FEBRUARY 2025

Oxford to Cambridge: Science, Innovation, and Technology Business Premises Study

Final Report

ICENI PROJECTS LIMITED WITH CARTER JONAS AND HDR INC ON BEHALF OF THE OXFORD TO CAMBRIDGE PAN-REGIONAL PARTNERSHIP

Iceni Projects Limited with Carter Jonas and HDR Inc on behalf of the Oxford to Cambridge pan-Regional Partnership

February 2025

Iceni Projects
Birmingham: The Colmore Building, 20 Colmore Circus Queensway, Birmingham B4 6AT
Edinburgh: 7 Alva Street, Edinburgh, EH2 4PH
Glasgow: 177 West George Street, Glasgow, G2 2LB
London: Da Vinci House, 44 Saffron Hill, London, EC1N 8FH
Manchester: WeWork, Dalton Place, 29 John Dalton Street, Manchester, M26FW

t: 020 3640 8508 **| w:** iceniprojects.com | **e:** mail@iceniprojects.com
linkedin: linkedin.com/company/iceni-projects | **twitter**: @iceniprojects

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1. Report Synopsis

1.1 Iceni Projects Ltd with Carter Jonas and HDR Inc has been commissioned by the Oxford to Cambridge pan-Regional Partnership[1] to undertake a Science, Innovation, and Technology (SIT) Business Premises Study. This is a wide-ranging study across a number of topics relevant to SIT premises with a particular emphasis on sectors of digital tech; future energy; engineering; automotive; space; future mobility; robotics; quantum Computing; AI and machine learning; life sciences and agri-tech.

1.2 The study identifies various types of premises utilised by SIT businesses. These include:

- **Wet labs** (Use Class E(g)(ii)) being crucial for life sciences research and involve testing chemicals, biological matter, and liquids.
- **Dry labs** (Use Class E(g)(ii)) cater for computational science and robotics testing.
- **Offices** (Use Class E(g)(i)) serve as spaces for desk-based work.
- **Workshops and high-spec industrial spaces** (Use Class E(g)(iii) / B2 / B8) are essential for product development and prototyping.
- **Custom industrial facilities** (Use Class E(g)(iii) / B2 / Sui Generis) support high-energy operations and containment needs.

1.3 The Oxford to Cambridge pan-Regional Partnership area exhibits employment specialisation and strengths in various SIT sectors, particularly life sciences, which is mainly concentrated in Greater Cambridge. However, skill gaps exist, notably in areas like software development, cyber security, and specialised technical fields.

[1] https://www.oxford-cambridge-partnership.info/

1.4 The study identifies a substantial pipeline of new office and R&D floorspace, driven by increasing demand, particularly for wet lab space. Greater Cambridge and Oxfordshire lead the way with a significant quantum of committed and pipeline floorspace, particularly for R&D activities, with potential for further supply development and diversification in the South Midlands Authorities and Buckinghamshire.

1.5 **Locational Preferences:** SIT businesses prefer locations offering:

- High-quality, modern workspaces.
- Access to a larger cluster/community for knowledge exchange.
- Attractive surroundings with a range of amenities (e.g. food and beverage options).
- Strong public transport connectivity.

1.6 **Infrastructure Implications:** This study highlights potential infrastructure pressures associated with SIT sector growth, including:

- Significant water demand in Greater Cambridge.
- Potential energy constraints in Oxfordshire and Northamptonshire.
- Digital connectivity challenges in rural areas.
- Sustainable transport infrastructure, ensuring door-to-door connectivity across the region.

1.7 **Sustainability and Design:** Sustainability is increasingly important in SIT premises design, driven by Environmental, Social and Governance (ESG) principles. Building Research Establishment Environmental Assessment Method (BREEAM) and Leadership in Energy and Environmental Design (LEED) certifications are sought after, alongside a focus on operational energy efficiency, biodiversity net gain, and net zero carbon targets.

1.8 **Policy Recommendations:** The study advocates for:

- Continuing to support start-up space, incubation and innovation centres, which will likely require public funding, as whilst they are well supplied in the area, vacancy rates are low. Ensuring scale-up spaces are well provided for as these can also experience market failure. Affordable workspace policies may have a role to play in ensuring start-up and scale-up space delivery.

- Growing SIT outside existing core cluster locations in areas such as Bedfordshire and Northamptonshire, by utilising greater land availability, lower cost land and premises and identifying local strengths and value chain opportunities – for example medical instruments / pharmaceuticals, or aerospace / automotive development - enabled through supporting infrastructure investment. Enhancing the role of University and Colleges and technical business partnerships can also support growth.

- Prioritising "place-based" business destinations that offer attractive work environments with supporting amenities and infrastructure.

- Local evidence should be kept up to date on sector make up, business need or growth opportunities.

- A dedicated information database to track premises demand and supply across different sectors, premises types, and business scales.

Conclusions

1.9 The Oxford to Cambridge region presents a vibrant and dynamic landscape for SIT businesses, characterised by robust employment, a strong development pipeline, and a commitment to sustainability. Addressing key challenges, such as skills gaps, infrastructure constraints, supporting spatial diversification and ensuring appropriate space for emerging companies, will be crucial to maintain the region's competitive edge and foster continued growth in the SIT sector.

2. Executive Summary

2.1 Iceni Projects Ltd with Carter Jonas and HDR Inc has been commissioned by the Oxford to Cambridge pan-Regional Partnership[2] to undertake a Science, Innovation, and Technology (SIT) Business Premises Study.

2.2 This is a wide-ranging study across a number of topics relevant to SIT premises with a particular emphasis on sectors of digital tech; future energy; engineering; automotive; space; future mobility; robotics; quantum Computing; AI and machine learning; life science and agri-tech.

2.3 This report's geographical focus is the Oxford to Cambridge region, covering a broad range of places around, and between, these two university cities. Specifically, it covers the regions of Oxfordshire, Buckinghamshire, Milton Keynes, Northamptonshire, Bedfordshire, and the Cambridgeshire and Peterborough areas.

2.4 This report focuses on a range of units including lab space, business incubators, innovation quarters / centres, science and technology parks, and light industrial space for technical testing and engineering activities, plus advanced manufacturing R&D.

2.5 The work running from spring to winter 2024 is timely considering the UK Government consultation on "Invest 2035: the UK's modern industrial strategy"[3] from 14 October 2024 to 25 November 2024. This identifies key sectors of: Advanced Manufacturing; Clean Energy Industries; Creative Industries; Defence; Digital and Technologies; Financial Services; Life Sciences; and Professional and Business Services. Furthermore the

[2] https://www.oxford-cambridge-partnership.info/

[3] https://www.gov.uk/government/consultations/invest-2035-the-uks-modern-industrial-strategy/invest-2035-the-uks-modern-industrial-strategy

revised National Planning Policy Framework[4] revised in December 2024 refers to the importance in planning policy terms of making provision for "clusters or networks of knowledge and data-driven, creative or high technology industries" with laboratories highlighted specifically.

2.6 Key messages from this SIT Study are set out below.

Premises typologies

2.7 Across the sectors the requirements for space are diverse. The key typologies are:

- Wet labs – use class E(g)(ii) - for testing chemicals, biological matter and liquids. Use most prominently in life sciences.
- Dry labs –— use class E(g)(ii) - laboratories for computation science or robotics testing.
- Offices – use class E(g)(i) - for write and desk-based computing.
- Workshops and higher spec industrial – use class E(g)(iii) / B2 / B8 - for product development and prototype testing.
- Custom industrial facilities – use class E(g)(iii) / B2 / Sui Generis – for high energy operations or containment.

2.8 There are numerous examples of the above across the study area which this report has explored.

Employment and Skills Baseline

2.9 The Oxford to Cambridge pan-Regional Partnership area has existing strengths across of the breadth of SIT sectors within the scope of this study. Specialisation varies among the local authority areas, such that the region's strengths in SIT sectors are reliant on capabilities both within and outside the main cities of Oxford, Cambridge and Milton Keynes.

[4] https://www.gov.uk/government/publications/national-planning-policy-framework--2

2.10 BRES data has been used to identify relative sector strengths at the local authority level, supported by qualitative analysis and a review of the Innovation Clusters Map from the Department for Science, Innovation and Technology[5].

2.11 According to the BRES data, life sciences' capabilities are particularly strong and specialised in South Cambridgeshire, Vale of White Horse, Cambridge, and Oxford City. These authorities also account for the largest proportion of advanced manufacturing jobs.

2.12 Automotive jobs are concentrated in Oxford, Cherwell, Luton, West Northamptonshire and Milton Keynes. A number of these are associated with plant-based activities.

2.13 Space and aerospace sector employment is concentrated in Buckinghamshire (likely due to clusters such as Westcott Venture Park) followed by South Cambridgeshire and Central Bedfordshire (due to major aerospace assets such as Marshall's, which is relocating to Central Bedfordshire from South Cambridgeshire, Cranfield University and proximity to London Luton Airport). Harwell Campus in the Vale of White Horse also supports employment in the space sector, as well as energy and quantum computing.

2.14 Agri-tech jobs are mainly concentrated in East Cambridgeshire, Fenland and South Cambridgeshire.

2.15 Milton Keynes has the highest proportion of jobs in digital tech, closely followed by Buckinghamshire and Cambridge.

2.16 **In terms of skills**, there is a diverse picture in terms of geography and sector. Key gaps include: **Oxfordshire –** design and process engineers, lab technicians, Cyber Security / Software Developers/Programmers and data analysis; **Buckinghamshire -** engineering (including management skills),

[5] https://www.innovationclusters.dsit.gov.uk/

digital and green economy; **Cambridgeshire and Peterborough -** life sciences technical support, digital professional and technical including programming, advanced manufacturing and agri-tech; and **South Midlands -** cross cutting gaps in leadership/management, digital, and soft skills across digital, environmental, green tech and automation/robotics.

2.17 Broader challenges facing the sector include replacing an ageing workforce and ensuring a sufficiently skilled workforce to grow the relevant industrial sectors. Despite a significant network of higher and further education establishments, there remains in part a misalignment between industry requirements and available skills. Some of the solutions proffered by the region's Local Skills Improvement Plans, include a greater network of apprenticeships; collaborative working between businesses and education establishments to inform the courses being offered locally; and use of community skills / employment and skills plan via planning policy or section 106 contributions from developers.

Future trajectory of SIT premises development

2.18 Using a range of data sources including monitoring commitments provided by local authorities, alongside inputs from Carter Jonas, Glenigan and CoStar, the pipeline of future supply of premises has been identified. Committed office and R&D floorspace, most readily identifiable in supply terms, totals 1.6 million sq. m. Much of this is concentrated in Greater Cambridge and Oxfordshire. Significant supply is located at Milton Park, Begbroke Science Park and Cambridge Biomedical Campus.

2.19 For this study, premises analysis is generally categorised into two main groups – labs (life science wet labs) and then wider engineering, science and technology premises.

2.20 The COVID-19 pandemic saw heightened demand for wet lab premises as a result of increased demand and funding for scientific research and development. This aligned to a time of slower pipeline and availability in the relevant sectors, leading to very low vacancy. Most stakeholders reported supply/demand issues beginning to ease into 2024 – in part due to reduced

demand as a result of a slow down in funding and in part due to an increase in permissions and developments coming forward.

2.21 Supply of space catering towards early stage/scaling life science businesses in 2024 has been particularly tight with very little choice for occupiers in the market. However, examples of good provision for early-stage companies was acknowledged, for example The Oxford Bioescalator, Cambridge Bio-Innovation Centre and Babraham Research Campus.

2.22 Outside of life sciences, the pipeline is considered reasonably strong for the wider engineering, science and technology premises, with a range of sector specific and non-sector specific tech pipeline developments and expansions. These are concentrated in the west and central area and include Silverstone Technology Cluster, Catalyst in Bicester, Bicester Motion, Harwell, Culham and Westcott. There is a continuous need for a range of mid tech manufacturing, distribution, piloting / testing spaces. A challenge is that mid tech type spaces do not provide returns of the same magnitude compared to those suitable for life sciences / office / dry lab, which reduces development interest.

2.23 There is a key challenge for SIT in accessing affordable high-quality start-up and grow-on space. A number of innovation centres are full, including for example Culham Innovation Centre, Babraham Research Centre and Silverstone Sports Engineering Hub. Institutions or grant funding is usually required to support development of new incubators with innovation and start-up space.

Locational preferences

2.24 There are a range of locational preferences which are generally common across the SIT sectors. Notwithstanding, there can be trade-offs between the cost of land and the value attached to premises leasing. For example, occupiers willing to pay high rents on wet labs can more feasibly occupy city centre, or edge of centre, developments. Mid tech or specialist sectors, such as automotive and space, can be land hungry and have lower rental

values, meaning they locate further from urban centres, despite potential preferences for better connectivity and access to labour markets.

2.25 **Amenity provision** – Amenity provision such as on-site cafes and restaurants, as well as leisure, was commonly stated as a key feature to enhance the work environment within SIT premises.

2.26 **Clustering** – being part of a cluster or community optimises growth of SIT occupiers. Co-location of similar businesses is beneficial as it enables and encourages networking, collaboration and sharing of ideas – all of which are vital for innovation and business growth.

2.27 **Ecosystem environment** – Closely linked to clustering is the concept of an ecosystem environment. For many SIT businesses, it is vital to be located in close proximity not only to other similar businesses, but also to learning institutions such as universities and other facilities such as hospitals. This is particularly important for early-stage companies where academics are managing their academic roles alongside the commercialisation of products.

2.28 **Shared specialist facilities** – SIT businesses often have unique requirements for specialist equipment associated with testing and development. This equipment is often costly and space-intensive and therefore not a feasible investment for smaller firms. The provision of shared specialist facilities can help to alleviate this market failure but usually requires an element of public funding.

2.29 **Ability to grow on-site –** SIT businesses often experience rapid growth and multiple stakeholders indicated a preference for premises where there is expansion potential on-site. This reduces relocation costs and, importantly, enables firms to retain their existing workforce.

2.30 **Transport –** Public transport accessibility was described as “really crucial” and something that requires improvement across the region, with a focus on frequency and reliability. For the tech sectors, public transport was highlighted as key for connecting talent to jobs as these sectors often choose to locate in city centres where car travel is often impractical and

unsustainable. The subnational transport body, England's Economic Heartland, published a series of Connecting Economies brochures for the region, setting out various projects to enhance transport across the region, such as the proposed Mass Rapid Transit (MRT) system in Milton Keynes and the proposed re-opening of the Cowley Branch Line in Oxford which will see two new stations at 'Oxford Littlemore' and 'Oxford Cowley', improving connections between significant SIT employment sites such as The Oxford Science Park, ARC Oxford and Oxford North. There is also a commitment from national government to funding the East West Rail project.

2.31 **Housing –** Multiple stakeholders raised local housing provision as an issue, specifically identifying the affordability of housing as problematic. Oxford and Cambridge have particularly high house price to median earnings ratios. Some staff have to commute relatively long distances, for example from Swindon to jobs in Oxfordshire. Good quality residential accommodation with flexibility of tenure and a range of affordability levels is required in order to attract talent to the region and house a growing local workforce.

