexible solutions into their office portfolios for greater agility, allowing them to 'buy time' as they launch new initiatives, develop longer-term space strategies and support hybrid working.

88%

of the workforce *would like more flexible working hours in the future, compared with 71% a year ago.*[3]

They will look for low capex, flexible contracts as they restructure their portfolios and will favour flex operators that offer maximum flexibility. The advent of hybrid working will generate impetus to transform workplaces, building design and portfolios.

Health and wellbeing

Forward-looking organisations will put wellbeing and resilience of the workforce firmly front of mind when designing the physical fabric of offices. Features such as outdoor spaces, exercise studios and wellness centres that will address the key health and wellbeing issues of the occupants, as well as building processes that support tenant programmes in their buildings, will become commonplace. Moreover, given that many workers may opt for healthier means of getting to work post the pandemic, such as cycling or running, they'll increasingly expect appropriate facilities like storage and showers.

One-third of the workforce do not have access to any health and wellbeing amenities at all today. In instances where health and wellbeing amenities are offered, the uptake is very high. Among those who have access to these services, 60% to 70% use them on a weekly basis.

Healthy buildings will be in high demand over the coming years, so the right performance metrics and technology solutions will be critical to understand how well a space performs.

63%

of the workforce *want to work in a hybrid style in the future, having the ability to switch between different places of work: home, office and third-party places.*[4]

Social and environmental responsibility

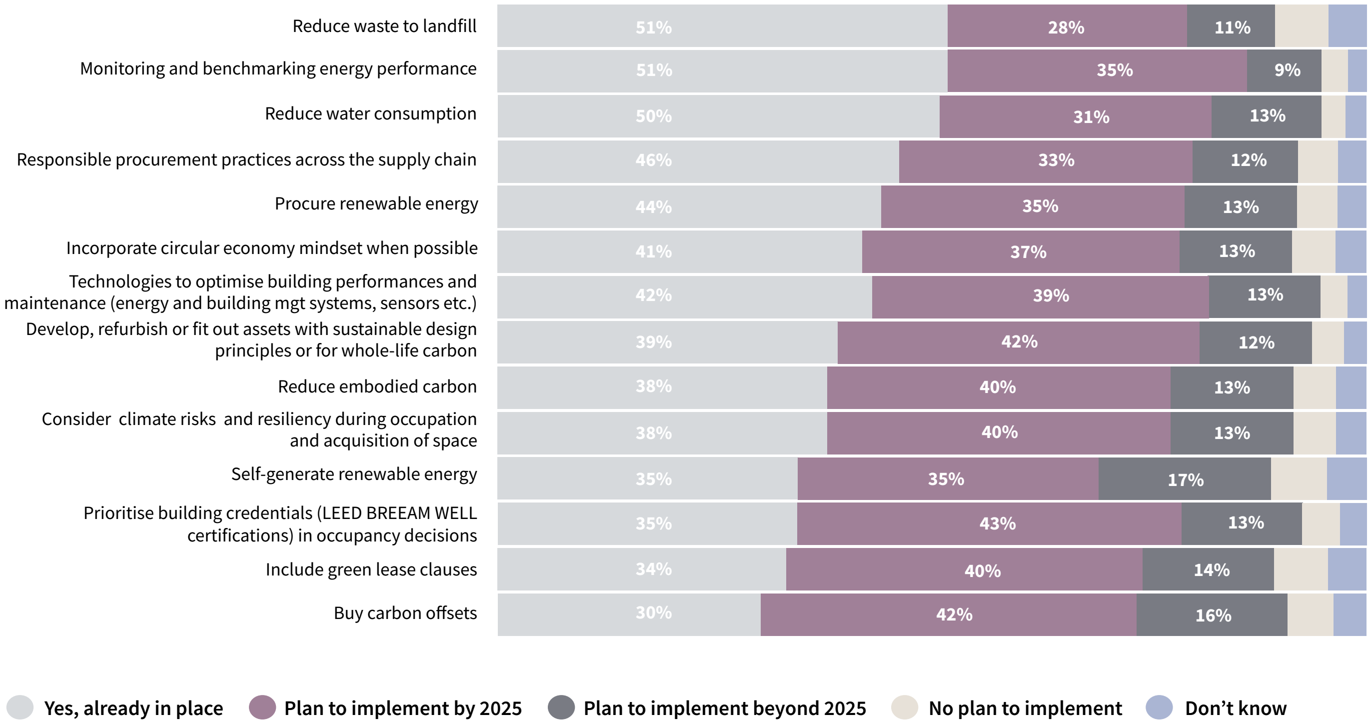
Sustainability is now a key criteria in the way occupiers acquire, fit out and manage their assets. From a space acquisition and occupation perspective, property decision-makers are engaging in a variety of initiatives. These include identifying assets with high carbon impact, leasing highly sustainable office buildings that carry LEED, BREEAM or WELL certifications, considering cities' climate risks and resiliency for location strategy, and incorporating green lease clauses to help meet their organisation's carbon commitments and attract environmentally conscious workers.

Going forward, organisations are poised to become far more discerning about the types of spaces they occupy – gravitating towards tech-enabled, high-quality, amenity-rich, sustainable office buildings.

3. Source: JLL Worker Preferences Barometer, June 2021
4. Source: JLL Worker Preferences Barometer, June 2021

Sustainability initiatives and their adoption by occupiers

Top initiatives already adopted or planned to be adopted



Which of these initiatives have you adopted, or plan to adopt, in your organisation? (327 responses)
Source: JLL, Decarbonizing the Built Environment, 2021

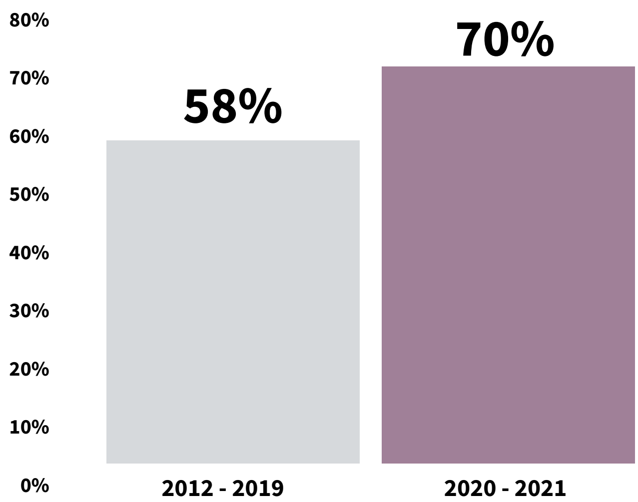
Market implications

Divergence between the best and the rest

Demand for higher-quality, amenity-rich, well-located and more sustainable buildings is accelerating, whereas yields are widening for less efficient and secondary assets. New leases taken in the last 18 months have leaned more towards the high-quality spectrum. We estimate that the percentage of Grade A office take-up in Europe has reached 70% since the start of the pandemic, compared to 58% in the 10 previous years.

European occupiers opt for high-quality space

Grade A office take-up as % of total take-up



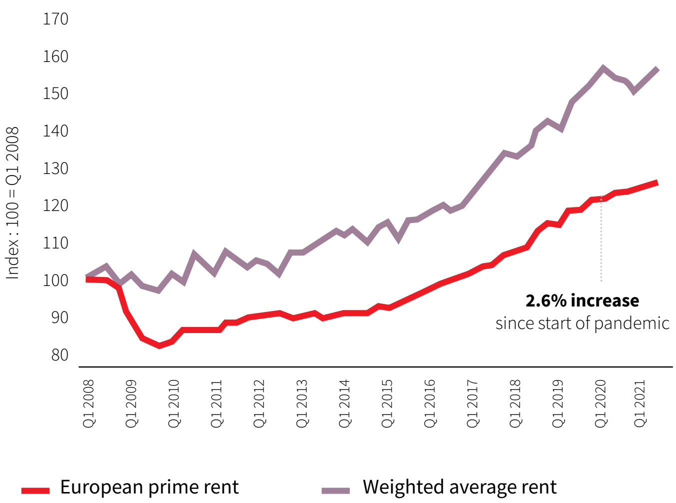
Source: JLL Research, H1 2021

European prime office rents remain resilient as occupiers choose high-quality space

European prime office rents have remained resilient over the last year as occupiers have been driven by a flight to quality. Meanwhile, weighted average rents (including Grade B and C properties) have witnessed a decline of 2.3%. We anticipate an increasing polarisation of rents and yields in the years ahead due to occupier interest focusing on scarce high-quality product as supply of sub-optimal space expands.

