



# Stevenage Bioscience Catalyst's key role in delivering economic benefit from life sciences

An economic impact assessment of  
Stevenage Bioscience Catalyst



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## About this report

This independent report was commissioned by Stevenage Bioscience Catalyst and prepared by Charles Monck & Associates and Human Economics Ltd.

The report was published in Autumn 2021.

# Executive Summary

## About this report

In 2020, Stevenage Bioscience Catalyst (SBC) commissioned research to determine the benefits brought to the national and local economies by SBC and its occupiers. This report considers the contributions made since SBC opened in 2012, and the potential for additional contributions to be made over the next 20 years.

The research was undertaken by Charles Monck & Associates, an organisation that is internationally recognised for its expertise in science parks and its close involvement in their evolution over the last 30 years.

The outputs will be used to inform the future development of the Stevenage campus and provide an evidence-based understanding of the

overall contribution SBC makes to the UK and Hertfordshire economies.

During the research, a number of interviews and surveys were carried out with current and former SBC occupiers and key stakeholders. The SBC team would like to thank everyone involved for their time and for sharing information so willingly.

## Introduction to Stevenage Bioscience Catalyst

SBC was incorporated in 2010 as a 'non-profit' company by GSK and the Wellcome Trust with substantial encouragement and financial support from the Department of Business, Innovation and Skills (now BEIS), the Technology Strategy Board (now Innovate UK) and the East of England Development Agency (EEDA). Its purpose was to provide an open innovation environment for the bioscience sector to accelerate the pace of discovery towards product development and support the growth of new bioscience firms.

The Campus is home to major organisations including GSK, the Cell and Gene Therapy (CGTC) manufacturing centre, LifeArc and Cytiva alongside a growing cluster of start-up companies. Since 2012, the SBC based companies have raised £2.3bn in grants, equity, initial public offering (IPO)/follow-on public offering (FPO) and acquisition making it one of the leading bioscience campuses in the UK.

Located within the golden triangle and close to the academic centres of London, Cambridge and Oxford, SBC is ideally positioned for the translation and scale-up of cutting edge innovation. The vibrant ecosystem brings together the innovation pipeline including leading universities, start-ups and major multinationals. Wrapped around this is a supportive environment that delivers access to specialist scientific equipment, business support and finance with mentoring from leaders in the field with the relevant scientific and commercialisation expertise.

This has created an exciting, knowledgeable and collegiate community where interaction and collaboration are the norm. The success of the cluster has been recognised by government through recent Life Science Opportunity Zone and High Potential Opportunity location awards.

## Summary of findings

Since opening in 2012, SBC has hosted a total of 47 organisations with occupational leases and a further 24 with virtual leases. The Economic Impact Assessment (EIA) was based on interviews with 35 past and present occupiers in addition to a range of key stakeholders.

## Benefits for occupiers

The most important non-property factors in attracting companies to SBC are the reputation and image of SBC, location and access to facilities and expertise. The proximity to similar organisations was also seen as essential and all interact with other occupiers, most commonly with those that have a similar sector focus.

The most significant challenges encountered by occupiers were finding suitable space for expansion, attracting suitably skilled labour, access to funding and availability of larger scale GMP facilities for companies with a focus on cell and gene therapy. Bioscience companies at SBC thought that the location and SBC's support had enabled them to reduce product development time by an overall average of nine months.

Since opening, 87% of the occupiers have continued to prosper. This compares very favourably to the national figure of 65-70% for the survival rate of start-ups after the first three years of trading.



## Positive economic impact of SBC

The economic impact was evaluated from the activity of the companies and the projected growth of the cluster. Figures are shown on a net basis (after allowing for additionality) rather than a gross basis, to illustrate the economic activity that would be lost to the UK, and the county, if SBC had not been established.

The economic impact of SBC in 2020 and potential increase to 2027 and 2040, assuming the required infrastructure is in place, is set out in the table on the next page.

Date and development	Developed sq ft	Hertfordshire		UK level	
		Net GVA p.a.	Net employment	Net GVA p.a.	Net employment
2020 current SBC portfolio	160,000	£20m	330	£34m	640
2027 + Sycamore House	262,000	£35m	570	£60m	1,100
2040 fully developed	732,000	£96m	1,510	£165m	2,900

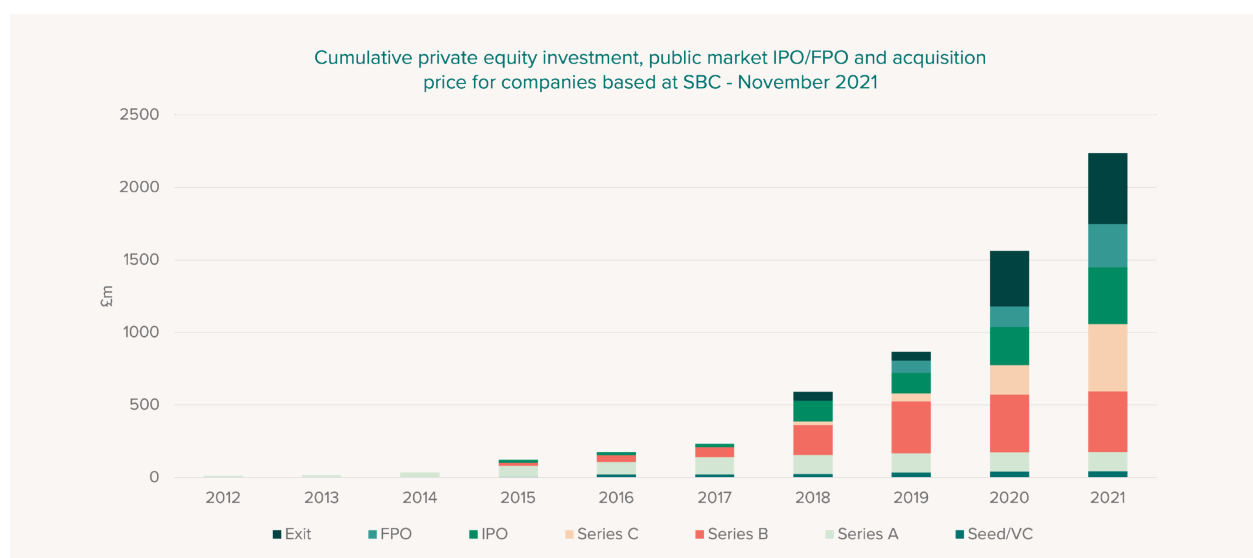
The current SBC portfolio comprises 160,000 sq ft of accommodation and generates a net gross value added (GVA) of £34m p.a. and 640 net jobs in the UK of which £20m net GVA and 330 jobs are in Hertfordshire.

Looking forward as development increases over time, by 2040 it is estimated that there will be 732,000 sq ft which will deliver £165m net GVA and 2,900 jobs in the UK of which £96m and 1,510 jobs are within Hertfordshire. The net value of the cumulative net additional GVA over the 20-year period is estimated to be around £740m.

## Funding attracted by occupiers

One of the strongest indicators of the added value and impact of SBC has been the success of the occupiers in raising significant levels of grant/ equity funding and their ability to attract investment through the public markets and/or acquisition.