2.32 **Lease terms** – Stakeholders highlighted the importance of flexible lease terms – especially for smaller and growing businesses within SIT. These businesses often grow rapidly and may quickly outgrow their space. Therefore, short-term leases (weeks/months rather than years) are often preferable. This is also the case for spin-outs and start-ups whose future may be less certain. As businesses mature and receive more funding they may require greater security of tenure and prefer longer leases of up to 5 years. Facilities such as The Wood Centre for Innovation and Culham Innovation Centre offer flexible leases for these reasons.

2.33 **Power and Digital Infrastructure** - electricity, water and digital infrastructure and supply are vital and a "top priority" for SIT premises. Digital connectivity is crucial to a successful SIT location, particularly in relation to the growing impact of AI in SIT sectors such as life sciences.

2.34 **Start-up Space** – Start-up spaces are important for entrepreneurs and small businesses as they provide small, affordable spaces with acceleration support when in an incubator environment, to help in the commercialisation of scientific ideas. Stakeholders noted that these types of spaces should be offered at all science parks, however also highlighted that these types of spaces challenge the traditional profit-focussed business model. Start-up space tends not to be financially viable, with larger units being more profitable for developers to deliver, hence the importance of funded innovation and incubator centres.

Infrastructure

2.35 A review has been undertaken of potential SIT premises scenarios and their associated impact on digital connection needs, water supply, electricity demand and transport. This highlights that there will be significant pressures on demand across infrastructure, notably for water in Greater Cambridge, energy in Oxford and Northamptonshire and digital connectivity in more rural areas. Note that these pressures are only considered in the context of the pipeline of SIT premises, which may be exacerbated or mitigated by infrastructure requirements for other types of development.

Sustainability and design

2.36 Design criteria vary across SIT building typologies, this study includes some benchmark information particularly around labs and provides links to best practice sources in design, such as from the organisation Constructing Science. Requirements are likely to change over time and particularly in response to greater capabilities in AI that may replace some physical premises.

2.37 There are sustainability issues and opportunities in SIT premises across ESG, BREAAM ratings, operational energy, BNG, net zero carbon and retrofit. This study looks at different approaches and best practice including campus and building level applications.

Recommendations

2.38 **Start-up space**, including supported incubation space, typically hosted in innovation centres, is critical infrastructure to the SIT ecosystem. In most instances this requires public or third sector funding for development, maintenance and wider business support. Many of the existing centres are full and require a strategy for expansion in the short and long term.

2.39 **Scale-up space** can also experience market failure. Working with private partners to ensure an appropriate mix of space delivery is recommended, including where necessary through the use of planning policy.

2.40 **Affordable workspace** policies may have a role to play in ensuring start-up and scale-up space delivery. These policies, successfully adopted in London Boroughs, seek to ensure a provision or commuted sum for an affordable space component

2.41 **Growing SIT outside of the core clusters** notably Oxford and Cambridge is important in terms of driving economic growth and improving the economic resilience of places. The 'central areas' of Northamptonshire and Bedfordshire offer greater land availability for development at cheaper cost, as well as lower house prices and typically better labour availability. Identification of existing local strengths, market failures and importantly value chain opportunities in these areas are growth opportunities. Value chains include, for example advanced manufacturing such as the provision of pharmaceuticals manufacturing or medical instruments (relating to life sciences); or automotive / aerospace research, development and production. These industrial sector and 'mid tech' components of SIT premises may work well in non-core locations. University and Colleges outside of the core clusters offer long term opportunities to develop local SIT assets and business partnerships with education, enhancing ways to access local value chains.

2.42 **Evidence and strategy** at the local level can justify planning allocations and funding decisions.

2.43 **Sustainable development** of buildings to the highest standards should be encouraged given the often high demands of SIT premises.

2.44 There is potential for a dedicated **information database** that enables occupiers and future occupiers to register demand and understand existing and future supply. Ultimately the purpose of this would be to monitor levels of premises demand across sectors and supply / capacity at innovation centre level and then scale up and larger premises.

2.45 **Place -** prioritising 'place based' business destinations for SIT premises creates an optimal environment for the growth and retention of businesses, competitive with rival science and technology clusters internationally. This means creating places that offer: high quality modern workspaces; form part of a larger cluster / community to enable knowledge exchange; are in attractive settings; offer a range of amenities including food and beverage; and are well served by public transport as well as car. Urban and edge of urban locations are advantaged, given their connectivity to workforce and amenities, whereas rural settings, whilst offering attractive environments, typically have greater connectivity challenges, unless they have access to the Strategic Road Network.

Wider infrastructure issues

2.46 Beyond the scope of this study but recognised as critical to the success of the SIT sectors, are various infrastructure issues related to transport, power, labour, skills, housing, funding and planning. Many of these fall under the responsibility of central government, local government or third party providers, but are recognised by stakeholders as an important consideration as part of this work.

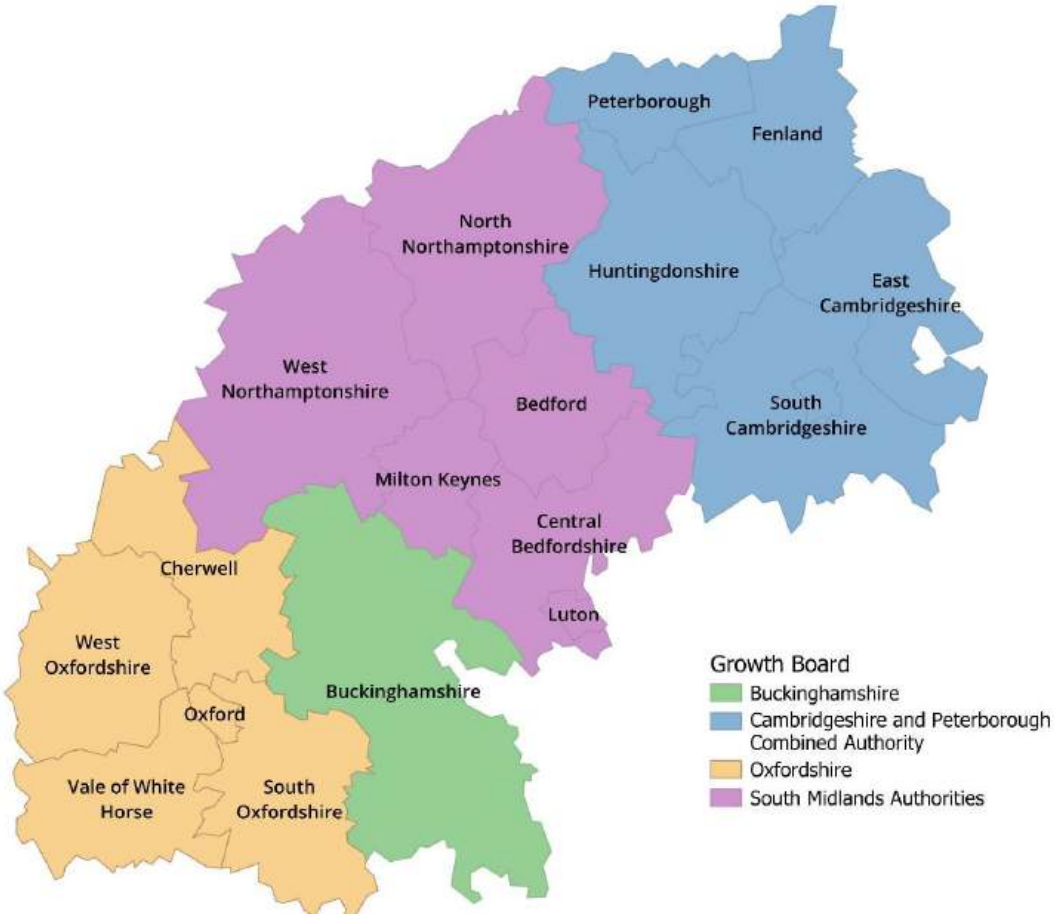
3. Introduction

3.1 Iceni Projects Ltd with Carter Jonas and HDR Inc has been commissioned by the Oxford to Cambridge pan-Regional Partnership[6] to undertake a Science, Innovation, and Technology (SIT) Business Premises Study.

3.2 This report's geographical focus is the Oxford to Cambridge region, covering a broad range of places around, and between, these two university cities. Specifically, it covers the areas of Oxfordshire, Buckinghamshire, Milton Keynes, Northamptonshire, Bedfordshire, and Cambridgeshire and Peterborough. The study area is shown on the map below.

[6] https://www.oxford-cambridge-partnership.info/

Figure 3.1 Study Area



Source: Iceni

3.3 This report focuses on a range of units including lab space, business incubators, innovation quarters / centres, science and technology parks, and light industrial space for technical testing and engineering activities, plus advanced manufacturing R&D.

3.4 In terms of sectors there is a particular focus on: Life Sciences and Healthcare, Digital and Creative, Agritech, Future Energy, Space, Future Mobility, Quantum Computing, AI and Machine Learning, and Robotics. These were chosen to align with the priority growth sectors identified in the Oxford to Cambridge Investment Prospectus, launched in May 2024. However, it should be noted that there is a significant overlap between these sectors and the 8 priority sectors identified in the Government's "Invest 2035 The UK's Modern Industrial Strategy Green Paper" published

in October 2024: Advanced Manufacturing, Clean Energy Industries, Creative Industries, Defence, Digital and Technologies, Financial Services, Life Sciences, and Professional and Business Services. As a result, this sector definition effectively captures both science and technology activities, as well as focuses on sectors where there is a significant economic growth opportunity for the region.

3.5 The key requirements of the brief for this wide-ranging study are to:

- Develop a robust definition of SIT business premises.
- Consider relevant employment and skills information, the latter derived from the 4 Local Skills Improvement Plans for the region.
- Identify characteristics of the SIT Industry in terms of preferences around premises and location and how these may change in the next 10 years
- Look at the past rate of construction of SIT floorspace and the development pipeline for new floorspace
- Provide a map of major SIT centres, and innovation support organisations, in the Oxford to Cambridge pan-Regional Partnership area
- Conduct a SWOT analysis of the supply and pipeline of SIT business premises.
- Undertake an assessment of the key attributes for successful innovation of existing SIT business clusters through a series of case studies.
- Include recommendations on the design and configuration of SIT business premises to best meet the needs of investors including around issues of biodiversity net gain and best achieve net zero carbon.
- Include a scenarios-based assessment of the derived demand for new infrastructure to support the pipeline of SIT business premises to 2030 and 2040.
- Recommend how the SIT sector in the Oxford to Cambridge area can be effectively and consistently monitored to provide robust evidence to inform future policy formation and review.

3.6 As a part of the work Iceni Projects undertook engagement with 31 stakeholders both online and in person between May and October 2024 to understand their views on the conditions and opportunities for the long-term development of the SIT sectors within the region.

3.7 Discussions were semi-structured, with a topic guide (See Appendix A9) used to guide conversion around the following topics:

a.) Current supply, availability and suitability of SIT premises

b.) Preferences for SIT premises

c.) Preferences for SIT locations

d.) Future requirements / changing preferences

e.) Barriers or challenges to growth

3.8 Stakeholders included agents, business representative organisations, investment and development companies, relevant government departments and premises owners and occupiers in the region. Iceni Projects and the client group are grateful to the stakeholders for their time and participation. A full list of stakeholders is provided in Appendix A4.

3.9 Through this work, Iceni undertook a range of in-person site visits. The information gathered during these visits was used to develop case studies which focus on particular SIT assets within the region.

4. Understanding Science and Technology Premises

4.1 Occupiers need a diverse range of premises for SIT activities. This chapter considers the broad types of premises required by different sectors as relevant to this study and how the activities align with the Use Classes Order. These considerations are important for understanding the nature of premises and in providing context for the remainder of this report.

4.2 The definitions have been informed by engagement with relevant stakeholders and cross-checked against existing developments and planning applications, examples of which are provided.

4.3 The typical premises required by SIT occupiers include offices, wet labs, dry labs, higher spec workshops and custom premises. Warehouse and factory space can also be a component of these premises.

Understanding premises definitions: wet labs and dry labs

4.4 Wet labs and dry labs are an important element of the SIT premises terminology and can have specific meanings. The table below helps to identify typical characteristics.

Table 4.1 Wet labs and dry labs

	Wet lab	Dry lab
Focus	Life science, biological matter, liquids.	Information systems and technology, engineering, data science.
Activities	Organic chemistry, tissue culture, molecular biology – liquid substances.	Computational analysis, robotics development / testing.
Features	Drain and vent services, fume hoods, controlled environment.	Electronics / computer powered or relevant technical equipment. Lower cost.

Premises and the Use Class Order

4.5 The table below provides a broad summary of Use Classes and premises for each of the study main sectors. These have been grouped into 4 categories based on similarities.

4.6 Group B crosses a particularly broad range of engineering and technology activities that are sensitive to the specific occupier but often include office space as well as dry labs for product development and, for some occupiers, workshops / industrial premises of a range of sizes for testing and operation.

Table 4.2 Broad sector / use class / premises categorisation

Sector	A Digital tech	B Future Energy; Engineering / automotive; Space; Future Mobility; Robotics; Quantum Computing; AI and Machine Learning	C Life Sciences and Healthcare	D Agri-tech
Typical Use Class	E(g)(i)	E(g)(i/ii/iii)/B2/B8	E(g)(i) and E(g)(ii)	E(g)(i/ii/iii)
Premises description	Typically office based	Diverse across and within the sectors. Can include office, dry lab, custom plant and high spec industrial workshop / workspace (often referred to as mid tech).	Typically Containment Level 2 wet lab with 40% office	Typically Containment Level 1 wet lab with office but includes glass house, polytunnel, workshops and farmland.

Source: Stakeholder engagement / Iceni Projects

Aerospace

4.7 The Aerospace sector develops and manufactures both aircraft and spacecraft including for example commercial planes, drones, satellites and space shuttles. Aerospace companies require a range of premises types including generic office space, lab space and specialist facilities such as clean rooms which can be housed in industrial type premises.

4.8 Companies involved in aerospace development and innovation usually also require testing facilities. These facilities often require significant floorspaces as well as surrounding space which is vital for safety reasons. The photo below shows a part of the National Space Propulsion Test Facility which is located at Westcott Venture Park, Buckinghamshire, in an industrial type premises (detailed in case study later).

Figure 4.1 National Space Propulsion Test Facility, Westcott Space Cluster, Bucks

Part of the National Space Propulsion Test Facility. Image Source: https://www.gov.uk/government/news/boost-for-uk-space-sector-as-new-facility-offers-cheaper-and-greener-rocket-testing

4.9 The image below shows Nammo's UK headquarters located at Westcott Venture Park. This industrial style building includes lab space, office space and specialist clean rooms. The company also occupies rocket testing sites elsewhere at Westcott Venture Park.

Figure 4.2 Nammo UK HQ, Westcott Venture Park.

Image source: https://westcottspacecluster.org.uk/nammo-take-on-new-building-at-westcott/

4.10 Further exemplifying the range of spaces occupied by aerospace firms, the Westcott Innovation Centre combines engineering and office space to support prototyping and small-scale manufacturing for space-related businesses.

4.11 In Central Bedfordshire, Cranfield University has expanded its aviation ecosystem, which already includes the National Flying Laboratory Centre operational aircraft, with the Cranfield Eagle Lab 'AVIATE+', at the Digital Aviation Technology and Research Centre (DARTeC). The Lab is a business incubator facility for early-stage companies in the Aviation-Tech sector. The incubator provides support for early stage companies and offers workshops and co-working desks.

