

THE FUTURE DEVELOPMENT OF LIFE SCIENCES READY FACILITIES

A SERIES OF INTERVIEWS WITH LEADING
INFLUENCERS IN THE UK SECTOR

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LIFE SCIENCES: BIG OR BUBBLE?

There is a lot of excitement surrounding the booming Life Sciences sector, and the opportunity this presents for the UK property industry - but is it just hype?

In this paper, we set out to test the market by speaking to leading influencers that represent different facets of the Sci-Tech real-estate industry. These conversations give a snapshot of how current requirements are being met and how UK property might better service Life Sciences end-users in the future.

Life Sciences has grown exponentially in recent years, but we're yet to see the pace of real estate growth that has taken place elsewhere. Could it be that the real-estate development market in the UK is underachieving? Are we off pace? Are the expectations too high? Or is it a reaction to the COVID-19 pandemic?

New treatments, therapeutics, and other new science sectors are blurring the boundaries between manufacturing and R&D. The rate of scientific progress has definitely changed but is construction keeping up?

With a diminishing certainty on returns from commercial development, traditional developers and institutional investors are looking at alternatives. The Sci-Tech sectors have become one such alternative, but without any dominant players in the market, there is room and opportunity to define standards and trends.

We hope you'll enjoy reading this paper as much as we have collating it, and hope that it will encourage broader, deeper conversations to help us define the UK market identity.

Join us and the Life Sciences conversation on LinkedIn and Twitter. [#LifeSciencesHype](#)

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Founder and Managing Director, Mission Street

Mission Street is a specialist investor, operator and developer of mixed use property for the UK Life Sciences and innovation economy, having managed over 500,000 sq ft of UK commercial developments for institutional investors since 2017. In December 2020, they formed a JV with major institutional investor BentallGreenOak aiming to be the partner of choice for the UK research and innovation sector.



Q ARE WE IN THE MIDDLE OF THE SCI-TECH REVOLUTION OR IS IT JUST HYPE?

A I don't think it's hype, but there is an element of 'excitement' in the real estate investment market. In 2017, when Mission Street was established, there were not many specialist commercial investors/developers operating in the UK, but from the perspective of the occupational market, it was obvious that there was an undersupply of the right kind of space in locations with strong R&D credentials.

Looking at the data, the US had 19 times more R&D focused supply in its top markets than the UK, despite having roughly seven times more jobs and VC funding in these locations. Boston and San Francisco individually had over four times more floorspace versus the top UK locations. Whilst obviously we can't directly extrapolate trends between very different markets, the UK ratio did not make sense. You could see from the exceptionally low vacancy rates in Oxford and Cambridge and consequential rental growth in these markets that there is opportunity.

What's interesting is that over the last six months there was a steep increase in interest from institutional investors across the spectrum including private equity funds, pension funds and sovereign wealth funds, resulting in a step change in asset pricing. There are a few reasons for this. Investors have identified the occupational dynamics mentioned above and the expected potential of the underlying R&D sectors and see this as a resilient investment theme. They are also comparing the sector to other investment options – there is a lot of uncertainty over the traditional office market, whereas you can't work from home if you're a laboratory

scientist. The shortening of lease lengths and increase in operational intensity now required to manage traditional office assets has made investors more willing to understand the occupational requirements in R&D real estate. The model of 15-year leases, '*hand over the keys, collect rent and forget*' doesn't exist anymore – space is now a service.

It will be interesting to see how this investment interest will align with long-term occupational fundamentals. The prices being paid imply investors are assuming that there will be steep growth in occupational demand and rents.

Q THE UNIVERSITIES ARE SHOWING AN UPWARD CURVE IN SPINOUTS AND A SUBSTANTIAL UNDERSUPPLY OF SERVICED LAB AND GROWTH SPACE. WHAT'S YOUR OPINION ON THE "BUILD IT AND THEY WILL COME" MODEL?

A That is our view and our business model. We do not need long leases from Universities to pursue developments and will build speculatively in core locations. This comes from spending time understanding ecosystems and the spinout activity in Universities and other key 'anchors' to gauge demand because there may not be substantial leasing transaction evidence in many markets.

The traditional approach to evaluating development based on leasing comparables and requirements lists from leasing agents often doesn't work here – we need to get our head around the suitability and long-term growth trajectory of the ecosystem and the ability of the potential development to serve it.

“The model of 15-year leases, ‘hand over the keys, collect rent and forget’ doesn’t exist anymore – space is now a service.”

Q WHAT DO NEW COMPANIES NEED FROM LANDLORDS WHEN THEY ARE WORKING TOWARDS DEVELOPING PRODUCTS?

A These growing companies don’t have long lead in times. They don’t want to be property developers and take schemes through a three-year planning process. They want flexible, high quality space in the right location that can accommodate their rapid business evolution.

