

Poised for growth.

Unlocking social impact real estate with **UK life sciences** | White paper

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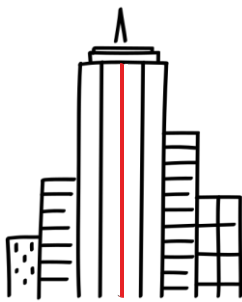


The UK economy is in pole position to benefit from a surge of venture capital funding targeting European life sciences companies. Developing specialist real estate will enable these companies to grow post-funding, support the creation of new innovative treatments and has potential to deliver strong risk adjusted returns to investors.

Supporting growth in a social impact sector

Despite a surge in investor interest, UK life sciences remains a very niche real estate sub-sector. For the investment proposition to stack-up, the underlying occupier fundamentals must repay the risks associated with investing in an emerging sector. Despite some challenges, we believe this market offers very strong risk-adjusted returns for early-mover investors who can demonstrate a deep understanding of the underlying occupier market and build long-term relationships with key growth tenants.

Defining life sciences real estate



What is life sciences?

The life sciences industry is comprised of companies involved in the research, development and manufacture of pharmaceuticals, therapies and medical devices, which help to foster medical innovations with the ultimate aim of extending the length and quality of human life.

Even with a surge in recent activity, life sciences real estate has comprised just 0.5% of total UK investment volumes¹ since 2012. With so much investor attention now focused on a small part of the market, it is important to first define what constitutes genuine life sciences real estate.

The word genuine is key as certain buildings may be sold with a *life sciences angle* but don't actually meet many of the criteria necessary to benefit from the anticipated growth in the sector. Broadly speaking, there are four main categories of life sciences real estate (see Figure 1).

Figure 1: Main types of life sciences real estate

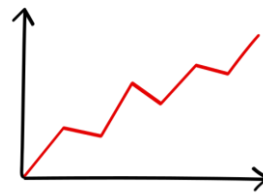
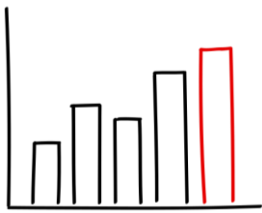
Lab-enabled office	Dry lab	Wet lab	Good manufacturing practice (GMP) unit
CAT A offices with capacity to be adapted to lab space or used as traditional office	R&D space for computational simulations and experiments	Analysis and testing of biological matter, chemicals, and/or hazardous substances	Manufacturing of biopharmaceutical products

Source: UBS Asset Management; Real Estate & Private Markets (REPM); March 2022

Rental levels vary significantly depending on the location, and degree of fit-out provided in each set-up. All things being equal, the cheapest space would be the lab-enabled office, which has the least requirements from a building structure and regulatory perspective, followed by dry lab space which is typically used for computer-based research.

Good manufacturing practice (GMP) units would typically demand higher rents than dry lab space to reflect the very specific requirements required to obtain regulatory approval to produce biopharma treatments on the site. The most expensive space is wet lab space, where the R&D into new biopharma treatments takes place.

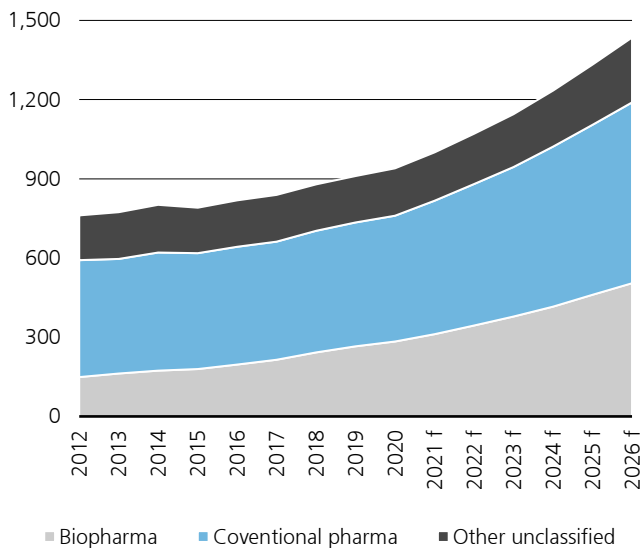
¹ RCA; data from 1Q12 to 4Q21



What's driving growth?

The global life sciences industry was on a strong growth trajectory even prior to the COVID-19 pandemic. The growing middle class in emerging markets, increased access to health insurance, private and public investment in the sector and advances in technology such as machine learning are all key macro-contributors to this growth. Figure 2 shows the global pharma industry is set to grow at 7.5% p.a. for the next five years with the strongest growth coming from the biopharmaceutical sector (10.1% p.a.) which is delivering the majority of new treatments to the market.