Figure 4.3 Digital Aviation Technology and Research Centre: AVIATE+ workshops / National Flying Laboratory

Image source: https://www.cranfield.ac.uk/business/access-our-world-class-facilities/business-incubation/aviate / AVIATE+ launch event video

Green / future energy

4.12 The development of sustainable energy sources requires a particularly diverse range of space types depending on the nature of activity, including wet and dry laboratories, office space and specialist industrial facilities for research and development activities. Some examples of industrial research facilities in the region are given as follows.

4.13 The Culham Centre for Fusion Energy based at Culham Campus is a major international fusion energy research site which includes wet and dry lab space and office space.

4.14 Cranfield University recently received a £69 million investment to help grow hydrogen facilities. This will support three infrastructure developments including a Hydrogen Integration Research Centre which will extend existing laboratories, two test bed facilities and developments to Cranfield Airport's runway for testing of hydrogen-enabled aircraft.

4.15 Chelveston Renewable Energy and Innovation Park, located in North Northamptonshire, uses a variety of different renewable technologies to generate clean energy. Intelligent Energy, a UK-based fuel cell developer, is building a hydrogen fuel cell testing facility at the site. The facility is expected to be operational by 2025 housed in specialist industrial facilities (see later case study).

Future mobility

4.16 Future mobility refers to the evolving ways that people and goods will be transported in the future. Examples include electric vehicles, autonomous vehicles and the use of drones.

4.17 Firms within this industry require a variety of space for research and development, testing and manufacturing.

4.18 For example, the Drone Test and Development Centre located at Wescott Venture Park provides an example of a future mobility premises. The Centre consists of three workshops for technical development, as pictured below, and 4 dedicated landing pads for vertical take-offs. The site also benefits from the use of the adjacent runway which is used for horizontal take-offs. The site is also surrounded by sufficient open space to enable real world flying environments.

Figure 4.4 Wescott Drone Testing Centre

Image source: https://westcottspacecluster.org.uk/centres/drone-test-and-development-centre/

4.19 Skyports recently gained planning consent for the UK's first vertiport testbed at Bicester Motion which will be used to advance electric vertical take-off and landing (eVTOL) aircraft for the electric air taxi industry. This includes infrastructure similar to a helipad plus a small passenger terminal building.

Figure 4.5 Skyports Testbed

CGI of Skyports testbed. Image Source: https://bicestermotion.com/green-light-for-bicester-motion-and-skyports-first-uk-vertiport-testbed-to-advance-electric-air-taxi-industry

Advanced engineering / automotive

4.20 Advanced engineering / automotive businesses, located in clusters such as Silverstone Park, typically require workshops (general industrial E(g)(iii) / B2 space) with an element of office space. These businesses focus on product development, prototyping, and high value, low volume manufacturing.

4.21 The image below shows one of the units at Silverstone Park – an industrial unit with an element of office space. Most units include 10% office space within the base specification, but occupiers are able to increase this as per their requirements.

Industrial unit at Silverstone Park. Image Source: https://silverstone-park.com/

4.22 Specialist facilities, such as tracks for vehicle testing, may also be required, such as those provided at Millbrook Proving Ground. UTAC Millbrook also has a dedicated vehicle battery testing facility and other dedicated technical spaces for example on emissions testing. Further detail regarding UTAC Millbrook is provided as part of a case study in Chapter 9.

Figure 4.6 UTAC Millbrook vehicle battery testing facility

www.utac.com

Life sciences

4.23 Life sciences require wet lab and office space in varying proportions. Currently, a 60:40 lab to office split is relatively typical, however as data computation and AI become more significant in life sciences the proportion of office space is likely to increase. The exact specification of wet labs vary depending on the maturity of the business and the type of activities undertaken.

4.24 Activities involving biological agents are carried out in specifically designed laboratories with varying Containment Levels (CL1-4). The requirements for the 4 different containment levels are a combination of facilities design, safety equipment and working practices. As the CL number increases the level of control also increases. CL1 has minimum level of control, whilst CL4 has the highest level of controls. A standard life sciences lab would typically be designed at CL2[7].

Figure 4.7 Oxford Bioescalator lab

[7] For more information on Containment Levels see Schedule 3 part II of COSHH 2002 (as amended): https://www.hse.gov.uk/pubns/books/l5.htm

Oxford Bioescalator. Image source: https://www.bioescalator.ox.ac.uk/work-spaces/starting-up

4.25 The table below identifies typical property requirements through the lifecycle stages of life science firms.

Table 4.3 Life science growth stages / property requirements

	Start-Up	Scale-Up	SME	Large
Staff	1-10	11-100	101-250	250+
Space (sq. m)	<200	200-2,500	2,500-5,000	5,000+
Property	Short term lets given level of uncertainty and risk	Improved leasing but remains risk	Strong lease covenants	Strong lease covenants / freehold
Support	Business incubators / bench space, fully fitted	Small lab space and back office	Can be more isolated from established institutions, although many still prefer proximity	Labour market cluster / or specific research proximity depending on type

Source: Stakeholders; Med CITY / Constructing Science: Guidance for Life Science Labs 2023; Review of Wet Lab Space and Incubator Space for the Life Sciences in the Cambridge Area, Cambridge Ahead, 2017

Agri-tech

4.26 Agri-tech businesses are diverse in nature but typically cut across wet labs (typically CL1) with supporting office space, in addition to poly tunnel / farmland for growing as well as workshop space for field equipment. The vertical farming sector requires higher end industrial premises, although the

associated high energy costs associated with vertical farming have largely made the practice prohibitive to date.

4.27 The images below show the National Institute of Agricultural Botany (NIAB) headquarters in Cambridge. This site includes a mix of laboratory space, offices, specialist growth room facilities and meeting rooms. The site is also located within close proximity to farmland used for activities such as field trials.

Figure 4.8 National Institute of Agricultural Botany labs

NIAB, Cambridge. Image Source: https://www.niab.com/about/locations/cambridge

4.28 Below we consider some of the broad attributes of the sector premises.

Tech, Digital, AI and Machine Learning

4.29 A large proportion of the sectors focussed on within this study fall under the broad category of digital and tech with ‘Deep Tech’ particularly relevant to the science engineering cross over. Deep Tech refers to companies, typically start-ups, who use advanced science and technology to develop solutions to complex problems. Deep Tech companies are often involved in

industries such as Artificial Intelligence (AI), biotechnology, quantum computing, agriculture, aerospace, future energy and mobility.

4.30 Deep Tech companies tend to be split between those that are computer based – requiring office / dry lab – and those that are more science based located in industrial type buildings.

4.31 AI and ICT / digital tech companies generally require concentrated office space. Some firms may require a mix of standard office space and dry lab/workshop space for product development if relevant – for example health tech firms. Whilst physical clustering is important for the industry[8], many activities within the tech sector (including AI), can be undertaken at home as long as there is a sufficient broadband connection. This means that some of these firms – especially at their early stages – operate fully remotely and are not as visible in the property market. Cambridge Science Park is home to a number of AI-related companies including AMD, Cambridge Consultants, Ignota Lab and AI Vivo.

Figure 4.9 The Bradfield Centre, Cambridge Science Park

The Bradfield Centre, home to Ignota Lab. Image source: https://www.bradfieldcentre.com/about-us/

[8] Savilles, August 2024, Spotlight: The Impact of AI on Offices https://www.savills.com/research_articles/255800/365299-0

4.32 ICT / digital tech firms are more office based due to their focus on software type products. These firms usually develop along a traditional tech pathway through the office space cycle. The table below summarises typical key property requirements through the business growth phases for digital tech firms.

Figure 4.10 ICT/Digital Tech Lifecycle Stages

	Start-Up	Scale-up	SME	Large
Staff	1-5	6-30	30-250	250+
Space (sq.m)	0-10	11-500	501-2,000	2,001+
Fund (varies)	Early stage / pre seed / Series A	Series A/B	Series B/C	Series C
Property	Hot desk / very short let	Improved leasing but remains risk.	Strong lease covenants.	Strong lease covenants / freehold
Support	Business incubators / commercial hot desk space. Advisory services.	Smaller – medium office multi-let space. Advisory services.	Larger scale serviced or independent managed office accommodation. Increased in house infrastructure / outsourcing.	Larger scale serviced or independent managed office accommodation. Increased in house infrastructure / outsourcing.

Source: Stakeholder engagement

Premises Flexibility

4.33 The importance of flexibility in build, for science and technology business premises, was one of the key messages derived from stakeholder engagement. It was stated that there is no one-size-fits-all and needs are often highly occupier-specific. This can cause issues for developers in terms of getting the 'right' product to the market and for landlords at the end of lease terms who are left with occupier-specific premises. It is therefore

preferable to build premises with sufficient flexibility that they can be retrofitted at a later date. This was noted as particularly important for innovation spaces as firms may grow rapidly and move premises relatively frequently in the early stages. These sectors are also evolving rapidly and factors, such as the increasing role of AI, mean that it is vital for developers to build schemes which have flexibility of usage to ensure their longevity and sustainability.

4.34 Flexibility is an important consideration for life sciences' occupiers who generally require a mix of office and lab space at varying proportions. Buildings can be developed as shell and core (basic structure with no interior work), lab-enabled offices (designed as office space but with the option to be used as labs) or lab ready (fully fitted lab space). Whilst there is mixed demand across these categories, lab-enabled space enables developers to market spaces more flexibly.

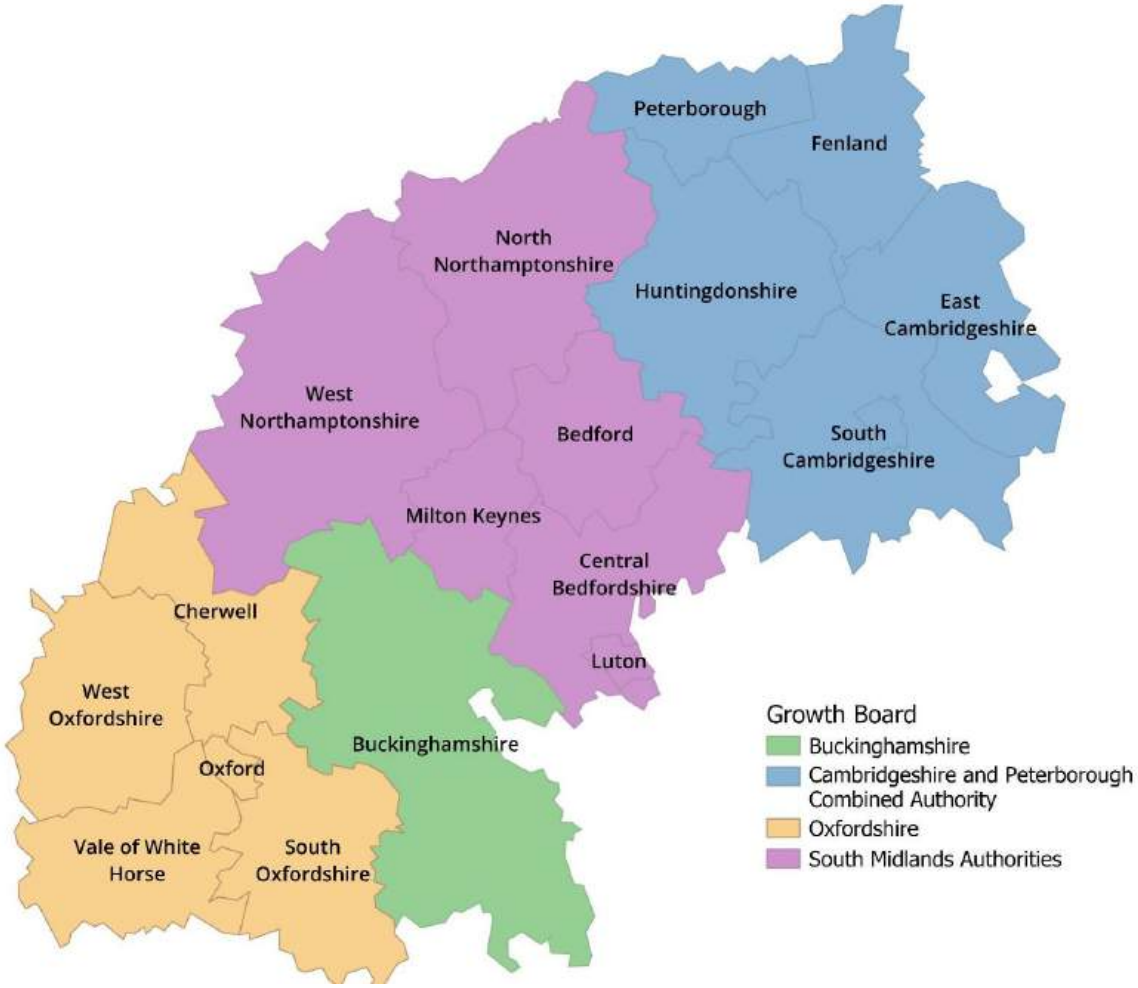
5. Study Area Characteristics

5.1 This chapter defines and introduces the Pan-Regional Partnership area, providing an overview of the SIT assets currently located within the area. It provides a qualitative summary of some of the key sectoral strengths at the growth board area level, whilst Chapter 6 provides a more detailed, quantitative spatial analysis of the region's strengths in key SIT sectors.

5.2 The spatial area covered by the report is mapped below and includes the 18 local authorities that make up the counties of Bedfordshire, Cambridgeshire, Northamptonshire, Buckinghamshire and Oxfordshire.

5.3 The map is colour coded to represent the four different growth board / LEP areas across the region: Buckinghamshire, Cambridgeshire and Peterborough Combined Authority, Oxfordshire and South Midlands.