Historically, traditional developers have sought to avoid the complication of developing science buildings and simply developed either shell & core space, or ‘enabled’ shell and core space (with various degrees of MEP, drainage etc. provided), pushing technical and delivery issues onto the tenant.

This is a solution for certain types of use or tenants, but it has forced others into becoming reluctant developers (for example, tenants converting industrial and office buildings themselves in Oxford and Cambridge) with risks and lead times not suitable for their growth trajectory. Given that development is not the business focus of these tenants, the projects are often not optimised commercially and they are unnecessarily expensive.

Proactive landlords need to strike a balance between creating labs and research space that can be adapted quickly and avoiding speculatively overdeveloping a space. There is no one type fits all, and the more money you spend the more you will need to recover from the tenant. A developer shouldn’t aim to cover every operational scenario, but thought needs to go into delivering adaptability.

The key is to establish a specification that provides what tenants need, balanced with the commercial viability, rental affordability and flexibility of the scheme.

Q WHERE DO YOU THINK THE SWEET SPOT IS AT THE MOMENT?

A It’s hard to pinpoint, because we have to consider each market on its merits and analyse available types of buildings in a

particular location versus occupier needs in the ecosystem.

From our standpoint, our aim is to partner with companies in delivering real estate that supports them through their lifecycle from discovery, to R&D, to manufacturing.

To this end, if you have a good active incubator at a certain location with institutional backing, then the next stage growth space may be the missing element that will respond to demand and support the ecosystem’s growth. Or conversely, it may be that manufacturing space is the missing component of the ecosystem. So, for example, we’ve looked at developing buildings for GMP use (to be leased and operated by occupiers), because this space was critical for advanced therapeutics companies and was missing in the location.

Q HAVE TENANTS’ REQUIREMENTS FOR SPACE DEVELOPED IN THE LAST FEW YEARS, AS THE MARKET DEVELOPS?

A The market is growing, but it’s still quite nascent. Different investors in the sector have different business models, making the sector opaque and not standardised. There is no BCO standard, or even an agreed Cat A specification equivalent for the space delivered. We tend to establish a baseline specification appropriate for a given scheme and then deviate based on occupier requirements established through workshops where there is early leasing activity.

Many companies active in the occupational market are emerging from public or University funded incubator facilities. The primary requirement of these facilities is often to facilitate translational research and feed it into the ecosystem, as opposed to maximising profit from the real estate investment. The challenge is to create space for the next stages of growth for these companies and help them transition from an incubator into such space on terms that are commercially viable for the private sector, allowing the incubator to support further early-stage companies.

PETER WARD

Director of Real Estate Development, King's College London and Guy's & St Thomas' NHS Foundation Trust

Peter is the Director of Real Estate Development for King's College London and Guy's & St Thomas' NHS Foundation Trust. He is leading a programme for the redevelopment of the Guy's and St Thomas' campuses and community facilities in Lambeth and Southwark, which aim to build on the partners' strong platforms for high quality healthcare and Life Sciences teaching and research to transform the campuses over the next two decades.



Q IS THERE A DEMAND FOR LIFE SCIENCES READY DEVELOPMENTS IN LONDON?

A There is an overwhelming demand for lab space in London, and the UK should capitalise on an enormous opportunity to build on a great platform of academic research by offering space to industry, and particularly start-ups, to co-locate with universities and the NHS. As Medcity's written evidence to the Science and Technology Select Committee showed in 2017, London produces as many peer reviewed and cited academic papers in the Life Sciences sector as Boston, but generates less than 10% of the investment. While there is an extra cost to developing buildings suitable for healthcare and Life Sciences (due to larger slab to slab dimensions, higher vibration category, higher capacity engineering infrastructure and so forth), they can command a premium rent because occupiers want to be part of a cluster where they can interact with leading clinicians, academics, and industrial firms and have access to a strong pipeline of talent.

Q HOW CAN WE DESIGN BUILDINGS TO MEET THESE DEMANDS?

A The rate at which life science discovery is growing is outpacing the rate at which our institutions design and develop buildings. To manage this, they need buildings with big, flexible floor plates that can adapt quickly to our changing requirements. In response, we have developed our own equivalent to BCO specifications, which are more suitable for science and healthcare uses.

Looking at examples of buildings around the

world, we identified three major categories of high, medium and low-tech spaces. Low-tech space is equivalent to BCO buildings, whereas high-tech space might be suitable for fit out as specialist spaces like GMP/CL3 laboratories and operating theatres, and medium-tech spaces might be suitable for CL2 labs, diagnostic suites, ambulatory care space and data labs which will only require a limited upgrade from standard spec buildings.

High-tech facilities make up less than 20% of our requirement, and the rest will be medium and low-tech typologies, in roughly equal measure, so the premium to a BCO building is not as significant as some people might think. Further, a building that is designed to last around sixty years will have a major refurbishment every fifteen years and operational uses that change every five years- so it makes sense to plan for that by separating the 'base' adaptable shell and core building from its fit out, making the latter much more economical. There will of course sometimes still be a need for some buildings to be designed around the specialist activities that take place inside it, but this is rarely the case. If we get the right basic infrastructure in place in our shell and core designs, and agree this with developers planning our buildings, we could create adaptable buildings that keep up with the changing needs of our science and healthcare delivery for their whole lives.

