

INDUSTRIAL REVOLUTION

Technology, innovation and the future of the logistics sector

September 2020

JUST THE BEGINNING...

Look back at the past 25 years, and it is easy to assume the pace of change now is as fast as it ever will be. The explosion of the internet, and its migration to mobile, has had such a profound impact that it can be hard to imagine further acceleration. To many, we are already at 'peak change'.

It is an understandable position, but a fundamentally flawed one. Make no mistake: we are not at the summit of a steep curve, but at the foot of an even steeper one. The innovations of the coming years – some sudden, some gradual – promise even greater shifts in how people live, work and play.

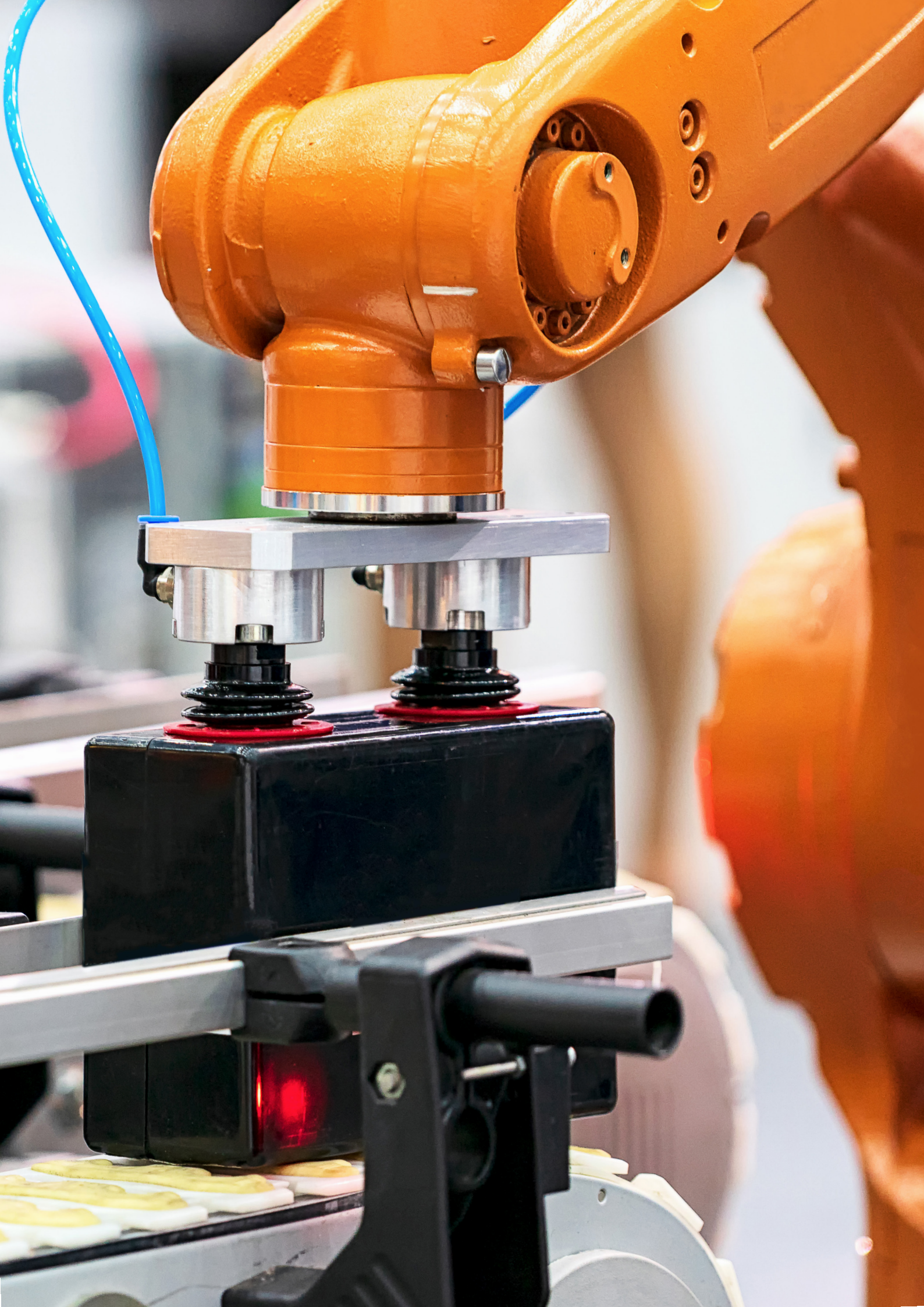
Central to it all it will be logistics and industrial property. What offices and shopping centres were to the 20th century, warehouses will be to the 21st – the focus of a modern economy, not just fulfilling our needs but anticipating them. The sector will need to adapt to meet new requirements, but it stands ready to capitalise on the opportunities that technological advances will bring.