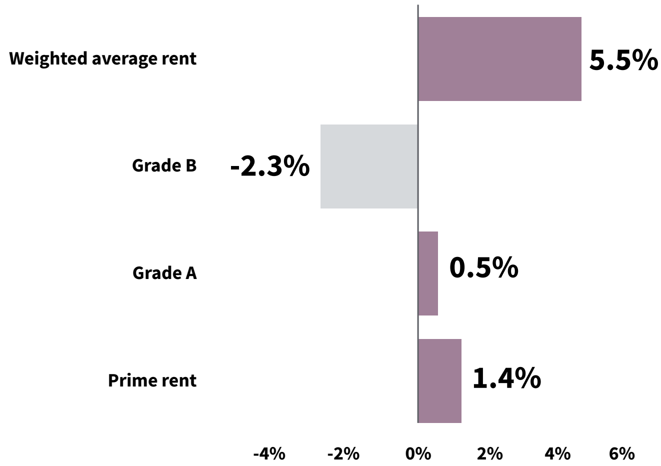
European prime office rents remain resilient

European prime rent vs. weighted average rent

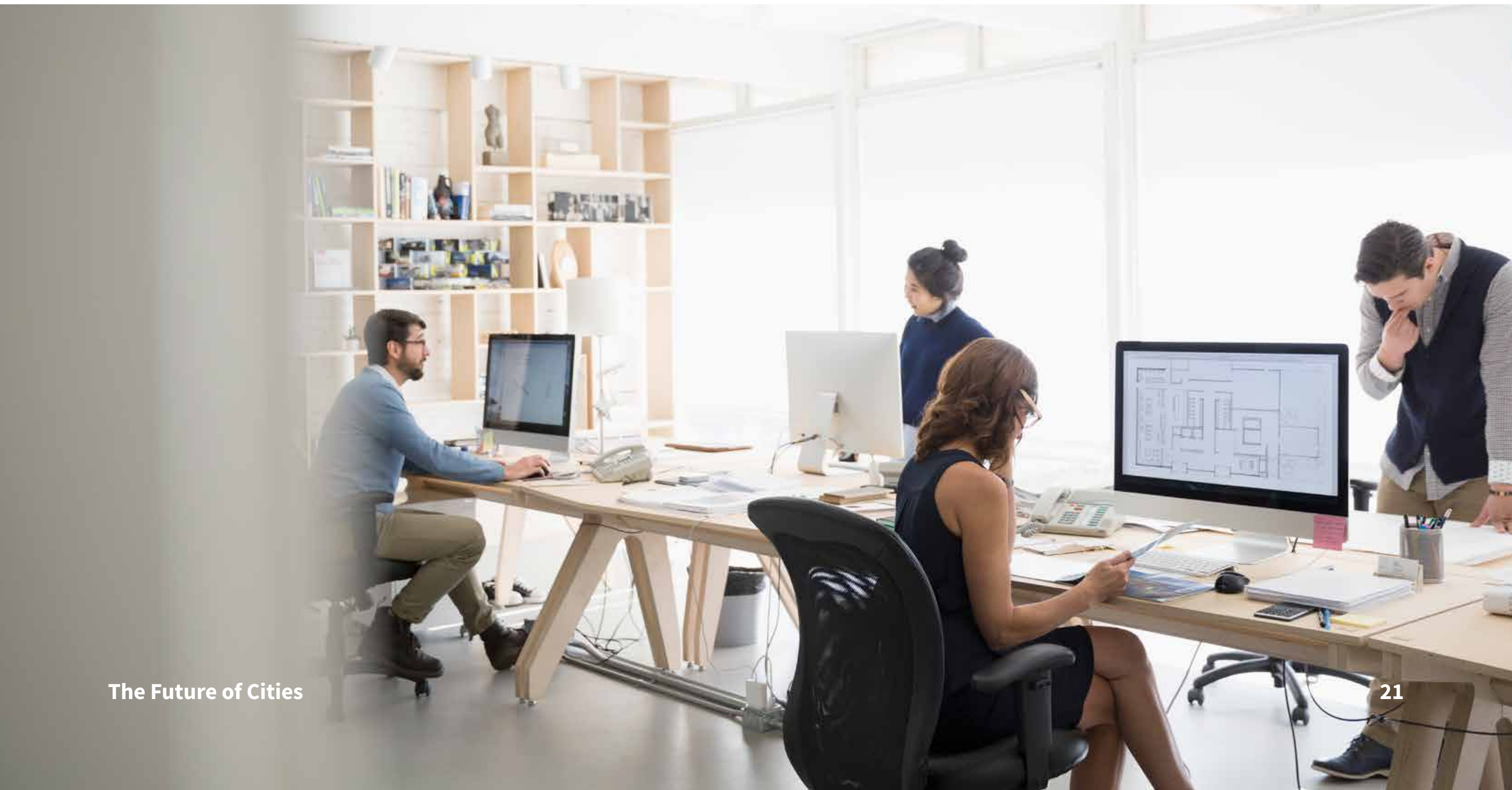


Increasing polarisation of office rents

European rental change YoY (%)



Prime and weighted average rents includes data on 19 European office markets in both charts displayed above.
Source: JLL Research, Q3 2021



Ageing assets drift towards obsolescence

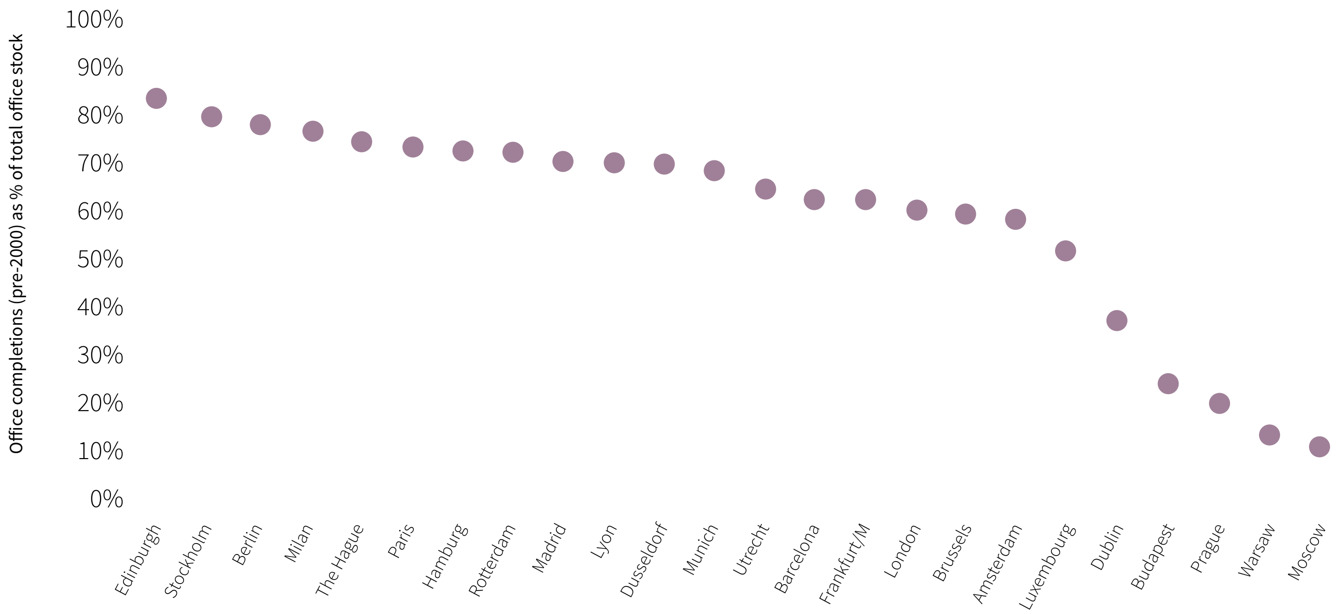
Shifts in the needs and demand of consumers is pushing more and more buildings towards obsolescence. The majority of existing European office stock was completed pre-2000, with most new-build stock found across Central and Eastern Europe.

Demand and supply imbalances will potentially result in green premiums for well-specified buildings, or, given that the vast majority of buildings are old (pre-2000), lead to increased obsolescence. These fluctuations in demand, supply, cost and legislation will occur over the next 1-2 hold periods for investors.

> *Given that 95% of the building stock in 2050 has already been built, the focus will be on retrofitting existing stock with demolition being the last resort. However, renovations will have to improve significantly as currently only 1% of European stock undergoes energy renovations each year, with average savings of just 16% in commercial property.*[5]

The majority of European office space completed pre-2000

European office stock completions (pre-2000) as a % of total stock



Source: JLL Research, 2021

5. Energy Post

Green assets drive value

78% of investors surveyed as part of JLL's research either agree or strongly agree that climate risk poses a financial risk. The opportunity to generate value and resilient portfolios through the creation of premier, green real estate assets is highly evident and, as such, demand for certified buildings is rapidly accelerating. At the same time, over one-third of occupiers are committed to occupy net-zero carbon properties in the future.

Green certifications are therefore growing in popularity as a means to demonstrate green credibility and drive value (rents, occupancy).

At the end of leases, tenants either renew or space is remarketed. JLL research has indicated that well-specified spaces fitted out to meet both sustainability and wellness criteria have minimal leasing voids compared to standard offices. This can be reflected in the cash flow for a shorter leasing-up period and, arguably, in a shorter rent-free period if there is greater demand for the space.

Finance geared returns can enhance performance through using debt to either acquire or fund the retrofit of a building. An increasing number of green loans are being made available which result in lower finance costs where sustainability KPIs are achieved, giving a lower cost of debt and enhancing returns.