As an example, the Guy's Tower was designed and built in 1974 as inpatient space with a 40-year design life in mind. Floor-by-floor that has been replaced by Life Sciences research facilities and has adapted reasonably well and is now quite a unique

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centre for experimental medicine - something which was never envisaged in the 1970s.

Unfortunately, we haven't done this enough - too much of the UK's research and healthcare space is made up of bespoke, small floor plate buildings which are complicated and expensive to repurpose, so we should learn lessons from other sectors.

Q WHAT'S THE FUTURE FOR UNIVERSITIES IN THE LIFE SCIENCES SECTOR?

A Competition in life science research is increasingly focussed on attracting and developing talent. Teaching and basic science research will always remain at the heart of Universities, but also generates an amazing pipeline of entrepreneurial talent that thrives in an innovative environment.

Now more than ever, students are attracted to commercialising their discoveries over a lifetime in academia and are happy to move to wherever will support them in doing that. We hope to build an environment fostering innovation as well as basic science research excellence, and help government understand the potential value that could attract to the UK economy, and how it could reduce NHS spending over time. This is a national challenge, and it's important that we don't ignore our existing successful research centres but give them the freedom to thrive while also investing in networks to ensure that value is distributed across the UK; if we don't do that, we risk losing scientific and entrepreneurial talent to places overseas that will.

Q WHAT WOULD YOU SAY TO A DEVELOPER WHO IS DEVELOPING A SITE NEAR YOUR CAMPUS?

A UK property developers and investors tend to focus on generic commercial buildings and often develop their letting strategy relatively late in the development process. By recognising the particular strengths of their locations – such as one of the world's leading centres for healthcare, Life Sciences research and innovation – they could deliver better value and build a more relevant narrative for occupiers and local government.

There has always been a nervousness about the technical complexity of science and healthcare buildings, but more and more developers are engaging with the sector to really understand its underlying drivers. Universities and teaching hospitals have a role in helping to demystify it for them, and if we can find a way of doing that there will be substantial benefits all round. For example, long commercial leases don't work for Universities and NHS Trusts, whose accounts show long leases as borrowing and give rise to regulatory obstacles. But if investors and developers could structure affordable leases in a flexible way they stand to benefit from being part of a rapidly growing research community, enabled by their public sector partners whose needs will change over the 60-year life of the building.

By working together, we can help make the UK Life Sciences sector greater than the sum of its parts.

ANDREW SOMERVILLE

Partner, Head of Science & Research, Hoare Lea

Working in science and research for over 20 years. Andrew has been involved with projects that can have major positive impacts on people, their health, and their quality of life. Andrew is a champion of convergence of disciplines, product focused teams implementing scientific methodology into his dynamic project teams. Championing simplicity and adaptability of design, he is one of the leading voices in the science and research construction industries.



Q KENDALL SQUARE IN BOSTON IS COMMONLY REFERENCED - WHAT'S SO SPECIAL ABOUT IT?

A Kendall Square is unique. It's a low-density environment near a world-class University, something we are still missing in London. The US market has been developing for over 40 years, so it's a good benchmark and provides a look into the future, but it's not a ready-made solution. We need people to take the step back and think about what we can do, how we can do it and how we can be better.

Our closest model is the development around King's Cross between the Crick and RVC. There's Big Tech investment, interest from pharmaceutical companies, and UCL is just around the corner. Competition in that area is now so great it's becoming out of reach for emerging companies, other than sponsored accelerator spaces.

Q HOW ARE LIFE SCIENCES OCCUPIERS DIFFERENT?

A The UK property market doesn't fully know how to handle Life Sciences occupiers; we need someone to make the first move and announce their success to build market confidence. There needs to be a change of mindset to accommodate the cost recovery of shared services and fluctuations in demand for specialist services and space.

The market considers on-floor plant as lost revenue. It doesn't necessarily understand the different stages of science companies and different space and service requirements. On the other hand, UK science designers and advisors often over-complicate the technical requirements.

An emerging Life Sciences company's sole driver is product development – office and lab design are a distraction. They need lab space to move into and develop the product and we haven't got that kind of off-campus ready-to-occupy growth space or successful serviced lab. If they fail – and some will – then it's part of the risk profile. There are a lot of them and another will fill the space. We have some promising starts in a few key places like Sycamore House and others around Stevenage, but not enough in London; it's early stages.

Q WHAT IS "LAB READY"?