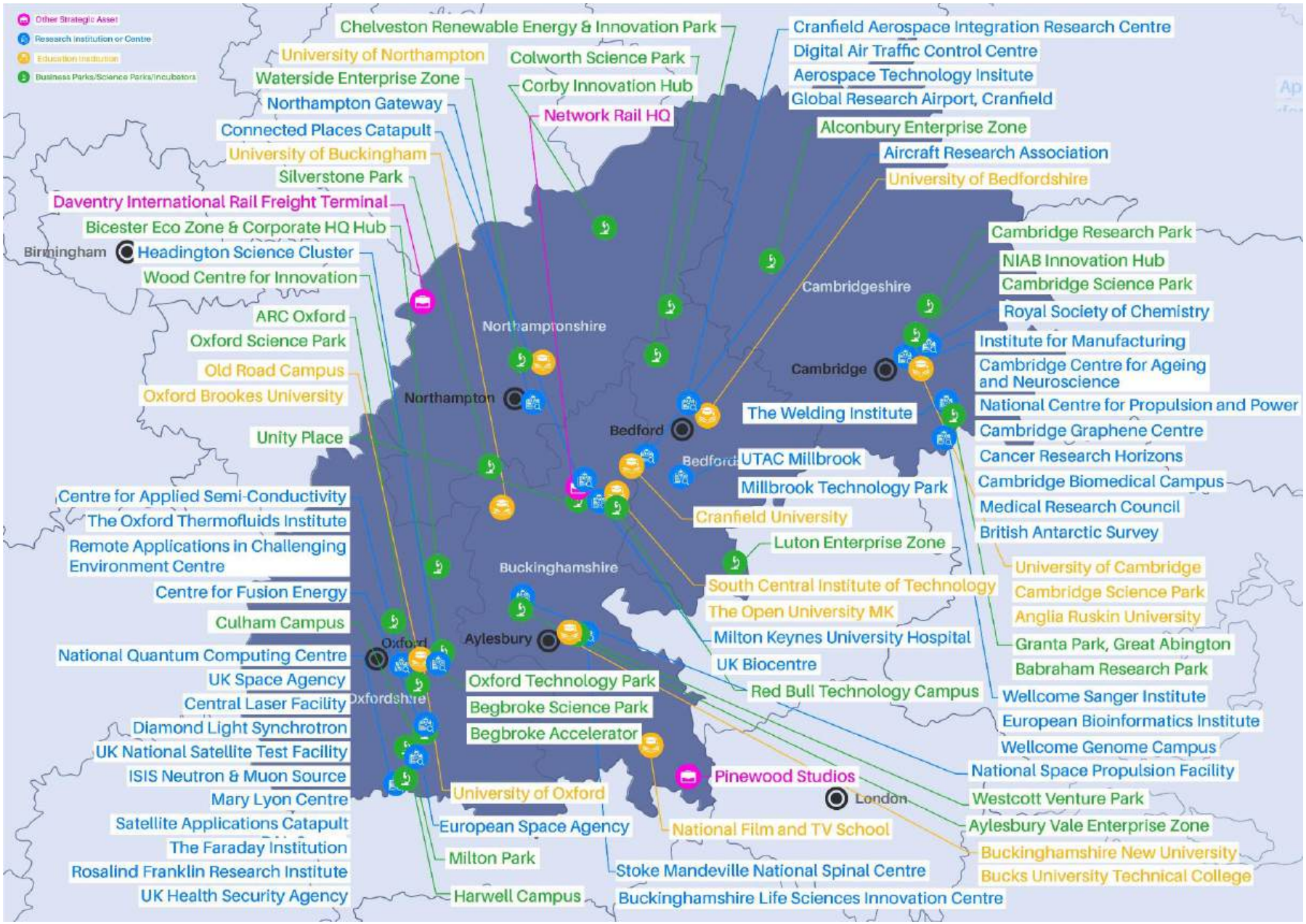
Figure 5.1 Study area map – the Oxford to Cambridge region



Source: Iceni mapping

5.4 The Oxford to Cambridge region contains a very substantial number of SIT premises and is supported by a wide range of institutions, research centres and infrastructure.

5.5 The map below provides an overview of the locations of many of the key SIT centres and assets across the study area which are colour coded by asset type. While it is not possible to map every asset in the region, the map below provides an overview of the key assets and capabilities in the region.


Other Strategic Asset
Research Institution or Centre
Education Institution
Business Parks/Science Parks/Incubators
Chelveston Renewable Energy & Innovation Park
University of Northampton
Colworth Science Park
Waterside Enterprise Zone
Corby Innovation Hub
Northampton Gateway
Network Rail HQ
Connected Places Catapult
University of Buckingham
Silverstone Park
Daventry International Rail Freight Terminal
Bicester Eco Zone & Corporate HQ Hub
Birmingham
Headington Science Cluster
Wood Centre for Innovation
ARC Oxford
Oxford Science Park
Old Road Campus
Oxford Brookes University
Unity Place
Centre for Applied Semi-Conductivity
The Oxford Thermofluids Institute
Remote Applications in Challenging Environment Centre
Centre for Fusion Energy
Culham Campus
National Quantum Computing Centre
UK Space Agency
Central Laser Facility
Diamond Light Synchrotron
UK National Satellite Test Facility
ISIS Neutron & Muon Source
Mary Lyon Centre
Satellite Applications Catapult
The Faraday Institution
Rosalind Franklin Research Institute
UK Health Security Agency
Northamptonshire
Northampton
Bedford
Buckinghamshire
Aylesbury
Oxford
Oxfordshire
Cambridgeshire
Cambridge
Bedford
Cranfield Aerospace Integration Research Centre
Digital Air Traffic Control Centre
Aerospace Technology Insitute
Global Research Airport, Cranfield
Alconbury Enterprise Zone
Aircraft Research Association
University of Bedfordshire
Cambridge Research Park
NIAB Innovation Hub
Cambridge Science Park
Royal Society of Chemistry
Institute for Manufacturing
Cambridge Centre for Ageing and Neuroscience
National Centre for Propulsion and Power
Cambridge Graphene Centre
Cancer Research Horizons
Cambridge Biomedical Campus
Medical Research Council
British Antarctic Survey
The Welding Institute
UTAC Millbrook
Millbrook Technology Park
Cranfield University
Luton Enterprise Zone
University of Cambridge
Cambridge Science Park
Anglia Ruskin University
Granta Park, Great Abington
Babraham Research Park
South Central Institute of Technology
The Open University MK
Milton Keynes University Hospital
UK Biocentre
Red Bull Technology Campus
Wellcome Sanger Institute
European Bioinformatics Institute
Wellcome Genome Campus
National Space Propulsion Facility
Westcott Venture Park
Aylesbury Vale Enterprise Zone
Buckinghamshire New University
Bucks University Technical College
Oxford Technology Park
Begbroke Science Park
Begbroke Accelerator
Pinewood Studios
London
National Film and TV School
University of Oxford
European Space Agency
Milton Park
Harwell Campus
Stoke Mandeville National Spinal Centre
Buckinghamshire Life Sciences Innovation Centre

Cambridgeshire and Peterborough Combined Authority (CPCA)

5.6 This includes the authorities of Cambridge City, East Cambridgeshire, Fenland, Huntingdonshire, South Cambridgeshire, and Peterborough.

5.7 The Cambridgeshire and Peterborough Combined Authority area is an internationally recognised centre for digital and information technologies (including artificial intelligence), life sciences, food production and advanced manufacturing.

5.8 Cambridgeshire and Peterborough is considered to be comprised of three different subeconomies – Greater Cambridge, Greater Peterborough and The Fens[9].

5.9 Greater Cambridge is a global leader in innovation and the commercialisation of new ideas, underpinned by the presence of two leading universities (University of Cambridge and Anglia Ruskin University). The area is characterised by a rich mix of life sciences, artificial intelligence and other technology companies.

5.10 Greater Peterborough is an area with an important manufacturing history and current strengths in high-tech manufacturing.

5.11 The Fens is a largely rural area with an associated industry of agriculture, agri-tech and food manufacturing. The agri-tech sector is relatively nascent with significant growth potential in the future.

South Midlands Authorities

5.12 This includes the authorities of Bedford, Central Bedfordshire, Luton, Milton Keynes, North Northamptonshire and West Northamptonshire.

[9] Cambridgeshire and Peterborough Local Industrial Strategy, 2019 https://www.gov.uk/government/publications/oxford-cambridge-arc-local-industrial-strategies/cambridgeshire-and-peterborough-local-industrial-strategy

5.13 The South Midlands Authorities have a diverse sectoral mix, with particular strengths in a number of sectors including:

- Advanced / Hi-tech Manufacturing – with assets/clusters including facilities at Cranfield University (Central Bedfordshire), a University Enterprise Zone including the Aerospace Integration Research Centre and Technology Park; UTAC Millbrook also in Central Bedfordshire; Luton Airport Enterprise Zone (aerospace and advanced manufacturing specialisms) in Luton; Silverstone Technology Cluster in West Northamptonshire, and Colworth Park (food and beverage R&D) in Bedford.

- Digital and Tech - The tech sector makes up a significant part of Milton Keynes' economy, with reports showing that as many as one in three jobs in the city are in tech[10]. The city is home to major tech employers and many businesses with significant data science and AI interests and operations, including Red Bull Racing and Advanced Technologies, Santander, HMGCC, Milton Keynes University Hospital and the Open University. The world's first ever global AI Safety Summit was held at Bletchley Park in Milton Keynes in November 2023 and the city hosted an AI festival in autumn 2024. There is also significant digital innovation in Northamptonshire, with Digital Northants set up to foster collaboration between local digital businesses, the University of Northampton and local councils.

Oxfordshire

5.14 This includes the authorities of Cherwell, Oxford City, South Oxfordshire, West Oxfordshire and Vale of White Horse.

5.15 Oxfordshire is a leader in science and innovation with a broad-based economic sector profile with notable strengths in health and bio-technology,

[10] Milton Keynes Tech, Smart City, Digital and Creative Industries Strategy 2024-2029

digital, creative and publishing (including cyber security, AI and big data) and vehicle manufacturing. There are also emerging strengths in energy and zero carbon technologies, with 2 out of 3 of the 'Prospering from the energy revolution' challenge funds granted in Oxfordshire[11].

5.16 The University of Oxford's research programme is 25% larger than any other academic institution in the UK. The University is also the UK's front runner in terms of spinouts, with £1.4bn out of the £2.9bn invested nationally in 2022 going to Oxford companies.

5.17 Oxfordshire is home to world class teaching and research hospitals, with globally significant collaborations between universities, and health tech and life science companies in and around Oxford. The Headington Science Cluster provides a strong example of this collaboration with the presence of the University of Oxford and Oxford Brookes University, John Radcliffe Hospital and multiple innovation centres.

5.18 Beyond the city of Oxford, there are also a number of key SIT clusters and assets. Science Vale UK – an area across South Oxfordshire and Vale of White Horse District Councils' areas - is home to a significant proportion of the region's scientific, research and development and high technology businesses. Science Vale UK has two enterprise zones covering parts of the Harwell Campus and a number of sites in and around Didcot and Milton including parts of Milton Park.

Buckinghamshire

5.19 Buckinghamshire's economy has a strong base of small and medium sized enterprises (SMEs), supplemented by a number of major international brands such as Arla UK, Bosch and GE Healthcare. Buckinghamshire's economy benefits from its location, being well-connected to London, with

[11] https://www.ukri.org/what-we-do/browse-our-areas-of-investment-and-support/prospering-from-the-energy-revolution/

direct Tube and rail connectivity, and in close proximity to Heathrow and Luton airports providing international connectivity.

5.20 Buckinghamshire has four strategic growth sectors, all of which fall within Science, Innovation and Technology:

- High-Tech and advanced engineering – at Silverstone Park and Tech Cluster.
- Space Innovation – including excellence in rocket propulsion, 5G and autonomous systems research and development that is spearheaded at the Westcott Space Cluster.
- Creative and Digital – including Pinewood Studios and the National Film and Television School at Beaconsfield.
- Medtech - advancing through digital health, life sciences and advanced AI being pioneered at Stoke Mandeville Hospital which also hosts the UK's National Spinal Injury Centre.

5.21 The Buckinghamshire Enterprise Zone is a multi-site facility featuring 3 nationally strategic assets: Silverstone Park (high-tech, R&D and advanced engineering focussed), Westcott Venture Park (space sector focussed) and Arla/Woodlands (agri-food, human health and creative sectors focussed). Enterprise Zone status has unlocked significant private and national government investment in the three sites, including agencies such as the UK Space Agency, and Satellite Applications Catapult who have already invested significantly in the Westcott site.

6. Sector Context: Employment

6.1 This chapter explores the employment and spatial profile of each of the key sectors identified.

6.2 The analysis within this chapter uses BRES data at the 5-digit SIC code level. Sector and sub-sector definitions by SIC code can be found in Appendix 1.

6.3 For each subsector the following analysis has been carried out:

time series of employment by local authority since 2009 (see Appendix 2);

location quotients (compares the relative concentration of employment in the local authority to the region and country);

spatial mapping of employment by LSOA; and

identified commercial premises using CoStar occupier definitions.

6.4 Data sets used are considered best available but do include inconsistencies.

Time series BRES data does include some discrepancies in employment numbers between 2014 and 2015, due to changes in the dataset[12].

BRES is reliant on survey based information reflecting main business activities but not all business branches may undertake that activity (i.e. HQ offices of a food retailer reporting food retail employment).

BRES uses Standard Industrial Classifications (2007) to define a business' sector. Given that science and technology businesses often conduct innovative activities which do not align to existing definitions and traditional industries, some companies may not be included in the analysis.

CoStar does not record all occupier types so can overlook some premises.

[12] From 2015 onwards the coverage of the dataset was extended to include a population of solely Pay As You Earn (PAYE) businesses, leading to an increase in the estimate of employment.

6.5 The Department for Science, Innovation and Technology (DSIT) has created Innovation Clusters Maps. These can be found in Appendix 3 and have been referenced throughout the section where relevant and additional clustering is identified beyond BRES.

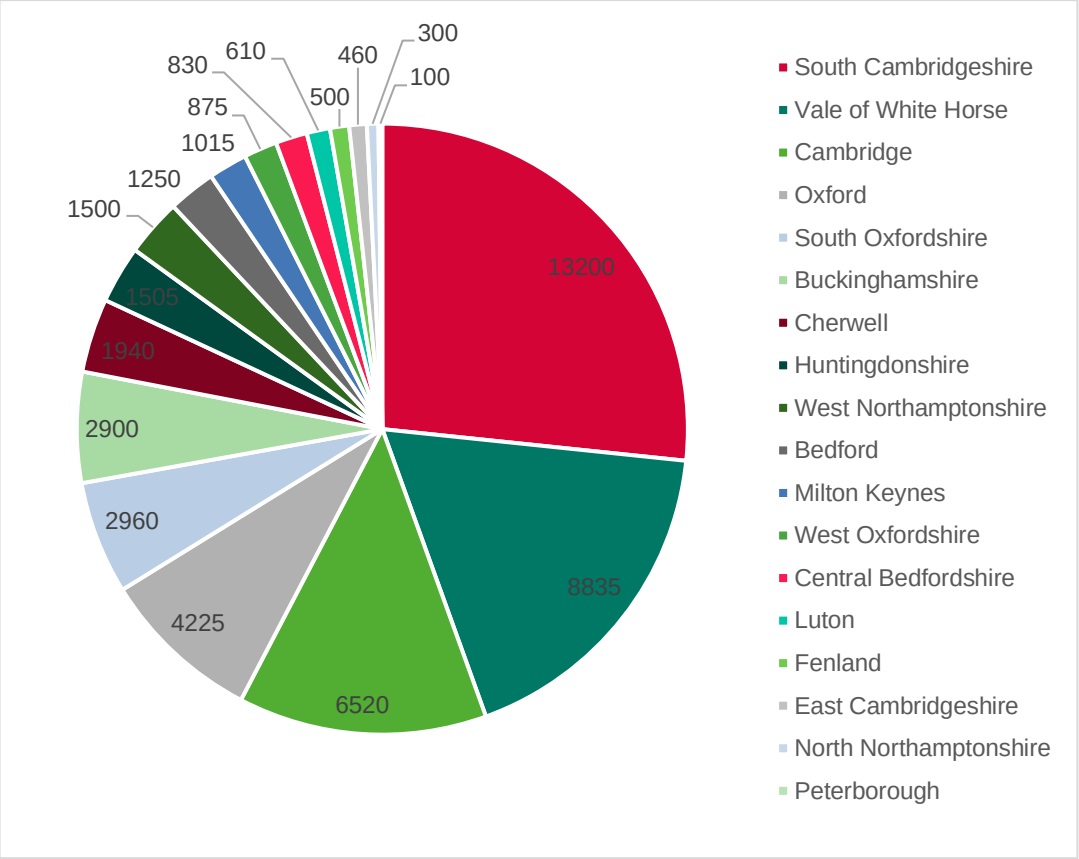
Qualitative information also supplements the data analysis, to add depth and to pick up potential data omissions or anomalies.

