

UK Commercial - December 2023

Q  
**SPOTLIGHT**  
*Savills Research*

# Life Sciences: Trends & Outlook



Funding • ELSR • Decarbonisation



# Global & UK trends

Capital raising has matched 2022, but the expectation is for a stronger year in 2024

Currently, the scale of capital raising across the world looks on par to that recorded in 2022. For real estate, a driver of occupier demand is the funding by the venture capitalists. However, on a global level, on average, venture capital (VC) only accounts for around 8% of the total capital raised. It is easy to obsess with VC raises, but there are other important types of capital raises to be identified and reviewed for the real estate market. Looking at the data in November, the 2023 data shows that mergers and acquisitions (M&A) accounted for 26% of capital-related events. This is down on the 34% share recorded for last year, which was in line with the five- and ten-year averages.

Sticking with the capital raising data, the total for 2023 is currently around three-quarters of the 10-year average, but will go past the total for last year. It is expected that the total for 2023 will be around 10% higher over the year at just over US\$400bn. This is 20% below the five-year average or 13% below the ten-year average.

The US-based companies continue to dominate the total capital raised, by value. 62% of VC has

been by US-headquartered companies with China in second place with a 15% share. The UK has a 6% share for 2023, in third place, showing a slight increase from a 4% share in 2022.

For identifying faster-growing companies, it is still important to review the leading global cities, in terms of VC raised, based on where the companies are headquartered. The right-hand chart below shows that both Cambridge and Boston, in the US, remain in the top 3 locations. Shanghai is still the leading Asian city and London leads in Europe. The last 'peak' in VC was 2021 and it is often mentioned that the financial 'runway' for companies is three years. On this basis, many companies will be heading to the finance providers next year and it would be expected that VC levels will be higher in 2024.

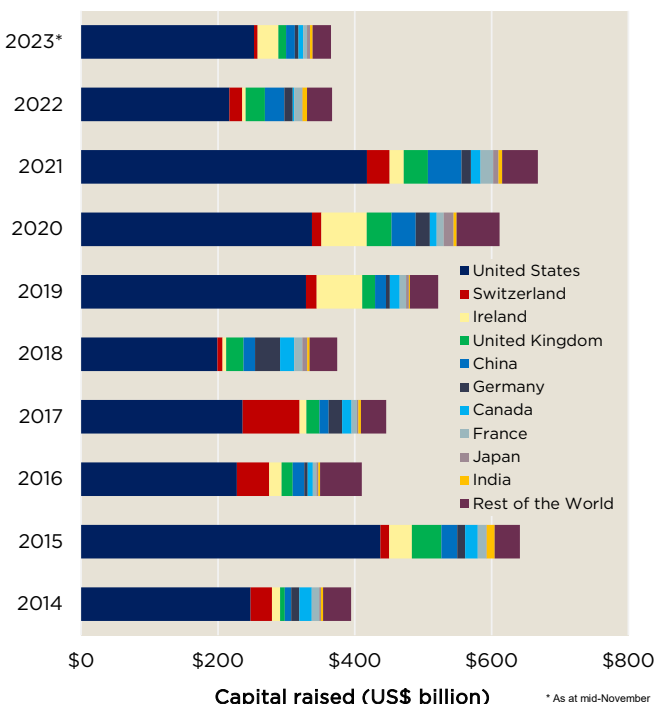
The real estate sector, across the world, will continue to be impacted by the demands from the life science sector. Across all sectors, the past 12 months has seen an increased discussion within the world of artificial intelligence. The scale of influence is, as yet, unknown, but it will have a fundamental impact on the future

of drug discovery and the need for laboratory space. The rise of AI in the field of drug discovery underlines the cross-over to the wider technology sector. There are 190 AI-powered drug discovery companies, who have completed 873 capital raising events to the tune of US\$17 billion. The average age of these AI companies is only 6.5 years. There is a range of companies to review based upon their scale and maturity. The 190 companies will certainly be part of any life science ecosystem in real estate markets across the world.

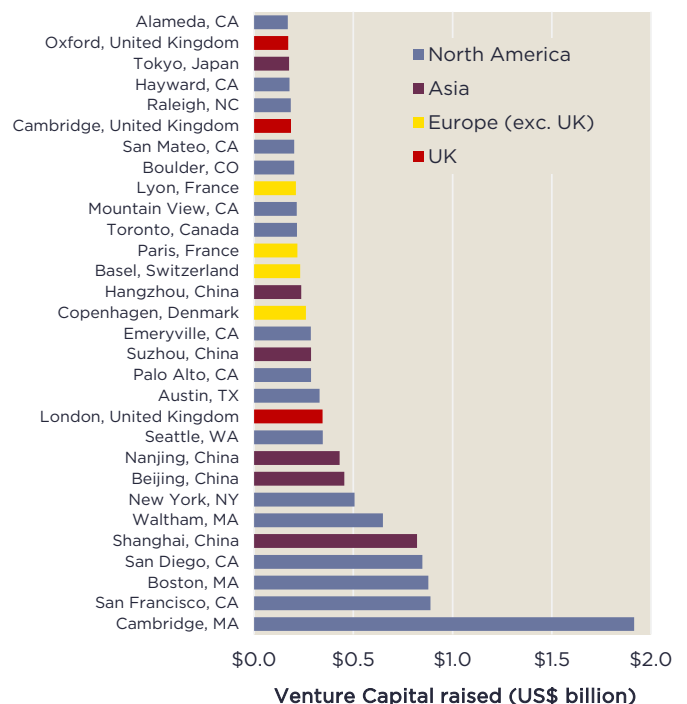
There remains increasing interest, in terms of real estate, across the key European markets. Our Strategic Advisory team have re-run their European Life Science Ranking (ELSR) model to highlight the key locations for investors, based upon around 60 metrics. The cross-comparison between capital and talent attractiveness is important to help understand where the real estate opportunities lie (see page 4).

During the past few years, the focus on human health and technological advancement, primarily using the future of computing, has been

**The US continues to dominate life science capital raised volumes** This includes M&A, IPO and Venture Capital.



**Top 30 locations** The US cities dominate the top-ranking locations, in terms of venture capital raised by life science companies in the first half of this year.



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

Source Savills, PitchBook

“ We remain positive for the sector and expect to see an uptick in activity in 2024 once key developments complete in the Golden Triangle ”

unprecedented. Therefore, it is no surprise to see that the recent UK Government’s Global Investment Summit (GIS) had a focus on a range of related sectors and highlighted their positive impact on the UK, in terms of the population’s health and future growth.

As highlighted at the GIS, the UK’s role as a globally renowned centre of knowledge, discovery and innovation has made it a key global location for inward investment. Additionally, during the recent past, there has been a rising interest in challenges for delivering solutions for human health and healthcare by the software, mobile and wider technology sectors, which all have a significant presence in the UK. Therefore, it is encouraging reading about the commitment from BioNTech to tap into the UK’s abilities in artificial intelligence and machine learning and for other companies to leverage our growing expertise in quantum computing. Increasing discovery, but faster! This crossover between life science and technology sectors has created an indication of the future layer of commercial real estate demand that will emerge in years to come to the benefit of the UK in terms of employment and economic growth.

Funding future growth of innovation will be derived from governments, but also the investment community, including corporate venture capital. In the US, the funding of science is becoming increasingly corporate. Also, we see a continued rise of philanthropic and foundations funding science, and this is highlighted by the commitment in the UK by the Ellison Institute for Transformative Medicine. Across key science locations in the UK, there is further evidence of other foundations and philanthropic money being invested/donated to drive forward innovation output. Government funding is vital to any national scientific community, however, across the globe there are questions regarding the layers of bureaucracy within the public system, which perhaps highlights the need for non-governmental funding. As reported recently in *The Economist*, in Australia, for a single year, researchers applying for grants spent, cumulatively, 614 years writing them. Wasted time of the smartest minds is not effective, efficient nor productive when faced with significant planetary issues (see article on page 6).

Overall, to ensure that the UK stays within the top ranks of countries with the best scientific and innovative communities and reputation for discovery, it is vital to deliver new commercial floorspace to the market, for both existing and incoming companies. The “right space in the right place” to continue to accommodate ‘discovery’ to ensure that cures and preventative solutions are created for human benefit, not just in the UK, but across the globe. However, for the commercial real estate industry, a life science moniker is not a panacea for office space that may be proving problematic in the portfolio or a future development that does not have key science and/or innovation ecosystem ‘ingredients’ within close proximity.



**Steven Lang**  
 Director  
 Research, Offices & Life Sciences  
 London, UK  
 slang@savills.com

**View from the Head of UK Science at Savills**

The final quarter of this year, for the UK, has seen a flurry of government announcements and activity. Starting with the Autumn Statement, there were favourable announcements for investment by corporates already in the UK and indeed those looking to invest into the UK.