Since opening in 2012, occupiers whilst based at SBC had raised £1.6bn in grants, equity, IPO/ FPO and acquisition up to the end of 2020, plus an additional £0.7bn raised up to November 2021 taking the total to over £2.3bn.



## Conclusion

This report clearly shows that SBC is creating a unique environment that supports bioscience companies and enables them, not just to grow, but to thrive. The evidence on the economic impact made by these companies in terms of financial contributions they make, and the number of jobs created, is highly significant both at the local and national level.

SBC is on course to deliver outstanding future growth and economic benefit to this important sector of the UK economy. By helping bioscience companies to turn innovative research and development into commercial realities, it is possible to support the delivery of therapeutic treatments to improve the health and quality of people's lives.

# 1. Objectives of the study

The purpose of this study is to assess the economic impact and wider benefits that SBC has made to the local and national economy to date, and what additional economic activity and high value jobs could result if local road improvements are carried out, so that additional space could be developed.

Opening in 2012, SBC is an initiative of national significance set up to support the UK in securing the commercial and economic benefits from its leading position in the development of a new range of precision medicines. SBC provides a range of critical facilities, services and a supportive environment for early stage and maturing life science companies engaged in the commercial development of precision medicines arising from research. They include cell and gene therapies, other novel therapeutics related to oncology and immunology as well as new tools arising from the application of AI and big data. This has resulted in the development of a vibrant cluster in advanced therapy medicinal products (ATMPs) and related technologies with the capacity to develop new cell and gene therapy treatments through world class R&D including manufacture of clinical trial materials.

SBC offers start-ups and rapidly growing firms flexible, small scale laboratory and office space with support services in an outstanding location. Stevenage is centrally located relative to the UK's leading bioscience and medical research centres in London, Oxford and Cambridge. The layout

of the Stevenage campus has been designed to encourage interactions between occupiers and the scientists at GSK's adjacent major research hub as well as the Cell and Gene Therapy Catapult's satellite manufacturing centre which opened in 2018.

To date, the Stevenage campus includes GSK's research hub, 74,000 sq ft of lettable lab and office space developed by SBC and 84,000 sq ft developed by the CGTC for its small-scale manufacturing centre. A further 102,000 sq ft of lab and office space at Sycamore House is being refurbished by the specialist property developer, Kadans Science Partner which is due for completion in Spring 2022. This extra space has already been pre-let, mainly to existing SBC occupiers, reflecting the strength of demand.

Development of an additional 480,000 sq ft of space is envisioned over the next 15 years in line with demand. The additional space will provide much needed skills training, incubation, grow-on and Good Manufacturing Practice (GMP) space and deliver high value employment.

## 2. Stevenage Bioscience Catalyst in context

### 2.1. The growth in the development of precision medicines

There have been a range of research breakthroughs enabling the production of new types of precision medicines, tailored more closely to the specific needs of smaller patient groups. Key drivers for these developments include stem cell therapies, genome sequencing, gene editing and the potential to utilise big data in medical research.

However, progress is dependent on the commercial development and clinical trials to translate these lab-based ideas into approved treatments. For this work to be undertaken in the UK these firms, mainly start-ups, require a supportive business environment, access to seed and venture funding, flexible laboratory and office space and access to GMP manufacturing facilities



for scale-up and the production of samples for clinical trials.

A key constraint has been the availability of facilities which have been approved by the Medical and Healthcare Products Regulatory Agency (MHRA) for cell and gene therapy production, essential for clinical trials and subsequent manufacture. The number of MHRA licenced production sites has increased from 13 in 2013<sup>1</sup> to 26 in 2020<sup>2</sup>. In the same period the number of cleanrooms available for cell and gene production has grown from 56 in 2013 to 159. However, the majority are small scale units in universities, hospitals and specialist research institutes – with just eight commercial operators and the new CGTC facility at SBC which now has 12 cleanrooms.

Cell and gene therapy has been identified as a strong growth area, projected to grow worldwide at an annual growth rate of over 30% to reach \$14 billion by 2025, according to the most up to date market intelligence report by Arizton<sup>3</sup>. Currently the US leads in application of cell and gene

therapies, in part, because of the strength of US healthcare market; ATMPs tend to be expensive due to the high cost of research, the processes involved in making complex biologics and the small scale of production.

## 2.2. Pharmaceutical research and production in Hertfordshire

Hertfordshire has a long tradition in pharmaceutical research and manufacture<sup>4</sup>. In 1992, 8,870 people were employed in the sector, half of whom were in R&D, which accounted for 25% of all UK pharmaceutical R&D employment. At that date four multinationals, Glaxo, Merck Sharp & Dohme, SmithKline Beecham and Roche accounted for over 80% of employment. Although overall employment in the sector has reduced, it still includes a number of significant multinational R&D and manufacturing companies including GSK at Stevenage and Ware, Roche in Welwyn Garden City, Eisai in Hatfield and Pharmaron in Hoddesdon.

1. CGTC (2014) Cell and Gene Therapy GMP manufacturing in the UK – Cell and Gene Therapy Catapult

2. CGTC (2020) Cell and Gene Therapy GMP manufacturing in the UK – Cell and Gene Therapy Catapult

3. Arizton (2020) Cell and Gene Therapy Market – Global Outlook and Forecast 2020-2025 – Arizton

4. Breheny M, Hart D, Howells J (1993) Health and Wealth? The development of the Pharmaceutical Industry in the South East, focusing on Hertfordshire – South East Economic Development Strategy

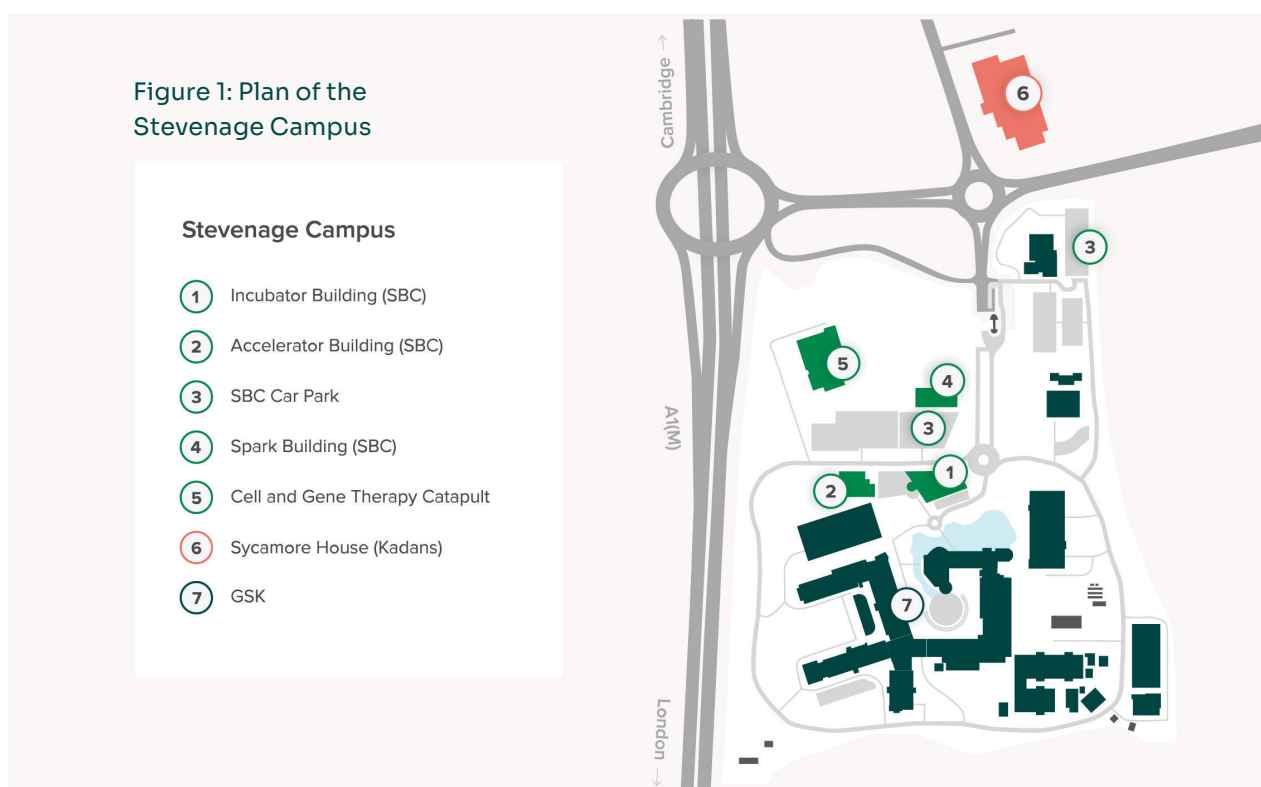
## 2.3. Progress of SBC since its foundation

