Linesight

Sky High Labs: The Rise of Life Sciences

A roundtable discussion hosted by Linesight

Key takeaways

- **Demand** currently outstrips supply
- **Locations** with good infrastructure more attractive
- **Automation in Life Sciences** driving the need for collaborative space types beyond the traditional lab
- **Inflationary pressures** are compounded by the **longer programme times** of **building tall**
- More difficult to hit **energy efficiency** requirements
- **Conversion viability** is still very tenant dependant
- **Regional cities with established life-sciences hubs,** growth potential, and a good talent pool across the UK can benefit
- **“Build it and they will come”** a healthy tenant mix of start-ups, scale-ups and established companies needed to make the concept work

Participants

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Chief Operating Officer
Eagle Street

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Director, Elliott Wood

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John Sommerville
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Richard Walder
UK Science & Tech Sector
Director, Buro Happold

Chris Walters
Head of Life Sciences, JLL

"You have to do the hard work to really understand the market fundamentals. What's going to drive demand in that location and is it going to be sustainable?" John Sommerville, Creative Places

DISCUSSION SUMMARY

As investment in life sciences soars, there is unprecedented demand for research space – and that's driving developers to look for new ways to meet it, from brand-new vertical campuses to conversions of city centre office towers. In December, Canary Wharf Group and Kadans Science Partner submitted a planning application for a 23-storey, 823,000sq.ft. life sciences tower at North Quay, set to be the tallest in Europe. Meanwhile, the shift to hybrid working is leaving a glut of commercial buildings that could be ripe for transformation. So could high-rise laboratories become the norm? Linesight invited science real estate experts to a round table discussion about the prospects for this exciting trend.

WHAT'S DRIVING HIGH-RISE LIFE SCIENCES DEVELOPMENTS?

In a word: demand.

> **"Developers have literally been walking the streets, building by building, to see if they can find something that's suitable for conversion or a site that can deliver some critical mass."** Chris Walters, JLL

"There's no shortage of investors and developers looking to get a foothold in the market, particularly in London", said Chris Walters, Head of Life Sciences at JLL. *"They are reacting to the strength of occupier demand, and provide scale within individual buildings to create an environment that's attractive to companies of different sizes and types."*

This is down to the clustering effect in life sciences, added John Sommerville, Partner of Creative Places. *"These businesses want to be near research institutions and they want very accessible spaces – locations near stations are really important. That is leading them to look at quite small geographical areas."* As in other sectors, density drives height.

But why do they want to be in London, where land is scarce, over more established edge-of-town clusters in Oxford and Cambridge?

Big pharma's business model has changed, pointed out Buro Happold's Richard Walder. Before companies were focused on organic growth within their own research campuses. *"Now, their M.O. is to buy up the seed-funded and series A, B-funded companies as they grow. Those very small companies are coming out of universities and staying in the city centre environment, so that's where the bigger companies want to be too."*

Science itself has changed too, said Elias Niazi of Niazi Roden. *"Gone are the days when you have the folks in white gowns standing around looking at test tubes. Today, automation is on the rise, which increasingly frees up lab time to spend somewhere else. That 'somewhere else' interests me the most,especially in an urban or high rise schemes. The idea is to create an eco-system that creates a healthier and greener environment."*

And on a pragmatic level, though rents are higher in London than those in Oxford and Cambridge, if you're flying in from Boston for a meeting, do you want to go to an office right

next to Paddington, or get on another train to a different city? ***"That's also driving occupiers into urban settings,"*** added Niazi.

DO TALL LIFE SCIENCES BUILDINGS WORK?

Life sciences is traditionally a low or mid-rise sector, partly due to the complexity and high servicing requirements of laboratory spaces. Can we really meet their needs in high-rise buildings?