According to Savills, take-up of science-related space across the Golden Triangle hit 982,000 sq ft at the end of Q3 2023, the highest total on record at this point in the year. Good levels of transactional activity have continued with take-up 4% above 2022 and 20% above the five-year average for the same time period.

Savills looked at the core markets of Oxford, Cambridge and London recording take-up for science related real estate including offices, laboratories and office space set to be converted to labs.

Oxford has seen a strong level of activity, reaching 387,000 sq ft of take-up at the end of the third quarter. It is worth noting that this is the second highest total in the last five years, which has been driven by transactions specifically for laboratory space, accounting for 269,000 sq ft, the highest total ever recorded in the city. Key deals this quarter include Ryze Hydrogen taking the whole of North Bailey House in central Oxford (24,000 sq ft) and Oxford Gene Technologies taking two recently completed buildings of 12,000 sq ft at Oxford Technology Park.

Cambridge has recorded the strongest take-up at 413,000 sq ft, with 189,000 sq ft transacted in Q3. Again, this is the highest total recorded at this stage of the year with notable transactions being the letting of the whole of BioMed’s Building 960 at Babraham Research Campus of 38,000 sq ft to Mosaic, Adrestia and Xap prior to practical completion.

In London, activity has been more subdued with take-up of 175,000 sq ft to date, of which 55% was lab space. However, there has been a lack of larger purpose-built lab spaces up until now,

with the first buildings being delivered next year. Also as a less mature market, the capital has been more exposed to the challenges facing venture capital funding in the face of ongoing economic uncertainty. The largest transaction this quarter was a letting at 40 Bank Street, Canary Wharf to hVIVO who took 39,049 sq ft to expand its challenge clinical trials facility.

With in excess of another 300,000 sq ft of leasing transactions under offer across the Golden Triangle, it is expected that take-up is likely to reach around 1.3m sq ft by the end of 2023, signifying a positive year for the sector, which remains resilient despite continued headwinds.

Overall, we continue to see positive levels of demand across the Golden Triangle, specifically in Oxford and Cambridge where take-up remains at record highs. Whilst London appears more muted, this is largely due to a lack of purpose-built stock, coupled with the market’s immaturity when compared to the triangle’s other cities. Overall, things remain positive for the sector and we expect to see an uptick in activity in 2024 once key developments complete in all three locations.



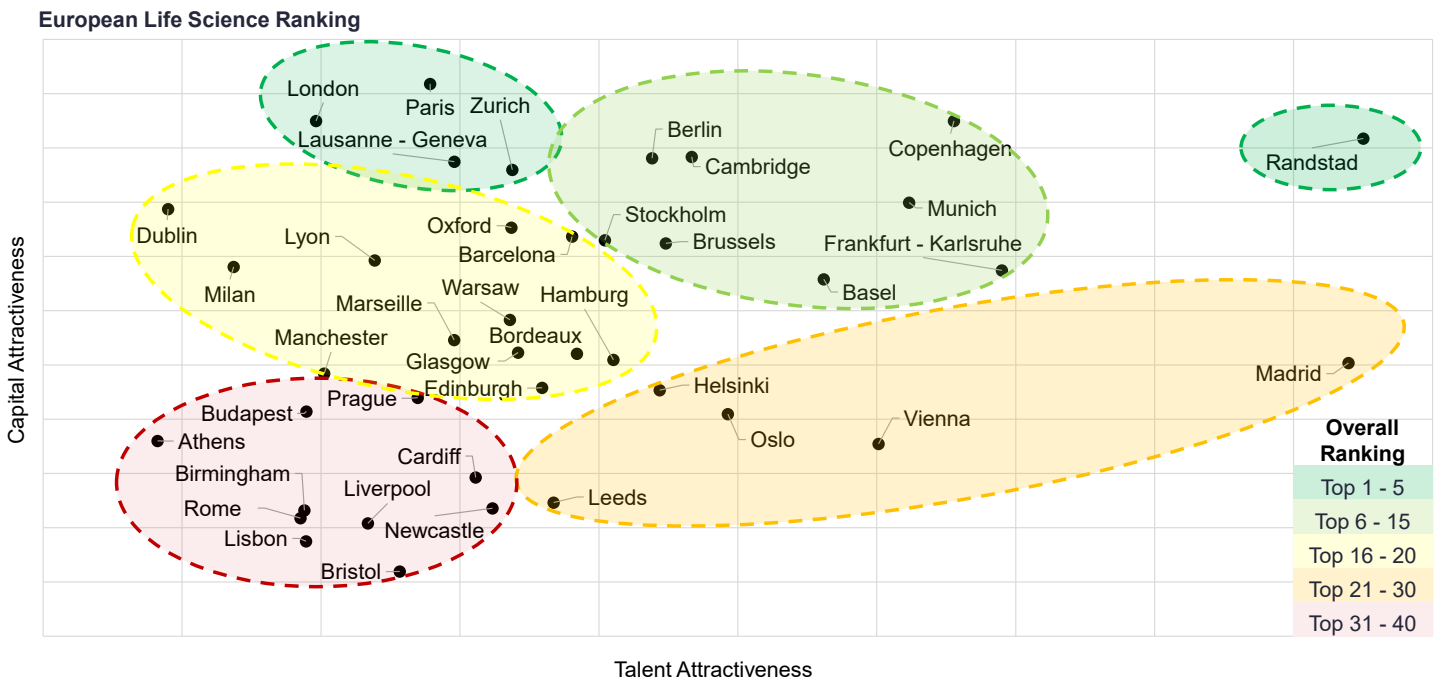
**Tom Mellows**  
 Head of UK Science  
 London, UK  
 tmellows@savills.com

“ Our methodology goes beyond traditional factors, encompassing around 60 metrics across talent, innovation, industrial output, investment, occupier activity, and social infrastructure ”

# ELSR 2.0

Using data in a smart way to highlight the future growth locations

Which locations have growth potential? - an update of the European Life Science Ranking



Source Savills

As the life sciences sector continues to evolve, understanding the fundamental attractiveness of locations is paramount to ensure the long-term return on investment.

We have undertaken detailed benchmarking of key life science hotspots across Europe for their attractiveness to life science occupiers. Our methodology goes beyond traditional factors, encompassing around 60 metrics across talent, innovation, industrial output, investment, occupier activity, and social infrastructure. Dynamic weightings are applied to reflect the importance of individual metrics to the market attractiveness. The overall ranking supports the strong dominance of historical life science clusters including Lausanne – Geneva and the Zurich region in Switzerland, Paris in France, London in the United Kingdom, and the Randstad region in the Netherlands.

The ranking also highlights emerging locations in which the sector is growing rapidly, and investors are following a development-led strategy due to the lack of purpose-built stock, whereas in the more established locations there are some opportunities to reposition existing

repositioned office stock (subject to technical capability).

Berlin, the German capital city, is a growing life science hotspot, ranking 6th just below major mature markets as mentioned above. As the best life science market in Germany, Berlin narrowly outperformed other German locations including Munich, Frankfurt-Karlsruhe, and Hamburg, in terms of the industrial output and investment activities. Yet, challenges exist to attract occupiers in the urban locations from more peripheral areas. Investors will be monitoring the capital markets situation in Berlin to gain exposure to assets with a credible repositioning angle in strong locations at a rebased pricing level. Savills has witnessed some specialist operators emerging in Germany and we expect to see an increase in dedicated management solutions.

Another growing market that attracted great investor attention is Copenhagen, which falls within the Top 10 list. Copenhagen has a strong concentration of life science companies hosting 75% of the total number in Denmark. Furthermore, nearly 60% of Copenhagen’s life

science companies are within the core science and innovation industry. The Maersk Tower in Copenhagen, designed by C.F. Møller, is a landmark development in central Copenhagen that optimises public / private partnerships. As the capital continues to support these partnerships, we expect to see opportunities for further science focussed real estate development.

We have further segmented our metrics to evaluate attractiveness from two crucial perspectives: talent and capital. The talent metrics focus on whether a location is attractive to a company and to their employees, such as quality of life, cost of living and scientist salaries, whilst the capital metrics focus on the investment volumes into the life science sector, and life science occupier dynamics within the market.

The Randstad region (including Amsterdam, Leiden, Rotterdam & Utrecht) in the Netherlands ranks the top regarding the talent attractiveness thanks to its exceptional quality of life. People living in Randstad have reported a high purchasing power, low average property price to income ratio and low traffic commute time with

“ Given the current economic headwinds, less established markets are facing challenges in respect of the funding environment ”

Rank	Location
Top 1 - 5	Lausanne – Geneva, Switzerland; Zurich, Switzerland; Paris, France; London, United Kingdom; Randstad, Netherlands.
Top 6 - 10	Berlin, Germany; Munich, Germany; Basel, Switzerland; Copenhagen, Denmark; Frankfurt – Karlsruhe, Germany.
Top 11 - 15	Cambridge, United Kingdom; Stockholm, Sweden; Oxford, United Kingdom; Brussels, Belgium; Lyon, France.
Top 16 - 20	Hamburg, Germany; Barcelona, Spain; Dublin, Ireland; Edinburgh, United Kingdom; Manchester, United Kingdom.
Top 21 - 25	Marseille, France; Glasgow, United Kingdom; Helsinki, Finland; Madrid, Spain; Milan, Italy.