SBC was incorporated in 2010 as a 'non-profit' company by GSK and the Wellcome Trust with substantial encouragement and financial support from the Department of Business, Innovation and Skills (now BEIS), the Technology Strategy Board (now Innovate UK) and the East of England Development Agency (EEDA). Its purpose was to provide an open innovation environment for the bioscience sector to accelerate the pace of discovery towards product development and support the growth of new bioscience firms.

Its primary focus, which is reflected in the entry criteria for occupiers, has been to provide

start-ups and early growth companies in particular areas of bioscience with a flexible and supportive working environment to enable them to develop from a proof of concept to a fully developed product approved for the market.

Currently three buildings, an Incubator, Accelerator and the Spark building with a total lettable area of 74,000 sq ft have been developed by SBC with a combination of labs, offices, meeting rooms and shared facilities. A fourth building, Sycamore House with 102,000 sq ft lab, office and amenity space is currently being refurbished by the Dutch specialist science park developer, Kadans Science Partner for occupation in Spring 2022.



SBC, which now employs 13 staff, has developed a series of services for occupiers and virtual companies. These include:

- Science business support - with access to a range of specialist consultants in process, analytical and manufacturing development, regulatory and clinical trials

- Access to three shared facilities and equipment
  - » Community Lab with specialised equipment and a space for tissue culture
  - » Lab Hotel, offering shared lab facilities free of charge to four research groups for a six-month period to enable them to complete their proof of concept work and secure seed funding
  - » A Technology Lab set up by Cytiva (formerly GE Healthcare) enabling SBC occupiers and Cytiva's clients to use a range of lab equipment free of charge
- Accelerator programme – aimed at pre-seed to seed funded data-centric biotech start-ups, the programme provides mentoring, networking, access to funding via investors days and relevant business workshops
- Mentoring — including one-to-one meetings with occupiers to help to address technical, funding and business issues, CEO's network as well as providing to access to a group of designated GSK Fellows. Special science interest groups on immunology, manufacturing and data science are held quarterly to discuss best practice, standard operating procedures and novel publications in these areas
- Networking — to encourage collaborations across the campus, via the UK Bioindustry Association and One Nucleus events and links to the supply chain (including SBC virtual occupiers such as Lonza and Genscript)
- Funding — providing introductions to a wide range of private and public sector funders through on site introductions
- Promotion — via the SBC website, social media and newsletter, particularly for companies with job vacancies
- Skills — regular presentations, workshops and training events.

There is a total of 24 SBC occupiers, 21 of which are bioscience companies, including five in cell and gene therapy, 10 in therapeutics, two in bioprocessing and four teams at the pre-incubation stage in the Lab Hotel. There are also three specialist service providers and consultancies. These figures exclude the CGTC.

Overall employment has grown to 655 FTEs including staff based in the CGTC and SBC itself.





## Case Study 1: Puridify – a biotechnology company developing a bio-process platform technology

**Period of Occupancy at SBC: 2013 – present**  
**Progress/Current Status: Acquired**

Puridify was set up in 2013 to commercialise proprietary purification technology to improve the manufacture of biologics. The company moved to SBC less than one year after incorporation due to the award of a period of free laboratory rental at the site as part of a start-up competition.

At this stage Puridify, developing technology originally worked on by the founders at University College London (UCL), comprised just three staff. Following their arrival at SBC the firm was able to fast track experiments, demonstrate proof of concept and was acquired by a major international technology company within four years. Following the take-over, the firm has remained at SBC where its employment has grown ten-fold and it is now one of the largest occupiers.

Puridify considers many aspects of its occupancy at SBC to have been crucial in

enabling its acquisition and progress to date, including SBC's geographic location, flexible and available lab and office facilities and linkages with GSK for potential collaborations.

## Case Study 2: Freeline – a biotechnology company developing cell and gene therapies

**Period of Occupancy at SBC: 2017 – present**  
**Progress/Current Status: Listed on NASDAQ**

Freeline is based on research from UCL in the application of liver directed gene therapies for bleeding disorders and other severe diseases. It spun out of UCL in 2016 and moved to SBC in 2017 initially taking a small office and laboratory facility.

Freeline rapidly raised significant equity funding later that year and went on to raise a further four funding rounds over the next four years. The company listed on NASDAQ during 2020 and is now one of the largest occupiers at SBC, taking space in the Incubator and Spark buildings as well as being a collaborator at the CGTC.

Since opening, SBC has provided space and services to a further 23 organisations that have since moved on. These have included 13 bioscience firms, three university teams, six service providers and the CGTC which has now moved to its own premises close to SBC on the Stevenage campus. Of the 13 biotech firms who have left, three were acquired by others, two have been listed on the London Stock Exchange and NASDAQ (together with two existing occupiers), one became a virtual occupier and six firms have ceased trading, mainly because of poor clinical trials results.

In addition, SBC has relationships with 17 virtual occupiers, each of whom has a formal agreement with SBC enabling them to access SBC services and develop linkages with the other occupiers. They include biotech firms, specialist technology consultancies and several major pharmaceutical companies.

Relationships have been established with the University of Hertfordshire, Cambridge University and University College London all of whom have taken space for research teams at SBC in the past.

Three anchor organisations, GSK, LifeArc and the CGTC have played a significant role in supporting the development of SBC and the cell and gene cluster:

**GSK plc:** Stevenage is GSK's European R&D Hub, employing 1,900 in R&D and 1,300 in corporate support. GSK, which is one of SBC's two founding members (the other being the Wellcome Trust) that provided the land at its Stevenage campus for the development of SBC's operations. Much of GSK's research focus at the Stevenage facility is complementary to that of the SBC community in the fields of cell and gene technologies, antivirals, antibodies, immunology and big data. SBC has accommodated four GSK spin outs, three of which are still at SBC. GSK's former venture arm, SR One, has invested in three other SBC occupiers, including Crispr Therapeutics which is now NASDAQ listed with a current Enterprise Value of £5bn.