A resounding ***"it depends"*** from the panel. A life sciences building is not one thing, but a very broad range of very specialist facilities. ***"It's like saying you're going to build a commercial building,"*** said Peter Gavican of Eagle Street, ***"Are you building a hotel, an office, retail? It's very difficult to say whether a development site or a conversion is suitable unless you know the end use."***

> **"Tall buildings give life sciences occupiers and developers the opportunity to create a landmark knowledge destination, and that could work outside London as well."** Giles Heather, Linesight

There's a major time difference between a "lab-enabled" building and a "lab-ready" building, said David Roden of Niazi Roden. ***"If you wait until you've got a prelet, that might not suit the occupier looking for space because they don't want to wait two years. So it becomes about placing as few constraints on it as possible, and that's going to mean the capital cost is higher."***

So does that rule out speculative development? And if you are trying to develop an office that could become a lab, but without providing sufficient infrastructure that is actually required for a lab, is the cost uplift worth it? According to Walder, ***"You can put in infrastructure that supports an average amount of everything, but you're not necessarily building in the layers of servicing and redundancy that science occupiers want. We tell people not to go halfway – the building will be really expensive and it still won't wash its face."***

"Right now, it's very hard to tell whether occupiers have a preference for high or low-rise" said Walters. There just isn't a high-rise lab offer in the UK or Europe at the moment. But there are some great examples in the US, like the 750,000sq.ft. Alexandria Centre for Life Sciences in Manhattan. ***"When Alexandria brought forward that space, it was a complete step change in the New York market. They've since managed to fill it with a mix of bigger corporates and academic research anchors, to create an open innovation environment within the campus."***

ARE THEY COMMERCIALLY VIABLE?

Life sciences buildings are already expensive. Building tall is even more energy intensive, adds complexity and lengthens construction programmes. So can high-rise labs really stack up?

> **"Life sciences is going through a Big Bang, just like financial services did in the 1980s and 90s. In the UK, it's historically been driven by academia, and specific pharma company research facilities. The pace of growth and consolidation mean it's now about commercial laboratories and the scalability of science. Buildings have to scale up too."** David Roden, Niazi Roden

In London's historically strong office market, there is now a clear divergence between commercial and life sciences rents, said Walters. ***"It's only in the last two or three years that we've started to see a transaction premium for labs. That's giving developers and investors confidence that the additional capex can make sense."***

But not every investor that's looking at this sector will go through with it, said Gavican. ***"Life sciences looks like a good idea, and it ticks a lot of ESG boxes, but then you get into the financial modelling. When you match tenant expectations with the costs of construction and financing, and the movement in yields, that's really challenging at the minute."***

Inflationary pressures in construction are compounded by the longer programme times of building tall, pointed out Giles Heather of Linesight. ***"So then you have to start thinking about how to protect your client's interests, through smart procurement, engaging early with your supply chain, and trying to get fixity on price and lead times to mitigate against inflationary pressures and programme delays."***

That's particularly hard in the current market, added Linesight's Natalia Gospodinova, ***"Two-stage procurement is a big hit at the moment, but even then, the market is so busy, trades are reluctant to hold prices, that we get second-stage returns with 'provisional fixed cost allowances'. That effectively makes your entire package provisional."***

CAN WE SELL THEM TO PLANNERS?

> **"In cities, 8-10 storeys seems like the most common size we'll see. That works quite nicely from an engineering perspective, and you've got enough volume to create an ecosystem and a proper community."** Richard Walder, Buro Happold

High-rise labs are a new building typology for the UK, and that means both planning and building regulations are playing catch-up, said Niazi.

Designers can cater to the specialist requirements of clients, ***"but how do you translate that to the authorities, and then get it on the ground?"*** Energy efficiency requirements are already difficult to achieve: currently, buildings must achieve a 35-45% reduction on top of Part L 2021 in London and some other Local Authority areas. ***"But that's based on an office scheme,"*** NIazi added, ***"a lab building is a completely different product."***

In a low-rise building, with reasonable energy efficiency measures, you can hit the target by installing photovoltaics on the roof, said Walder, ***"But a tall building is very energy intensive in the first place, and the useable area on the roof is tiny, so it's basically impossible."***

High-rise buildings are among the most scrutinised of developments – so what happens when you add toxic chemicals and gas storage to the mix? Buro Happold engineered the UK's tallest existing lab building, the 14-storey Michael Uren Biomedical Engineering Research Hub at Imperial College London. ***"The only way to know if we had designed it to be safe was to do wind tunnel testing, and actually, we ended up with a very low-energy system where all the extracts are taken up to the roof,"*** explained Walder. This is particularly important in an urban context where adjacent buildings may be taller than the laboratory, and understanding the flue performance through wind tunnel testing or Computational Fluid Dynamics (CFD) is the best way to reassure building owners, occupiers and their neighbours.