These changes are happening against a backdrop of the growing importance of environment, social and corporate governance (ESG) to companies and consumers. New developments will need to consider not only the building itself, but how it is integrated into the urban environment. There is a symbiotic relationship between technology and ESG, and as new and innovative practices emerge, we will all need to keep the sustainability of the whole supply chain in mind.

There is plenty of debate over which new technologies will become ubiquitous and which will wither. Some, such as hyperloop, are still relatively new and it remains to be seen whether the potential benefits will outweigh economic realities. This report explores the five major innovations that we think are most likely shape the future of industrial and logistics real estate for occupiers, investors and developers. Those that anticipate the changes, and work to embrace them, will be the ones that thrive in the economy of tomorrow.

John Rodgers
Partner, Gerald Eve





RIDING A WAVE

The innovations, advances and breakthroughs we explore in this report will fundamentally reshape the UK and global economies. Trends we have seen post-2000 – the decline of bricks-and-mortar retail, the expansion of on-demand home delivery, the growth of the sharing economy – will accelerate, while new shifts will rise and drive further change.

The industrial and logistics sector stands to gain from the new economy more than any other significant real estate asset class. A market that has already had a stellar decade promises further growth in the years to come; Gerald Eve's market-leading Multi-Let and Prime Logistics reports forecast rental and capital growth in every year from 2021-24. Some locations and warehouse types will benefit more than others, but the sector will continue to ride the wave.

On a fundamental level, the growing influence of technology will drive rising occupier demand for logistics space of all sizes at a rate that will outstrip supply. New development has trailed take-up for some years, and availability in early 2020 remains at a near-record low. Rents in general will rise, driven by both competition for space and the increasing profitability of the firms that occupy it. A post-coronavirus world, where occupiers are seeking slack in the system to deal with any shocks, will exacerbate this further.

Capital growth will continue in parallel, and if yield compression will be more limited than before – if only because yields are already close to historic lows – then whilst it may be practically difficult to deliver in terms of building structures, the money flowing into the sector will look to unlock new “last-mile” hubs in former retail parks, larger off-high-street properties and even some residential sites.

The outlook is a strong one, but the need to adapt to meet changing requirements will underpin everything. Futureproofing will be key, and that means flexibility. Occupiers will want space that can meet their changing needs over time, and where occupiers lead investors will follow.

Occupier expenditure on property and the technology inside it will be an increasingly complicated picture. For many, the investment in technology will be huge, and this will dictate the length of lease they require; for others, such as third-party logistics providers, a greater flexibility in leases will be required to better match occupational costs with the contracts they hold.





INNOVATION 1: FACILITY AUTOMATION & ROBOTICS

IMPACT: ○ —————→ **HIGH**
HORIZON: ○ —————→ **NOW**

The automation revolution has already begun, but the advances in coming years will be exponential, particularly following the COVID19 pandemic. Occupiers leading the field, such as Amazon, Ocado or DPD are not only showing the capabilities of the technology today, but pushing the envelope of what will be possible tomorrow.

This is not simply automated picking, packing and despatching. Automation will develop to manage all aspects of the logistics chain. High-end manufacturing, long at the vanguard of this area, will develop further robotic tools that will outperform human counterparts in both speed and quality. The term “handmade” may, in many cases, cease to be a badge of honour.

Over the longer-term, automation will continue to impact the construction process too, with ever-greater elements of a build being undertaken by machines with reduced human input, if any.

For occupiers, the spending required will be huge, but justified by the economies and efficiencies it will create. Demand for labour in warehouses will be upended; the focus will be on those highly-skilled in IT, robotics and engineering.

For investors and developers, they will need to put in place the infrastructure and facilities that will make automation possible. That means sustainable power, that means floorplates – and, indeed, flooring – capable of accommodating the tech, and it means being in the right location to supply a workforce able to operate it all.

OPPORTUNITIES

 Greater operational efficiency	 Increased accuracy and manufacturing quality	 Sustainability gains
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CHALLENGES

 Power	 Skilled labour	 Capital expenditure	 Ease of retro-fitting
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INNOVATION 2: DATA

IMPACT: ○ —————→ **HIGH**
HORIZON: ○ —————→ **NOW**

The explosion of data has been the defining driver of advances in the sector over the past decade, with the value of the data becoming more understood. The Covid-19 pandemic has only accentuated this understanding. Smartphones and the data created by changing consumer behaviours have underpinned the changes we have seen, but the trail of data being created will go into the stratosphere as 5G and subsequent generations are rolled out.