73%

of investors *say that green strategies lead to higher occupancy, higher rents, higher tenant retention and overall higher value.*[6]

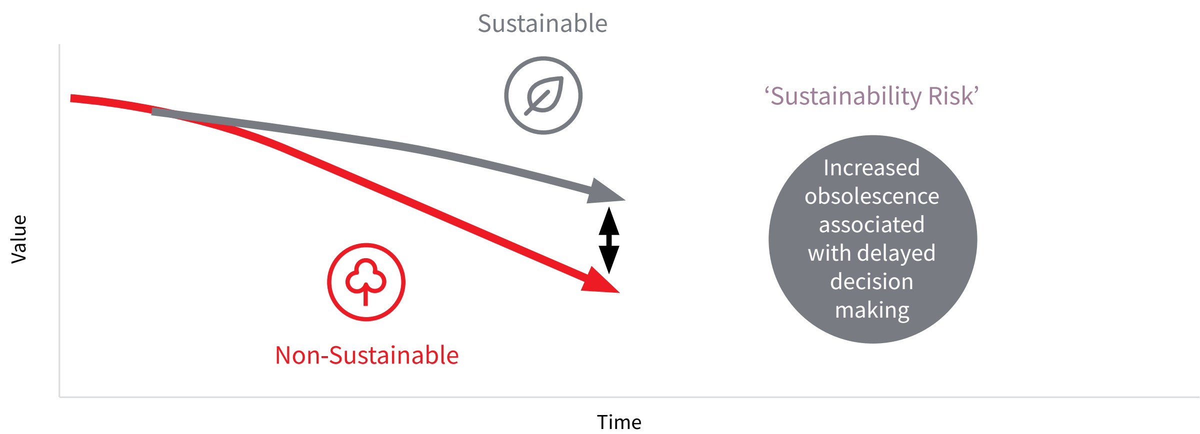
10%

rental premium for BREEAM Outstanding/Excellent rated buildings compared to all new Grade A achieved rents (refurbishments and new builds)[7]

11%

rental premium for EPC A/B rated buildings compared to all Grade A achieved rents[7]

Increased obsolescence of properties that do not meet market and legislative sustainability standards



Source: JLL, Valuing Net Zero & ESG for Offices: Global Market Trends and Valuation Methodology, 2021

6. Source: JLL, Decarbonizing the Built Environment, 2021
7. Findings of JLL Research in Central London, UK

The outlook for offices in the new urban ecosystem

Offices will remain the beating heart of city CBDs, particularly in high amenity, highly connected core cities. But they will need to adapt to reflect their evolving role as **social and business hubs** and destinations for face-to-face interaction, collaboration, innovation, creativity and socialisation. Office space will merge with other uses in mixed-used districts, allowing commercial and residential sectors to complement rather than compete with one another.

The opportunities that **hybrid working** offers to some for 'distributed living' will create demand for localised coworking, satellite office hubs in favoured residential locations. It will also encourage office demand in select second-tier cities with a high quality-of-life offer.

Cities will double down on reducing carbon and waste emissions from office buildings. Investors will need to tackle the retrofitting challenge to avoid assets being stranded and unlettable. **Smart technology** in digitally interconnected buildings will be a key catalyst for green progress.

Retail

With retail typically at the heart of urban areas and intrinsically woven into everyday life for most of society, there is a significant role to be played by owners and occupiers of retail space to provide experience-led, inclusive places in a net-zero world.

Drivers of change

The importance of 'place'

Spurred by the debilitating impacts of the pandemic, shopping centres are having to reinvent themselves more vigorously as destinations where people come together to socialise, network, shop, dine, live and work – while also acting as support systems for local communities. As such, landlords are keen to leverage the opportunity presented by placemaking to elevate experiences for consumers and enhance the positive impact of their places on local people and local economies.

A well-executed placemaking strategy has the potential to provide a halo effect to an asset and its wider surroundings. For retail, the appeal has been focused on increasing consumers' dwell time and ultimately increasing (impulse) spending.

Placemaking will entail combining retail, leisure, food & beverage and commercial, and include the offer of unique experiences, attractions, demonstrations, curated talks, fitness classes and much more. These will be important details in helping to create vibrant and dynamic places that draw people in.

Guided by robust placemaking principles, large inner-city retail assets will be revitalised, redesigned and repurposed, and have user experience embedded in the heart of their transformation.

Sustainability

The rise in popularity of online retailing is an area for review when it comes to reducing the carbon footprint of many retailers.

The drive to achieve net zero could therefore see the physical store become part of the solution as the price of 'home delivery' convenience becomes too high and 'click and collect' becomes the norm. In-store layouts may also become more homogenised as landlords make a conscious effort to discourage wasteful fit-out practices in favour of providing more efficient retailing spaces.

> *Data from third-party returns processing firm B-Stock shows that the percentage of returns from online sales is approximately 30% compared with 10% of in-store sales, while a U.S. study by retail logistics company Optoro found that c. 2.25 million tonnes of retail returns end up in landfill every year.*

Physical stores fulfil a pivotal role in a sustainable retail industry

Bulk Transport: Retail stores encourage a more efficient way of transporting products

Brand Exposure: Physical retail space offers opportunities to differentiate from e-commerce companies

Value Retail: For outlet operators and discount retailers, physical retail space remains a highly efficient channel

Returns: Stores encourage lower amounts of returns and waste

Socioeconomic Benefits: Retail places encourage inward investment and strengthen community ties

Source: JLL, Valuing retail in its global journey to Net Zero Carbon, August 2021

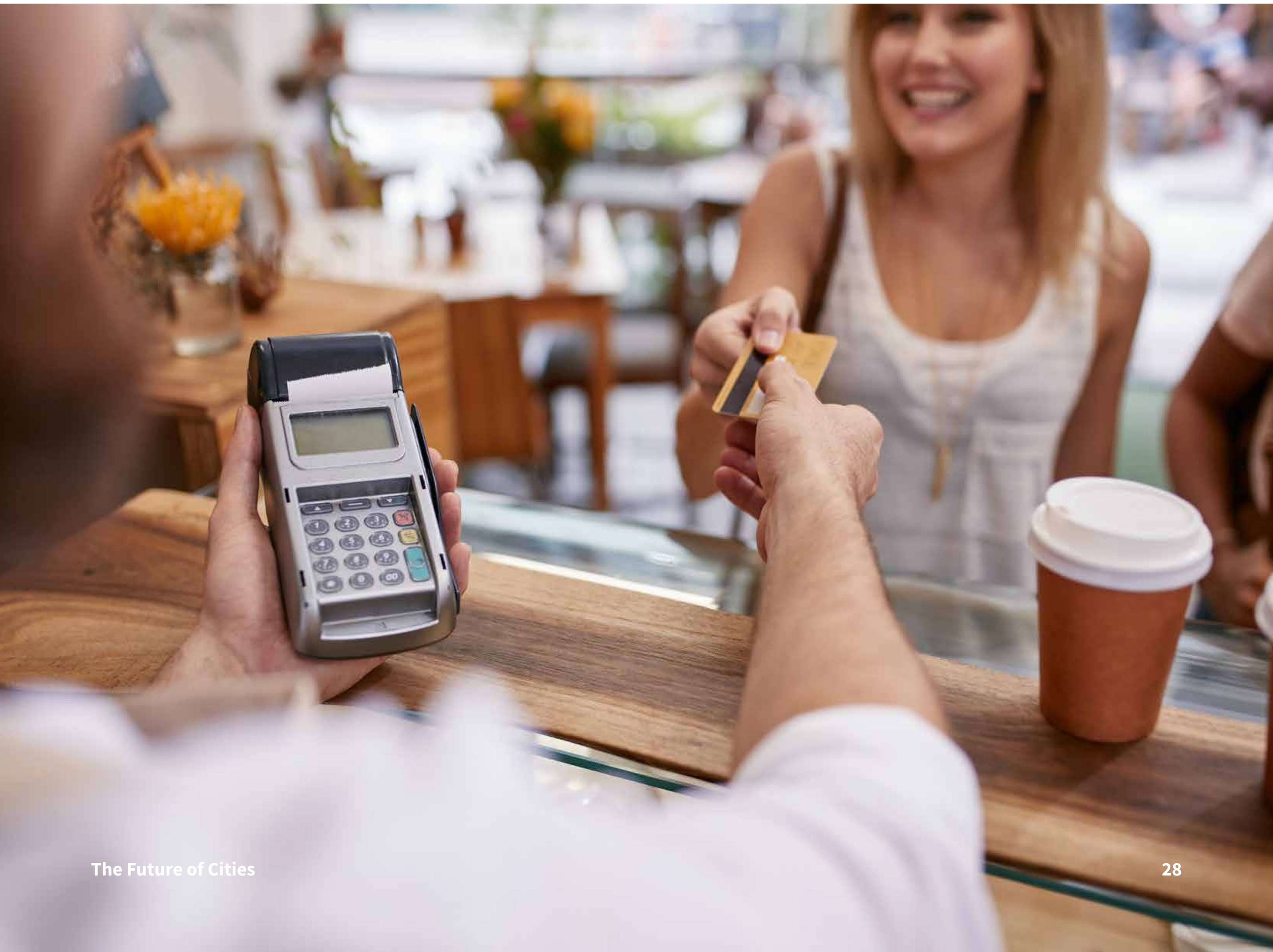
Dynamic and flexible retail spaces

The retail sector has always been highly dynamic, yet the need for places to remain fresh and relevant has never been stronger, with a proportion of the tenant-mix rotating on a regular basis. The necessity for retailers to have more flexibility in their leases has merely been accelerated by the pandemic. Buildings now require a high level of flexibility and elasticity to offer better resilience in response to continuous shifts in demand and a greater frequency and intensity of adaptation.

Flexible technical design can enable a building to evolve over time as a user's requirements change.

We anticipate a growing trend towards incorporating flexibility into the design of a building to allow units or space to more easily change in terms of the tenant and the fit-out, as well as the store size, thereby permitting multiple store configurations and also, for example, connection points for food & beverage units.

Department stores have been least able to adjust to the impact of pandemic due to the higher operational cost of their business models. With more intense competition across the retail landscape, the department store model, with large floor plates and a high volume of inventory and staff, has become increasingly vulnerable and would lend itself well to downsizing or repurposing.



Market implications

Retailer demand to pivot towards prime destinations and convenience

Retailer demand will continue to pivot towards experience-led, prime shopping destinations and quality space in local neighbourhoods. As major retailers progress the rightsizing of their store portfolios, the amount of excess retail space (mostly lower-quality stock) will become more prominent and will require active asset management in the most mature retail markets.