**LifeArc:** LifeArc (previously Medical Research Council Technology) was set up to run a substantial seed and venture fund portfolio targeted at bioscience firms. In 2013 it chose to locate at SBC because of the availability of suitable laboratories for a new discovery team set up to help selected academics to progress their research and start clinical trials. They have grown significantly and are now one of SBC's largest occupiers.

**Cell and Gene Therapy Catapult:** SBC was selected as the location for the CGTC's GMP manufacturing centre which opened in 2018. The Centre offers production space, trained quality control and support staff and facilities for use by up to 12 organisations for a period of about two years, enabling them to produce new cell and gene medicines under GMP conditions for clinical trials. To date the largest users of these facilities have been four SBC occupiers: Achilles, Autolus, TCR2 and Freeline<sup>5</sup>.

### 3. Feedback from occupiers on the role of SBC

The economic impact study has been informed by interviews with 35 occupiers, former and virtual occupiers and stakeholders.

**Table 1: Summary of organisations surveyed**

	Existing occupiers	Former occupiers	Virtual occupiers	Total
Bioscience firms	16	3	2	21
Service providers	3	—	6	9
Stakeholders	—	—	—	5
Total	19	3	8	35

The survey included 19 of the 20 current bioscience occupiers and service providers, excluding the four pre-incubation firms who have recently been selected to use the new Lab Hotel. The interviews provided detailed information on current employment and where they live, company turnover, average salary levels and a series of additional questions to ascertain deadweight, leakages and displacement, which have been used in the calculation of economic impact used in Section 4.

Table 2 ranks the most important reasons selected by bioscience occupiers (from a list of 14 features) for residing at SBC now compared to their view on arrival. Most of the key reasons tended to be location and property related, reflecting the critical role of suitable premises to facilitate their development. However, reputation and image are now seen as the most important, compared to eighth on arrival, a reflection of the range and quality of facilities and services available at SBC and the growing reputation of the cell and gene cluster.

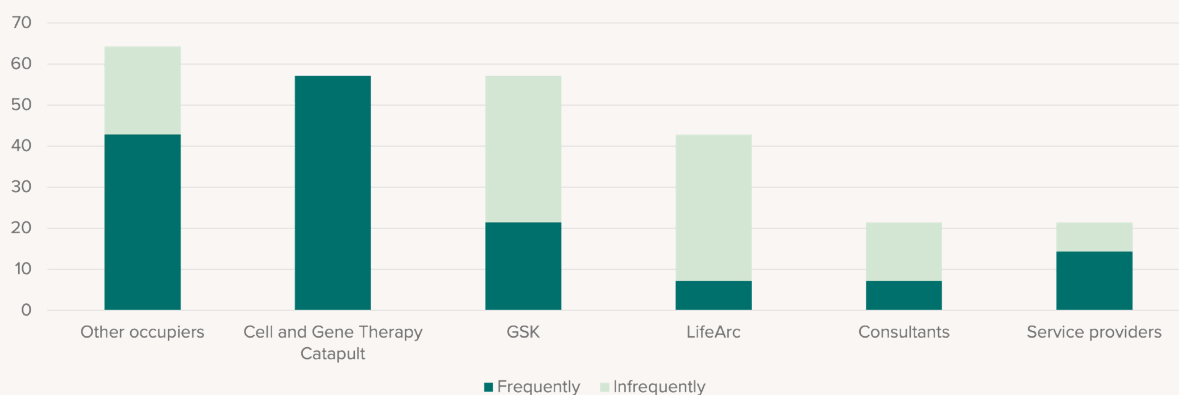
**Table 2: Ranking of key reasons for being based at SBC now and on arrival (n=14)**

Key reason for locating at SBC	Now	On arrival
Reputation and image of SBC	1	8
Availability of office and private lab space	2	1
Location and ease of accessibility	3	3
Proximity to similar companies for collaboration etc	4	6
Flexible lease terms	5	2
Competitive rental	6	4
Access to communal labs, scientific equipment and expertise	7	10

The bioscience occupiers that took part in the survey felt that the most important non-property factor was proximity to similar organisations. They

were asked about the extent of their linkages with other organisations. The results are summarised in figure 2:

Figure 2: % frequency of networking by bioscience occupiers with others (n=14)



Significantly, bioscience occupiers reported good levels of interaction and networking with other occupiers (64%), the CGTC (57%), GSK (57%) and LifeArc (43%).

In Figure 3, occupiers were asked to rate the most significant challenges facing them on a scale of 1=least to 5=most critical. There were wide variations between the three types of bioscience firm. The major challenges facing cell and gene therapy companies are lack of suitable space for

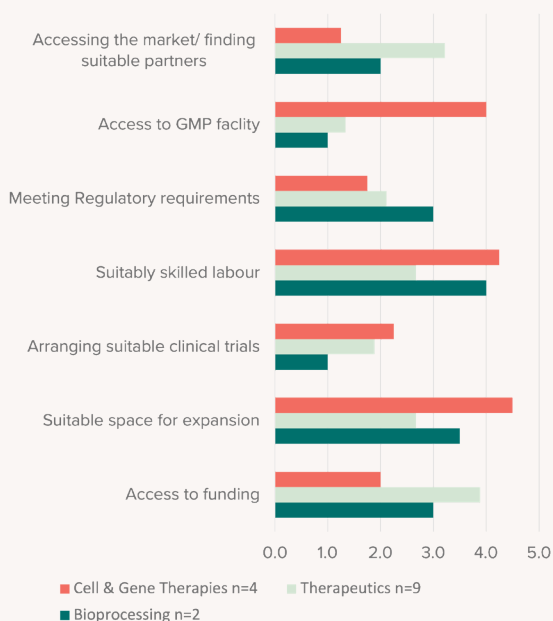
expansion (rated 4.5), ability to recruit suitably qualified staff (rated 4.3) and access to GMP production facilities (rated 4.0). Therapeutic firms said their major challenges are access to funding (rated 3.9) and market access (rated 3.2); and for bioprocessing firms the main concerns are attraction of suitably qualified labour (rated 4.0) and identification of suitable space for expansion (rated 3.5).

Each of the challenges are integral to SBC's offering and future plans. Section 5.3 summarises the success that occupiers have had in raising funding to progress their developments and engage in clinical trials.

SBC is developing proposals to create a training facility to increase the availability of skilled labour. The provision of space is central to SBC's mission. Being based at SBC has helped firms make contact with potential marketing partners and the CGTC offers suitable space enabling them to produce their drugs under GMP conditions for clinical trials.

The provision of on-going GMP production facilities for cell and gene therapy firms is a key priority for SBC's expansion plans.

Figure 3: Key challenges indicated by occupants rated 1 = least to 5 = most





The area below the dotted line indicates the building occupancy including Sycamore House which is under development and due to complete Spring 2022 whilst above the line indicates future space to be developed.