A The minimal requirements for an operational science building are the additional power and data supply, support for resilience, data enabled devices and technology like AI, analytics, diagnostics, imaging equipment, gene sequencing and gene modification work. The other major element is logistics space for waste storage and removal, goods in/out, preferably secure loading bays, yard space, and naturally ventilated space at ground floor level. Most of the other issues we can figure out. Riser space, vertical plant, on-floor plant space, material and waste, vertical transport, safe routes, liquid nitrogen storage - even the ceiling heights are solvable.

Typically, a lab-ready building has considered all the infrastructure requirements, secured the additional power and data, and (to varying degrees) designed for adaptability rather than installing everything on day one. The market is probably 20% specialist: GMP suites and CL3 labs, and 80% CL2 level and lower with a bit of tissue culture, a little bit of gene sequencing. But mostly it's dry lab or cell therapy and open bench lab work.

“I think we’re going to get away from a tick box mentality when it comes to building design, and we’re going to get more risk assessment -based approaches. A move that will make us more efficient and more competitive internationally.”

Historically most science institutions have tried to be compliant from day one for future processes they didn’t know the component parts of yet and ended up installing systems for the sake of it. The developer model of planning for adaptability has to be more efficient.

Q DO THE DESIGN TEAMS NEED TO RETHINK THE APPROACH TO DESIGN, AS PART OF A MINDSET CHANGE?

A Both in the UK and globally I think there will be a shift to risk assessment-based design. In the UK this is to make us more competitive. In buildings where the tenant is unknown we need to start producing tenant fit out guides based on risk-based methodology that the tenant can work with and understand. If you take the use of fume cupboards in the city as an example, most buildings in London should not have fume extract flues due to surrounding buildings or the turbulent airflow. To date we haven’t been modelling these extract flues unless there was specific need and the requirement was evaluated through a tick box exercise but, as soon as we start modelling, the picture changes. We may be compliant with the international standards, but we should model against COSHH requirements for exposure levels.

I think we’re going to get away from a tick box mentality when it comes to building design, and we’re going to get more risk-based approaches. A move that will make us more efficient and more competitive internationally.

Q WHY ARE WE NOT SEEING MORE SPECULATIVE DEVELOPMENTS NEAR UNIVERSITIES?

A I think that will come. There is a growing interest around teaching hospitals. The hospitals haven’t quite realised that they can earn money from having buildings nearby that are accessible to private firms. Conversations are happening, it’s just we haven’t started developing yet. Any new development in exchange for land is light on risk for the hospital and is a potential earner. It just requires foresight. These are prime locations for MedTech and advanced therapeutics firms. Once the demand is proven then these developments will get a premium on returns. The research they do also brings in revenue to the hospital.

The government strategy from 2017 is driving some of this; we’re just starting to see growth in commercial science in the UK. There is an increase in pharmaceutical companies coming back to the UK, an increase in start-ups and overall growth in commercial science. Finally, everyone has realised the importance of having pharmaceutical manufacturing and diagnostics in the UK and this makes investment easier, however it’s creating a gold rush; everyone is rushing in and not everyone will be successful.

The UK science market is on a journey – we need to understand where we are and how best to get there, not just hurtle to the destination.

JAMES LATHAM

Development and Leasing Director, Stevenage Bioscience Catalyst

James is the Development and Leasing Director at Stevenage Bioscience Catalyst (SBC), a leading location for companies to develop and commercialise cutting edge therapeutics. The campus is home to major organisations including GSK, LifeArc and Cytiva alongside a growing cluster of start-up companies primarily specialising in the development of Cell and Gene Therapies.



Q WHAT IS THE STATE OF COMMERCIAL LIFE SCIENCES DEVELOPMENT IN THE UK?

A The UK is a recognised global hub for Life Sciences; an industry leader with a proven track record of scientific breakthroughs. The sector stands to benefit from major developments over the coming years which will help drive the next generation of life changing treatments, technologies and services. Notable examples being UCB's commitment to invest £1 billion over a five year period to create a major R&D hub that will support more than 650 high-value jobs. Crucially this, and other developments like it, will help maintain the UK's world-class position so that we might match or exceed the ambitions of our international competition.

The pandemic has shone a spotlight on the global importance of the Life Sciences sector, the UK's R&D capabilities and the need for schemes that contribute at a national level. It was very encouraging to see additional funding made available to fast-track the construction of the Vaccine Manufacturing and Innovation Centre (VMIC) in Harwell, Oxfordshire, to accelerate the completion of a much-needed facility. At a policy level, changes also made last year to the Use Classes order should enable more developers to bring forward schemes that meet the needs of a multitude of occupiers in a variety of buildings.

Q WHY ARE DEVELOPERS NERVOUS IN THIS MARKET?

A Life Sciences occupiers require buildings to be delivered to technical specifications which consequently can be very resource intensive and expensive for developers to procure. There are also significant compliance and regulatory issues which developers have to overcome.

With lab developments, occupier requirements can also be very specific, such that a BSL2 lab for one biotech company might not be suitable for the next incoming occupier. This, compounded with the short-term leases occupiers in this sector often like to take, can make the viability of delivering lab spaces harder for developers to justify to shareholders and investors.