Source Savills

abundant entertainment facilities for after work activities. Madrid comes in the second place, outperforming other established markets for its low cost of living and a high number of science professional job posts. Despite being a nascent market, there is still demand for lab-enabled real estate as evidenced at Madrid Science Innovation District (MASID) which is actively leasing incubator and scale space to biotech tenants.

Given the current economic headwinds, less established markets are facing challenges in respect of the funding environment and much of the capital into the sector is being concentrated in more established locations.

Paris is home to over 1,000 life science companies across various scientific subsectors with around 70 global pharmaceutical companies who have more than 10,000 employees across the world. As the top market with the highest number of investment deals, Paris have raised over 500 life science funding deals in the past 30 years, totalling at around €10 billion with over 64% raised in the last five years. With incubators in the region operating at full capacity and given the limited pipeline of purpose-built developments in the Greater Paris region, we expect to see strong rental growth over the near term. London also shows strong capital attractiveness, with over €10 billion of capital raised over time and a total number of around 1,300 life science companies in the market.

As shown from the graph on the opposite page,

markets with higher talent attractiveness are located to the right and markets with higher capital attractiveness are located to the top. Thus, markets with higher overall ranking are generally located at the top right corner.

It is noticeable that Warsaw in Poland shows fairly strong capital and talent attractiveness. Yet, it ranks significantly lower than the yellow circle (Top 11–25) that it falls within, at the 36th place. One of the key reasons is the weakness in the innovation metrics for Warsaw which is not included in the graph. Due to the lack of specialist hospitals and life science universities acting as the anchors of life science activities, it is difficult for Warsaw to generate scientific outputs and transform them into industrial outputs via academic-industry collaboration. This is a similar story to other secondary markets across Europe like Cork in Ireland, which is poised to grow due to a historic concentration of big pharma in the city attracted by local incentives.



**Sarah Thorley**  
Associate Director  
Strategic Advisory EMEA  
London, UK  
sarah.thorley@savills.com



**Yan Shi**  
Analyst  
Strategic Advisory EMEA  
London, UK  
yanxun.shi@savills.com



**George Coleman**  
Associate Director  
European Capital Markets  
London, UK  
george.coleman@savills.com



“For the top three, Pfizer, Johnson & Johnson and Roche, they have around US\$80bn of ‘cash on hand’”

# Where will funding come from?

Dealmaking is in a downturn. The impact of higher interest rates, geopolitics and economic uncertainty has stalled deal activity across all sectors, not just those related to life sciences. In the real estate sector, the focus on venture capital (VC) trends has been high. Why is this?

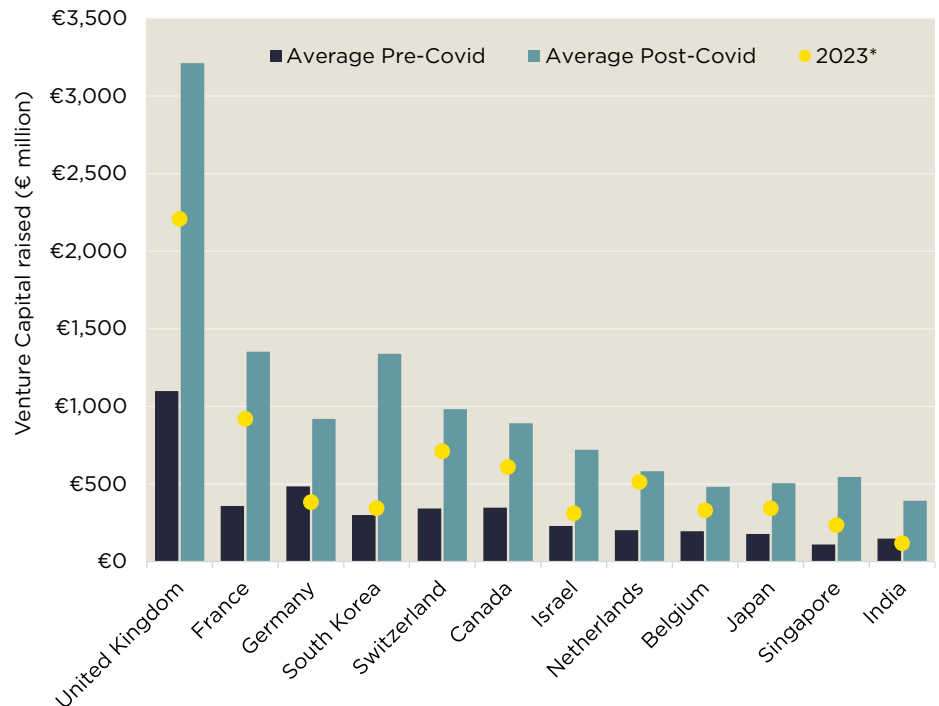
The VC world is watched closely and the trends within it are seen as the bellwether of future corporate growth and ultimately real estate demand. The emergence and subsequent growth of start-ups, through to scale-ups is a good news story and exciting prospect to consider for commercial property owners. However, on average, VC represents between 5% and 6% share of the total level of life science related capital raising in the past five and ten-year periods. Despite its relatively low share of the total, VC does initiate company growth, through increased employment and it is worth reviewing the 2023 levels in comparison to the pre-pandemic levels. The chart to the right presents a comparison between the eight years leading up to the start of the pandemic and also the total VC for the past three full years. The slowdown since the peak of 2021 is well documented, however, the chart shows that for 2023, most countries have seen a higher level than the pre-Covid period. So not all bad.

The picture for the UK is positive in terms of the venture funds actively looking at life science related opportunities. Nearly 300 funds identified that have deployed £85.7 billion between them, albeit on all sectors not just life sciences. This is still an enormous number. These funders will have ‘dry powder’ to spend.

It is worthwhile to review the other financial-led catalysts for increased commercial real estate demand. A larger impact on occupier demand may derive from merger and acquisitions (M&A), refinancing and buyouts. So what are the other areas to focus on that will create future life science-related demand for commercial real estate, including offices, laboratories and more mid-tech and industrial property types?

Corporate research and development (R&D) spending is an important driver of future growth. For the top 2,500 companies, in terms of R&D spend globally, the total amounts to around US\$1.2 trillion per annum. This is twice the annual GDP of Sweden. For the Pharmaceuticals & Biotechnology sector, it accounts for a fifth of the R&D total. Indeed, within the top 30 global companies, there are ten of the well-known pharmaceutical companies, including Roche, Johnson & Johnson and Merck (the top 3 for the life science sector). Some of these large biotech/pharma corporates are growing their R&D spend by over 15% per annum. Also, the intensity of the R&D, expressed as the value of R&D spend as a percentage share of sales, is as high as 25% for some big pharma

Annual average life science Venture Capital volumes pre-Covid (2012–2019) vs post-Covid (2020–2022)



Source Savills, PitchBook Data, Inc. (Data has not been reviewed by PitchBook analysts), \*as at end-November

companies. The hunt for future profit is intense by these largest companies looking for extension and expansion of their product pipeline. However, with an eye on the future expansion of their real estate need, it is the 73 pharma and biotech companies that have doubled their annual R&D spend in one year that look interesting. This will be a key driver of real estate demand as these companies have around 40,000 employees.

Moving back to the large corporates, with a Corporate Venture Capital (CVC) angle, it will be potentially positive for the real estate sector, in terms of demand, as the larger companies look to spend their large cash piles. For the top three, Pfizer, Johnson & Johnson and Roche, they have around US\$80bn of ‘cash on hand’. There is likely to be more M&A activity, as seen recently with the large pharmas piling into key areas. This includes the oncology drugs sector by Pfizer, AstraZeneca and Merck, but also obesity drugs, which will be a mega global issue in the next decade. The question here is whether there is likely to be more of this corporate cash feeding through to the earlier stage companies as deployed by the CVC entities.

The big corporate venture capital backed deals during the past five years include Moderna, Tempus and GRAIL, which are all companies to watch closely, not just for their scientific

endeavour, but as significant acquirers of commercial real estate.

Other areas of funding that Savills are tracking includes the global foundations, endowments and all other forms of philanthropic activities. Without the need for shorter-term financial returns, these are interesting organisations to track. Some are old organisations, some much newer, but they will enable the funding of companies to further scientific discovery. These funding entities may also grow the number of Focused-Research Organisations (FROs). An example of a FRO would be the Human Genome Project (HGP) that ran for 13 years. In that period, HGP delivered one of the most important scientific discoveries of all time. Would it have happened without the charitable investment, probably not. FROs will remain a key way forward to fund the new ideas, discovery, innovation and ultimately create new companies. Overall, there will continue to be a wide range of sources of funding that will continue to grow the life science market.