Of the additional space now being constructed at Sycamore House, 70% has been pre-let to SBC companies whilst the remainder is let to an existing occupier. The pre-let space is expected to be fully occupied by the start of 2023 once the new occupiers have finished their fit outs. There is the possibility that the remaining 30% (30,000 sq ft) initially let to another occupier would be taken up by 2027, assuming it was to become available.

The model has allowed for fluctuations in the rate of occupancy to take into account that it may take time to re-let all the space after the departure of a large occupier.

## 4.2. Economic impacts of SBC at the end of 2020

The economic impact of SBC on the UK and Hertfordshire economies has increased rapidly since its opening in 2012.

In 2020/21, occupier activities are estimated to have contributed £87m gross GVA to the UK economy and 1,610 jobs, of which £64m and 1,050 jobs are estimated to have stayed in Hertfordshire.

Once adjusted for deadweight, leakage, displacement and substitution (using estimates taken from the occupier survey), the net additional impact of SBC to the UK economy in 2021 is estimated at £34m and 640 FTE jobs. The net figures for Hertfordshire are £20m and 330 jobs. These are impacts that would have been lost to the UK and the county had SBC not been developed.

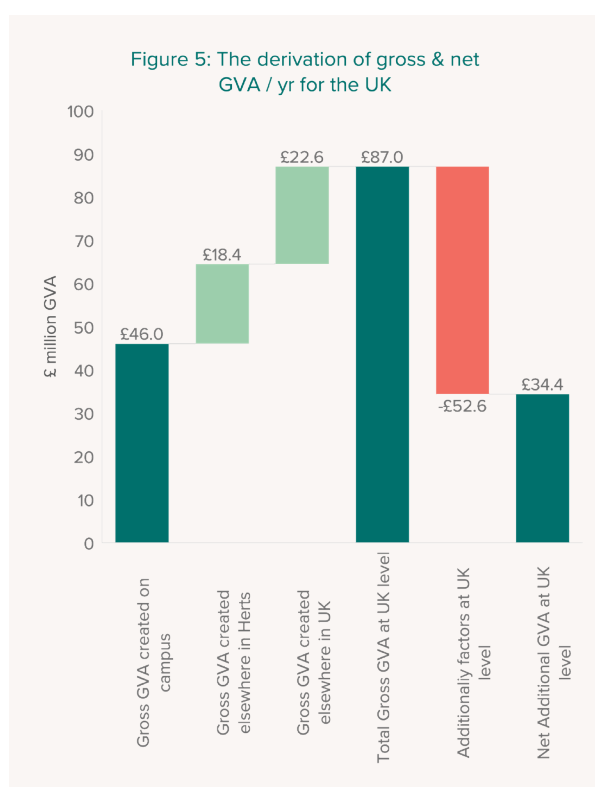


Table 3: Estimated total gross and net GVA per year and jobs at the end of 2020

Total GVA and employment End of 2020*	UK		Hertfordshire	
	Gross	Net	Gross	Net
Additional GVA per year	£87m	£34m	£65m	£20m
Additional employment	1,610	640	1,050	330

\*The Incubator, Accelerator and Spark buildings which are fully occupied

Figure 5 to the right provides a graphic representation to illustrate the conversion from gross GVA to net GVA at the UK level. The gross GVA for the UK is built up from the gross GVA created at SBC, together with the additional GVA created in Hertfordshire and at the UK level. These are illustrated by the four green bars on the left of the figure, reflecting the different multipliers used at the UK and Hertfordshire level. The net GVA figures for the UK (and for Hertfordshire) were derived from the gross GVA figure for the UK economy (and the county). These have been reduced to take account of additionality factors (deadweight, displacement and leakages) – shown as the red box. Different additionality figures have been used to calculate the net GVA for the UK and Hertfordshire. The same approach has been adopted to estimate gross and net employment figures.



### 4.3. Potential economic impact in 2027, when Sycamore House is fully occupied

As indicated above, a conservative approach was taken in assuming that Sycamore House would not be fully occupied until 2027 based on the presumption that the original occupier of the remaining 30% moves out.

With the extra space, the economic impact of the occupiers to the UK is estimated to peak with a contribution of £150m gross GVA and 2,800 jobs, of which £60m and 1,100 FTE jobs would be net additional.

**Table 4: Estimated total gross and net GVA per year and jobs in 2027  
when Sycamore House is fully developed**

Total GVA and employment: 2027*	UK		Hertfordshire	
	Gross	Net	Gross	Net
Additional GVA per year	£150m	£60m	£110m	£35m
Additional employment	2,800	1,100	1,820	570

\*The Incubator, Accelerator and Sycamore House fully occupied

#### 4.4. Potential economic impact in 2040, if further development is possible

Further expansion beyond Sycamore House will occur once further road infrastructure improvements have been made allowing for an extra 480,000 sq ft of space, in phases, over a 15-year period between 2023 and 2038.

It is expected that the expansion would be made up of 30,000 sq ft of additional incubation space, 300,000 sq ft of office and lab expansion space and about 150,000 sq ft of GMP manufacturing space, urgently required by SBC's more mature occupiers. Partly because of a lack of suitable space at SBC and in Stevenage, a number of

occupiers have had to relocate elsewhere in the UK. The result is that the local area and, in some cases, the UK economy as a whole has missed out on GVA and the extra jobs that would have arisen.

Based on a similar set of assumptions, it is expected that the additional development of 480,000 sq ft would result in a substantial increase in net economic activity for Hertfordshire and the national economy.

Once fully let by 2040, it could result in additional gross impacts to the UK of £265m and 4,500 jobs per annum. Of these gross figures, £105m and 1,800 FTE jobs per annum would be net additional. The equivalent net figures for Hertfordshire would be £61m and 940 additional jobs.

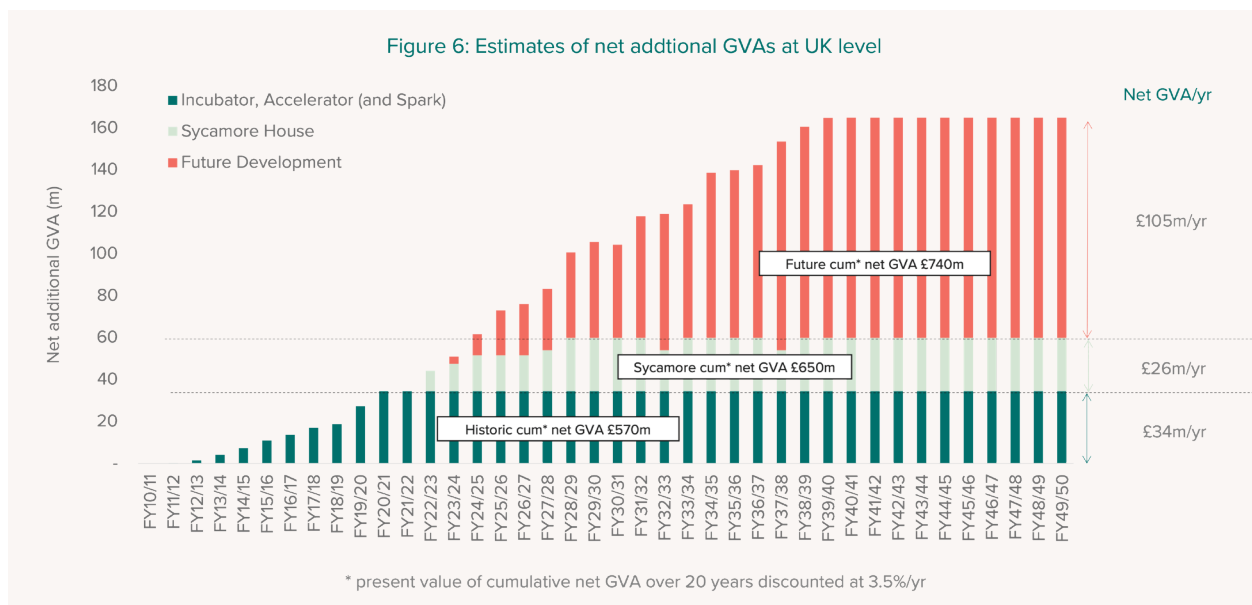
**Table 5: Estimated extra gross and net GVA per year and jobs in 2040  
arising from the further development of 480,000 sq ft**