For developers that have constructed open plan offices to date and secured occupiers on institutional lease terms, the prospect of entering the sector to build a lab can be daunting, especially when building specifications require future proofed floorplates, greater floor loading capacity, additional plant, drainage and HVAC solutions. Developers also need to adopt robust asset and operational management strategies that can react to changing occupier needs which all comes at a cost. Understanding the occupier market has become paramount to developers operating in this sector, with the onus very much on securing pre-lettings where possible.

Q ARE UK SCIENCE PARKS UNDERACHIEVING?

A A number of science parks have enjoyed unprecedented levels of rental growth, low vacancy rates and yield compression for circa three to four years which has made investing in and developing on them a very attractive proposition. An influx of capital has also poured in from investors keen to acquire science park stock, a good example of this more recently being the assets on Cambridge Science Park brought to market at a guide price of circa £60 million which actually transacted at circa £98 million.

“It is on us as asset and development managers to provide the required facilities for these innovative companies to thrive in.”

Objectively, many science parks continue to perform well, and they have data from third party economists who have produced impact assessments to highlight their positive contribution to the local, regional and national economy. Recently this has led many science parks to produce and publish ambitious plans for their expansion over the next 10-20 years to capture projected growth.

The criticism from the occupier market and the agents acting for them is that the space to be developed is needed now. In a number of locations there simply isn't sufficient available stock or supply in the development pipeline. The challenge for landlords and developers continues to be how the best IP rich companies developing leading therapeutics and innovations can be retained whilst the next phases of development they require are built. There is a risk therefore that science parks do not underachieve per se but fail to retain the best companies and deliver to their full potential.

Q WHERE DO YOU THINK WE SHOULD BE WITH OUR DEVELOPMENT?

A As a former consultant and agent, I saw several buildings delivered and targeted at Life Sciences occupiers, but so many were typically only shell and core office buildings or offices marketed as being capable of conversion for lab use. In both cases, the onus was (and in many cases still is) on the occupier to fit out the space for their intended lab use.

For many occupiers in this market lab fit outs are not their core business, but because they have a remit to deliver key milestones for their own investors, I have seen occupiers take on projects so they have surety over space and a pathway to achieve their own KPIs. For some businesses though, they simply do not have the capital to invest in technical lab fit outs, as it is earmarked for key R&D activities, experiments and/or clinical trials. Others do not have the expertise, so the take-up of space is delayed whilst project teams are assembled, and detailed designs worked up.

Smaller start-ups dependent on seed funding or grant funding often need serviced lab accommodation they can operate in immediately.

Headline rents in many locations are now sufficiently high that landlords can justify installing and capitalising lab fit outs, so I would like to see a commitment from more science parks and developers to deliver turnkey solutions for their occupiers. If more developers could also commit to deliver lab enabled buildings, as opposed to offices which are expensive and time consuming to retrofit for labs, we would accelerate the take-up of space as occupiers who do choose to fit out themselves would be able to do so in a building fit for their use.

Q WHAT CAN WE DO TO FOSTER INNOVATION IN THE UK?

A A number of science parks do a very good job harnessing sector specialisms in the Sci-Tech sectors and have a proven track record creating vibrant ecosystems which foster innovation. This is best achieved when a range of organisations throughout the innovation pipeline are brought together, including leading Universities, hospitals, local government bodies and companies of various sizes from early stages to major multinationals. Science parks that do this can create exciting, knowledgeable and collegiate communities where collaboration and innovation is the norm.

When I met with LabCentral late 2019 in Boston, US, I was very impressed with the quality of the serviced lab and office space constructed to support high-potential biotechs. They provide exemplar levels of business support and opportunities for collaboration which enable innovation. At the time, such was the competition for space, only 18% of all applicants were successful in being allocated a bench space. They had a very high retention rate, but only offered occupiers agreements for two years to get a constant throughput of new businesses focussed on developing the next innovation.

I have since been involved with the creation of a Lab Hotel at SBC which similarly facilitates early-stage companies sharing lab and office space. It has proved to be an excellent platform for our companies to develop their ideas and new technologies and graduate into growth space on the campus. This has helped to foster and will continue to grow our community of innovators.

PETER BAIRD

Senior Associate and Urban Designer at Perkins&Will

Peter is a planner and designer who is passionate about advancing the design qualities, application of data/information, and collaborative opportunities of science and technology locations. His experience has led to a strong understanding of research environments, funding realities, and the company growth dynamics that underpin innovation environments. His experience spans multiple masterplans and facility programmes across the US, the UK, and New Zealand.



Q IS THE LIFE SCIENCES, REVOLUTION HAPPENING OR IS IT JUST HYPE?

A There is this huge amount of hype about Life Sciences. With a lot of people making a lot of noise. Covid has generated a global awareness, and it's revealed that we're not really geared up to deliver at speed in terms of any of the Sci-Tech models.