New mobile data networks will enable the “internet of things”, with nearly all appliances creating data of their own. On a basic level, this makes a radical difference to inventory management, supply chain security, and identifying efficiencies in the use of warehouse space. It will shortly revolutionise home deliveries as individual packages can be tracked to a remarkably local level. By seeing exactly where our goods are – and how long until they arrive – the days of waiting for the delivery driver to turn up may well soon be over.

Artificial intelligence will take this a step further, ordering goods before we even know we’ll need them. Fridges will know when our milk will run out and order accordingly, anticipating our requirements. The ‘just-in-time’ supply chains harnessed by manufacturers are about to be brought to the home.

For investors and developers, data will be used in the same way to match occupiers’ requirements to the space available. More data will enable more flexibility, and we can expect to see greater sharing between all parties. Similarly, data and specific metrics will increasingly drive investment decisions, and in time underpin the planning system.

OPPORTUNITIES

CHALLENGES

 Greater operational efficiency	 Increased sales from anticipation	 Facilities that better meet occupier requirements	 Ethics – is data being collected and used in the right way	 Slow adoption in planning and legislative spheres	 Effective sharing of data between occupiers, investors and developers
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INNOVATION 3: ENERGY & DIGITAL INFRASTRUCTURE

IMPACT: ○ —————→ MEDIUM-HIGH
HORIZON: ○ —————→ NOW

The elephant in the room. Advances in technology rely on reliable energy and digital infrastructure if they are to reach their potential. Whether to power production line robots, growing produce under UV lamps or managing the ever-growing amount of data that will drive our businesses, technology is extremely power hungry. Not only will there need to be a suitable power supply, but with a growing focus on the ESG agenda, it will need to be provided in a socially and environmentally sustainable way.

Offsite energy provision from the national grid will continue to be the basis for most day-to-day operations, and onsite power is increasingly used for specific purposes. The latter – be it always on biomass or solar and wind renewables – also offers sustainability advantages, something of growing importance. This increased demand from occupiers for renewable power reflects the growing demand from consumers so will be particularly important to consumer-facing brands.

Battery technology, however, has the potential to transform. The investment in it is huge, and its capabilities are on an upward curve. The trajectory of this technology will in time create batteries that are reliable enough, cheap enough and with enough capacity to offer back-up power if the grid fails, or store the electricity created by onsite generation.

There is another impact of better batteries: delivery vehicles. Especially in urban areas, electric delivery vehicles will become essential, not only to hit increasingly stringent emissions requirements, but also from a straight PR perspective. In a world where most companies can deliver on-demand, customers will choose deliveries that are sustainable over those that are not.

As for digital infrastructure, connectivity of the highest speed and capacity – both for now and future uses – is a non-negotiable utility for occupiers. There is no question that both investors and developers must today pre-empt the long term digital infrastructure and energy needs of occupiers to make sure that buildings are able to continue to meet their needs in an ever more digital world.

OPPORTUNITIES

CHALLENGES

 Greater resilience	 Sustainability gains	 Slower than expected technological advances	 Reliability, capacity and cost	 Lack of investor / developer appetite to be involved in power position	 Clean supply of energy
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INNOVATION 4: 3D PRINTING

IMPACT: ○————→ MEDIUM

HORIZON: ○→ 2025 ONWARDS

One thing highlighted by the coronavirus crisis has been the fragility of just-in-time supply chains. Long before lockdown, many manufacturing facilities were having to scale back production as the raw materials and components they required were no longer arriving from factories in China.

Imagine if, instead of downing tools when the components dried up, a factory could instead fire up a 3D printer and make vital components onsite? And why rely on components from elsewhere at all if they can be 'printed' in-house?

But perhaps the biggest impact will be on small, simple consumer goods. Take just one type of product – cheap, plastic children's toys, for example – and consider the journey they make through international logistics chains to reach the end user. Is that sustainable – economically and environmentally – in a world where each home has a small 3D printer and the plans for a set of plastic blocks can be downloaded from the internet?

How consumers access such goods will have an enormous impact on manufacturers, logistics companies, and by extension the investors and developers of the properties they occupy. Of the technological advances this paper is looking at, the rise of 3D printing – and its removal of some storage requirements through on-demand production nearer to points of us – is the most likely to have a negative impact on long-term property requirements.

OPPORTUNITIES

CHALLENGES

 <p>Supply chain resilience</p>  <p>Sustainability gains</p>	 <p>Impact on consumer demand for manufactured goods</p>  <p>Impact on warehouse requirements</p>  <p>Reliability and capacity</p>
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INNOVATION 5: AUTONOMOUS VEHICLES & DRONES

IMPACT: ○ → LOW-MEDIUM

HORIZON: ○ → LONG-TERM

Gamechanger or hype? Autonomous vehicles have seen huge investment from tech giants and private equity alike, and their proliferation is widely seen as a matter of time. As for drones, a slew of patent applications have made the prospect of airborne deliveries appear just round the corner and the COVID19 pandemic has further highlighted the importance of home deliveries.