GVA and employment from 480,000 sq ft development: 2040	UK		Hertfordshire	
	Gross	Net	Gross	Net
Additional GVA per year	£265m	£105m	£196m	£61m
Additional employment	4,500	1,800	3,000	940

## 4.5. Cumulative contribution of SBC to the UK economy

Figure 6 summarises the build-up of net additional GVA per annum. It shows the current development (Incubator, the Accelerator and the temporary Spark building), which peaks at £34m per year

from 2020/21, an additional net GVA of £26m when Sycamore House is fully occupied and an extra £105m per year if 480,000 sq ft of extra space is developed.



When comparing the net economic output of a project with the associated the public sector investment, it is reasonable that the cumulative net GVA figure (the sum of the GVAs generated each year) over a period of 20 years (in the case of SBC) is used to reflect the extended life of the facilities. To determine the net value in 2020/21, these annual GVA figures, all of which are based on 2020/21 prices, need to be discounted by 3.5% per year in line with HM Treasury guidance to reflect the current value of future benefits.

The cumulative net GVA contribution to the UK economy, from the current development to date, is estimated to be around £570m, compared to a public sector investment to date of £100m in SBC and the CGTC's manufacturing centre. When Sycamore House is fully occupied, the cumulative net GVA increases to £650m.

An additional 480,000 sq ft of space would result in a cumulative net additional GVA to the UK economy of around £740m.

## 5. Other benefits of SBC not included in the GVA and employment analysis

### 5.1. The use of a conservative GVA per head figure

The analysis set out in Section 4 is a conservative estimate of the additional net GVA and employment that would be generated as a result of the development. These GVA figures are based on an average salary of £71,125 per

head being paid by SBC occupiers in 2020 and the assumption that none of these firms will be in profit. This is comparable with £69,800 per head, the figure used in the 2018 evaluation of the Babraham Research Campus. The difference



could be because at SBC the companies may be more mature with more senior management.

However, these figures are very much lower than ONS figures; the average GVA per head nationally for scientific research and development (SIC code 72110) for 2019/20 was £100,100 per head and for the pharmaceutical sector, £386,900 per

head. These higher numbers align with figures developed in research papers prepared by the Association of the British Pharmaceutical Industry (ABPI) and independent researchers<sup>6,7</sup>. This is due, in the main, to the very substantial uplift in GVA per head once a new drug has been approved and enters the market.

## 5.2. GVA from construction and fit out investment

In the economic impact analysis, no account has been taken of the resulting GVA and employment created as a result of the initial investment in buildings as they are modest compared to the economic impact from occupiers. The cost of developing SBC facilities has been £35.8m, made up of £21.3m from public sectors bodies (BIS, TSB, EEDA and HLEP) and £14.5m from the private sector (Wellcome Trust, GSK and SBC

itself). In addition, the development of the CGTC's manufacturing centre was financed by a £65m grant from UKRI and it is estimated that occupiers have spent around £10m in fit-out and equipment costs. If the proposed expansion goes ahead as envisaged, the construction of the extra 480,000 sq ft of space will involve an additional investment of around £120m.

6. Alba Nora, Mecke Marc, Ostwald Dennis, Zubrzycki Katharina (2016) The Economic Footprint of Selected Pharmaceutical Companies in Europe – WifOR and EFPI

7. ABPI (2020) European Comparison of GVA per worker <https://www.abpi.org.uk/facts-and-figures/uk-pharmaceutical-market/gross-value-added-per-worker-european-comparison/#7b3059ef>

### 5.3. Grant and equity funds raised by current occupiers

One of the strongest pointers of added value and impact of SBC has been the success of occupiers in raising significant levels of equity and grant funding. These seed, series A, B and C funds are vital during the development phase when companies are pre-revenue. They flow directly to companies to fund their research and clinical trials.

Table 6 shows an analysis of the funds raised at SBC between 2012 and 2020. The majority of the funds (62%) were raised whilst the occupiers and virtuals were at SBC, of which 82% was by existing occupiers and virtuals and 18% by former occupiers. The funds raised by companies whilst at SBC was split approximately equally between early stage grant, seed and venture funds (49%) versus IPO/FPO and acquisition (51%).

**Table 6: Analysis of timing and sources of funds raised at SBC between 2012 and 2020**

Grant, seed and venture funds only: raised between 2012 and 2020 £m	Virtuals	Existing occupiers	Former occupiers	Total	%
Funds raised before coming to SBC	n/a	342	136	478	38%
Funds raised whilst at SBC	122	558	93	774	62%
Total	122	900	229	1,252	100%
	10%	72%	18%	100%	

Funds raised only whilst at SBC: between 2012 and 2020 £m	Virtuals	Existing occupiers	Former occupiers	Total	%
Grant, seed and venture funds	122	558	93	774	49%
IPO/FPO and acquisition	345	382	62	790	51%
Total	467	940	155	1,563	100%
	30%	60%	10%	100%	