Our market is slow in terms of funding, governance, local authority partnerships and development partnerships. It's a mismatch between lots of talk with the same old delivery speeds and a lack of available dedicated Sci-Tech development sites.

In terms of planning allocation, it's harder to evaluate current progress, we should have a body of evidence in the next three to five years.

Kendall Square is a benchmark that we can point out to because it is just so much further ahead in terms of floor space and market maturity. Will London replicate Kendall Square? Absolutely not. We will be doing our own thing, probably more diverse and probably including other industries, in a way that only London can do. I would love to see the creative industries having a much bigger role to play in the evolution of the London scene compared to just the corporate Life Sciences industries. It's that mix that makes London special.

Q WILL WE EVER HAVE THE UTOPIAN MULTI-TENANTED DIVERSE-DISCIPLINED DEVELOPMENTS?

A Can we? Yes, but it requires a change in mindset and it's unlikely in the near future, judging by the current conversation. We need to stop thinking in terms of sectors. I think it's desirable, because putting all those things together is where the

happy accidents happen. Think of this convergence of biomedical research with engineering, AI and the ergonomics of fashion, that's an interesting conversation that I hope we'll end up with.

Q IS OUR "SECTOR VISION" A CONSEQUENCE OF THE HIGHER EDUCATION/ INSTITUTIONAL HISTORICAL DOMINANCE OF DEVELOPMENT THE UK?

A It's our background in higher education-based systems and the commercial developers' inexperience. Speaking from my US experience they had the same problem. They forced themselves into combining departments, space and resource sharing, moving people around. It's a learned legacy.

Q HOW MUCH OF THIS IS THE LEASING MODEL?

A A tried and tested approach keeps the banks happy. Managing five floors, four tenants per floor with different leasing structures, different renewal times – it takes a much more proactive management role that not everywhere is set up to deliver. Its more complex but there are benefits if you get it right.

Q SHOULD WE CHANGE THE LEASING MODEL, CONCENTRATE ON PROPORTIONATE SERVICE CHARGES?

A I think we're getting more comfortable with subscription base charges. Everything gets compartmentalised from your engineering contracts, shared facilities, to parking and logistics. It's a serviced lab approach but it's more adaptive to typology.

It's a huge infrastructure investment over an existing estate. Many clients struggle with a lack of detail on energy usage. It could work as part of

“It’s a mismatch between lots of talk versus the same old delivery speeds – places that can deliver at speed certainly set themselves out”.

the infrastructure investment in new developments, but legacy buildings often need upgrade to provide require adaptability to different tenant models.

Enabling the tenant to see what they are spending by itemising the services is preferable. Flat fees won’t work because there will be different requirements depending on the type of development and the tenant company in terms of the point in its life cycle. Developers need to be creative and proactive to accommodate this.

Q WHAT ARE THE LOCATION AND PLANNING OPPORTUNITIES AND CONSTRAINTS FOR LONDON SCI-TECH DEVELOPMENT? USE STRATFORD AS THE STARTING POINT.

A We would have been in a good position if we started science development in east London five years ago, but it is still on a positive trajectory. Capitalising on the UCL Stratford campus as an anchor point, the university is going through a transformation and there is a huge shift in the cultural vibe. It sits well with transport links, and housing development in the wider area is providing exactly the right kind of common accommodation for 20 to 30-year olds in a reasonably central London location.

The employment provision in the area is questionable in terms of scale, height, and density. What is the reason for maintaining the low-rise industrial feel of Here East and surrounding area compared with Kings Cross which is circa 10 storeys? The out-of-date masterplan needs re-evaluation because it’s not keeping with the area’s evolution.

We need to push for taller employment elements like the housing developers do, denser employment means more jobs. Looking at the mature US examples, we should have a target of 60,000 - 80,000 jobs per square mile, with most those people working in the knowledge economy. The overmixing of housing with employment will not achieve the critical mass of employment concentration for potential growth.

Bringing us back to transport, to get a sustainable urban area, it’s imperative to maximise the development around the walkable catchment centring on the transport hubs. For example, Hackney Wick Station or Stratford International. Call it transit oriented development or a 15-minute city. Maximising the residential around the transport hubs creates commuter stations, which is not as effective as a system of mixed employment and residential.

Basing development centres along a defined transport route can give us the connection between different types of facility, different types of activity locations. Taking the Here East example, the next stops are Wanstead and Dagenham - locations that are probably more appropriate for the larger footprint manufacturing facilities, and it connects westwards to the city and the old Bloomsbury campus.

Q IS LOCAL PLANNING POLICY BLOCKING DEVELOPMENT PRIORITIES?

A We need our conversation to filter through to the planning teams and the investment teams in local authorities, because I don’t think they understand the way this could work. They’re still looking at plans which have purple areas for employment and orange areas for housing, and the housing is more important because the government set targets to provide more of it.