**Steven Lang**  
 Director  
 Research, Offices & Life Sciences  
 London, UK  
 slang@savills.com

“The planning system needs to shift up a gear to support the ambitions of the sector and to improve the supply of lab space”

# Unlocking planning

The next general election can be held at any time between now and 28 January 2025. All political parties are in full electioneering mode and proposing measures to support the ambition to make the UK a ‘scientific superpower’.

It is widely acknowledged that there is a shortage of lab space across the UK. Many schemes are stuck in planning, with the UK planning system being accused of being too slow to deliver. Planning was firmly in the spotlight in the Autumn Statement. Financial incentives were announced to encourage take-up of Local Development Orders (LDOs) and a “premium planning service” for commercial applications. Details are awaited, but early reports are that this service will be targeted at large-scale regeneration schemes.

In June 2023 Jeremy Hunt, the Chancellor of the Exchequer, announced a Life Sciences Growth Package that proposes consulting on factoring R&D considerations into planning decisions; and working with local authorities to encourage proactive planning tools, such as LDOs and Development Corporations, to bring forward development (in England). Rachel Reeves, Shadow Chancellor, announced in October 2023 that Labour reforms would include: fast-tracking the planning process for priority growth areas of the economy, such as battery factories, laboratories, and 5G infrastructure. She also proposes to raise the stamp duty surcharge on non-UK residents to appoint 300 new planning officers. The planning system is no stranger to planning reform and there is much more to come in 2024.

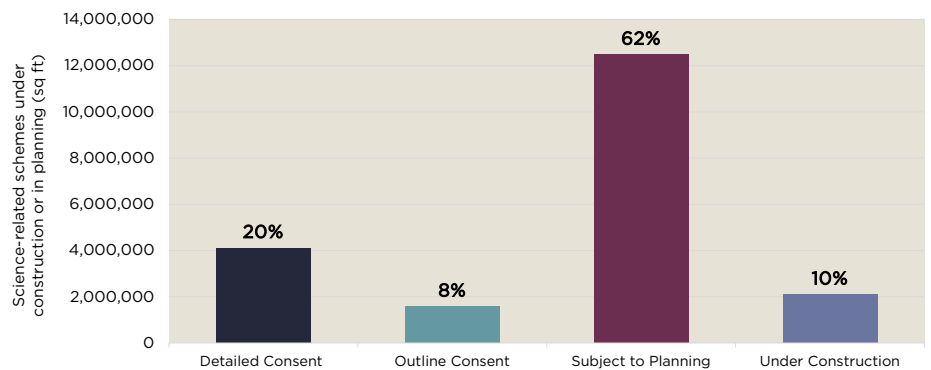
## The Development Pipeline

In total, Savills has recorded around 20.2 million sq ft of science-related projects in the planning pipeline today. Of this, 62% is ‘subject to planning’ so still in the system. Ten percent, or just under 2.1 million sq ft, is ‘under construction’. Against this increase in the number of planning applications being submitted, an analysis by the Royal Town Planning Institute in May 2023, showed a 25% loss of public sector planners between 2013 and 2020, whilst the private sector experienced an 80% increase over the same period. Against such stark facts, placing more targets on local planning authorities to process planning applications more quickly will never deliver, if there is no one there to process them.

## Planning in Practice

Recent years has seen a growth of R&D activity and life sciences in town/city centres. There are a number of reasons behind this, such as access to capital, the synergistic benefits of clustering and

## Status of science-related schemes in planning



Source Savills

access to talent. This dynamic has combined with available real estate opportunities to re-purpose vacant commercial buildings and a focus on reducing Whole Life-Cycle Carbon costs through conversions of buildings rather than new builds. There are four ways to obtain planning consent:

- Planning application – a grant of planning permission by a Local Planning Authority or the Secretary of State.
- Local Development Order – a general consent granted by a local planning authority that is similar to an enterprise zone regime, but without the tax incentives.
- Development Consent Order – mainly applicable to infrastructure and strategic scale projects to provide the range of consents required.
- General Permitted Development Order – a national grant of planning consent, such as the Use Classes Order and the General Permitted Development Order.

The change made to the Planning Use Classes Order in September 2020 with the introduction of Class E ‘Commercial, Business and Service’ Use, which grouped together retail and commercial uses in the same Use Class. This change removes the need for a change of use application, unless there is a restriction on the planning permission, but rarely avoids the need for a planning application.

Conversion of commercial buildings tends to involve physical adaptations that require planning consent, such as the installation of a flue, additional power or mechanical plant, alterations to servicing and waste management. Such ‘minor’ works can require the submission of a planning application, with the associated time and costs of preparing drawings and technical reports and inherent risks of the planning process.

The issue is that many of the schemes that are locked in planning are relatively small-scale and will not benefit from many of the changes to the

planning system that are aimed at larger-scale developments.

## Easing the backlog

There is a compelling case for the introduction of a new General Permitted Development Right (GPDR) for the conversion of commercial buildings into R&D use. This would require Government to adapt the existing Town & Country Planning (General Permitted Development) Order, which has been done to facilitate conversions of commercial buildings to housing. Why not adopt the same approach for labs and R&D space and add a further option for delivering space more quickly and where it is most needed?

A new GPDR for R&D/life science development would help reduce the number of planning applications requiring processing by local planning authorities, even if the GPDR was to be subject to a ‘prior approval’ process for matters, such as flood risk, heritage and noise. This would reduce the length of time required for planning, reduce the costs of preparing technical reports and drawings and help to encourage more landowners and developers to commit resources to converting buildings into labs. Moreover, it would enable the planning system to focus on the most significant planning applications.

Perhaps the Premium Planning Service referenced in the Autumn Statement will also apply to science schemes to help these schemes move through the planning system more quickly.



**Emma Andrews**  
Director  
Planning  
London, UK  
emma.andrews@savills.com

“There are some exciting developments which will continue to make the UK a very attractive place for growth and investment”



## What are the benefits of SMEs working with big pharma?

What are the benefits of small and midsize enterprises (SMEs) working with big pharma?

The main benefits of SMEs working with Big Pharma is additional funding for development of their platforms and products along with access to the development expertise and commercial infrastructure which is necessary for product development, approval, manufacture and supply. It also provides credibility to existing and prospective investors in the SME, particularly when the SME is considering an IPO.

There are several models of partnering to consider from funding pre-clinical work with an option to license on proof of concept through to a full license which gives them rights to develop and market the product in return for milestone payments and royalties on sales. Generally, the earlier in development the product is partnered the lower the value is for the SME.

Many SMEs will partner their lead product when it has achieved clinical proof of concept which will provide them with additional revenue to fund other programmes. However, the downside is that they may then lose control of the development timelines (which is their lead value driver for investors) because of big Pharma process and decision making and can be competing for funds with other programmes within the Big Pharma pipeline so the SME has to ensure that appropriate and effective joint project management processes are in place to avoid this.

There are also encouraging signs of improving government support for the sector in terms of defined pension contributions, Horizon Europe and more investment into clinical and regulatory areas what would this

mean for occupiers' long term?

There are some exciting developments which will continue to make the UK a very attractive place for growth and investment across the life sciences industry which is good news for attracting occupiers going forward with the prospect of a better landscape for investment, more streamlined regulatory pathways and enhanced potential for funded international collaborations. The pandemic has driven new innovation in the development of medicines and the UK was at the heart of this. Novel genomic technologies were developed and approved in months rather than years through the use of novel collaboration models and partnerships between Industry, Government, Healthcare systems, regulators and payers which is now embedded in the UK life science sector. This also led to innovation around clinical trial design and regulatory science which has the potential to shorten approval times for new medicines.

Brexit was a significant factor in the downturn of investment and funding in the life sciences sector in the UK, companies found it less attractive to invest and locate here because of factors such as the UK no longer being part of the European Medicines Agency (making it less attractive for carrying out clinical studies) and the loss of access to the EU research fund, Horizon Europe.

The UK is now taking steps to address this. The Government has recently announced that it is supporting the MHRA with additional funding to allow it to become faster and nimbler. Partnerships are also being explored with trusted international agencies

such as in the US, Europe and Japan to provide rapid approvals for medicines and technologies that have already received approval in these territories. There is also a move towards realigning with the EMA in terms of clinical trials and shipping of materials.

It has also been announced that the UK will reassociate with Horizon Europe which will be a huge boost for funding of scientific research in the UK. Since Brexit, researchers have been forced to rely on UK equivalent grants and funding instead of being seamlessly integrated into Horizon Europe and this has meant a reduction in funding and international collaboration. Scientists will once again have access to the world's largest research collaboration programme.