Life Sciences

6.6 The figure below shows life science employment by local authority. In the Oxford to Cambridge area, BRES reports 49,525 life science jobs. Life sciences employment has been consistently increasing – since 2009 the sector has grown at an average rate of 6% per annum.

6.7 South Cambridgeshire has the highest proportion of life sciences employment at 26.7% of the pan-regional's sub-sector employment, totalling 13,200 jobs. This is closely followed by Vale of White Horse with 17.9% of life sciences employment, Cambridge City (13.2%), Oxford (8.5%) and South Oxfordshire (6.0%).

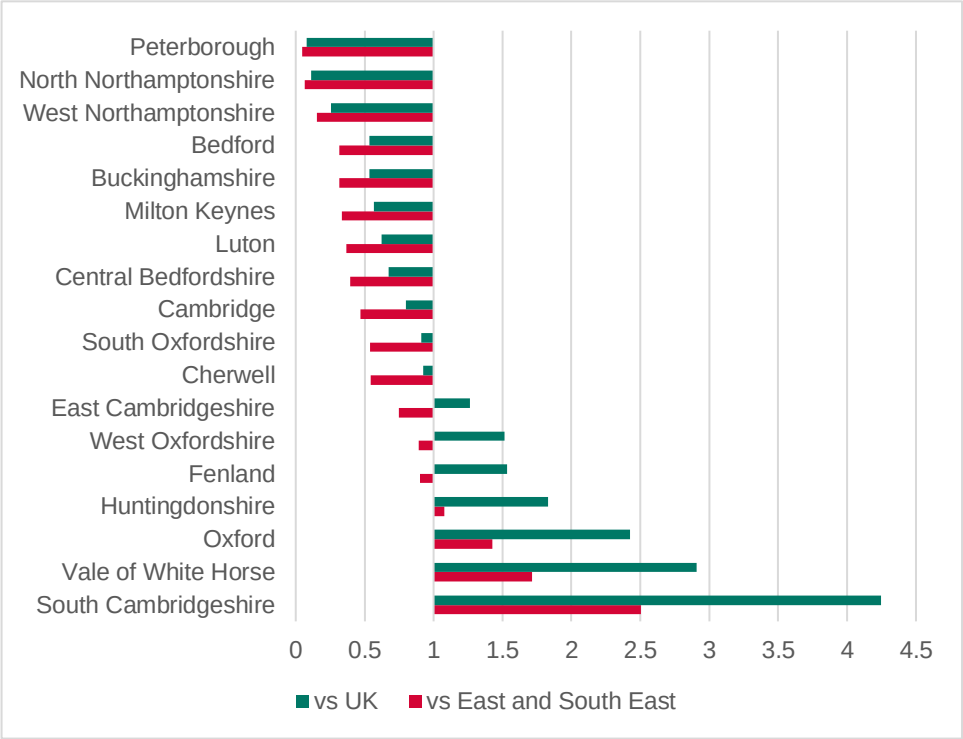
Figure 6.1 Life Sciences Employment by Local Authority, 2022



Source: Iceni analysis of BRES 2022

6.8 The figure below shows that South Cambridgeshire, Vale of White Horse, Oxford and Huntingdonshire have a significantly higher proportion of life sciences employment than the wider regions and England.

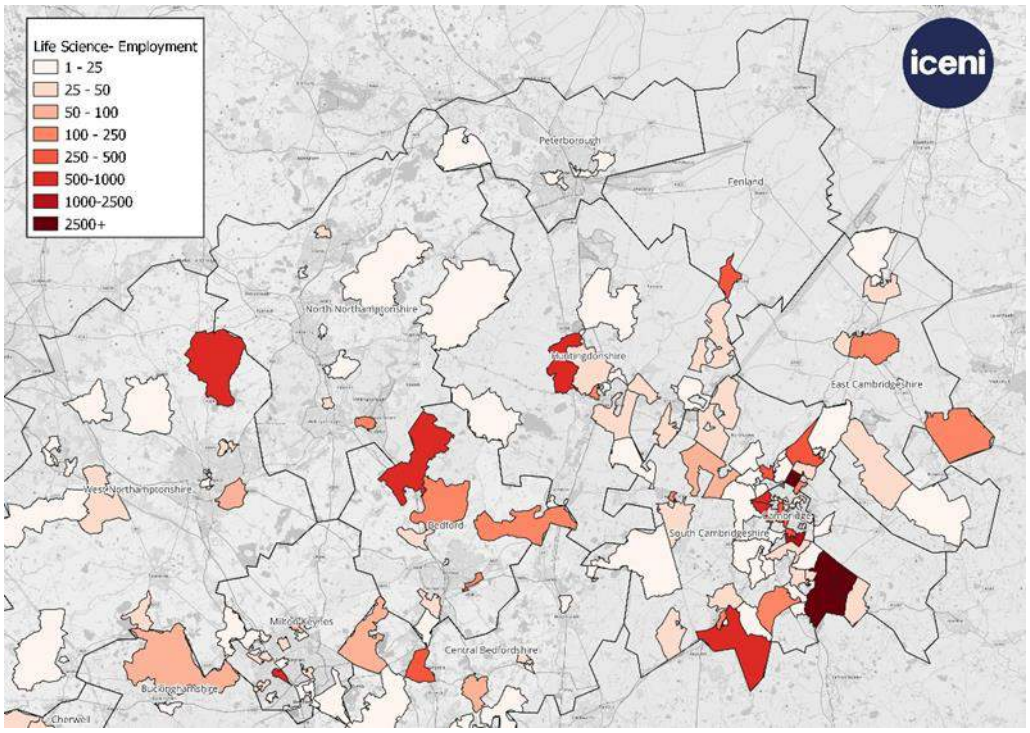
Figure 6.2 Life Sciences Location Quotient – vs East & South East and vs UK



Source: Iceni analysis of BRES 2022

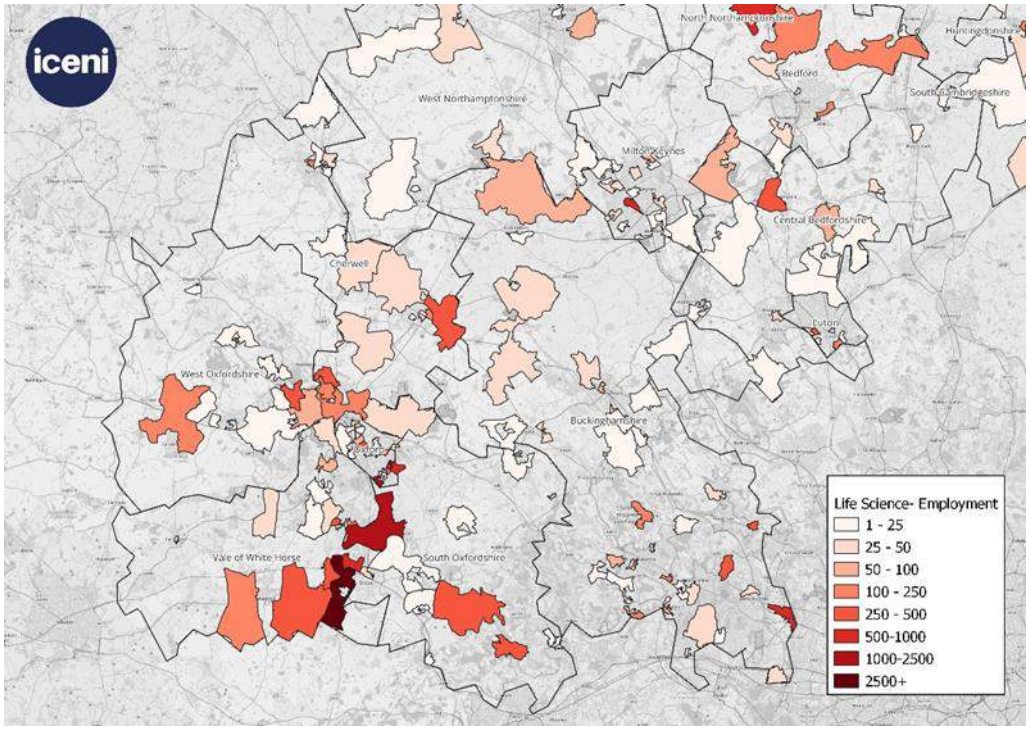
6.9 The figure below shows the spatial distribution of life sciences employment across the region according to BRES.

Figure 6.3 Life Sciences Employment by LSOA – North East of Region



Source: BRES 2022

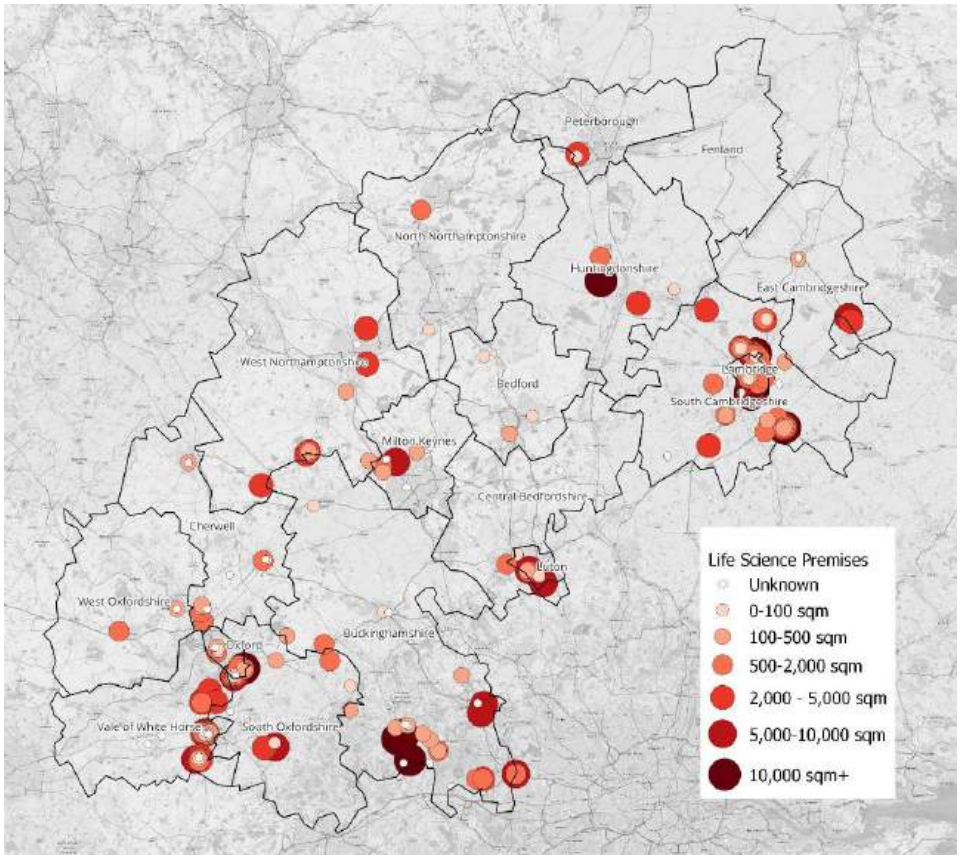
Figure 6.4 Life Sciences Employment by LSOA – South West of Region



Source: BRES 2022

6.10 The figure below shows the spatial distribution of life sciences premises across the whole region. This broadly correlates with employment data particularly around Greater Cambridge, Huntingdonshire, Oxford, South Oxfordshire and Vale of White Horse. South Buckinghamshire and Milton Keynes also report high premises concentrations, but lower employment concentrations. Bedford shows employment concentration, likely reflecting its capabilities in medical diagnostics (see Bedford Borough Economic Prosperity Plan 2023-28) but not premises. Luton has a low employment concentration, but a high concentration of premises. Employment and premises location 'mismatches' reflect commuting patterns and suggest potential for delivering additional space in labour / skill concentrations.

Figure 6.5 Life Science Premises

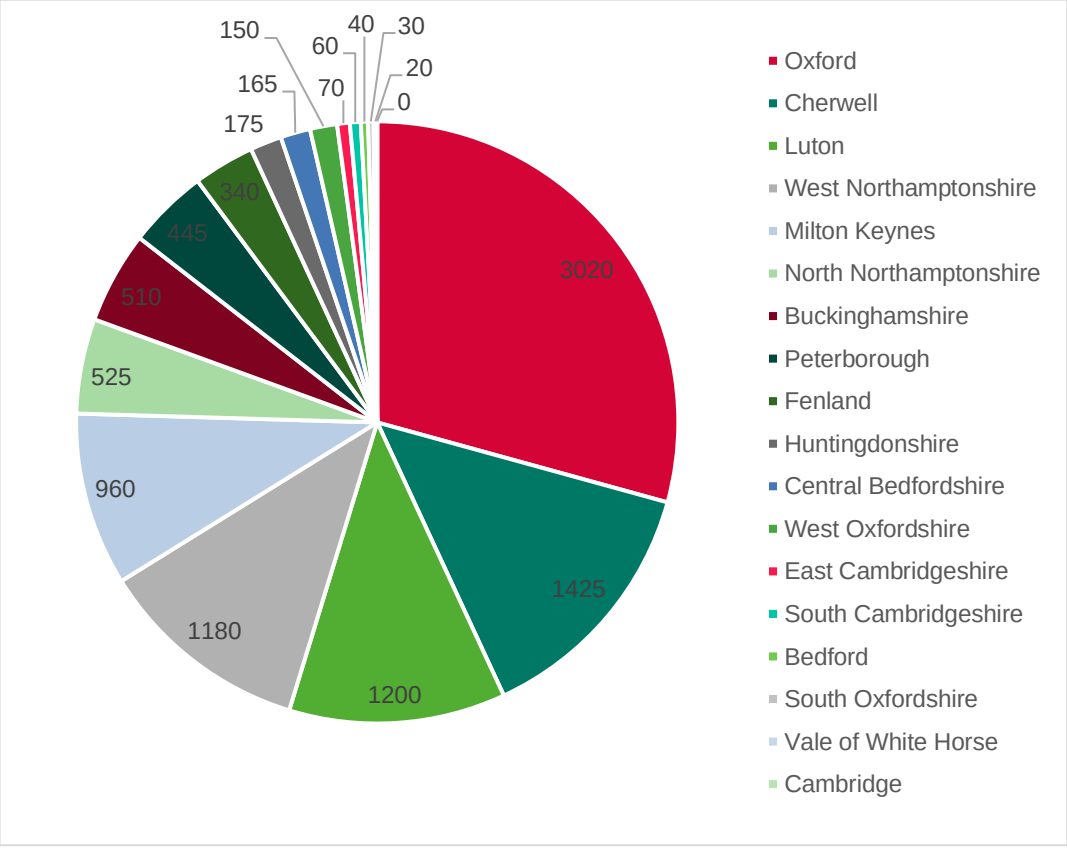


Source: CoStar 2024

Automotive

6.11 Analysis of BRES data indicates that there are 10,315 jobs in the automotive sector (manufacture). Nearly a third of automotive jobs are concentrated in Oxford (29.3%) totalling 3,020 jobs. There are a significant proportion of sub-sector jobs in Cherwell (13.8%), Luton (11.6%), West Northamptonshire (11.4%) and Milton Keynes (9.3%). A number of these are associated with factory activities in Oxford (Mini) and Luton (Vauxhall).