Ultimately that means we’re still in this very long process of supporting new industry, instead of science and technology rather than being able to operate at the speed of business that we’re all talking about.

AARON VERNON

VP of Technical Operations, TCR² Therapeutics Inc.

Aaron Vernon is the VP of Technical Operations at TCR² Therapeutics Inc. He has over 20 years experience in manufacturing, supply chain management, organisational transformation, and facility design/constructions at Johnson & Johnson, MedImmune, AstraZeneca, Sucampa, Autolus, and TCR². TCR² is developing a new generation of T cell cancer therapies.



Q WHAT WOULD INFORM YOUR DECISION MAKING PROCESS IF YOU WERE TO START LOOKING FOR SPACE TODAY?

A Cheap laboratory space and a good talent pool to pull from - a provision often found around Universities, simply because Universities have started to realise that opportunity. They provide good quality space, a pool of people, and a good degree of accessibility, which is important.

The right combination of space and logistics is paramount, especially in the preclinical phase. Stevenage Bioscience Catalyst is a good example of an ecosystem in the UK, there's good lab space and good opportunities for people to congregate and build relationships.

You really want that lab space to be ready to move into within a month or so and not expend resources in building anything, which is where the efficiencies of an incubator space come about. There is nothing special at that stage for a company to merit spending resources on its own bespoke space.

The efficiency comes from understanding what the standard provisions of these spaces should be - some BSCs, a glass washer, an autoclave. At that stage companies don't have the resources to buy and set up all those things they just want to be able to move in just like moving into a normal office space.

Q DOES THAT MEAN THAT THE DEVELOPERS BEAR ALL THE RISK? WHAT SHOULD THEY BE AWARE OF?

A In a nutshell, yes, but the nature of the industry means that if an asset is built correctly, there

will always be someone else ready to come in. The question then becomes, whether as a developer you wait for companies pounding at the gates or whether you lead it proactively by building the spaces first. I'm a firm believer in the latter - companies will always look for quality spaces and if the right ecosystem exists with spaces that provide the right services, people will show up.

Regardless of what the technology is, the industry will always need lab space but developers should be aware that even if a standard lab gets moved to another standard lab space, it is still cumbersome to requalify all the equipment.

The other dimension of flexibility is not simply the lease model but the whole offering. For example, if you build an incubator lab space that has glass wash and autoclaves, and your tenant decided to do everything as single use, they will much rather not have to pay for that service. I love the concept of places with some centralised facilities, but this is inherently harder on the developers because it's difficult to forecast.

Any developer, however funded, who aims to provide labs and incubator spaces will need to be operationally excellent from day one. This goes beyond just compliance, extending to elements such as gowning and snoods and so on, where the right people and processes need to be in place.

“The nature of the industry means that if an asset is built correctly, there will always be someone else ready to come in.”

Q DEVELOPERS IN THE UK HAVE GROWN ACCUSTOMED TO LONG INSTITUTIONAL LEASES. HOW FAR AHEAD DOES YOUR INDUSTRY LOOK AHEAD WHEN MAKING SUCH DECISIONS?

A Thirty years is far too long! Even if I pretended to predict far ahead it'd be nothing more than lines in a spreadsheet at best. A typical biotech would be looking about ten years ahead but if I'm starting from scratch with an incubator space, we would be looking at a two-year horizon and then longer term if we outgrow the space following another round of funding.

I know this may be controversial for some, but I wouldn't start buying and building our own lab space until after we have revenue coming in. That doesn't mean we are not still planning five or ten years ahead for these things and we'll need space in the interim.

Biotech is not a work-from-home industry, not for the lab work part of it anyway, and as such it will still need office space co-located with lab space simply because you need to be able to do the lab work.

Q HOW DO COMPANIES MAKE THE TRANSITION FROM INCUBATOR TO GROWTH SPACE?

A Companies ideally don't want to build anything – if they can help it – until there's money coming in through the door. It is widely recognised in the industry that there's a valley of death between promising early phase clinical data and launch.

Hundreds of millions of dollars of investment into product development are needed to enable manufacturing. As such, companies want as flexible an infrastructure as possible to account for the potential failures and changes. If you build out the whole company based on a single asset, there is a high risk you will wind up with a giant anchor around your neck if things go poorly.

At the same time, some of the company growth rates expected in the industry are monumental. Companies go through hyper growth, doubling in numbers every year to ensure product market release.

The target product numbers for success are ambitious but clear from the very early stages. These considerations make it hard for developers because you have to strike a balance of hypergrowth in some companies, with the ones that don't make it.

Q THE UK HAS BIG TARGETS FOR LIFE SCIENCES, WHAT CAN THE GOVERNMENT DO TO ASSIST MORE?

A When you look at the places that have been successful, they are successful because there are parties in every part of that ecosystem providing value. You have academia with a continual stream of scientists, operational staff and physical space, as well as service providers.