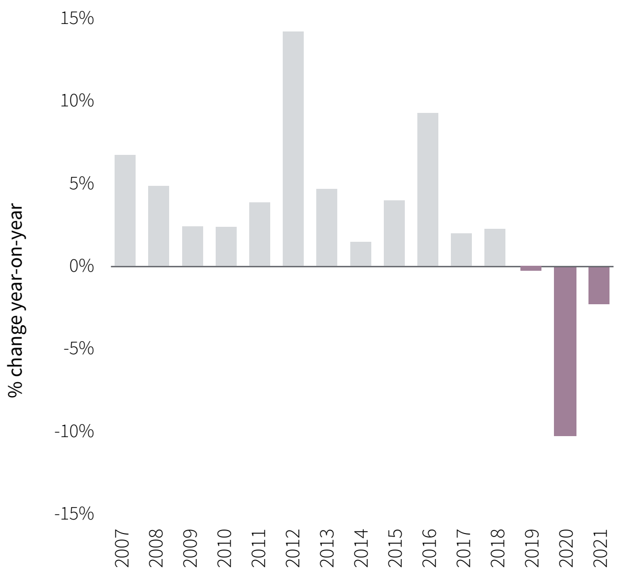
The pandemic has created opportunities for retailers to secure high-quality retail space in some of the best trading locations at more attractive terms than prior to the onset of COVID-19. Several major retailers are aiming to capitalise on a limited window of opportunity in some of their target markets so they can tap into a returning customer base, grow market share and build brand awareness. There is currently a greater adoption of flexible lease terms and larger incentives on offer, although the terms vary widely between markets, tenants and landlords.

Online shopping is likely to continue at higher rates than pre-pandemic, but pent-up demand, growing footfall at physical stores and selective expansion or relocation activity (as retailers look to secure quality space at attractive terms) are anticipated to drive a continued increase in leasing activity in major urban markets.

Looking forward, following a rebound in retail spending over the next two years, retail sales growth is forecast to soften, with physical retail spending only projected to return to pre-COVID levels by 2025 in a large number of developed retail markets.

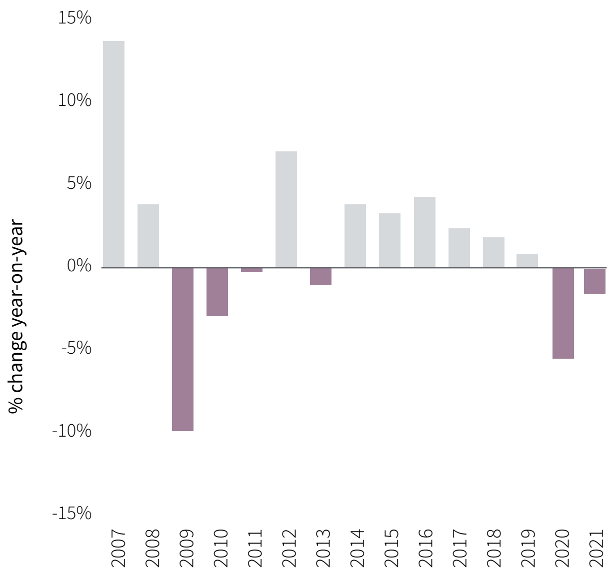
European High Street Rental Growth Outlook

Prime high street rent forecast Europe



European Shopping Centre Rental Growth Outlook

Prime shopping centre rent forecast Europe



Source: JLL Research, Q3 2021

The outlook for retail in the new urban ecosystem

The rapid transition from physical retail to online retailing is resulting in huge challenges for cities in how they repurpose downtown retailing and Grade B/C shopping malls. We will see greater collaboration between stakeholders (governments, landlords, tenants) to find workable solutions that emphasise district-wide placemaking and **a focus on experience and multi-use**.

The greater emphasis within cities on the experience and digital economies will require more **dynamic and digital retail formats** that create fruitful customer experiences and which optimise omni-channel retail.

The rising appeal of 'localisation', based on four major principles – proximity, diversity, density and ubiquity – will encourage **'live, work, play' models** that integrate convenience retailing with shared services and urban logistics.

Industrial and Logistics

The industry and logistics sector is undergoing huge structural changes, many of which have been brought into sharp focus by the pandemic. Demand for logistics or warehouse space is at record levels across the globe, and investor appetite for logistics assets seems to be insatiable. Worldwide, occupier demand for modern logistics space has never been higher and will remain elevated by a range of key drivers including digitisation, decarbonisation and urbanisation.

Drivers of change

E-commerce: a standout demand driver

Due to permanent changes in consumer shopping habits enhanced by the pandemic, growth in online shopping is projected to remain high going forward and to potentially accelerate. 71% anticipate demand from e-commerce to be significantly higher over the next three years, according to JLL's 2021 Global Logistics Survey. While industry leaders expect the e-commerce sector to drive demand, growth across the globe is predicted to be broad-based with over **70% expecting further growth in demand from the Express & Parcel Delivery, Third-Party Logistics, Healthcare & Life Sciences and Construction & Materials sectors.**

The disruption to global supply chains caused by the pandemic means that building greater supply chain resilience will become an increasing area of focus for companies, resulting in some reconfiguration of supply chains and changes in the location of industrial and distribution facilities. Additionally, smart technologies, automation and robotics are forecast to have the greatest impact on warehouse design and operations over the next five years, particularly through new innovations in supply chain management and space rationalisation (e.g., multistorey facilities) that lean heavily on data-driven technologies.

The rise of urban logistics

Various factors have combined to elevate urban logistics, including urbanisation, the growth of e-commerce, the importance of last-mile logistics, challenges around sustainability and air quality, and the strong competition for limited land in what are typically densely developed areas. These dynamics are affording significant opportunities for investors and developers, while posing challenges for many corporates seeking to implement fast and efficient logistics operations.

COVID-19 has also been a key factor behind the upward demand for the delivery of online retail purchases to homes or collection points in urban areas. **Respondents from our Global Logistics Survey believe that the typical urban logistics requirement will be for small buildings below 500 sq m (5,000 sq ft) particularly across Europe**. This may reflect a range of considerations, including more stringent environmental pressures (which are driving demand for smaller facilities), sustainable transport modes and the burgeoning demand for hyper-local micro-fulfilment facilities to service shorter deadlines such as 'on-demand' grocery deliveries within 10 to 30 minutes.

Sustainable distribution and logistics

As companies seek to decarbonise their warehouse facilities, we will see growing emphasis on retrofitting existing buildings with carbon-reducing systems and devices, and more demand for new environmentally sustainable buildings, including net-zero facilities. In addition, there is emerging interest among some developers and investors in developing warehouses or logistics parks that provide enhanced building amenities which address worker wellbeing and also offer opportunities for occupiers to engage with the local community. This interest largely reflects the increasing challenges that companies are facing in attracting and retaining labour.

Over the next 5 to 10 years and beyond, we anticipate growing demand for green warehouses, including net-zero carbon buildings, as companies make commitments on carbon emissions. Net zero for big box logistics will quickly become the expected norm for occupiers and investors as larger organisations increasingly have sustainability and wider ESG targets, as do investors. The need to attract and retain a skilled workforce is likely to compel developers, investors and end-users to provide and demand warehouses with enhanced building features and worker amenities.

> *74% of respondents expect growth (of more than 5%) in logistics demand over the next three years; 28% predict this growth to be over 20% higher.*

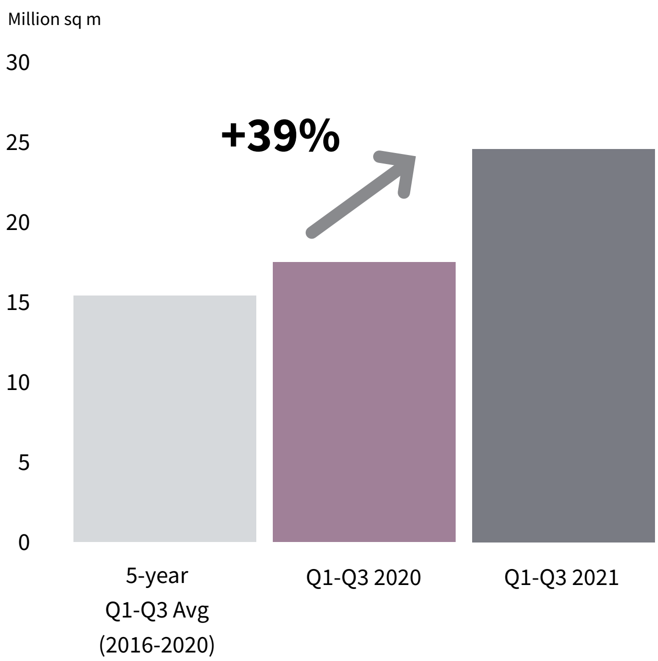
Market implications

Structural uplift in global demand for logistics real estate

Occupier demand for modern logistics space has never been higher and sentiment around the fundamentals driving occupational demand is overwhelmingly positive. Despite record occupier activity, JLL's Global Logistics Survey projects yet further demand growth over the next three years. **74% of respondents expect growth (of more than 5%) in logistics demand over the next three years; 28% predict this growth to be over 20% higher**. Strong online sales continue to be one of the main drivers of demand, with several of the major online retailers still seeking to expand their fulfilment networks.

European logistics demand hits all time high

European industrial and logistics take-up



Source: JLL Research, Q3 2021

While globally, buildings between 10,000 and 50,000 sq m are predicted to be the most in demand over the next three years, demand for smaller buildings to support final-mile distribution within urban areas is also likely to grow. **In EMEA, 39% anticipate significantly more occupier demand for buildings of less than 5,000 sq m**. A densely built-up environment and higher land costs make larger buildings economically less feasible for many developers and occupiers in Europe.