Figure 6.6 Automotive Employment by Local Authority, 2022

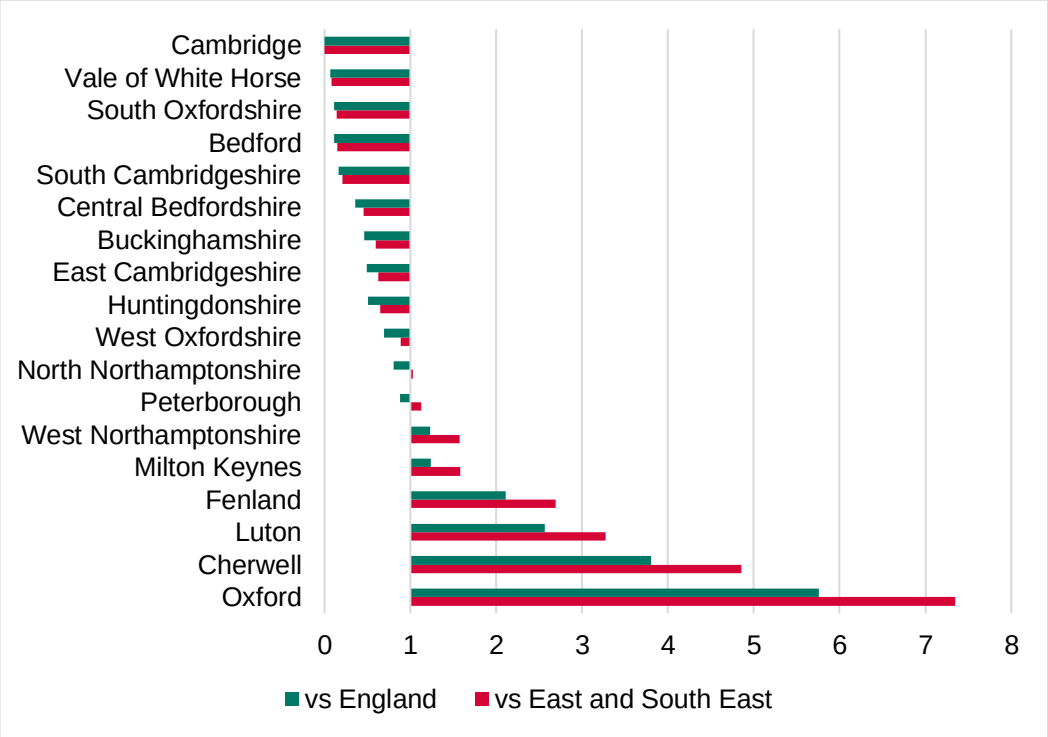


Source: BRES (2022)

6.12 The figure below compares the proportion of automotive employment in each local authority to the proportion seen in the wider regions and England. The location quotient shows that Oxford has a proportionally significant larger automotive sub-sector than the regions and England by up to over 5 times. Cherwell, Luton, Fenland and Milton Keynes also have

proportionally more automotive employment than the national and regional benchmarks.

Figure 6.7 Automotive Location Quotient – vs East & South East and vs England



Source: Iceni analysis of BRES 2022

6.13 The figures below show the spatial distribution of automotive employment and the location of automotive premises as classified by CoStar. There are automotive employment clusters in the following locations:

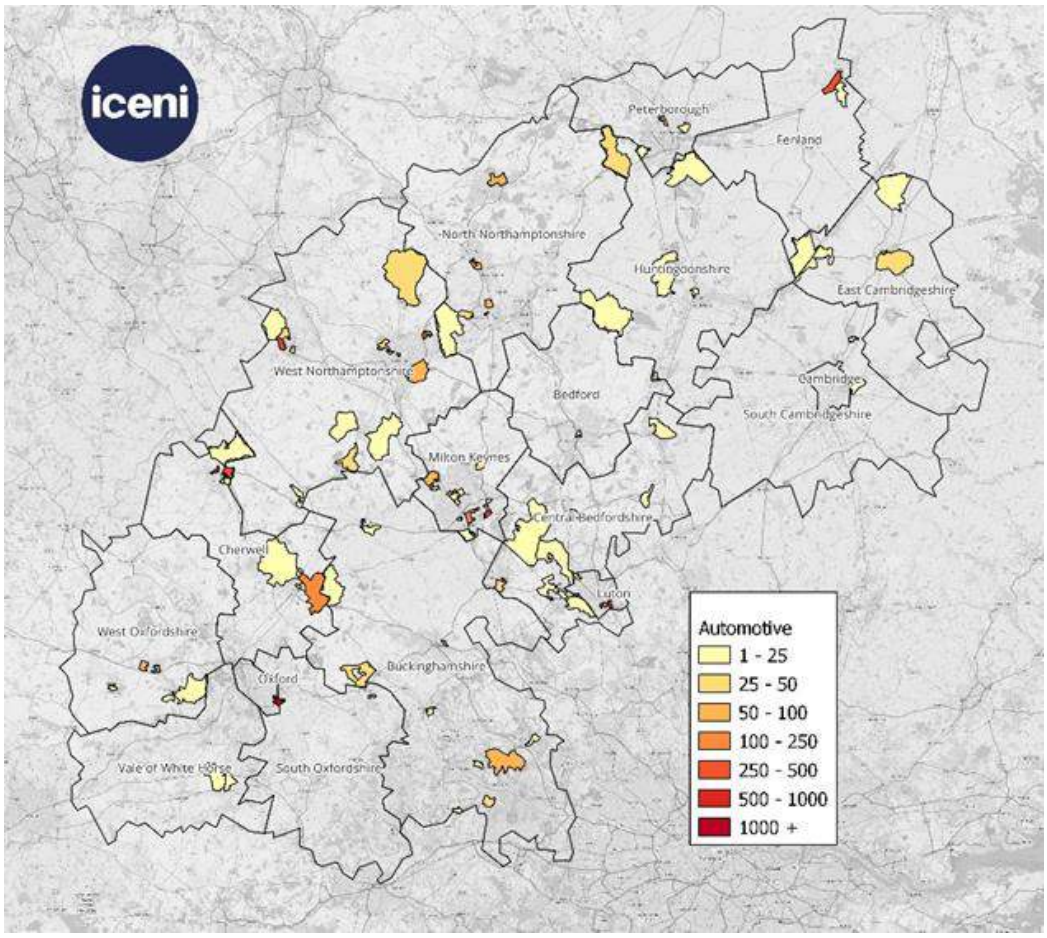
Cowley, Oxford

South Luton

Banbury Industrial Areas, Cherwell

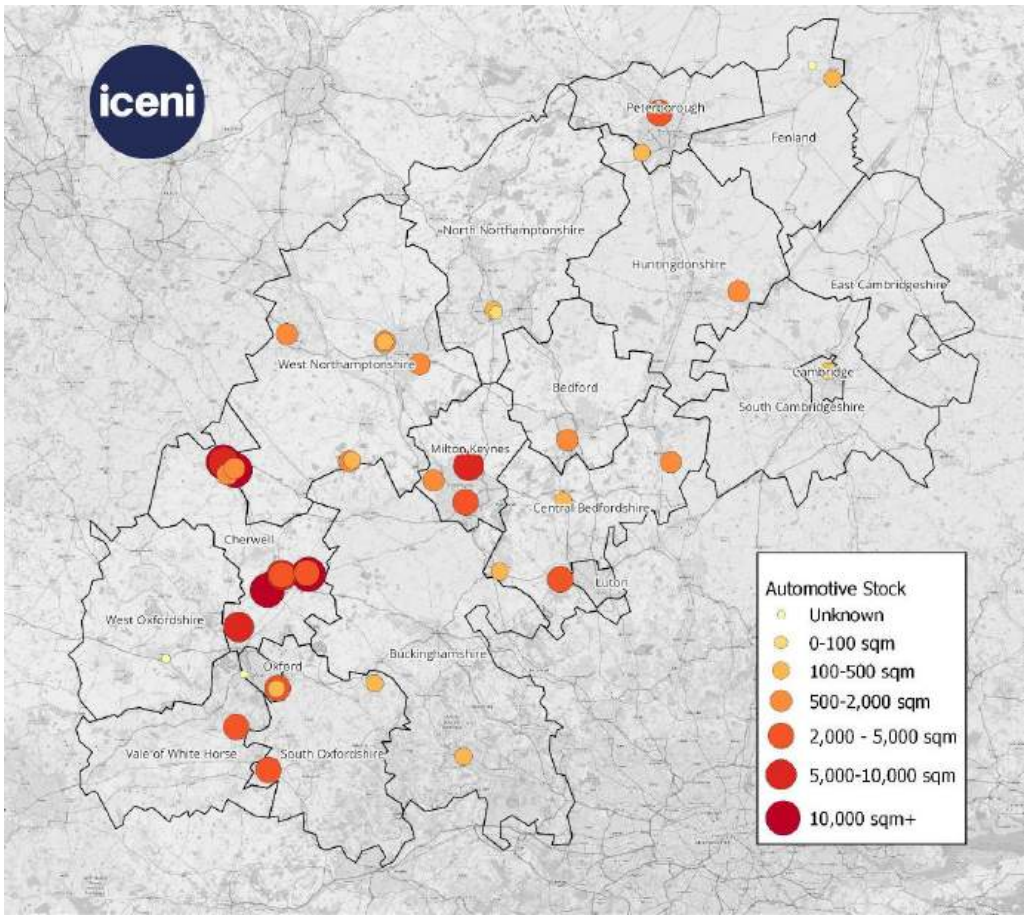
Royal Oak Industrial Estate, Daventry, West Northamptonshire

Figure 6.8 Automotive Employment by LSOA



Source: BRES 2022

Figure 6.9 Automotive Premises



Source: CoStar 2024

Advanced Manufacturing

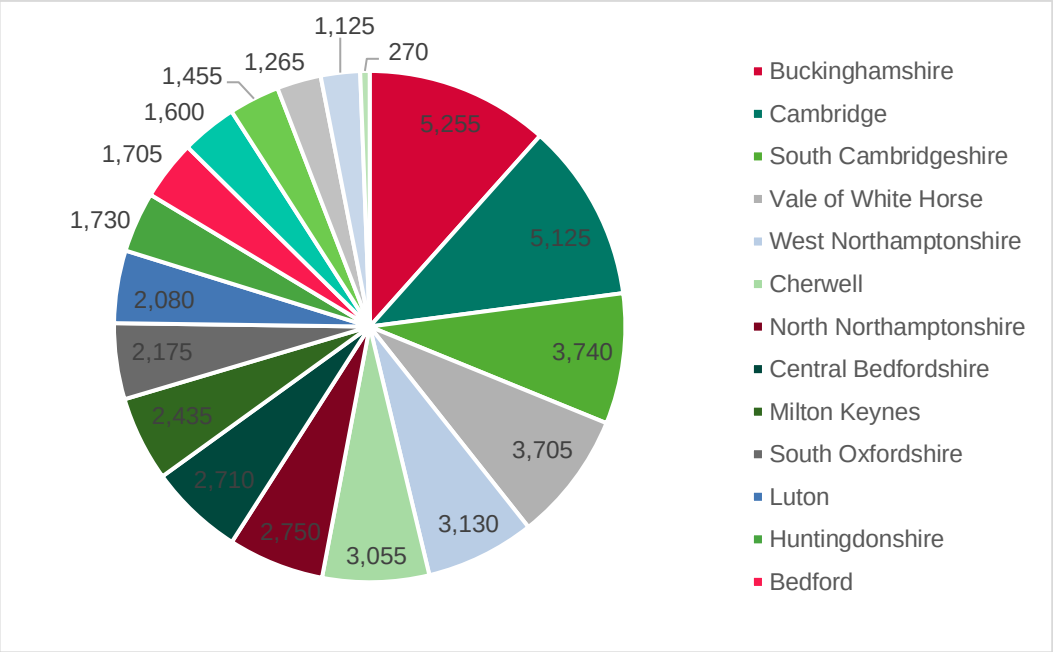
6.14 Data from BRES indicates that there are 45,310 advanced manufacturing jobs in the study area. The sector experienced growth in the region between 2018 and 2020 but has since been declining.

6.15 Buckinghamshire has the largest proportion of advanced manufacturing employment out of the local authorities in the study area with 11.6% of jobs. This is closely followed by Cambridge (11.3%), driven by engineering design activities rather than manufacturing. South Cambridgeshire also reports a significant proportion of employment at 8.3%, similar to Vale of White Horse at 8.2%.

6.16 In nominal terms, Cherwell has seen the largest growth over the past decade with a net growth of 2,565 jobs since 2012. Subsector employment has increased by 1,670 jobs in Cambridge, 900 in West Oxfordshire and 895 jobs in West Northamptonshire from 2012-2022.

6.17 There has recently been a decline in jobs since 2020 (-7,980). The greatest losses were seen in North Northamptonshire (-2,040 jobs), Peterborough (-1,090 jobs), Central Bedfordshire (-980 jobs) and West Northamptonshire (-770 jobs).

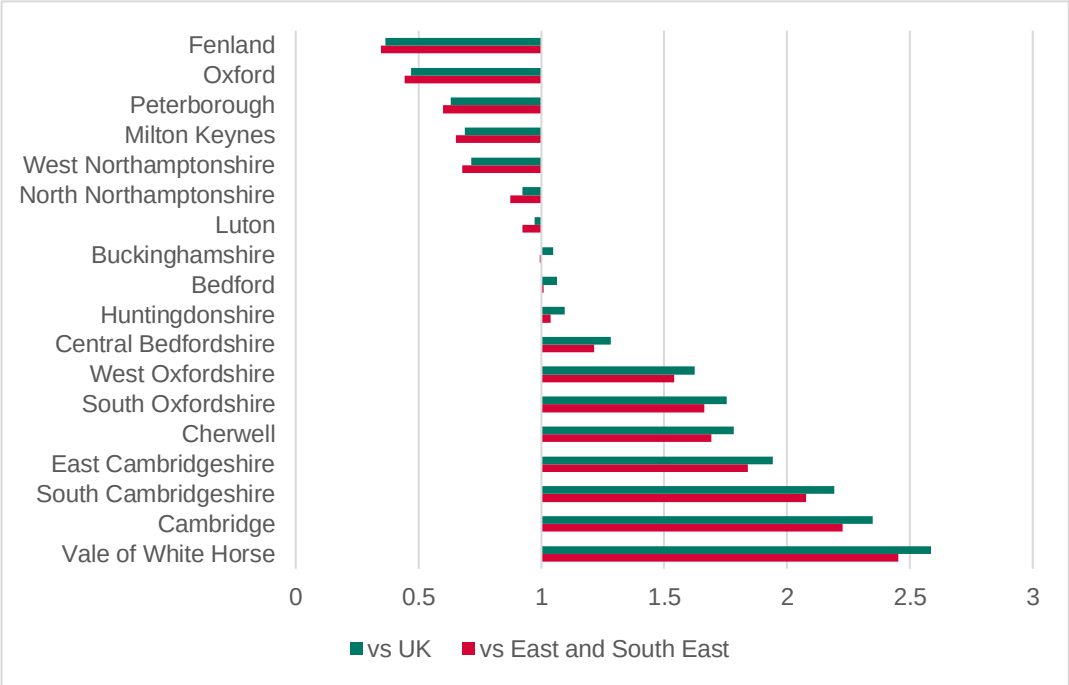
Figure 6.10 Advanced Manufacturing Employment by Local Authority



Source: BRES 2022

6.18 Vale of White Horse, Cambridge, South Cambridgeshire and East Cambridgeshire have over double the concentration of advanced manufacturing employment than the wider regions and England.