Planners are very keen to talk about cross-laminated timber buildings, said Niazi – did the panel think a laboratory could be constructed out of CLT?

Not a high-rise laboratory, Walder pointed out. And it would be uninsurable, added Gospodinova.

A speculative laboratory would be concrete every time, said Goodbrand, but a partially CLT building would be theoretically

possible, if you knew who the end user was. "***They'd have to be happy with certain locations being more solid, and then all the offices and back-of-house areas being CLT.***"

Timber is not necessarily the most sustainable option though, according to Goodbrand, ***"If you build in timber out in a remote location, where everyone will have to burn fossil fuels to get there. You'd do better to build as high as you can in concrete next to a transport hub."*** An eye-opening Elliott Wood study found that it would take 15 years for the embodied carbon in a central London office to be overtaken by the carbon emissions associated with commuting. For an identical building located next to the M25, it would take only a year.

COULD AN OFFICE TOWER BE CONVERTED INTO A LAB?

> **"The trouble with adaptability is that if you don't know who your end user is, you're going to end up overdesigning your building and paying a massive premium. There's no point paying for a life sciences facility and then fitting it out like an office."** Mark Goodbrand, Elliott Wood

Embodied carbon is a very hot topic right now, and that's driving greater discussion of adaptive reuse projects, especially in city centres. Could obsolete office space be converted for life sciences? The consensus from the panel was ***"yes, but..."***

From an engineering perspective, anything is possible, agreed Walder and Goodbrand.

"It's about knowing who the tenant is," said Goodbrand. "***Different buildings will be suitable for different occupiers. It gets a little bit more forensic – you have to understand the capacity, how much vibration can happen. But you can take out floors or even jack an entire floor up within a building if you need to."***

Whether you should is another question, said Walder. "***Maybe not, because if it has too many compromises, in two years' time it might not be commercially viable. It'll just be a white elephant that needs to be converted into something else."***

As with any development, it's important to look several years ahead – to where the market will be, and what occupiers will need, said Walters. ***"You need to be honest about the technical suitability. When new stock comes online and occupiers have more choice, if you don't have the right technical solution, you'll lose out."***

IS THIS JUST A LONDON THING?

> **London definitely has the strongest fundamentals, said** Sommerville: ***"You've got the challenges around space and you've got the ability to create these buildings around transport nodes."***

There's potential in second-tier cities like Manchester, he added, but development above five or six storeys is not likely to be prevalent in Oxford or Cambridge.

Not so fast, said Niazi: there's a proposal for a 14-storey lab building in Oxford. "It doesn't take too much to break into that level of density, but it'll be driven by the desire to create a Boston-style knowledge quarter."

Conclusion

Looking to the future, if the UK was to re-enter the €96bn Horizon Europe, EU's key funding programme for research and innovation, that could underpin higher development around transport hubs not only in London, but Manchester, Leeds and Birmingham, said Gospodinova.

> **"Progression in Life Science is phenomenal, if you take DNA sequencing for example, twenty years ago, the Human Genome Project ran for thirteen years and cost nearly £2 billion. Today, one can run sequencing for less than £1,000 and would take a few days. The advancement in the life science industry has been staggering over the last 10 years and the change anticipated over the next 10-20 years is even more exciting."** Elias Niazi, Niazi Roden

It is therefore likely space in attractive locations will continue to be a driver of the developer and occupier and so the prospect of the vertical life sciences campus still a possibility.

> This round table event was moderated by Mike Philips, UK Editor of BISNOW. Our next Life Sciences Round table will take place in June 2023.

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