Acute supply constraints across Europe

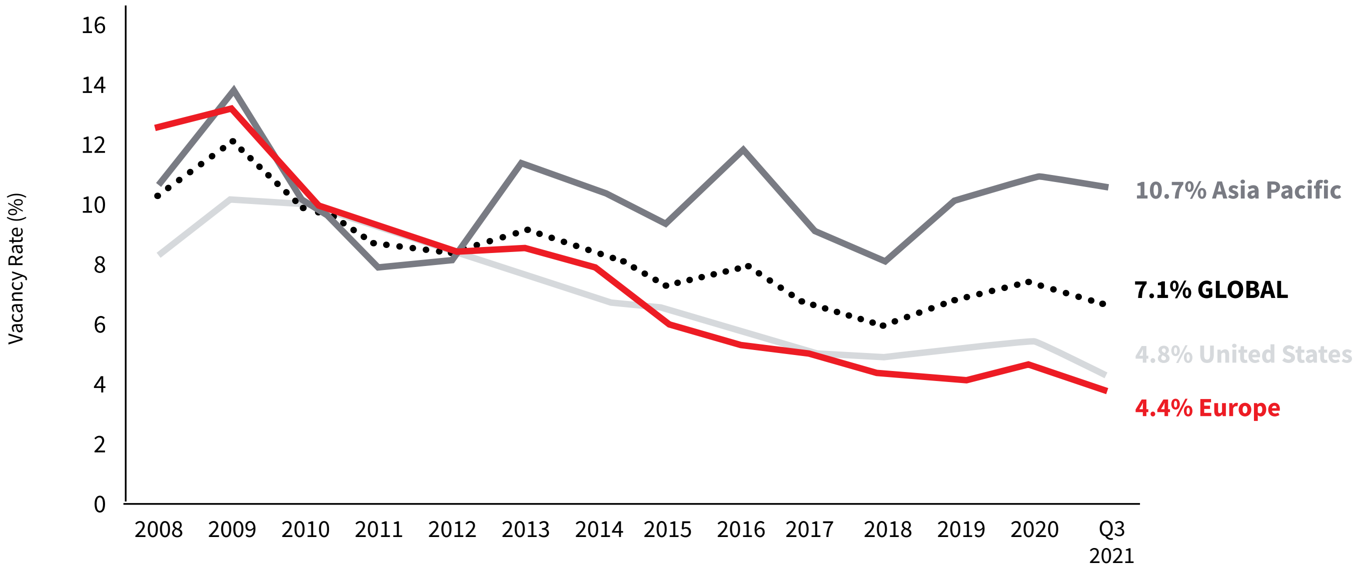
Limited availability of entitled land and a lack of available speculative buildings are perceived to be the biggest constraints on leasing activity. Supply levels remain very tight across Europe, with new speculative floorspace continuing to account for only around one-third of the total new space being completed. Developers are already struggling to secure suitable development land and planning permission for logistics facilities in many markets. Urbanisation, competing land uses and environmental issues are likely to further impact the delivery of adequate future logistics real estate supply.

With cities putting a greater value on green spaces, and some cities restricting the amount of 'soil sealing', future land supply for logistics may become further constrained. Soil sealing is the covering of the soil surface with materials like concrete in new building and infrastructure works, thereby preventing natural soil and ecological functions.

Brownfield urban infill sites will probably be the strongest opportunity to meet the growing demand for urban logistics. In JLL's Global Logistics Survey, 66% of participants in Europe identify brownfield redevelopment as very important in meeting this demand. Additionally, multi-level and multistorey ramped buildings will become a necessary feature in certain major cities. The bigger challenge, however, will be retrofitting Europe's huge stock of older industrial and warehouse buildings.

Global vacancy rates remain under pressure

Logistics space vacancy rates



Source: JLL Research, Q3 2021

Rental premiums for green warehouses highest in Europe

Whether because of tighter regulations or increasing pressure around social and environmental responsibility, there will be growing demand for sustainable buildings going forward. And with expanding demand for sustainable space in danger of outstripping supply in many markets, there is strong reason to believe sustainable buildings will yield rental premiums over the coming years. For investors there is value in sustainability-focused strategies that create future-proof, resilient real estate assets, while for occupiers deepening commitments on sustainability will help to spur more operationally efficient portfolios.

Developers and investors in logistics real estate need to keep ahead of the trends that will shape the sector to ensure they build and invest in future-proof assets in robust locations.

For investors there is value in sustainability-focused strategies that create future-proof, resilient real estate assets, while for occupiers deepening commitments on sustainability will help to spur more operationally efficient portfolios.

The outlook for industrial and logistics in the new urban ecosystem

The massive growth in e-commerce is requiring a radical rethink by city governments and property owners over how they deal with new distribution channels and rising demand for very short delivery times. We will see the **reinvention of last-mile delivery** so that logistics facilities are more integrated into the city fabric.

It will require creative solutions, from developing vertical facilities and repurposing from other uses (e.g., retail and car parking) to **skillful integration into mixed-used developments**.

The logistics sector has been slower to adopt sustainable solutions than other sectors, but city governments are increasingly concerned over congestion, pollution and soil sealing and will force the pace of change. **Facilities with strong sustainability credentials** (such as low energy, onsite energy and clean transport) will be at a premium.

Living

Lifestyle changes prompted by the pandemic have reinforced migration patterns and opened up new preferences for locations to live, as people have sought more spacious and affordable homes. These demands, along with growing populations, housing shortages and increased awareness of the environmental impact of property development, are shifting our relationship with the places we occupy. Tackling these challenges requires new approaches to housing and community design and development.

Drivers of change

Affordability

Affordability of housing will remain a fissure that defines urban populations, mainly as it determines their ability to own or rent their homes. A high proportion of Europe's urban population are renters, but this varies significantly across the continent due to cultural preferences and regulatory environments, alongside market impacts, that define housing choices.

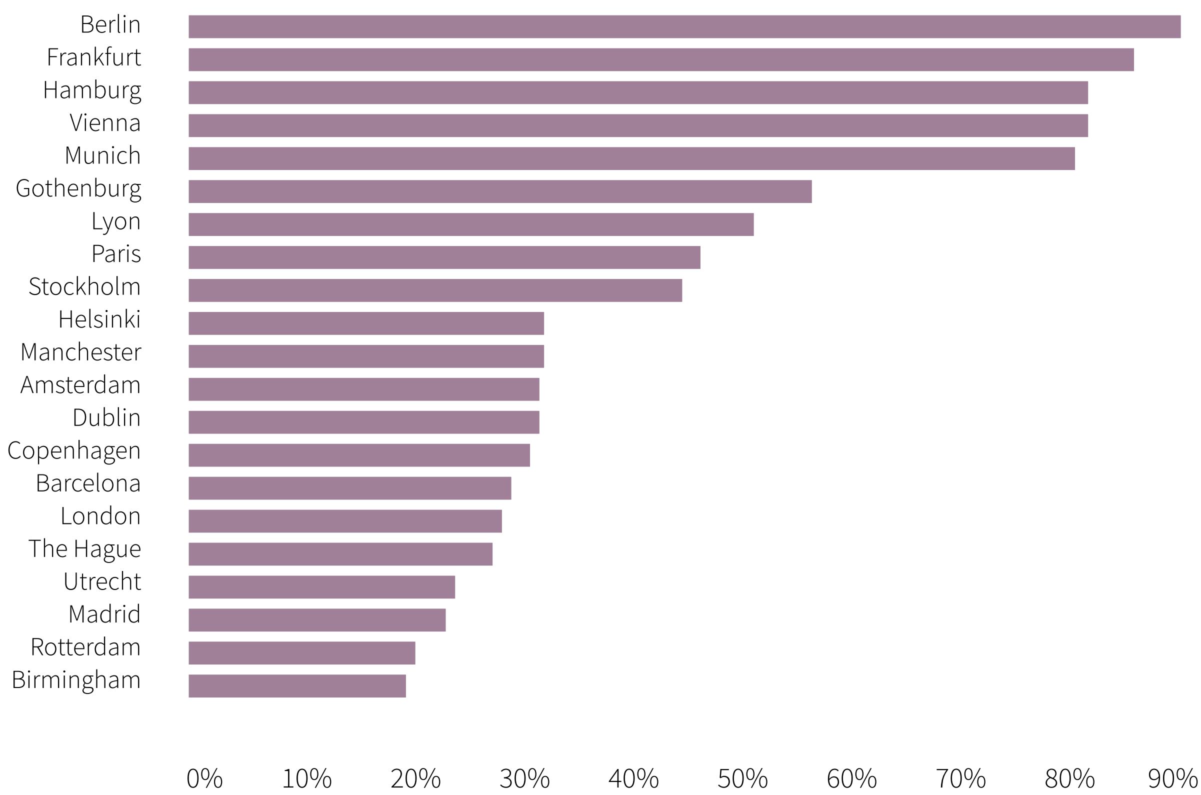
In many markets, renting is a legitimate alternative to ownership, and standards of professionally owned and managed rental properties are constantly improving.

However, it is also the case that renting, whether in the private sector or through public support, is an option that is defined by inaccessible ownership markets.

This is important as it shapes the options available to urban populations seeking more flexible working structures – and the type of properties that will best meet this desire. For example, many households are drawn to opportunities for more space in the home, or to relocate to suburban or rural locations. The ability to take advantage of these opportunities is driven by the types of jobs amenable to flexible working and the balance of wage growth against housing costs that facilitates greater choice.