Figure 2: World pharma sales by technology type
(USD billion)



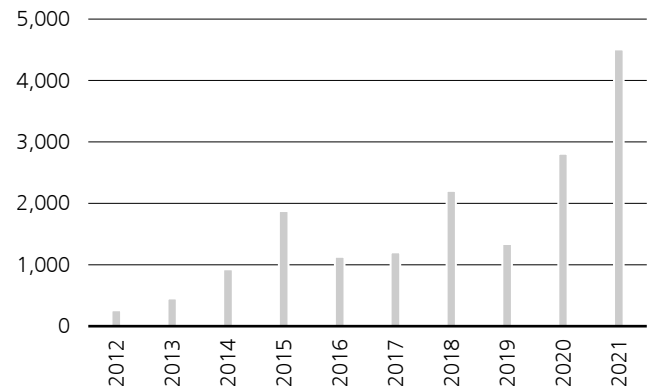
Source: Evaluate pharma; World Preview July 2020

Underneath this growth is two areas which are specifically set to increase demand for life sciences real estate. First, forecasts from Evaluate Pharma suggest the global spend on pharmaceutical R&D will increase by 3.7% p.a. to reach USD 254 billion by 2026², which will require both dry and wet lab real estate. Second, the creation of new treatments plus the global increase in demand for existing treatments will add more demand for GMP units, which will need to deliver increasingly complex biopharmaceutical treatments to a mass market. UBS Investment Bank estimates this will increase global demand for biopharma manufacturing capacity by 70% by 2024³.

Venture capital as a driving factor

Supported by the long-term growth thesis outlined previously, venture capital (VC) funds have been actively seeking out opportunities to deploy into life science companies and support breakthrough research into new treatments. Initially, this was focused on the more established US market. However, in recent years Europe and in particular the UK has risen up the agenda in terms of competition as funding rounds in the US have become increasingly competitive. Figure 3 shows that life sciences VC funding in the UK has grown by 33% CAGR since 2012 and hit a record GBP 4.5 billion in 2021. Savills estimates that every GBP 500 million of VC life sciences funding creates 57,000 sqft of new demand for real estate⁴. Essentially, this is unleashing a large volume of net new demand into markets which have an extremely limited supply of suitable life sciences space available.

Figure 3: Life sciences VC funding raised in UK
(GBP million)



Source: UK BioIndustry Association; UK Biotech Financing in 2021; January 2022

² Evaluate Pharma; World Preview; July 2021

³ UBS Investment Bank; Biologics Manufacturing supply/demand insights, COVID-19 scenarios & stock implications for our global coverage; January 2021

⁴ Savills; European Life Sciences; September 2021. Figures converted from EUR and SQM to GBP and Sqft

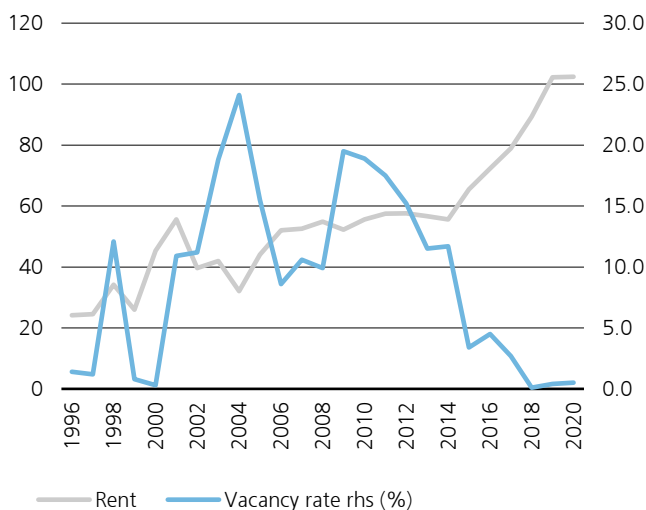


East Cambridge, Boston Massachusetts lab space market

Evidence from the established US life sciences sector in Boston demonstrates the impact this rapid increase in funding can have on the real estate market. Analysis of deals in this market showed that life sciences companies that received new VC funding took on average of just 215 days to find expansionary real estate⁵. The key word here is expansionary – the companies are in growth mode so they are not releasing any space back on to the market.

With the weight of capital going into the market and very little space being returned, vacancy rates quickly ran down to near 0%. Development has increased to try and match this demand, but life sciences buildings take several years to complete and are usually leased prior to, or during construction. With this intense supply-demand imbalance, Figure 4 demonstrates that since 2014 the market has delivered double digit annual rental growth for lab-space.