Figure 6.11 Advanced Manufacturing Location Quotient – vs East and South and vs UK



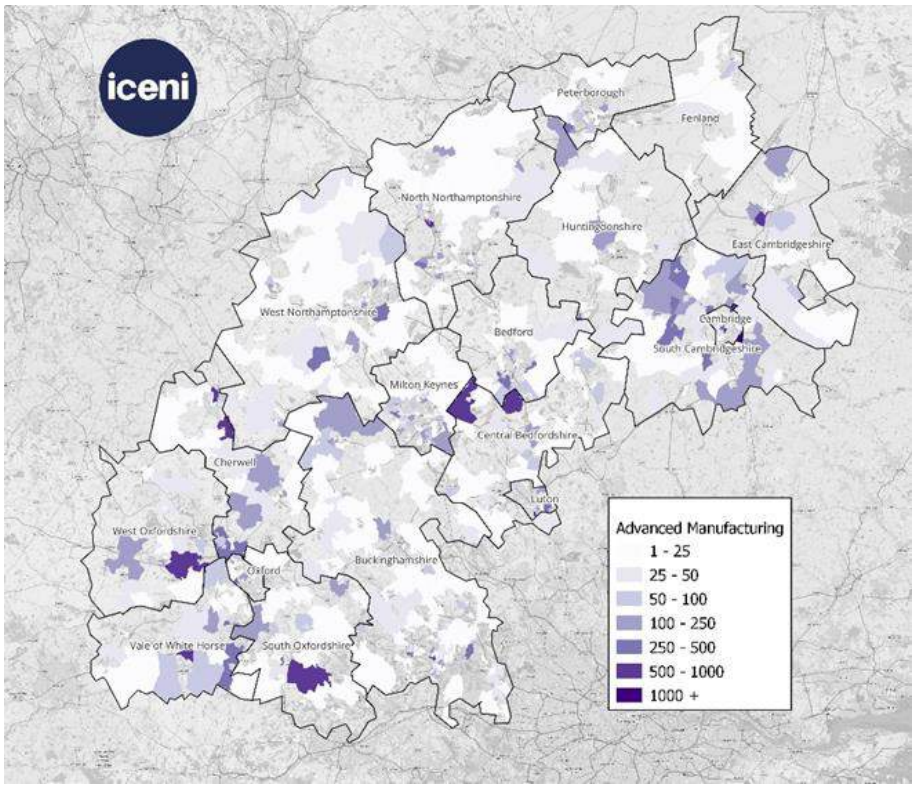
Source: Iceni analysis of BRES (2022)

6.19 The maps below show the spatial distribution of advanced manufacturing employment by LSOA and the location of advanced manufacturing premises as classified by CoStar, revealing employment clusters in the following areas:

- Greater Cambridge: Peterhouse Technology Park (Cambridge (ARM)); Cambridge Science Park and Cambridge Business Park, Cambridge
- Capability Green, Luton
- Williams Racing F1 site, Vale of White Horse
- Horizon Technology Park / Oasis Business Park, Eynsham, West Oxfordshire
- High Wycombe Industrial Area, Buckinghamshire

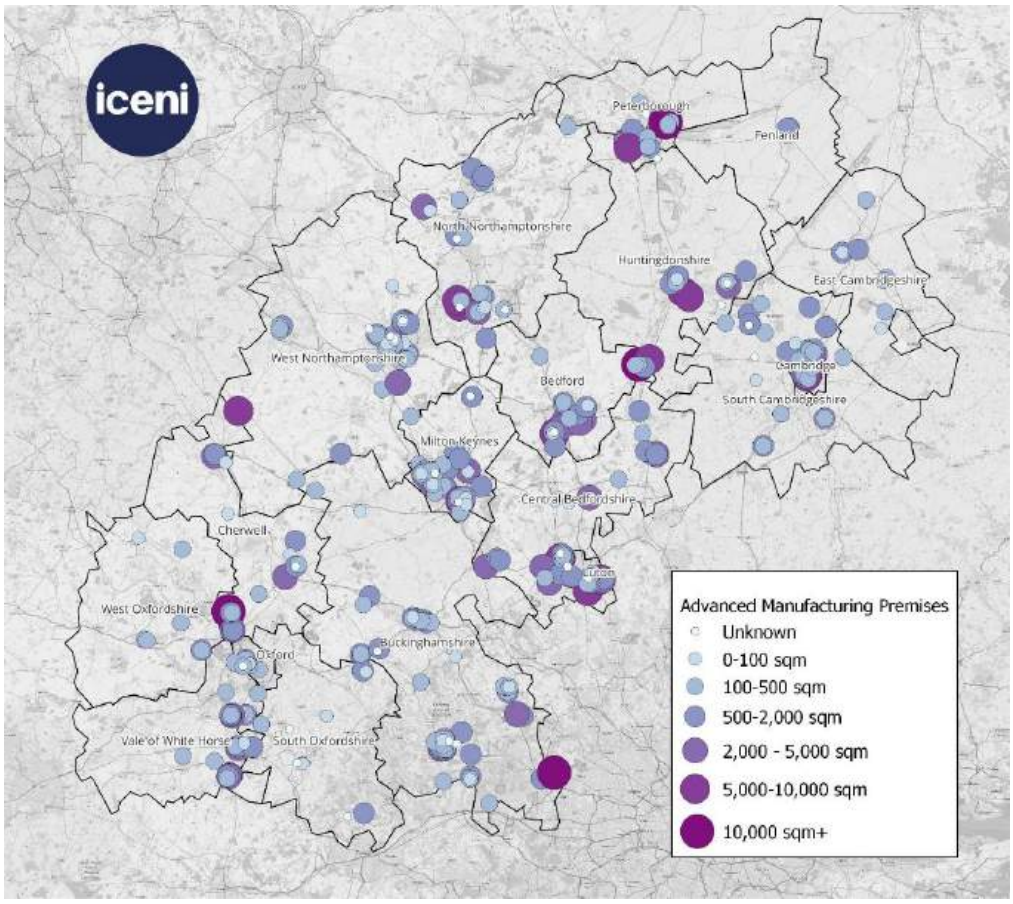
6.20 The DSIT innovation clusters map identified advanced manufacturing clusters in Milton Keynes (836 jobs and 141 companies); Cambridgeshire (1000 jobs and 110 companies); Northamptonshire (774 jobs and 119 companies).

Figure 6.12 Advanced Manufacturing by LSOA



Source: BRES 2022

Figure 6.13 Advanced Manufacturing Premises



Source: CoStar 2024

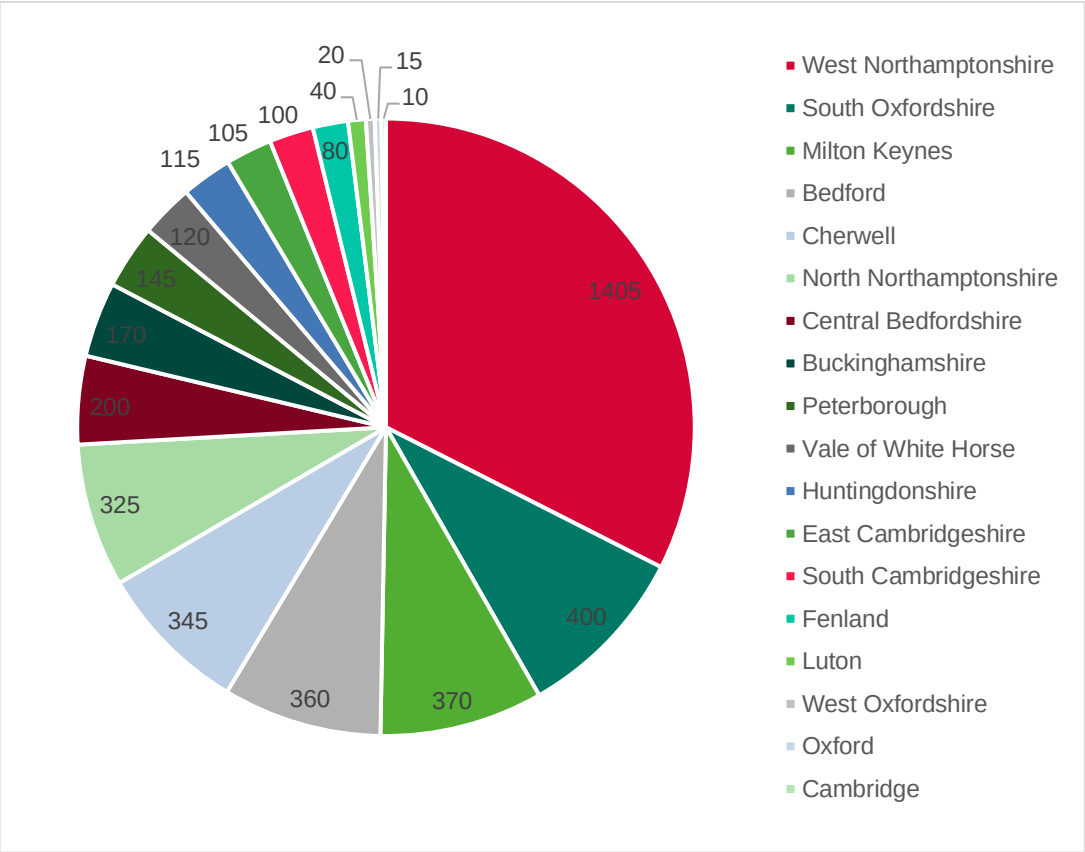
Future Energy

6.21 Analysis of BRES data indicates that there are 4,325 future energy jobs[13] across the study area which have varied year on year, declining slightly from a peak in 2017 of 5,525 jobs. Over a third (32.5%) of future employment is concentrated within West Northamptonshire. There is also significant employment in South Oxfordshire (9.2%), Milton Keynes (8.6%),

[13] Processing of nuclear fuel; Manufacture of electricity distribution and control apparatus; Manufacture of batteries and accumulators; Production of electricity; Transmission of electricity; Distribution of electricity; Trade of electricity; Manufacture of gas; Distribution of gaseous fuels through mains; Trade of gas through mains; Steam and air conditioning supply

Bedford (8.3%) and Cherwell (7.5%). Over the past decade, Vale of White Horse has seen a decline in future energy employment (energy production) from 495 jobs in 2012 (11.4% of sub-sector employment) to just 120 in 2022 (2.8%).

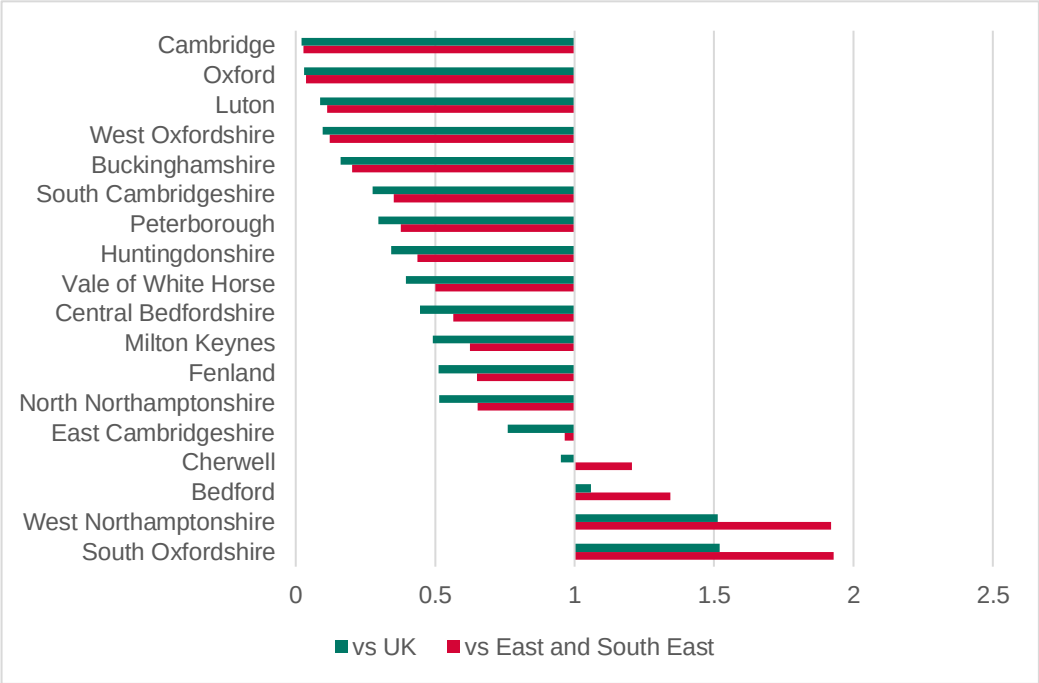
Figure 6.14 Future Energy Employment by Local Authority, 2022



Source: Iceni analysis of BRES 2022

6.22 South Oxfordshire, West Northamptonshire and Bedford have a higher proportion of employment in the future energy sub-sector than the regions and England. Cherwell has a higher proportion of future energy employment than the regions, but not England.