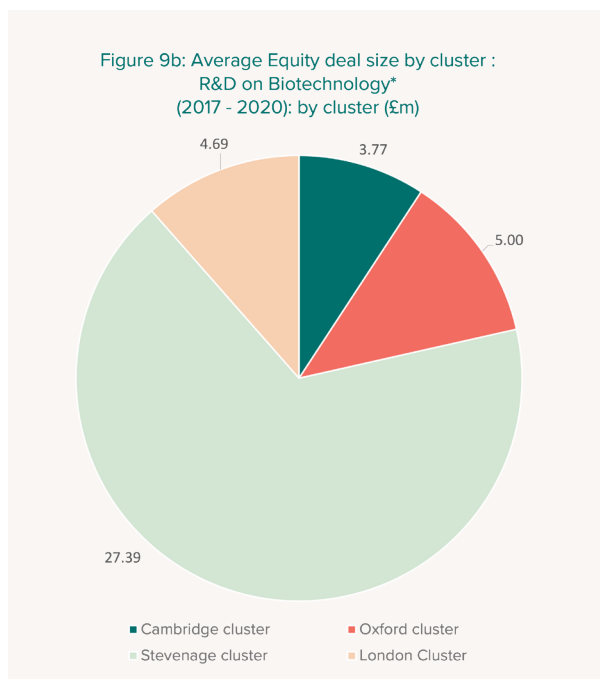
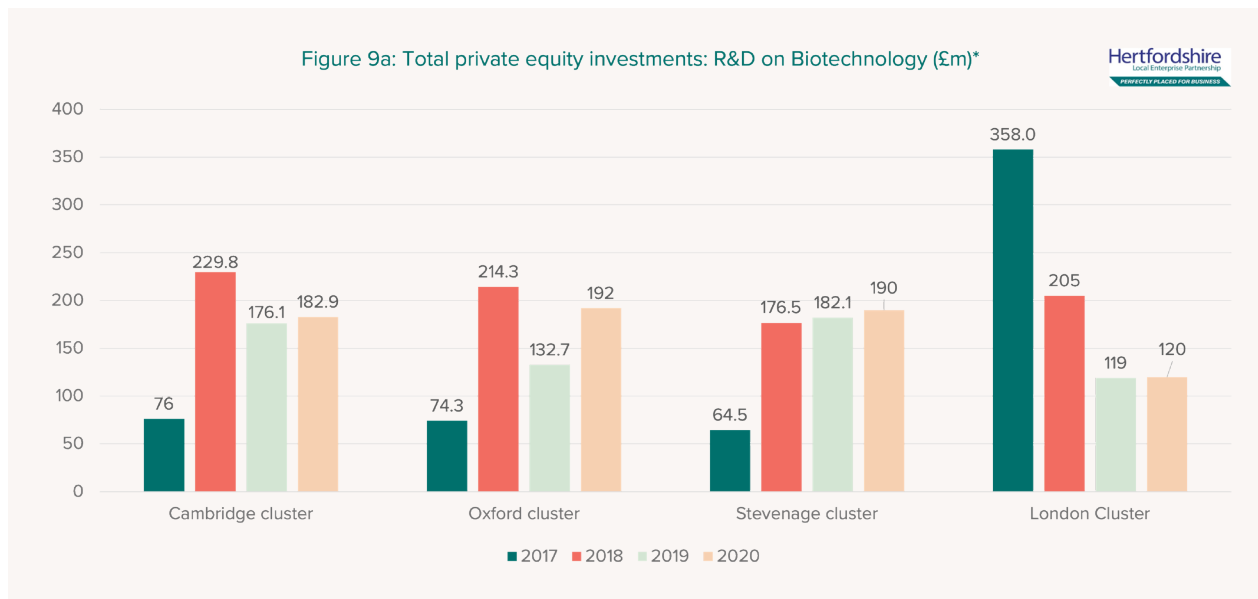
In the period since 2012, occupiers and virtuals have been awarded 51 research grants worth £32m and secured 48 seed and venture investments totalling £774m (shown in Figure 7). These funds were raised from over 30 seed and venture funders, illustrating the strong track record that SBC has built up with funders specialising in bioscience projects.

The most active funder has been Syncona, which was established by the Wellcome Trust in 2012. Syncona engage with academics at the research stage, take a majority stake and play an active role in steering the new business through development and clinical trials. Four of SBC's most successful occupiers are Syncona investments as well as being the main users of the CGTC's manufacturing facility.



To put these figures in context, the Hertfordshire Local Enterprise Partnership (HLEP) commissioned SQW, a leading provider of research and analysis, to work with Beauhurst, a consultancy specialising in the analysis of high-tech company performance, to compare the value of private equity investments in Stevenage (SBC postcode) with the other

leading bioscience clusters within the golden triangle of Oxford, Cambridge and London. The figures presented by Beauhurst are shown in figures 9a and 9b and include resident and virtual occupiers but exclude IPO/FPO and acquisition data which totals to an additional £980m for Stevenage companies for the period 2017-2020.



The numbers in figure 9a show that the Stevenage cluster has raised similar amounts of equity investment for R&D in Biotechnology to the Cambridge, Oxford and London clusters and more than the other clusters in 2019.

\*Biotechnology as defined by SIC code 72110 Source: Beauhurst courtesy of Hertfordshire LEP

As outlined above, these figures exclude the substantial £980m additional impact of IPO/FPO and acquisitions that have occurred within the Stevenage cluster due to the maturity and focus of the companies located there. This is also reflected in the average size of the deals in the different clusters as shown in Figure 9b.

According to Beauhurst, over the four-year period between 2017 and 2020, in Stevenage there were 26 private equity deals worth a total of £613m. This compares 140 deals and £665m raised in the Cambridge area, 94 deals and £613m secured by firms in the Oxford area, and 186 deals and £802m by London firms.

The numbers in figure 9b are calculated by taking the average of the four yearly averages from 2017 to 2020. The results show that overall deals in Stevenage are at least five times larger than in the other cluster locations shown emphasising the greater maturity of these companies.

## 5.4. The progress of former occupiers of SBC

The estimates in Section 4 do not take into account the additional GVA and employment generated by the 22 former biotech occupiers since they left SBC including three that were acquired, or the CGTC and its collaborator organisations.

Records suggest that, of the 47 current and former occupiers, only six firms have ceased trading: an average failure rate of only 13% over an eight-year period. Despite the high risks involved, this is very much lower than the failure rates for start-ups across the UK, typically 30-35% within the first three years. This reflects the effectiveness of SBC's gateway policy of admitting those companies with good technology and an ambitious team and then providing them with a supportive environment, a range of added value services and access to the CGTC's GMP facilities.

An important contribution is also being made by LifeArc's drug discovery unit based at SBC. Since 2016, the unit has assessed over 300 opportunities and selected 33 projects in the fields of oncology, neuroscience and anti-infections for further development at its labs at SBC, investing around £13m per year in their development. To date 18 projects have been completed resulting in four licence sales and five collaborations with a commercial partner, and nine that closed.

## 5.5. Linkages with the research base

SBC has built up strong relationships with a range of universities and research institutes. During the early stages, SBC let space to teams from Cambridge, UCL and the University of Hertfordshire. Since then, links have been strengthened through a series of relationships developed with academic researchers by SBC itself, the CGTC, LifeArc and the venture funder Syncona, all of whom have given practical assistance and, in some cases, substantial funding to speed up the translation of research to marketable products.

## 5.6. Locational preference

The survey of occupiers found a strong preference for SBC as a potential location for bioscience firms due, in part, to its strategic location equidistant from London, Cambridge and Oxford, being close to the A1(M) and having direct rail links to London, Cambridge and the North.

## 5.7. Clustering effects

SBC has played a critical role in building up a growing bioscience cluster in Stevenage, bringing together a dynamic group of bioscience entrepreneurs with a number of anchor organisations (particularly CGTC, GSK's research base and LifeArc) together with an increasing number of equity funders, specialist technology, business and professional consultancy and a growing pool of talent and critical skills.

## 5.8. Inward investment location

In February 2020, the Office of Life Science, part of BEIS, awarded SBC the status of Life Science Opportunity Zone (LSOZ) for Advanced Therapeutics, which will help to raise its profile at a national and international level. These zones will be able to attract investment from national and international businesses linking research and business expertise. Their special designation will help them attract foreign investors based on the UK's expertise in life sciences.

In October 2020, the Stevenage cluster was selected by the Department for International Trade (DIT) as a location of High Potential Opportunity (HPO) in the field of Cell and Gene Technology. The Stevenage HPO is one of 19 High Potential Opportunities in the UK which will be promoted to foreign investors. These locations will be showcased and promoted to potential investors internationally via DIT's global network covering 177 cities around the world.