A high proportion of Europe's urban population are renters

European households in private-rented sector (%)



Source: JLL Research, Q2 2021

Sustainability

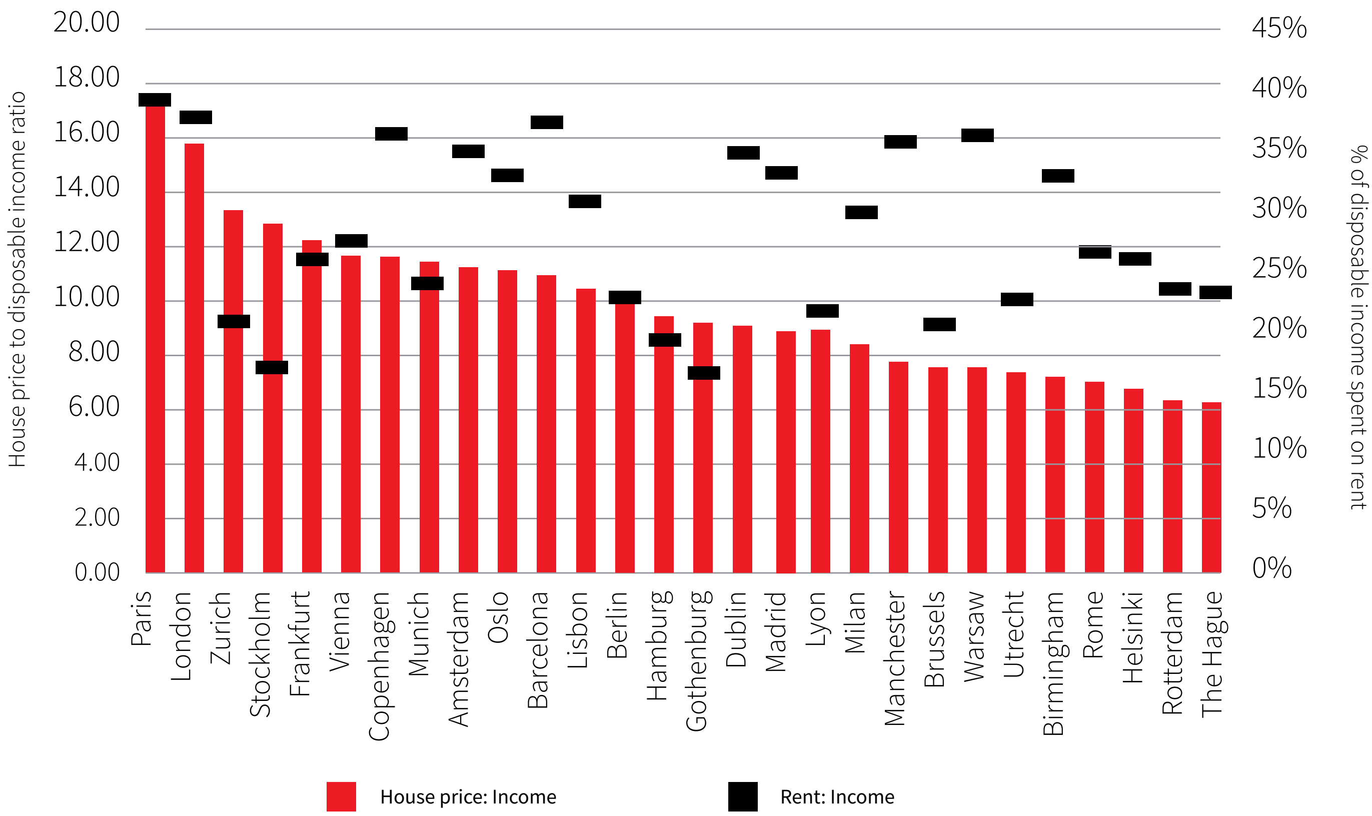
For homeowners, the cost of energy to run the home is often the starting point for improving environmental standards at home. Governments are alive to the profound challenge of retrofit solutions to decarbonise housing stock and many have developed incentive schemes to drive investment in technologies such as insulation, smart meters, solar panels and heat pumps, among others. As energy cost increases tip the scales ever more steeply in favour of these investments, adoption is being given a fillip by the deeper environmental consciousness of consumers.

The clear benefits of lower running costs for landlords in the rental market are also driving solutions to decarbonise, whether through the design of new purpose-built rented stock or through the vast retrofit programmes which are led by public owners and other social housing providers.

The social benefits of sustainable investment are an even more significant focus for homeowners and landlords. Increased recognition of health and wellbeing associated with high-quality spaces designed to support quality of life is gaining sharp attention from landlords and much greater interest from homeowners spending more time in and around their homes.

Renting is an option that is defined by inaccessible ownership markets

European major city affordability: House price vs. income



Source: JLL Research, Q3 2021

Market implications

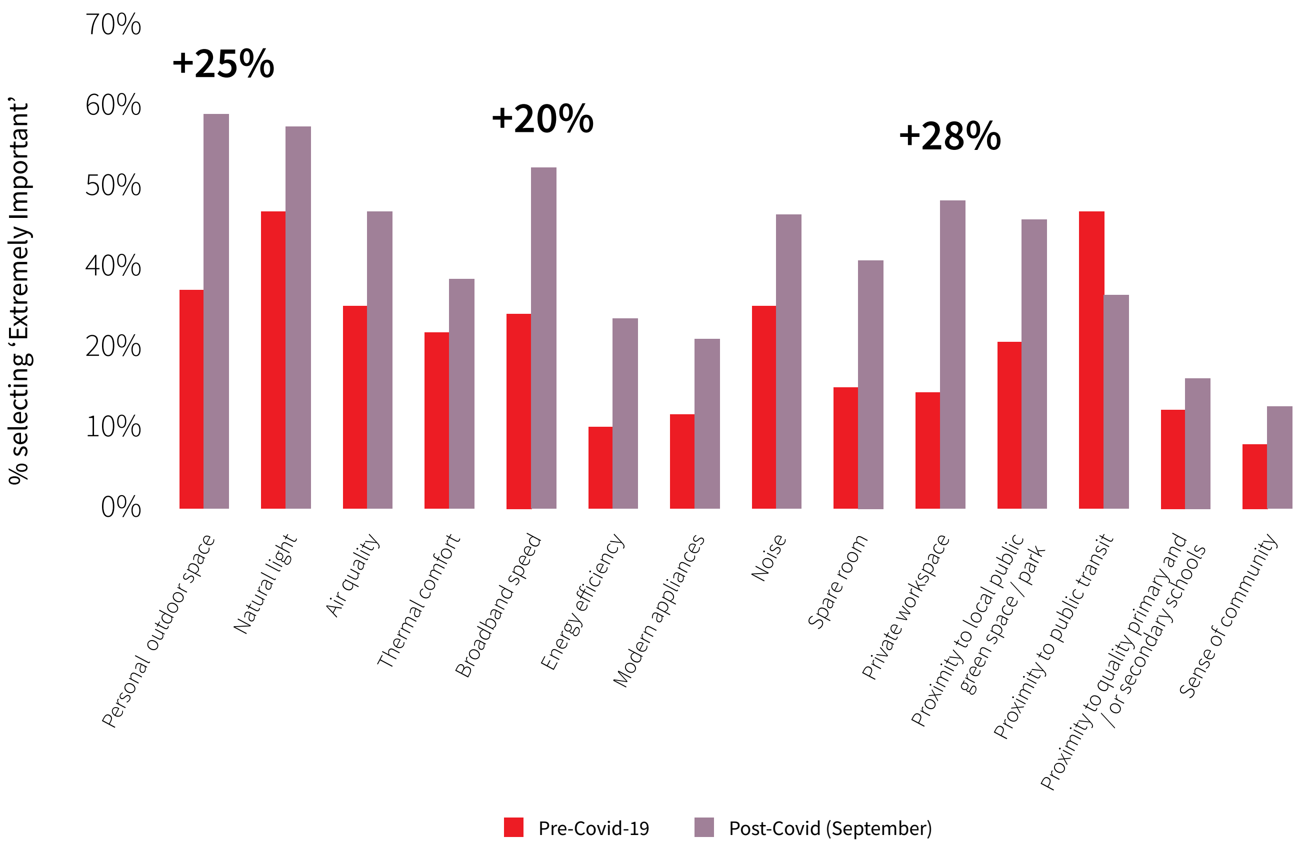
Hybrid living to drive future housing adaptations and uses

The pandemic has revealed unknown flexibility in how the real estate sector could function and change people's relationships with their spaces. In particular, the continued emphasis on work/life balance will require physical changes to houses to promote productivity. Residential adaptations will evolve beyond an 'open space' to offer high-quality living, working and learning environments. Digital innovations will only serve to facilitate this. In a JLL European employee survey (September 2020) investigating how lockdown has changed people's housing needs and perceptions, outdoor space, natural light and broadband speed were among the top five most important factors.

Meanwhile, private workspaces saw the most significant shift in importance in the survey. These characteristics open up new consumer-centric investment and development opportunities.

Key priorities: Outdoor space, broadband speed and private workspaces

EMEA living priorities, % selecting 'extremely important'



Source: JLL Research, September 2020

A deeper focus on connected and inclusive communities

Where we live – and the housing we live in - is a critical part of our wellbeing and directly impacts both our physical and mental health. While technology has improved connectivity and networking opportunities at faster-than-ever-before speeds, lockdowns and movement restrictions have left many feeling lonely and isolated.