The current fund has around €85 billion of funding remaining for the life of the programme which ends in 2027. The UK science base has been a big recipient of Horizon Europe funding prior to Brexit. As importantly, it opens up the opportunity for enhanced international collaboration which is key for innovation and making the UK an attractive place to locate for potential collaborating companies and researchers. The UK will be able to fully participate from 1st January 2024 and will be eligible to apply for 2024 calls that open this year.

The negotiated deal is described as “bespoke deal” meaning that the UK will not pay into Horizon Europe for the 3 years as it has not been part of the scheme. From 2024, the UK will then provide around €2.6bn annually into Horizon but has obtained a “clawback mechanism” to ensure it does not contribute much more than it receives in grants meaning that the

UK will be compensated if British scientists receive significantly less money than the UK puts into the programme. This is an important mechanism as the lead time for re-establishing the level of grant funding could take several years.

The agreement also includes an overperformance indicator, which means the UK will not be penalised for overperforming which is a likely scenario.

Another important government initiative is The Global Britain Investment Fund of £1.4bn programme of public funding designed to strengthen the UK economy through investments in particular high growth sectors, including life sciences. Around £300 million has been allocated to the Life Sciences Manufacturing and Innovation Fund which is aimed at strengthening the medicines manufacturing base and providing manufacturing robustness in the event of another pandemic. One other political initiative that is worth mentioning is the proposal to boost long term investment in technology and science through allowing defined contribution pension fund investment into innovative UK companies. These plans are to be announced by the Autumn and if they come to fruition could be worth £10's of billions.



**Dr Steve Chatfield**  
Life sciences special adviser  
steve.chatfield@savills.com



“The San Francisco Bay Area’s life sciences market is the global epicentre for the sector and is poised to benefit from the growing need for innovation”

# San Francisco, CA

A key and mature life science market in the US

## San Francisco Bay Area is the Global Epicentre for Life Sciences

The San Francisco Bay Area is the largest life science ecosystem in the world with over 43 million square feet (msf) of space. Nicknamed “Biotech Bay”, the Bay Area hosts industry leaders such as Moderna, Amgen, AbbVie, Gilead Life Sciences, and many others. Companies in the area have access to a top tier talent pool coming from reputable institutions like Stanford University, two University of California campuses – Berkeley and Davis, San Jose State University, and more. Life sciences employment growth in the San Francisco Bay Area remains strong and elevated demand for these specialized employees has created some of the highest salaries in life sciences across the nation.

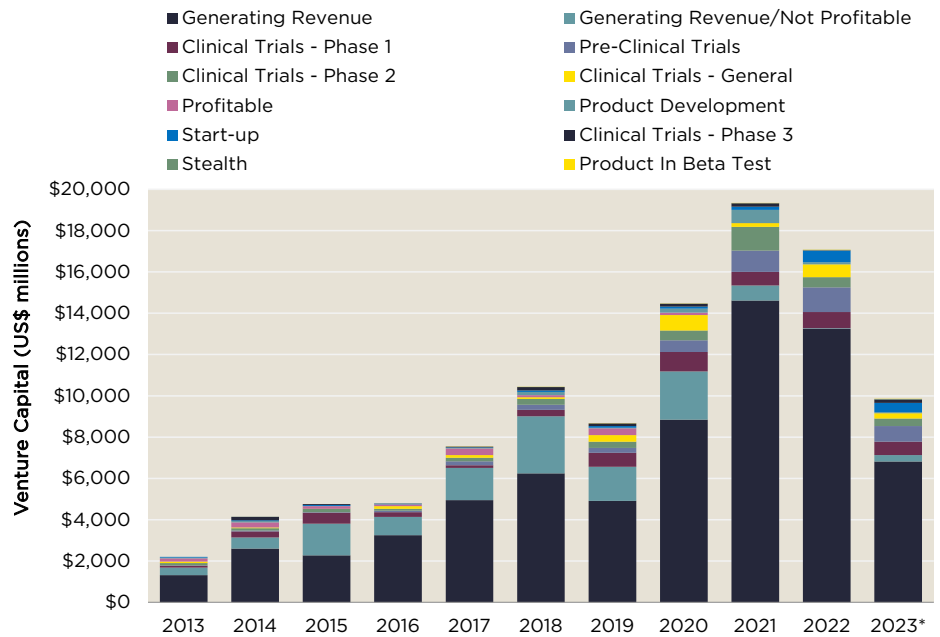
## Life sciences demand slows but pent-up demand for high-quality R&D space keeps the development pipeline robust

Uncertain economic conditions, rising interest rates and the decline in venture capital funding from recent record-highs have pushed many life sciences companies into cost-cutting mode in 2023. However, this change in dynamics brings with it an era of opportunity. Moderating lease activity has resulted in an uptick in available space and created a tenant-favourable market. Despite the pullback in demand, millions of square feet of new life science developments are underway and they continue to attract active tenants in the market as flight to quality prevails. One of these new projects includes Southline, a state-of-the-art development currently under construction that will encompass 2.8 msf of R&D and office space across six different buildings. Additionally, San Francisco Mayor London Breed is preparing to propose legislation to help convert obsolete and unoccupied office inventory into lab space by changing zoning regulations and accelerating the approval process for permits. As the tech sector returns millions of square feet to the market and office vacancy surges, there is hope that these conversions to life sciences use can help revitalize areas like the Financial District and downtown.

## Life sciences venture capital funding in the San Francisco Bay Area

2021 represented a record-breaking year for life sciences companies headquartered in the San Francisco metro region as they raised a staggering US\$19.1 billion dollars across 898 venture capital fundraising transactions. As the economy shifted in 2022 funding levels began to decline and by 2023 it became clear that the pandemic-induced

## Life science venture capital raised in San Francisco (metro area)



Source Savills, PitchBook Data, Inc. (Data has not been reviewed by PitchBook analysts) \*as at end-November

funding frenzy was at an end. By the third quarter of 2023, the San Francisco Bay Area raised US\$6.6 billion dollars from 359 deals closed. As funding levels in San Francisco temper, life sciences companies are shifting their expectations regarding how long fundraising may take and are trying to make their capital last longer.

In 2023, Kriya Therapeutics, a Bay Area biopharmaceutical company that develops gene therapies to treat numerous diseases, raised a total of US\$430 million to clinically support the company’s pipeline of gene therapies. Also in the Bay Area, Elon Musk’s company, Neuralink, raised over US\$280 million dollars and plans to start the recruitment process for the first human trial to surgically place a brain-computer interface (BCI) in patients with paralysis. Funding remains available for exciting science and unmet needs.

### Looking forward

Although the entire country has felt the impact of recent economic headwinds, the life sciences industry is better prepared to withstand the ongoing volatility. On top of the National Institute of Health (NIH) and other U.S. agency funding for the sector, the White House signed an executive order at the end of 2022 for an additional US\$2 billion to advance biomanufacturing and biopharma innovation which will spur growth in life sciences. Funding

from biopharmaceutical companies is on the rise as a large number of patents for “blockbuster” drugs are set to expire over the next decade which will elevate R&D spending in the subsector. Lastly, as the Boomer generation ages there is a growing need for life sciences development to cure and prevent disease. The San Francisco Bay Area’s life sciences market is the global epicentre for the sector and is poised to benefit from the growing need for innovation.



**Brianna Friedman**  
Senior Research Analyst  
Rutherford, NJ  
briannafriedman@savills.us

“ Beyond equipment usage, building services systems can be responsible for up to 80% of the EUI of older laboratory buildings ”

# Decarbonising life sciences: The Cambridge Science Park example

With all parts of the real estate investment sector looking to decarbonise, the Life Sciences industry is now subject to increasing scrutiny from regulators, investors and society due to its contribution to carbon emissions. Operational energy consumption from buildings and processes is one of the main contributors to the sector’s carbon emissions.

## Cambridge Science Park

Cambridge Science Park was established in 1970 by Trinity College Cambridge and is one of the largest life science parks in Europe. It is home to 130 businesses across 59 buildings, employing 7,500 people and consists of approximately 200,000m<sup>2</sup> of office, laboratory and research spaces. With a carbon footprint of approximately 30,000 tonnes CO<sub>2</sub>e per year, radical changes are required in order to align with the decarbonisation target of Trinity College Cambridge. In addition, a survey of tenants who attended an engagement event on the science park showed that more than half of the tenants had set their own sustainability targets. Energy efficiency is also increasingly relevant due to rapid energy cost increases, leading to considerably higher bills for life science buildings. Finally, tougher regulations add pressure for decarbonisation, as the Park’s EPC data suggests that approximately 65% of the properties will have to be upgraded by 2030 to meet the expected Minimum Energy Efficiency Standards upgrades. Trinity College envisions a collaborative and

sustainable Park community where innovation can thrive, by promoting decarbonisation, positive actions, and inspiring others. Savills Earth collaborated with Trinity College Cambridge to help them realise their vision, by helping understand the Park’s energy use profile and developing a decarbonisation plan for the science park.