I think you need focus at all ends of the spectrum ensuring there is investment into each to allow optimisation across the entire value chain. You can't just focus on one area because you're going to build bottlenecks and that's not what you want.

The government also needs to invest in the future workforce by focusing on STEM projects because that's the pool you'll be drawing from by the time your facilities finish. This is what governments are good at, but unless there is a focus on solving that part of the problem, it will perpetuate.



THE LIFE SCIENCES REVOLUTION IS HERE

The conversations collated in this paper should be interpreted as a snapshot of sentiments within the South-East of England regarding the Sci-Tech real estate market. Although entirely anecdotal there is an optimistic undertone and we are seeing institutional investors entering the game.

COVID-19 has accelerated growth in the sector as well as existing market trends like the growth uncertainty in the commercial market.

The Pharmaceutical, Life Sciences, and MedTech industries amongst other science sectors are all going through an evolutionary stage with major similarities to the tech boom.

We all want to participate in our own way which is reflected in the “hype”, but the UK developer led science market is in its infancy, contrasting strongly with the US and their decades of development.

We understand the ecosystem, the [University > Start-up > Scale up > Apex > Mature companies](#) flow. Naturally the universities are pointing to the shortage

in incubator and growth spaces. Developers seem to be more comfortable with filling the needs of larger SMEs rather than those of small second stage funding companies. With no truly dominant developers to influence trends or an appetite to support simultaneous projects targeting different evolutionary stages the ecosystem has been unable to flourish.

The situation is not helped by a proliferation of self-proclaimed experts. There is little willingness to revolutionise the leasing structure. Ignoramus agents holding too much sway over letting structures may not necessarily be in line with the users' interests, especially without any established formats in the market.

A “science ready” building could be an office block with additional power and data, or a fully-enabled infrastructure, logistically enhanced and fully adaptable. There seems to be consensus that the majority of user requirements could be satisfied in a “BCO++” type structure with the “++” requiring better definition.



We mostly agree that long term leases are not required for market confidence and that we are not ready for a full-service type lease agreement. We would like to see lab-enabled office buildings delivered as the default, not office buildings delivered ready for conversion to lab suites.

We had an interesting conversation about misalignments of government targets and their disparity with innovation industries growth. This is exacerbated by the primarily-London problem of residential development being in direct competition with alternative developments around university campuses. The shortage of speculative growth and incubator spaces despite pre-existing transport routes around these campuses is a cause of concern.

It is clear that growth companies at pre-product stages would prefer fitted out or serviced lab spaces to move into and grow within. It is also evident that they are willing to pay a premium for suitable pre-fitted spaces rather than divert critical research funding and attention towards lab design during early growth stages.

There is a gap in the market for robust science-abled asset management firms to handle compliance and management operations bridging the gap between developer and user.

Some design teams maintain an overreliance on tick-box compliance models and a dogged approach towards technical prerequisites. We should be accepting the need for interdisciplinary teams that are not atomically the norm. The facility design should be risk assessment-based to mirror the scientific approach of the user. Certainly, a better understanding of longer-term building adaptability requirements is needed.

The revolution in the UK for developer-led Life Sciences ready facilities is in its infancy, but it is here. We have an incredible opportunity to shape the UK version of the Sci-Tech market and with your help we hope to continue these conversations and expand the forum.

Please join the conversation with [#LifesSciencesHype](#) on LinkedIn and Twitter.



WHY?

Having seen the industry develop over the past 25 years, we came together to ask the question: 'what are the key decision-making points along the journey of product development to clinical and commercial launch and how can we best assist our clients using that information?'

Reflecting on the scientific approach that our clients make, we changed our methodology when we realised that this should not be a report but a conversation – one that revolves around the journey that the Life Sciences developer sector takes as it reaches maturity, becoming more mainstream.

This report is the outcome of the first phase of that conversation, designed to open the discussion with the specialist disciplines of the market.

We'd love to welcome you into this conversation on LinkedIn and Twitter using the [#LifeSciencesHype](#) tag.

About EEDN

EEDN is a dynamic cross-disciplinary built environment consultancy and developer with focus on advanced research, manufacturing and industrial facilities.

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About Overbury

Overbury is the UK's leading fit out specialist. We deliver exceptional fit outs and refurbishments that provide outstanding facilities for our clients in the Higher Education, Life Sciences and Office sectors.

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ABCAM, MBBJ / HOARE LEA

BCO	British Council for Offices
BSL	Biosafety Level
Cat A	Category A, referring to the BCO Standards
CL2/CL3	Containment Level 2 or 3
COSHH	Control of Substances Hazardous to Health
GMP	Good Manufacturing Practice
HVAC	Heating, Ventilation and Air Conditioning
IP	Intellectual Property
MIT	Massachusetts Institute of Technology
NHS	National Health Service
R&D	Research and Development
SBC	Stevenage Bioscience Catalyst
STEM	Science, Technology, Engineering and Mathematics
VC	Venture Capital