This may have previously been an issue facing the elderly, but it is also now linked to young transient students and professionals. This forces a rethink on community design, to enable individuals and families to engage with one another and their environment. Ensuring sustainability, comfort, quality design and rich amenities are at the core of its success.

The resurgence of urban living

There is no question that the pandemic has ushered in a shift in living preferences away from core markets and downtowns to suburban districts as people prioritise affordability, safety and space. However, the pleasure of social interaction in city centres is expected to drive a resurgence in demand for properties in urban cores. Contrary to predictions around the future of the world's major cities, we expect these to thrive again, invigorated not just by a return to the office but by the appeal of urban living, including greater connectivity, collaboration and innovation.

> *Where we live - and the housing we live in - is a critical part of our wellbeing and directly impacts both our physical and mental health.*

Innovation in supplying housing faster and reducing costs

In most places, houses are still built the same way they were decades ago, and construction costs continue to form a significant component of the selling price of any housing project. However, by employing Modern Methods of Construction (MMC) which utilise pre-manufactured parts and pre-cast structures, there is an opportunity to improve and standardise build quality while saving time and cost; on average, off-site manufacturing reduces construction time on site by 30%.

Similarly, tech innovations can save on maintenance and operating costs. Low-cost initiatives can be as simple as motion-controlled lighting sensors, programming usage on lights and reviewing set temperatures on thermostats - without compromising occupant comfort levels. More complex initiatives would be revising the Building Management System (BMS) to optimise utility usage and reduce wear and tear on equipment or retrofit/upgrade controls to reduce maintenance costs.

"In most places, houses are still built the same way they were decades ago, and construction costs continue to form a significant component of the selling price of any housing project."

The outlook for living in the new urban ecosystem

The way we live, work and play will forever be reimagined. Housing adaptations and uses are expected to become **agile and flexible** to keep up with these rapid changes.

As urban spaces are reimagined, greater focus will be placed on **connectivity and inclusivity**, highlighting the 'S' in ESG. Developments and assets that can demonstrate how they contribute to (rather than detract from) the social wellbeing of their tenants will emerge as the winners in what is likely to remain an extremely competitive environment.

As the housing industry faces pressure to address affordability issues, heavy emphasis will be placed on developing housing faster, creating efficiencies and streamlining operations to reduce **overall housing costs**.

Digital innovations and increased stakeholder engagement and collaboration have a pivotal role to play in ensuring the success of these future trends.

Implications for sectors | The future is change

Offices

The case for: ***Better***

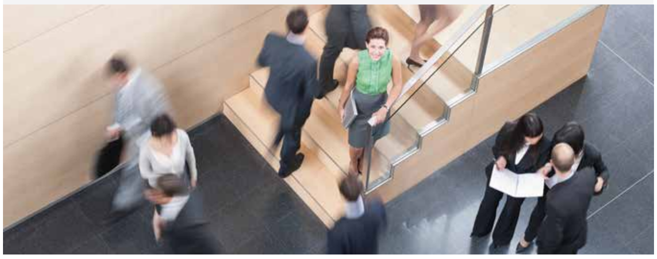
Context

Pre-pandemic trends accelerated.

Bifurcation underway - healthy demand for 'better' - product and location. Demand for prime remains resilient — vacancy increasing, with downward pressure on rents and capital value outside of prime.

Fundamentals:

Recovering overall, but market and building specific.



Retail

The case for: ***Resilient & flexible***

Context

Pre-pandemic trends accelerated.

Rebounding but very selective and targeted occupier and investor demand. Resilient Grocery, Retail Warehousing, select High Street. Shopping Centres to rebound, but pre-pandemic polarisation to continue with investors looking for value.

Fundamentals:

Recovering but polarised. Market and asset specific.

Industrial and logistics

The case for: ***More & urban***

Context

Increase in demand driven by uplift in online retail adoption.

Broad-based occupier demand, growing demand for urban/last-mile logistics - including for on-demand grocery - and continuing demand for 'big box' facilities. Elevated investor demand. Rents and yields trending stronger.

Fundamentals:

Tight supply and robust occupier demand (urban logistics in particular); investor demand significant.

Living

The case for: ***More & better***

Context

Pre-pandemic long-term drivers remain, fueling demand.

Increased capital allocation will underpin long-term investor demand; growing range of investors; ESG lens a key driver; broad range of opportunities: Student, Multifamily, SFR, Affordable.

Fundamentals:

Long-term supply challenges.

Part 3

The common thread: Responsible Real Estate — meeting the challenge of net zero

> *This decade is being seen as the tipping point in decarbonising real estate.*

The common thread: Responsible Real Estate — meeting the challenge of net zero

This decade is being seen as the tipping point in decarbonising real estate. The pandemic has acted as a wake-up call for environmental and social responsibility, which will require real estate to make complex changes in what will be a critical shift for the industry. We are in a new 'age of responsibility' in which organisations face unprecedented and elevated expectations from their employees and customers, as well as from society at large to act responsibly. With demand for greener, more sustainable spaces amplified by the pandemic, occupiers, investors and city authorities are now more willing than ever to commit to tackling climate change.

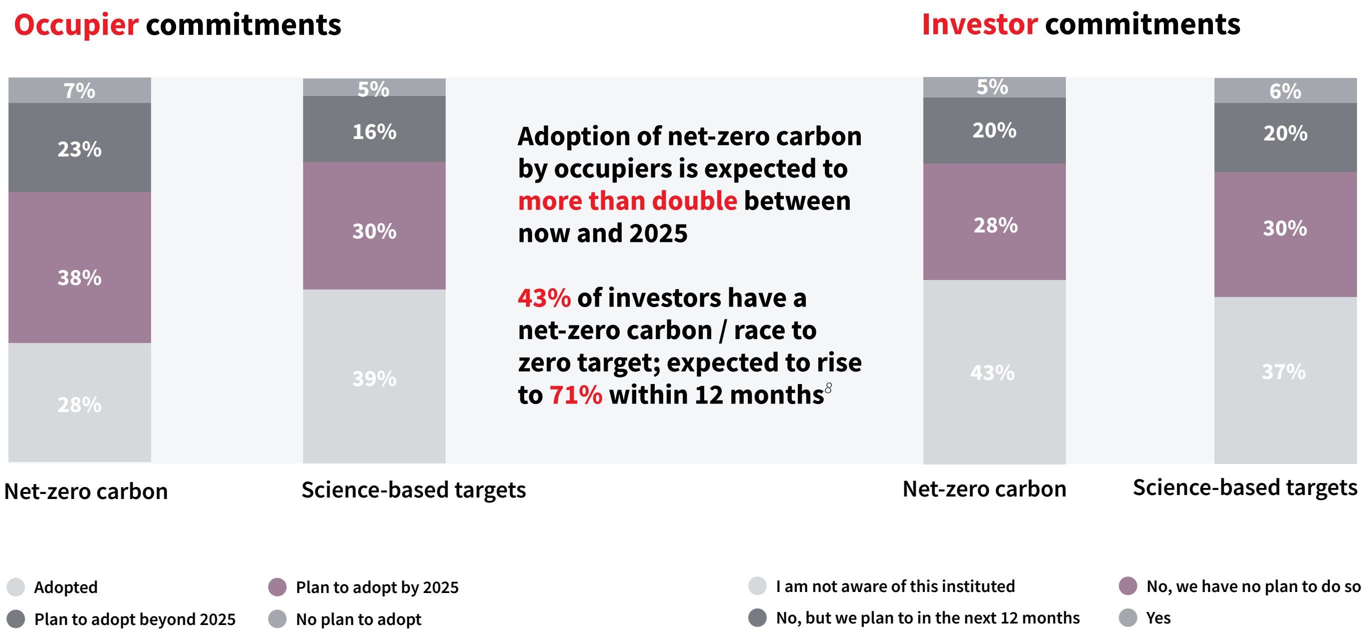
Both occupiers and investors are making bold commitments around decarbonisation, and at a fast pace, with most companies now setting ambitious net-zero goals for 2030 or even sooner according to JLL's recent research, Decarbonisation of the Built Environment.

78% & **73%**
of occupiers **of investors**
agree/strongly agree that climate risk poses a financial risk.[8]

82%
of occupiers *agree that their employees will increasingly demand green, sustainable spaces.*[8]

8. Source: JLL, Decarbonizing the Built Environment, 2021

Commitments are coming in swiftly



Sustainability is now a key criteria in building selection for occupiers and in acquisitions for investors.

Demand for green and sustainable space is going to rise in the coming years and risks outstripping projected levels of supply. Over one-third of occupiers are committing to occupy net-zero carbon buildings in the future. However, we cannot simply 'build our way out' of the issues we face; beyond the feasibility of the building programme required, there are major concerns around the implications of embodied carbon in new construction. If the current supply of net-zero buildings is insufficient to meet projected demand, the retrofitting of existing stock is the dominant, critical solution to transitioning to a low-carbon economy.