## Energy use hot spots in laboratories

An initial Park analysis led to the conclusion that there is no one-size-fits-all solution for the science park, as age, design, usage and operation differ from building to building. We therefore assigned all of the Park’s life sciences buildings to one of seven building typologies, depending on their use and building age. We were then able to carry out deep technical analyses for these seven building typologies and use these analyses to extrapolate data, and draw relevant conclusions across all science park’s buildings, attaining technical robustness but providing best value for money for Trinity College.

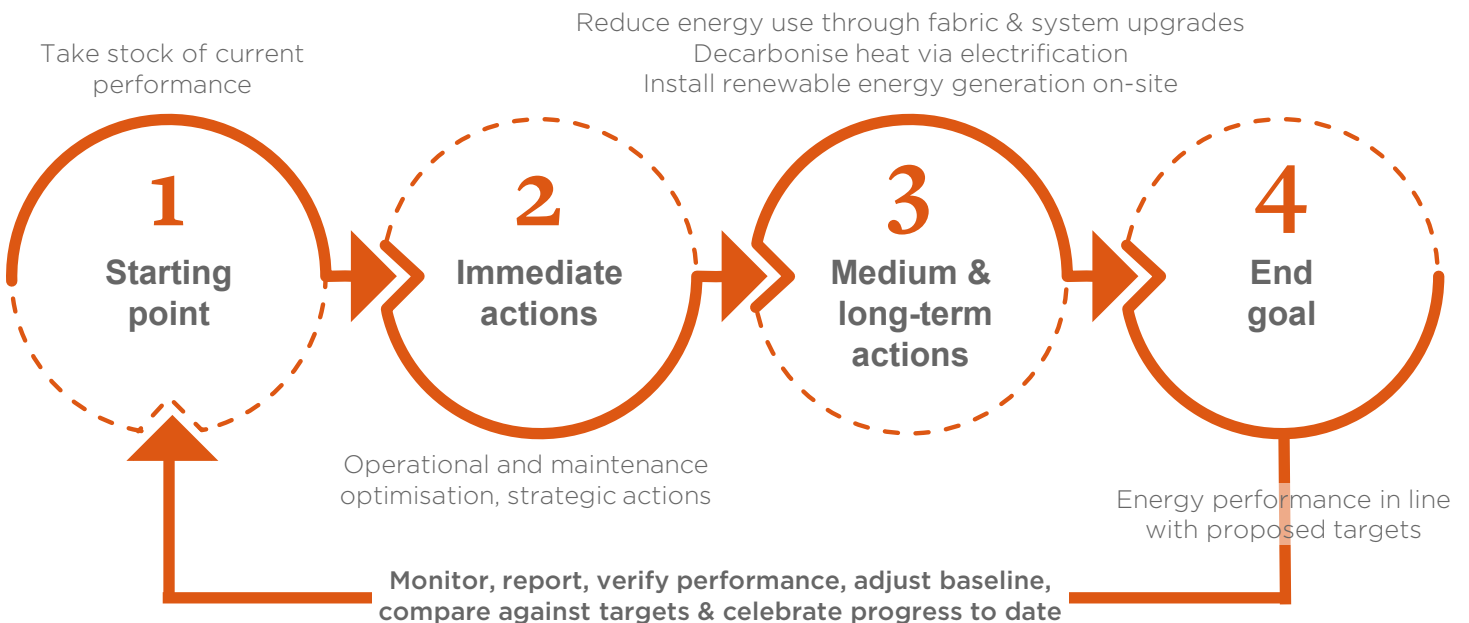
Buildings in the Park comprise mostly laboratory spaces, offices and some support functions such as gym, nursery, conference spaces etc. that foster the sense of community. The laboratory buildings occupy less than half of the Park, but are responsible for 80% of its energy use. Laboratory buildings built 20 years ago or more consume 75% of the Park’s energy use, even though they only occupy 30% of the Park’s floor area.

A large part of the high energy use of laboratories is due to their business function. Laboratory occupants use extensive, specialist and energy intensive equipment. Energy Use Intensity (EUI) (kWh/m<sup>2</sup>) is a prime indicator of a building’s energy performance, and equipment may account for at least half of the total EUI for newly built laboratories.

Beyond equipment usage, building services systems can be responsible for up to 80% of the EUI of older laboratory buildings, mostly due to the provision and heating of enormous volumes of fresh air to achieve a comfortable environment and the stringent air quality requirements in laboratories.

Our technical analysis of the Park’s buildings energy behaviour included scrutiny of the building condition, building services systems, use, occupancy, operation and maintenance, and used information derived from energy surveys conducted by Savills EDC. The analysis enabled us to identify possible interventions to reduce the Park’s energy use and carbon emissions. We used energy modelling tools to build ‘digital twins’ of the 7 selected pilot buildings and to quantify the potential energy and carbon savings, and collaborated with specialist cost consultants to estimate the associated capital and operational costs.

## Savills Earth: Cambridge Science Park – Decarbonisation Review



“The average cost for the whole building retrofit of the Park’s buildings is £795 / tonne CO<sub>2</sub>e saved for a 30 year period”

**Building-level interventions**

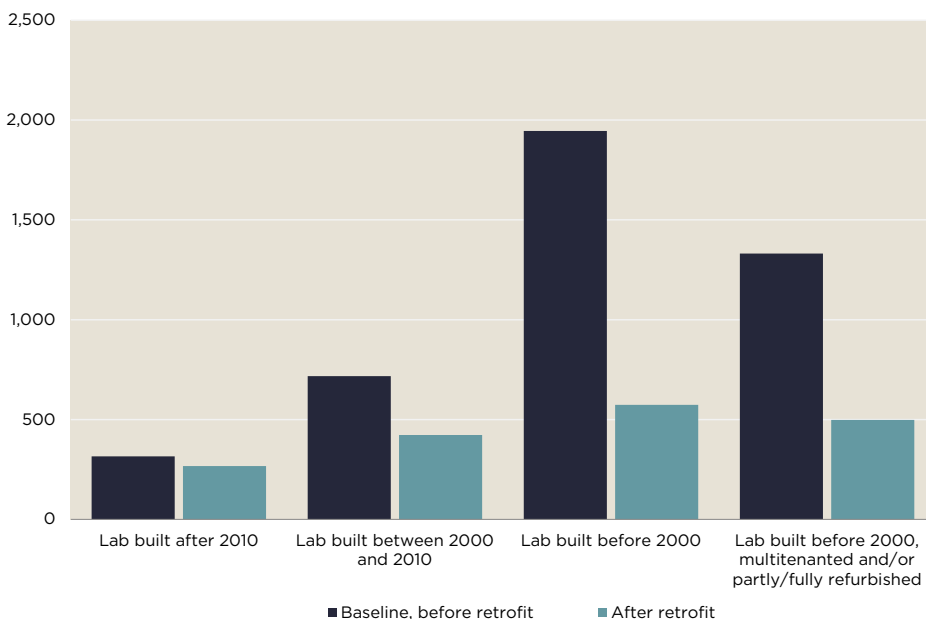
A key conclusion of the analysis is that all buildings on the science park can benefit from decarbonisation interventions, irrespective of use and age. Some interventions are simpler and require less interruption than others, and could be implemented right away.

Medium and long-term interventions require a whole building approach, starting from fabric and insulation upgrades to control and reduce energy losses and to increase comfort in older buildings. Building system upgrades and optimisation, including installation of heat recovery and replacement of components with more efficient versions can reduce energy use in all laboratory spaces. Moving away from fossil fuels and installing heat pumps for space heating and hot water is necessary to have a chance of achieving decarbonisation targets.

Photovoltaics installed on roofs, canopies and car parks can generate some of the electricity demand on site, reducing carbon emissions and reliance to the grid.

The interventions have the potential to reduce energy use between 15% and 73% in each building in the science park, depending on building use and age, based on energy modelling data. The 15% reduction could be achieved even in newly built, laboratories. The average cost for the whole building retrofit of the Park’s buildings is £795 / tonne CO<sub>2</sub>e saved for a 30-year period. Many of these interventions have low payback periods of between 4 and 8 years.

**Energy Use Intensity (kWh/m<sup>2</sup>) for the 4 laboratory typologies before and after retrofit**



Source Savills

But to achieve more attractive paybacks a whole building retrofit approach needs to be combined with maximum photovoltaic installation.

Occupants must play their part in reducing emissions, understanding their building and optimising its usage. A number of guides and schemes available to help occupants reduce energy use, such as My Green Lab and the Laboratory Efficiency Assessment Framework (LEAF) can be used as the starting point.

**Site-wide interventions**

The whole building, Park-wide retrofit approach can reduce total Park’s electricity demand to lower levels than the total electricity consumed before retrofit, despite the science park’s move from fossil fuels to electric systems. This can reduce grid capacity challenges on the site. Fully electric systems combined with a micro-grid, on or near-site renewable sources and energy storage on site form a key part of achieving decarbonisation.