Figure 4: East Cambridge Massachusetts lab space rent (USD/sqft) and vacancy rate (%)



Source: JLL Lab Market Overview; August 2020



Cluster of UK leading academic institutions key to mirroring US's success

The presence of a number of leading healthcare research institutions places the UK in a very strong position to mirror the success of the life sciences sector in the US. This is particularly focused around the *golden triangle* of Oxford, Cambridge and London which comprises four of the top 20 ranked global higher education institutions⁶.

The combined scale that these locations offer is crucial as it creates an ecosystem that has attracted a sharp rise in funding. This drives more research initiatives, and crucially attracts more global PhD students and scientists to work at the growing number of life sciences companies. This cluster of academic excellence is largely why in the first three quarters of 2021, the UK attracted 5.7% of global VC life sciences funding versus 6.6% for the whole of Continental Europe⁷. And as Figure 5 shows, all of the 10 largest VC fundings in the UK in 2021 were based in the golden triangle.

Figure 5: Top 10 UK life sciences venture deals 2021

Company	Location	Value (GBP m)
Oxford Nanopore	Oxford	195
Exscientia	Oxford	158
Vaccitech	Oxford	118
Quell Therapeutics	London / Stevenage	117
Artios Pharma	Cambridge	110
Apollo Therapeutics	Stevenage	104
Gyroscope Therapeutics	London / Stevenage	104
bit.bio	Cambridge	103
Cambridge Epigenex	Cambridge	65
Pulmocide	London	64

Source: UK BioIndustry Association; UK Biotech Financing in 2021; January 2022

⁵ JLL; Boston Cambridge Lab Market Overview; August 2020

⁶ Times Higher Education (THE); World University Rankings; 2022

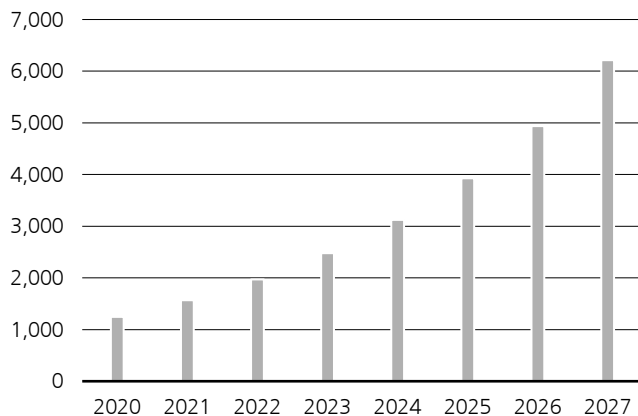
⁷ JLL News Release; September 2021



CAR T-cell treatments in Stevenage

CAR T-cell treatments is a highly specialized form of immunotherapy, and is a small but rapidly growing segment of the global biopharma industry (see Figure 6). Treatment works by taking a patient's T cells which are genetically engineered in a GMP facility to recognize and target a specific protein in cancer cells. The modified T cells are then reintroduced to the patient's bloodstream to recognize and attack the cancer cells. Current treatments are focused on blood cancers and lymphoma, which are delivering positive results and will continue to develop as capacity is expanded. In October 2021, US regulators cleared a new CAR T treatment for phase 1 trials which will target solid tumors for the first time.

Figure 6: CAR T-cell therapy market size (USD billion)



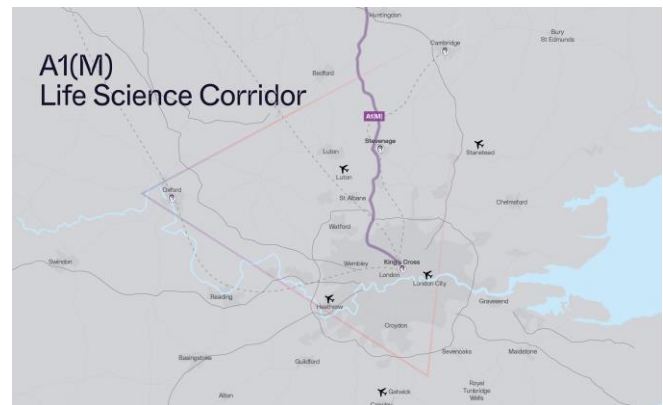
Source: Source: Brandessence Market Research and Consulting Private Limited; November 2021.

Supported by the presence one of GSK's global R&D HQs, Stevenage has become established as the third largest global hub for cell & gene therapy research. Within the complex is the cell & gene therapy catapult, which supports start-ups and has attracted over GBP 1.6 billion in VC funding⁸. As these companies are moving through their trial phases and attracting more VC funding, they need expansionary R&D and GMP space. But as they grow, they remain tied to Stevenage for these real estate requirements.