54%

of 'leading' occupiers
are prioritising building credentials in occupancy decisions.[9]

80%

of 'leading' investors
say they consider climate risk and resilience as part of their due diligence process when acquiring new real estate.[9]

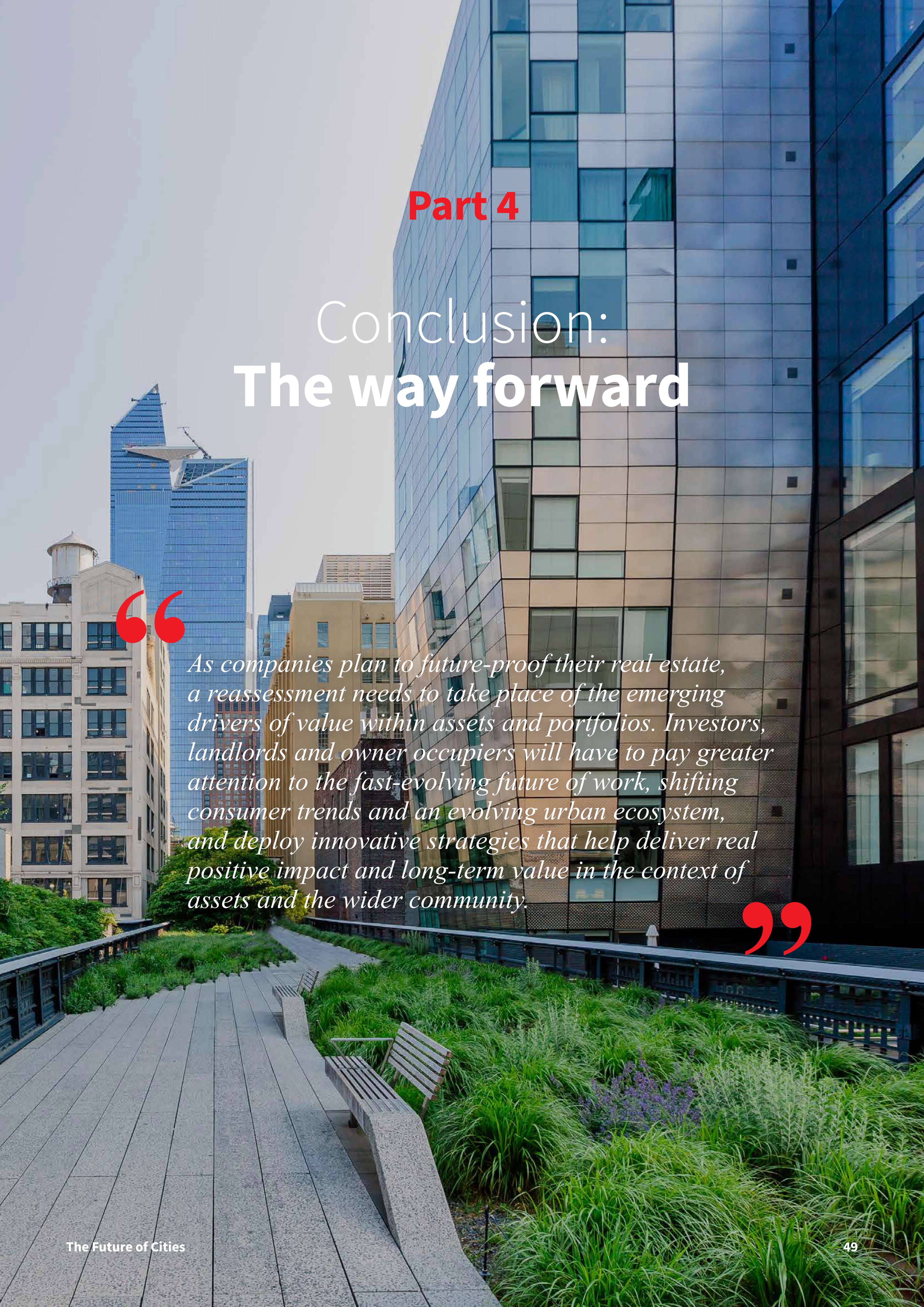
9. Source: JLL, Decarbonizing the Built Environment, 2021

Additionally, net-zero goals should be sought in tandem with social goals for the transition itself to be sustainable over the long term. Delivering decarbonisation presents numerous opportunities for creating social value through the built environment by engineering more appealing workplaces, improving the housing stock and procuring locally, for instance.

A complete transformation of real estate is inevitable, with decarbonisation initiatives becoming commonplace. There is an increasing recognition within the industry, as highlighted in our survey, that companies cannot overcome the barriers and challenges in the race to net zero unless they commit the right level of investment over several business cycles.

For many industry players this will require a cultural shift and the adoption of a more collaborative business model.

> *A complete transformation of real estate is inevitable, with decarbonisation initiatives becoming commonplace.*



Part 4

Conclusion: **The way forward**

“As companies plan to future-proof their real estate, a reassessment needs to take place of the emerging drivers of value within assets and portfolios. Investors, landlords and owner occupiers will have to pay greater attention to the fast-evolving future of work, shifting consumer trends and an evolving urban ecosystem, and deploy innovative strategies that help deliver real positive impact and long-term value in the context of assets and the wider community.”

The 2021 JLL Investor Survey confirmed results:

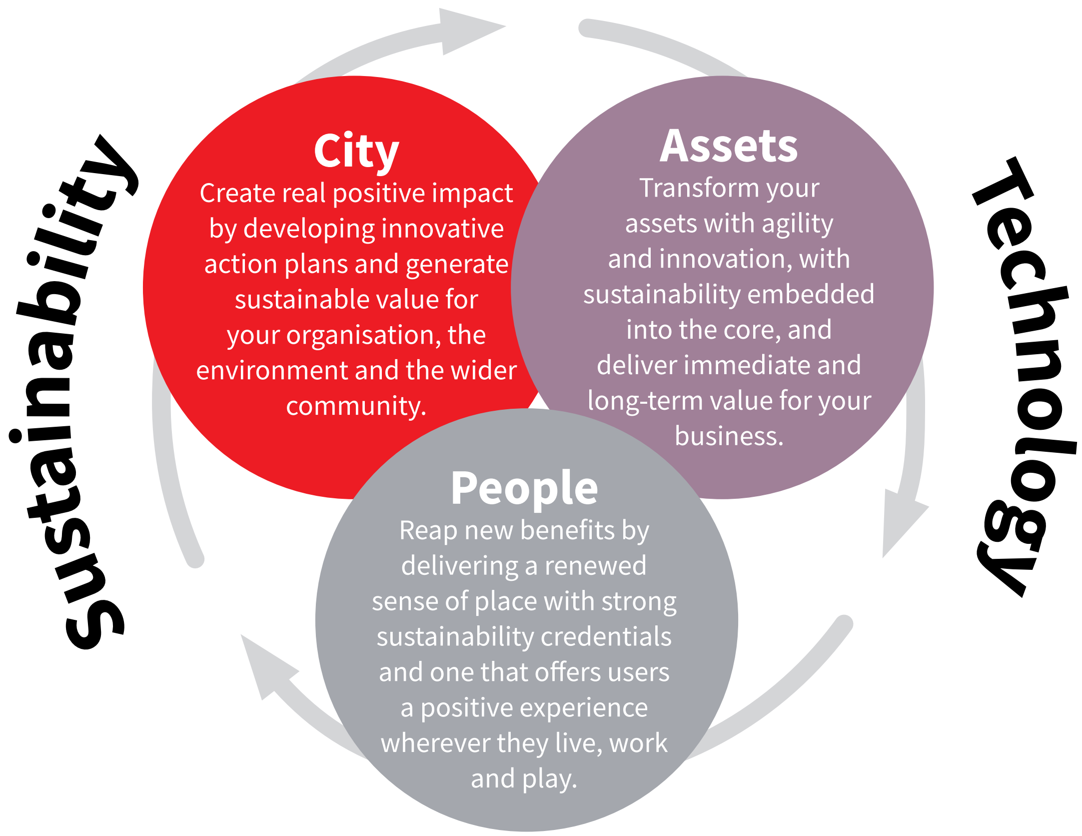
60%

of owners are re-evaluating their assets for the creation of longer, more stable income streams[10]

51%

of investors *expect to utilise an asset repositioning strategy over the next 12 months*[10]

At JLL, we believe **long-term financial and social value** for assets can be delivered through an **effective regeneration strategy** that encompasses an end-to-end approach built on a deep understanding of urban dynamics, sustainability and user experience, alongside the current and future potential of real estate assets.



10. Source: JLL Investor Survey, 2021

Key considerations for successful regeneration

Evaluate the relevance of your strategy in the context of the evolving urban ecosystem, shifting tenant expectations and user experience.

Align your asset and portfolio strategy in light of changing market dynamics, tenant requirements and your organisation's purpose.

Translate your goals into objectives through a clearly defined regeneration strategy.

Adopt a multi-faceted approach – creating value through vision, data, insights and best practices spanning every stage of the real estate investment life cycle.

Leverage intelligence and best practices from an ecosystem of partnerships to uncover new, innovative ways of putting your assets to work.

> *The world around us is changing at a fast pace. From creating greener cities to regenerating neighbourhoods, encouraging social interaction and supporting communities, real estate has the potential to drive real impact and to lead the way towards a sustainable, equitable, healthier and resilient future for generations to come.*

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About JLL

JLL (NYSE: JLL) is a leading professional services firm that specialises in real estate and investment management. JLL shapes the future of real estate for a better world by using the most advanced technology to create rewarding opportunities, amazing spaces and sustainable real estate solutions for our clients, our people and our communities. JLL is a Fortune 500 company with annual revenue of $16.6 billion in 2020, operations in over 80 countries and a global workforce of more than 95,000 as of September 30, 2021. JLL is the brand name, and a registered trademark, of Jones Lang LaSalle Incorporated. For further information, visit jll.com.

About JLL Research

JLL's research team delivers intelligence, analysis and insight through market-leading reports and services that illuminate today's commercial real estate dynamics and identify tomorrow's challenges and opportunities. Our more than 400 global research professionals track and analyse economic and property trends and forecast future conditions in over 60 countries, producing unrivalled local and global perspectives. Our research and expertise, fueled by real-time information and innovative thinking around the world, creates a competitive advantage for our clients and drives successful strategies and optimal real estate decisions.

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