However, even following retrofit, the laboratories on the Park will consume a considerable amount of energy for heating and cooling due to their business function. Our study demonstrated that sometimes this will occur simultaneously, providing an opportunity for heat sharing across the science park through a heat network, with potential energy and carbon savings.

**What about the performance gap?**

The ‘performance gap’ is of particular interest

in laboratories. System imbalance, lack of good maintenance and occupancy behaviour can lead to great disparity between energy use predicted from energy models and actual energy use of the building.

**Key takeaways**

Our analysis showed that whilst laboratories consume a significant proportion of energy across the science park, they also have significant potential for energy and carbon reduction.

While energy use and associated carbon emissions reduction can be realised in all laboratories irrespective of age, characteristics and operation, the potential is greater in laboratories of approximately 20 years old or more. Collaboration among tenants, leaseholders and investors is key to the decarbonisation of any large and complex estate like Cambridge Science Park. Different leasehold, tenancy and occupancy types require different levels of engagement. This needs to be accompanied by a clear decarbonisation monitoring, reporting and tenant engagement strategy to provide ongoing support, share lessons learnt and keep everyone informed and invested in the project’s success.

Actual building energy use data is necessary to perform a robust technical energy analysis in order to develop a clear, costed and successful decarbonisation plan. The decarbonisation plan developed by Savills Earth has unlocked investment from Trinity College to start with the implementation of the recommended decarbonisation actions in the first of their buildings.

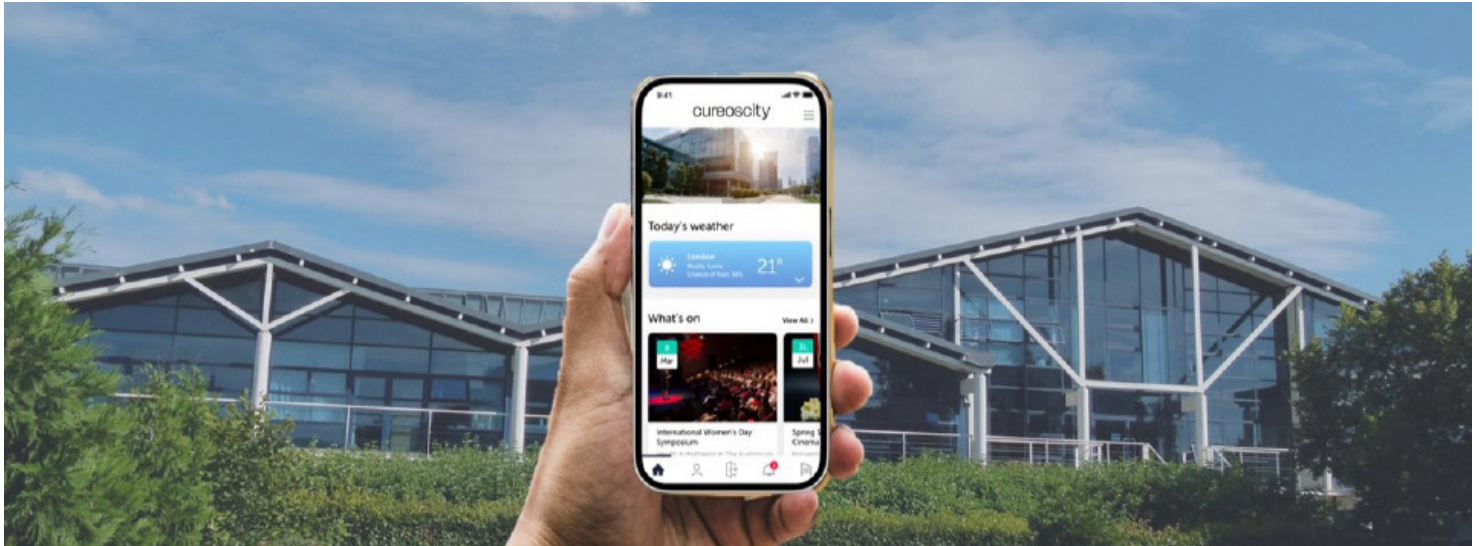
**How do we start?**

With the continuing commercial, social and legislative decarbonisation pressure and the cost of energy prices and carbon offsetting increasing, embarking on the decarbonisation journey as early as possible is key. The Savills Earth team can assist.



**Georgios Askounis**  
Savills Earth  
Associate Director  
Sustainable Design  
London, UK  
georgios.askounis@savills.com

“Life sciences are increasingly embedding sustainability into their wider business policies and procedures”



# How life science owners and developers can win with technology

No other real estate sector has the opportunity that life sciences real estate does when it comes to embedding technology into its approach. Unlike more traditional real estate uses, which are often hampered by longstanding embedded legacy issues, science-related real estate is writing its own rule book, built on a platform of constant tech evolution. With the industry total valuation set to surpass US\$3 trillion by 2030, life science occupiers are underpinning their own individual performance, growth, and innovation by utilising tech to underpin their operational delivery within demised spaces. Success is being powered by technology to deliver exceptional results when it comes to accelerating research and development, improving data management and collaboration and enhancing manufacturing capabilities and quality control.

With the market continuously growing and the availability of laboratory space becoming more prevalent, we are now in a unique opportunity phase for owners and developers of life science spaces to differentiate their campuses and provide the most captivating locations for life science occupier talent. The ultimate win is the enhanced rental income and yields as their places are selected as the preferred locations for the best and expanding science enterprises.

Up until recently, traditional commercial offices, business parks and campus locations have experienced little technological change however the tide has now turned. Leading destinations have embraced technology solutions to realise their asset vision and deliver the best possible end-user customer and occupier experience.

Innovations include eliminating plastic passes and implementing permission-based location

mobile access for talent and their visitors, embracing smart solutions to enhance sustainability and green travel solutions, and facilitating connectivity between individuals with amenity, food and beverage and service solutions.

To ensure your destinations leverage the benefits that technology has to offer, project teams need to understand three fundamental principles:

### It's never too early to talk tech

Far too often technology is an afterthought. Once the vision for an asset is established, project teams should proactively engage in technology discussions to guide base-build provider selections, establish protocols and prevent individual development project limitations from becoming future obstacles to achieving a fully connected asset approach.

### There are no silver bullet solutions

A successful tech strategy is the convergence of multiple partners working in collaboration to deliver a simple, smart and seamless experience for respective customer profiles, with variation enabled to meet the different levels of connectivity and ability to consume the information they require. Open-source connectivity is key to delivering day-one value and an ecosystem for future-proofed performance.

### Cost effectiveness is key

Science-related real estate is in the unique position to benefit from the research and development pathway that the wider real estate industry has seen with the emergence of proptech over the last decade. Timely discussion around appropriate investment across capital expenditure elements, to

deliver best-fit solutions plus what can be passed through to service charge recoverable budgets long term is key to achieving appropriate solutions that underpin place performance.



**Chris Coleman-Brown**  
CEO and Founder  
Cureoscity  
London, UK  
chris@cureoscity.com

**cureoscity**

Cureoscity, an independent business owned by Grosvenor Hill Ventures, Savills' proptech investment subsidiary. Cureoscity connects people and buildings through technology. Through our web portal, Cureoscity provides occupiers, building and property managers with effective tools for core operational processes. Cureoscity is used across more than 1,200 individual destinations, covering over 200 million square feet. We take pride in our esteemed client partners, including Stanhope, Mitsui Fudosan, Mitsubishi Estates, The Valesco Group, Tristan Capital Partners, BEAM and numerous others.



👉 Laboratory take-up in Oxford and Cambridge is set to be the highest annual total ever recorded in 2023 🏆

# Overview of the Golden Triangle

The expansion of the science and innovation sectors across the Golden Triangle has resulted in an increased demand for real estate which has been evident when analysing the take-up levels across this market area. Across London, Oxford and Cambridge there was 982,000 sq ft transacted at the end of the first three quarters, which was 4% above the same time period last year.