As many originated in the town, they have built-up a skilled employment base from the surrounding area. Even on the manufacturing side, the precise and heavily regulated nature of the work means the locations are not easily transferable. And due to the just-in-time nature of the treatments, the GMP facilities have to be well centered on key infrastructure to receive and distribute patient blood transfusions.

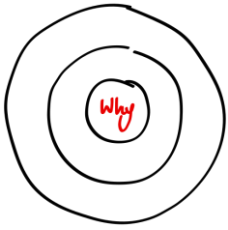
As Figure 7 demonstrates, Stevenage is well connected to the R&D centers in the golden triangle, and in close proximity to four international airports. Combined with the significantly cheaper land cost than Oxford, Cambridge and London, makes Stevenage an ideal hub for highly specialist biopharmaceutical manufacturing.

Figure 7: Golden triangle map



Source: UBS Asset Management, Real Estate & Private Markets; Reef, November 2021

⁸ Powering up the cell and gene therapy industry in the UK, Catapult Network, <https://catapult.org.uk/our-work/case-studies/powering-up-the-cell-and-gene-therapy-industry-in-the-uk/>; March 2022



GMP important to growth in UK life sciences

Much of the focus of life sciences real estate investment has been on lab space – the *exciting* part of the market where new treatments are being researched. But the GMP component is absolutely critical in supporting further growth in the sector in the UK. Patents for new biopharmaceutical products typically last twenty years, but as these need to be granted early in the development phase it is usually 6-7 years before a treatment can be brought to market. The business model of life sciences companies assume most treatments will not make it to commercialization, and incur an R&D loss.

Therefore, it is crucial that the treatments which do make it to commercialization, maximize revenue during their patent protection period. Regulatory approval cannot be granted until the company can demonstrate scalable manufacturing. Essentially, this means that if GMP facilities don't grow in tandem with the new treatments coming from the R&D side, there will be a bottleneck which prevents approvals being granted and new treatments becoming commercialized. This also negatively impacts the P&L of life sciences companies.



Hurdles to be considered

One of the biggest challenges with the current life sciences market is scale. There is limited existing stock and a few sites available for development around the key locations. The sites which can be developed are often owned by academic institutions, hospitals or large existing occupiers. To support growth in the sector, these landowners are starting to sell development sites, but they are looking for specific partners which share their long-term vision. So the process is often very selective with only a few established players invited to bid.

This mirrors what we have seen in the US with a few key players dominating the development market in the key life sciences hubs. Development partners who are able to forge the necessary relationships 1) form the bridge between the real estate capital needed to access the sector, and 2) deliver the social impact space required to enhance the sector in the UK and improve health prospects globally.

Even when opportunities can be sourced, they are expensive. This is an inevitable consequence of the weight of capital seeking a limited pool of sites and assets. But we believe that the high entry prices are negated by the very strong outlook for rental growth. In a period of rising inflation, low property yields will start to look expensive unless the supply-demand balance in the occupier market is supportive of strong rental growth. With well capitalized companies desperately seeking expansionary space, as demonstrated by the US market, this rental growth can be achieved which justifies the entry costs and can still comfortably deliver strong returns for development led investments.



Final thoughts

As with any niche sector, the relative success or failure of a real estate investor will come down to their expertise in the businesses of their underlying tenants, and their ability to work with them as partners. For life sciences real estate investors, it is crucial that they understand what drives the growth in their tenants' companies, and how they can deliver sustainable real estate to support them achieve their goals.

Securing sites will be heavily reliant on the reputation and experience of the development manager. In addition, a track-record of delivering schemes on time for tenants can form long-term relationships and provide a pipeline of sustainable capital deployment as the companies expand. There's a widely held belief that real estate is a good inflation hedge. The reality is, however, that only certain types of real estate will actually provide inflation protection in the coming years.

Unless a real estate asset benefits from a long-term indexed linked lease, the ability of a real estate asset to provide an inflation hedge is derived from the supply-demand dynamics for that sector and market. Where that balance is heavily weighted towards the landlord, then stronger rental growth can be achieved which can match or even exceed the high levels of inflation we're currently witnessing.

This is ultimately what underpins a life sciences UK strategy at the current point in time: a clear outlook on demand which gives us the confidence that strong rental growth can be achieved. This can mitigate both the challenges of higher inflation and interest rates. And through delivering this crucial real estate, investors can feel comfortable knowing that their capital is delivering a positive social impact, while generating strong risk-adjusted investment return.



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