## 6. Conclusions and Implications

**Since its opening in 2012, SBC has played a major role in the commercialisation of cell and gene and other therapeutic medicines leading to the development of high-growth, high-value companies.**

Through the application of rigorous entry standards, the provision of much-needed occupier support services and the attraction of key anchor occupiers like LifeArc and the CGTC, SBC has created a thriving community of advanced therapeutic companies, yielding significant economic benefits to the local and national economies.

SBC's national importance is reflected in the fact it has recently been recognised as one of just six Life Science Opportunity Zones across the whole of the UK.

### Key highlights of SBC's overall role and contribution to date

- Since opening, SBC has hosted 47 organisations on site, 34 of which were bioscience firms, three were academic institutions and the remainder service providers. In addition to these, 24 organisations have had virtual leases at SBC.
- Of the bioscience firms, five have been acquired or floated, while just six have gone out of business – reflecting much higher success rates and lower failure rates than would be expected of firms in this sector at this stage of development.
- Collectively, these firms have raised £1.13bn in grants, equity, public offerings and acquisitions. This rises to £1.6bn to the end of 2020 if virtual occupiers are included and over £2.3bn to November 2021. In the last four years, Stevenage bioscience firms have raised a similar level of equity funding as firms in the Oxford and Cambridge areas.

### In terms of economic impact

- As of 2020/21, there are 655 full time equivalent staff working on the SBC site.

- The activities of SBC's current occupiers are expected to generate £87m per year in GVA to the UK economy this year, of which £34m per year is net additional (would have been lost to the UK had it not been for SBC).
- These activities are estimated to support an estimated a further 328 net jobs in Hertfordshire and a total of 637 net jobs across the UK.

### SBC is at full capacity

SBC is now at capacity. Sycamore House is currently being redeveloped and will nearly double the lettable space on the Stevenage campus, but it is already 100% pre-let by existing occupiers, which reflects the strength of pent-up demand for much needed grow-on space.

### Economic benefit to Hertfordshire of retaining successful bioscience occupiers

Although the £71,000 average GVA per job figure among current SBC occupiers is already more than twice the UK average, the average GVA per job figure for the pharmaceutical sector as a whole in the UK stands at £380,000 per job. This five-fold increase in productivity reflects the high value jobs created and significant profits generated once products get to market.

### Looking forward

A further 480,000 sq ft could potentially be developed on site. It would unlock additional net economic output for the UK of £105m per annum and 1,800 additional jobs. In Hertfordshire net GVA would increase by £61m per annum and 940 extra jobs.

In 2040, when 732,000 sq ft is fully developed, SBC has the potential to contribute a total of £96m net GVA per annum and 1,510 net jobs to Hertfordshire.

# Glossary of terms

## Terms used in economic impact assessments

Additionality	The extent to which an activity is undertaken on a larger scale, takes place at all, or earlier or within a given geographical area as a result of the intervention. Thus, an impact arising from an intervention is additional if it would not have occurred in the absence of the intervention
Deadweight	Output that would have occurred without the intervention
Displacement	The proportion of intervention outputs accounted for by reduced outputs elsewhere in the target area
Gross Value Add (GVA)	<p>An indicator of wealth creation, measuring the contribution to the economy of a specified investment in economic activity. There are two ways of estimating GVA:</p> <p><math>GVA = \text{Operating Profit (before tax)} + \text{Employee Costs} + \text{Depreciation} + \text{Amortisation (used in this assessment)}</math></p> <p><math>GVA = \text{Turnover (or sales) less the cost of bought in goods \&amp; services (excl. employee costs)}</math></p>
Leakage	The proportion of outputs that benefit those outside the intervention target area or group
Multiplier effects	Further economic activity (jobs, expenditure or income) associated with additional local income, local supplier purchases and longer-term effects
Present value	The future value of a cost or benefit expressed in present terms by means of discounting
Substitution	Where a firm substitutes one activity for a similar activity (such as recruiting a different job applicant) to take advantage of public sector assistance

Source: Additionality Guide Fourth Edition 2014 - Homes and Communities Agency and guidance notes prepared by Scottish Enterprise

## Property terminology

Campus	The SBC Campus refers to the Cell and Gene Therapy Catapult, Incubator, Accelerator and Spark Buildings along with associated car parks and communal areas on land let by GSK to SBC at postcode SG1 2FX, plus Sycamore House developed on land off site owned by Kadans Science Partner at postcode SG1 2BP. The Stevenage Campus refers to the SBC Campus plus the additional land and facilities owned and operated by GSK at postcode SG1 2NY.
Virtual occupier	An occupier that has the right to access the communal facilities in the Incubator Building for business support, networking and events but does not have a lease which separately provides laboratory or office accommodation. They benefit from access to e-journals and are considered part of the ecosystem, adding to the community.

## Biomedical terminology





Advanced therapy medicinal product	<p>A medicinal product which is either:</p> <ul style="list-style-type: none"> <li>• a gene therapy medicinal product</li> <li>• a somatic cell therapy medicinal product</li> <li>• a tissue engineered product</li> </ul>
Gene therapy	<p>The introduction of genetic material (nucleic acids) into patients' cells to compensate for abnormal genes and treat disease by fixing a genetic problem at its source.</p> <p>A correct version of the gene (without the mutation) would be packaged into a viral vector (essentially just the shell of a virus, not infective), and injected in the person. The correct copy of the gene would then replace the mutated one and the person would be cured.</p>
Cell therapy	<p>Viable cells are injected, grafted or implanted into a patient in order to achieve a medicinal effect.</p> <p>The human body contains over 200 different specialised cell types, such as muscle, bone or brain cells. These cells carry out specific functions within the body, necessary for the health of an organism. Injury, disease or ageing can lead to the loss of specialised cells from the body. In many cases, such loss is irreversible, meaning that the diseased or lost cells can no longer be replenished by healthy ones.</p> <p>Cell therapy aims to introduce new, healthy cells into a patient's body, to replace the diseased or missing ones. A challenge for this type of therapy is having enough cells for transplantation into a patient. This is because specialised cells, such as brain cells, are difficult to obtain from the human body. Also, specialised cells typically have a limited ability to multiply, making it difficult to produce sufficient numbers of cells required for certain cell therapies. Some of these issues can be overcome through the use of stem cells.</p>

## Abbreviations used throughout the report

AI	Artificial Intelligence
APBI	The Association of the British Pharmaceutical Industry
BEIS	Department for Business, Energy & Industrial Strategy
BIS	Department for Business Innovation & Skills
CGTC	Cell and Gene Therapy Catapult
DIT	Department for International Trade
EEDA	East of England Development Agency
FTE	Full Time Equivalent
GMP	Good Manufacturing Practice
GVA	Gross Value Added
HLEP	Hertfordshire Local Enterprise Partnership
HPO	High Potential Opportunity
LSOZ	Life Science Opportunity Zone
MHRA	Medical and Healthcare Products Regulatory Agency
ONS	Office for National Statistics
SBC	Stevenage Bioscience Catalyst
TSB	Technology Strategy Board
UKRI	UK Research & Innovation



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