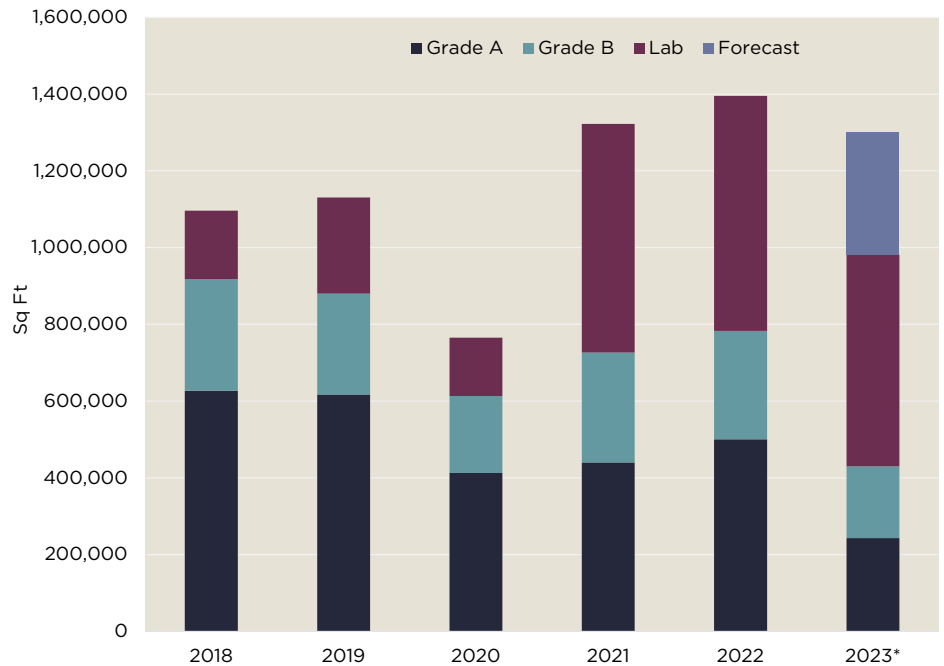
Notably, laboratory take-up in Oxford and Cambridge is set to be the highest annual total ever recorded in 2023, demonstrating the continued growth of these sectors. At the end of Q3 2023 there was 269,000 sq ft and 189,000 sq ft of laboratory take-up recorded in Oxford and Cambridge, respectively. These figures were boosted by Building 960 Babraham Research Campus, Cambridge being fully let ahead of practical completion with Mosaic, Adrestia and Xap leasing a combined 38,000 sq ft. The UK has the largest biotechnology cluster in Europe which is set to be further enhanced by a leading occupier from the sector under offer to lease 85,000 sq ft of shell and core laboratory space at 1000 Discovery Drive, Cambridge Biomedical Campus. They will join Cambridge University Hospitals NHS Foundation Trust who have acquired the remaining available space at the scheme totalling 23,000 sq ft.

Oxford has also experienced strong demand for laboratory space with Moderna pre-letting a 145,000 sq ft R&D facility at Harwell Campus. Other transactions have included Oxford Gene Technologies letting 12,000 sq ft at two recently completed buildings at Life Science REIT's Oxford Technology Park and Milvus Advanced acquiring 6,900 sq ft at Swales SuperLab, which was the first purpose-built laboratory letting in Oxford city centre in the last five years.

Take-up in London has been more subdued with 175,000 sq ft of science related space transacted, which can be predominantly attributed to the relatively nascent nature of the market in comparison to Oxford and Cambridge and the lack of available purpose-built laboratory stock. Developers are responding to the lack of supply in the capital with 116,000 sq ft of laboratory space completed this year and a further 2.9 million sq ft of purpose built or laboratory enabled space either being under construction or being granted planning permission. Canary Wharf's science and innovation cluster continues to expand with 38,000 sq ft of incubator space being delivered at 20 Water Street and Kadans securing planning consent to deliver a 823,000 sq ft health and life sciences laboratory building at North Quay. This development will be the largest scheme of its kind across Europe. The submarket has secured the two largest laboratory lettings this year with AviadoBio leasing 15,000 sq ft at 20 Water Street and hVIVO acquiring 39,000 sq ft at 40 Bank Street.

The supply constraints of immediately available

The expectation is for 2023 take-up to be 1.3 million sq ft



Source Savills (\*as at end-Q3)

laboratory stock in both Oxford and Cambridge has resulted in strong developer appetite to provide this type of space. There is currently 228,000 sq ft of laboratory space under construction in Oxford that is set to complete by the end of the year. The largest scheme being The Iversen Building, Oxford Science Park, comprising 110,000 sq ft. Cambridge is also experiencing development activity with 326,000 sq ft of laboratory space set to complete by the end-2024. There will be a time lag before the Golden Triangle experiences a significant increase in laboratory stock levels with 73% of the pipeline schedule to complete after 2025.

New rental tones have been set on laboratory space with rental levels of over £70 per sq ft consistently being achieved on fitted space in both Oxford and Cambridge. Further rental growth is expected with newly fitted laboratory space delivered in the city centre expected to achieve rents in excess of £90 per sq ft from 2025 onwards. London is also experiencing rental growth with quoting rents for fitted laboratory schemes being in excess of £120 per sq ft.

The consistent delivery of real estate will be critical to enable the acceleration of the UK's life science growth ambitions. The combined stock of laboratory space across the Golden Triangle is estimated to be 5.4 million sq ft. This is significantly below US markets which have large life science ecosystems. Notably, Boston is estimated to have nearly ten times the existing laboratory provision with an estimated stock level

of 52.7 million sq ft.

Demand continues to outweigh the current supply and despite the reduction in venture capital raising due to the current economic conditions, there are currently an estimated 2.1 million sq ft of requirements. This volume bodes well for take-up next year as well as the ongoing development of the life science cluster across the Golden Triangle.



**Simon Preece**  
Associate Director  
Research, London UK  
spreece@savills.com



## Savills Science

Science, R&D and technology sectors all demand specific types of real estate. Savills, using data and expertise across all markets and disciplines will help clients make the best real estate decisions. Savills have established offices, with science capability, within the key markets across the UK. Savills also has significant expertise in dealing with all aspects of science real estate, particularly for occupiers, within the key markets in EMEA, North America and Asia. Having a global understanding of these international markets, with experts 'on the ground', means that Savills can provide an enhanced offering to all types of clients, including occupiers, investors and landlords.

For more information on Savills Science and the research capability, in the first instance, please contact:

**Tom Mellows**, Director, Head of UK Science.

**Steven Lang**, Director, Office & Life Sciences Research.

---

### Agency

**Tom Mellows**

Head of UK Science  
Agency, London  
020 7409 8964  
tmellows@savills.com

**Sam Denehy**

Agency, London & South  
East Science Markets  
020 7330 8673  
samuel.denehy@savills.com

**Charles Rowton-Lee**

Head of Commercial  
Agency, Oxford  
01865 269030  
crlee@savills.com

**Mark Taylor**

Head of Business Space,  
Cambridge  
01223 347254  
mark.taylor@savills.com

**Austin Barrett**

Vice Chairman, Head of  
Life Sciences, Boston, US  
+1 650 269 9941  
abarrett@savills.us

**Rupert Dando**

Agency, London & South  
East Science Markets  
01223 347037  
rupert.dando@savills.com

**Liv Thomas**

Agency, London & South  
East Science Markets  
01865 269066  
olivia.thomas@savills.com

**Jan Losch**

Commercial Agency  
Oxford  
01865 269065  
jan.losch@savills.com

**Izzy Vyvyan**

Commercial Agency,  
Cambridge  
01223 347021  
izzy.vyvyan@savills.com

**Mark Gilbert-Smith**

Agency  
Central London  
020 7409 5925  
mgsmith@savills.com

---

### Capital Markets

**James Emans**

UK Investment  
London  
020 7409 8132  
jemans@savills.com

**Barry Mangan**

Central London Investment  
London  
020 7409 5915  
bmangan@savills.com

**Sam Isaacs**

Operational Capital Markets  
London  
020 7409 9989  
sam.isaacs@savills.com

**George Coleman**

European Capital Markets  
London  
0207 330 8614  
george.coleman@savills.com

---

### Planning; Building & Project Consultancy

**Emma Andrews**

Planning - Corporate  
Commercial & Education  
020 3810 9842  
emma.andrews@savills.com

**James Dexter**

Building & Project  
Consultancy  
0207 409 8062  
jdexter@savills.com

---

### Strategic Advisory

**Sarah Thorley**

Strategic Advisory EMEA  
London  
020 7409 8997  
sarah.thorley@savills.com

**Tara Patel**

Strategic Advisory EMEA  
London  
07977 362 113  
tara.patel@savills.com

**Jessica Edgley**

Strategic Advisory EMEA  
London  
07811 061975  
jessica.edgley@savills.com

**Yan Shi**

Strategic Advisory EMEA  
London  
020 7877 4743  
yanxun.shi@savills.com

---

### London Commercial Development

**Oliver Fursdon**

Head of London  
Commercial Development  
020 7409 5900  
ofursdon@savills.com

**Lucy Godwin**

London Commercial  
Development  
020 7299 3051  
lgodwin@savills.com

---

### Research; UK, US & China

**Steven Lang**

Director, Offices & Life  
Sciences  
020 7409 8738  
slang@savills.com

**Simon Preece**

Associate Director  
London  
020 7409 8768  
spreece@savills.com

**Brianna Friedman**

Senior Research Analyst, Life Science  
Rutherford, New Jersey  
+1 617 925 6293  
briannafriedman@savills.us

**James Macdonald**

Head of Research  
China  
+8621 6391 6688 Ext 8605  
james.macdonald@savills.com.cn

---

### Science Advisory

**Dr Steve Chatfield**

Life sciences special  
adviser  
steve.chatfield@savills.com