There are hurdles to be overcome, however. An autonomous car that parks itself is one thing; a hands-free drive along the motorway is quite another. Will the population at large ever feel comfortable with driverless vehicles on the road? And will legislation keep pace and enable the technology to reach its potential? For drones, issues such as airspace and flyover rights will cause complications and may hold back progress.

But if we assume that autonomous trucks and drones will one day be in use, what impact will that have on the sector? Aside from a reduction in labour costs, it is a stretch to identify them as fundamentally changing building design and requirements. They could perhaps assist the growth of hyper-local delivery hubs, perhaps even for a single postcode, where autonomous facilities and automated delivery methods would make such centres viable.

It is likely to be a long time, if at all, that autonomous vehicles or drones are widely used in the logistics sector, and while they would undoubtedly improve efficiency and offer a more environmentally friendly solution, it is hard to see what fundamental change they would instigate for many buildings.

OPPORTUNITIES

CHALLENGES

					
Greater operational efficiency	Hyper-localisation	Power (see innovation 3)	Labour (see skills)	Capital expenditure	Insurance implications

IMPACT FOCUS: PROPERTY & ASSET MANAGEMENT

Most technological innovations impact on the occupier first. From warehouse processes to supply chain efficiency, via responses to shifting consumer behaviour, advances are radically changing the way industrial and logistics occupiers operate on a day-to-day basis.

For investors and developers, this creates the challenge of how to futureproof their portfolios and pipelines while providing the space required in the here and now. Flexibility in investment and development will be key.

If location will remain one of the main drivers of value, any given property's ability to house the operation of the day – and have the capacity for shifting requirements in the future – will command an increasing premium. Property and asset management strategies will need to reflect this too, and anticipate what occupiers will require over a longer horizon.

There will be specialisation of assets at the extreme ends of the spectrum – biotech production or high-end manufacturing for example, which have unique needs – but elsewhere investment and development decisions will be made knowing that the occupational requirements now will be very different to those when a property is re-marketed at lease end.

The need for greater flexibility is not a new factor, but an accelerating one. We're likely to see portfolios trimmed of assets that provide no longevity or opportunity to future proof and whole new properties will be developed in the knowledge that they will require complete re-orientation at various points in its lifecycle to meet shifting occupier requirements. Strategic asset management will need to consider the challenge of how to bring existing buildings up to speed and identify opportunities for re-purposing to prevent obsolescence. Relationships will be vital, and it is those investors and asset managers with a genuine and open dialogue with their occupiers that will have the best insight into the property requirements of tomorrow.



Jennifer Cottle
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IMPACT FOCUS: SKILLS

Put very simply, the warehouse of the future will employ people who are more skilled and specialised. To use an economic term, the logistics sector is moving up the value chain.

Automation, robotics and artificial intelligence will ultimately reduce the need for warehouse-floor operatives – the worker as ‘picker’ will become a thing of the past – but specialists will be needed onsite to manage the system and firefight any issues that arise. If warehouses of old ran on strength and stamina, it is skills such as coding and high-end mechanical engineering that will increasingly be in demand.

Competition for talent will be intense, and the need for the best-and-brightest will create new tensions on where facilities are located. The current bases of those holding this expertise – universities and high-technology hubs – are not necessarily situated in the best logistics locations.

Areas that have both a skilled local population and traditional logistics advantages – examples include the M40 near Oxford, Greater Manchester and Bristol – are likely to command an increasing rental and investment premium. Operators away from locations that provide the right balance of these requirements will have to provide the salary and benefits incentives to attract the skills they need to previously unfavoured areas.

Any sector facing shifting skills requirements sees a battle for talent, especially in the early days of change as the abilities of the population lag behind the new requirements. Education and training have a ‘lead-in’ time, doubly so for highly-specialist capabilities, and this will be reflected in the packages such experts can expect as demand for their services outstrips supply. Competition will be not only on a salary basis, but on benefits, working conditions and locations too. Ongoing career development, helping employees to grow their skills in line with the latest technological advances, will play an important part in the overall packages being offered. Operators that have in the past relied on relatively cheap warehouse-floor labour will need to shift their recruitment strategy and approach if they are to attract the talent they need.



Helen Foley
HR Director, Gerald Eve

ADVISING YOU

While the impacts of technological advances are many and varied, Gerald Eve's industrial and logistics team is uniquely well-placed to advise you on navigating the challenges ahead. Operating across all disciplines, from occupational and investment agency through to lease consultancy and valuation, our specialists are here to help occupiers, investors and developers make better decisions.

See more of our industrial and logistics market research and thinking at geraldve.com/insights



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