Figure 6.15 Future Energy Location Quotient – vs East and South East and vs England UK



Source: Iceni analysis of BRES 2022

6.23 Mapping of employment by LSOA and future energy tenants classified by CoStar, reveals future energy employment concentrations in:

Northampton, West Northamptonshire

Milton Park, Vale of White Horse

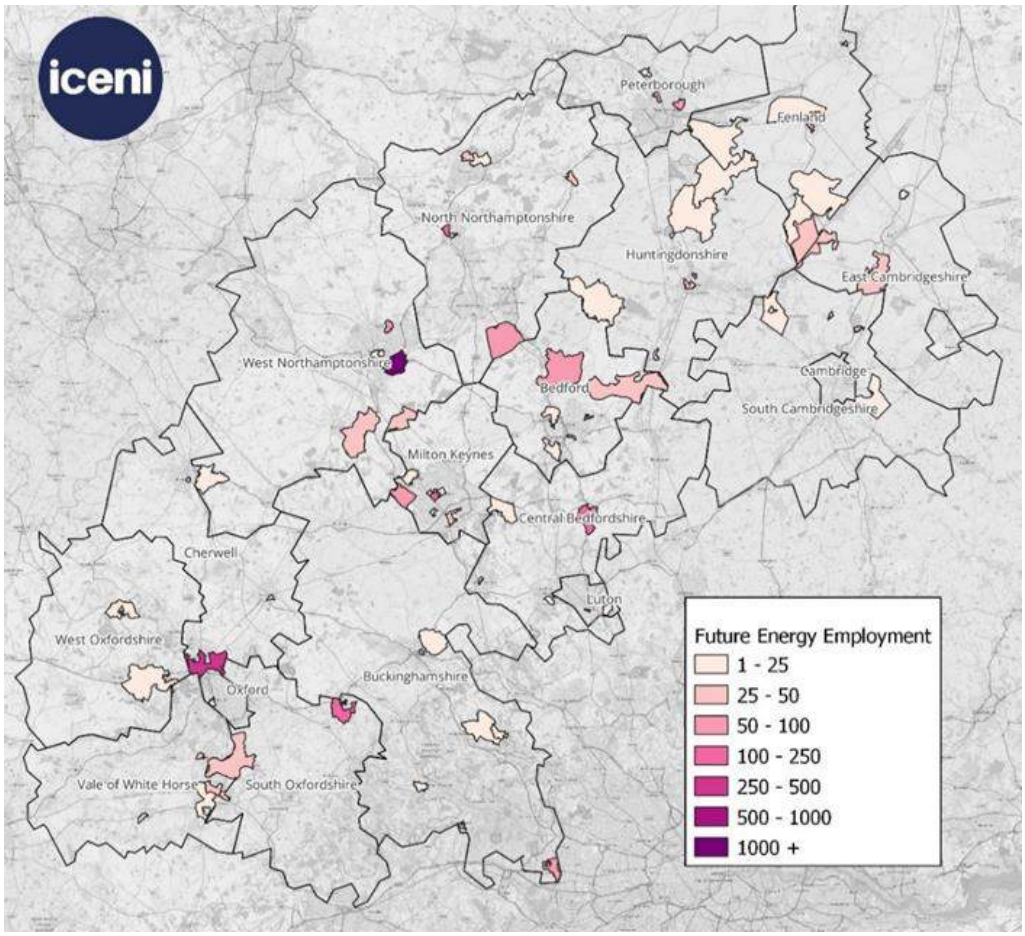
Kidlington, Cherwell

Thame, South Oxfordshire

Kettering – Telford Way Industrial Estate, North Northamptonshire

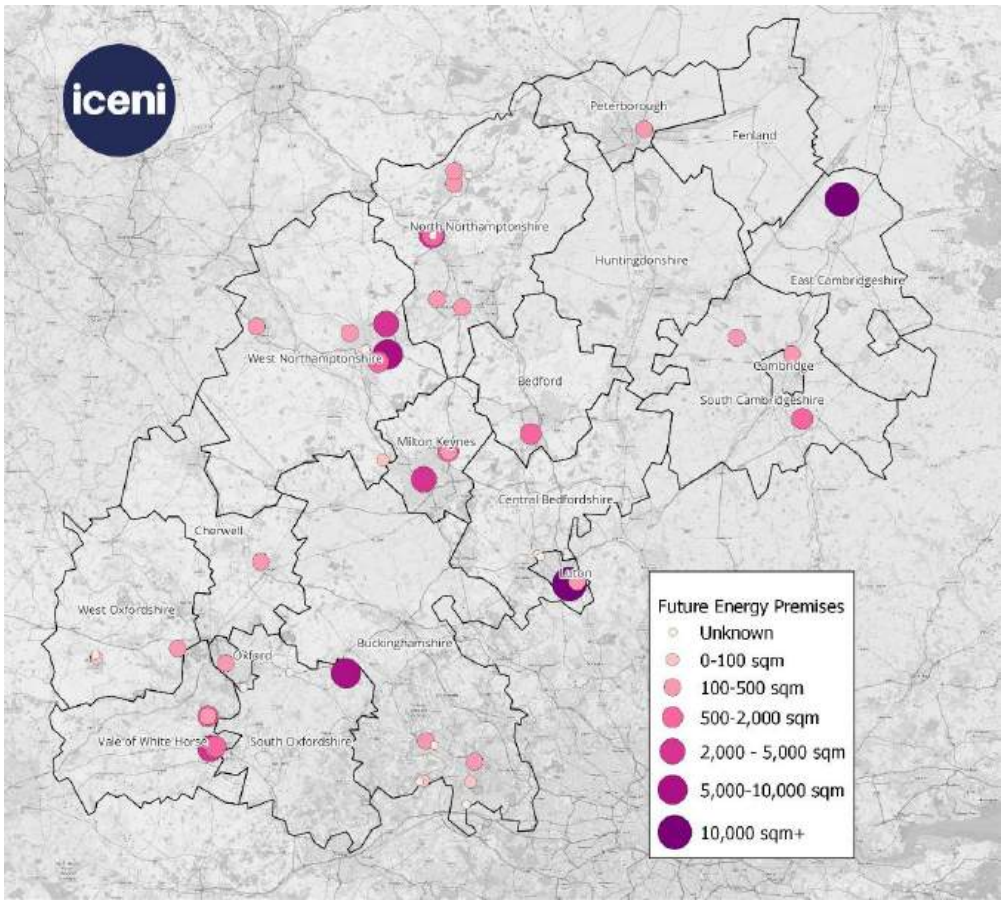
South of Rushden, Bedford (Wykes Engineering)

Figure 6.16 Future Energy Employment by LSOA



Source: Iceni analysis of BRES 2022

Figure 6.17 Future Energy Business Premises Locations



Source: Iceni analysis of CoStar 2024

Space / Aerospace

6.24 The Space / Aerospace subsector includes the development and manufacture of both air and spacecraft and related machinery. It should be noted that at the most granular level of sector definition (5 digit SIC code) the manufacture of aircraft is not separated from manufacture of spacecraft and related machinery, therefore the data will include space and aerospace engineering and manufacturing companies. However, activities in both sectors are closely linked.

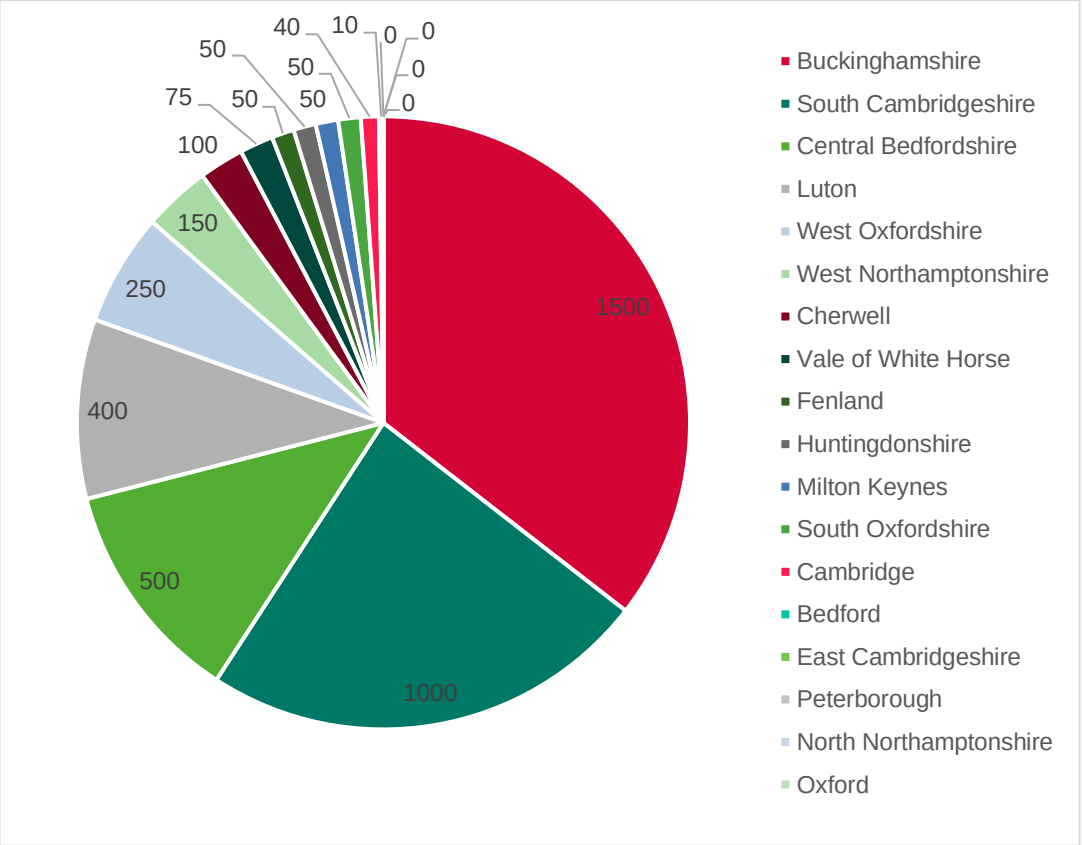
6.25 The report ‘Developing the Space Sector in the Oxford-Cambridge Arc’[14] provides further context on the space sector within the study area including further employment analysis, business case studies and sector assets. The document discusses the potential for the region to drive innovation in the sector, highlighting strengths in research, advanced manufacturing and technology, emphasising the collaboration between academia and industry.

6.26 The figure below shows the time series of employment within the space subsector by local authority. As of 2022 there is an estimated 4,225 employees working within the subsector across the study area, which has gradually been declining since 2017 from a peak of 5,775 jobs.

6.27 Over 35% of regional employment in the space sector is concentrated in Buckinghamshire (likely due to Westcott Venture Park) followed by 23.7% in South Cambridgeshire (potentially Marshall’s aerospace, which is in the process of moving to Cranfield University in Central Bedfordshire) and 11.8% in Central Bedfordshire. Since 2019 there has been a net reduction of 1,000 space jobs in South Cambridgeshire. Although Vale of White Horse doesn’t register as a significant space sector employment concentration, it is home to Harwell Science and Innovation Campus which hosts multiple organisations within the Space and Satellite Applications sectors.

[14] Developing-the-Space-Sector-in-the-Oxford-Cambridge-Arc-Full-Report-FINAL-Mar-21.pdf, March 2021

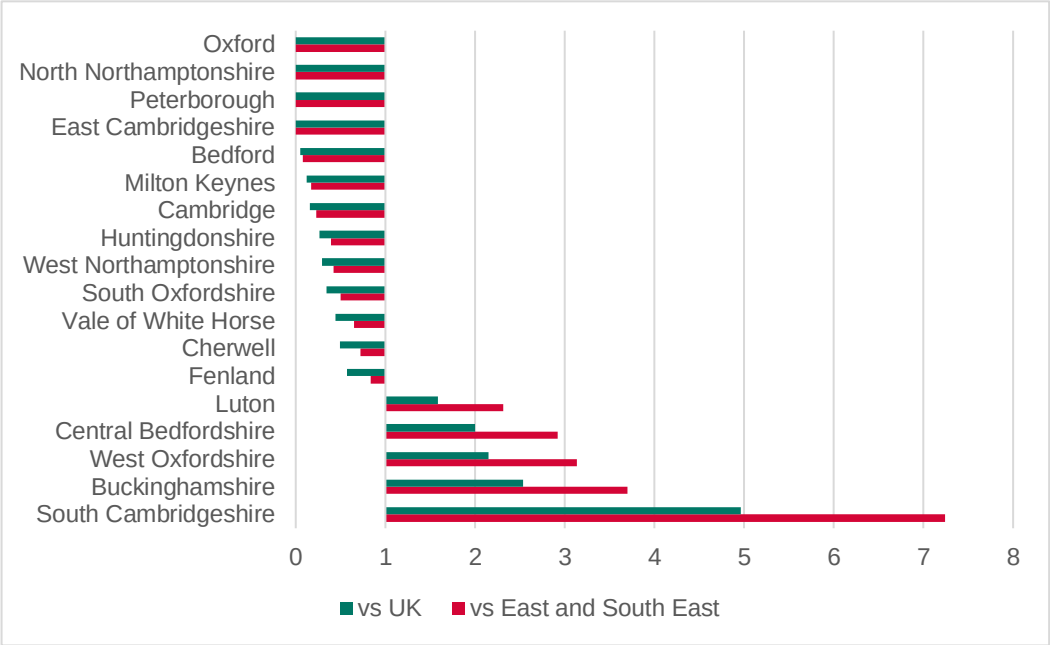
Figure 6.18 Space Employment by Local Authority



Source: BRES 2022

6.28 South Cambridgeshire has proportionally over 7 times employment in the space and air sector than the wider region. Buckinghamshire, West Oxfordshire, Central Bedfordshire and Luton also have a higher concentration of employment in the sector in comparison to the regions and England.

Figure 6.19 Space and Air Location Quotient vs East and South East and vs UK



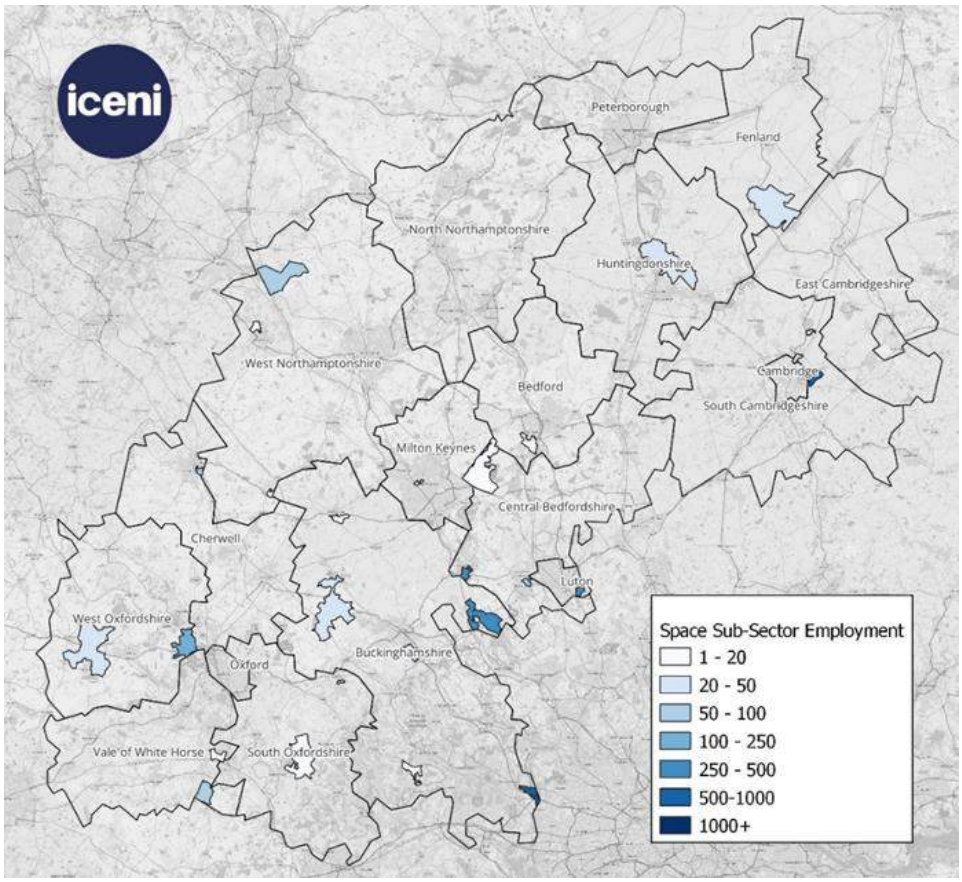
Source: Iceni analysis of CoStar 2022

6.29 The maps below show the spatial distribution of space employment (BRES) down to LSOA level and the location of premises of which have space-sector tenants classified by CoStar. Key clusters include:

- South of Buckinghamshire – Martin-Baker Aircraft Company, Chelton
- Cambridge – Cambridge Airport (Marshall's) and Cambridge Business Park – Tamarack Aerospace. It should be noted that as Marshall's is relocating to Cranfield University in Central Bedfordshire, this may significantly change the specialisation in this cluster.
- South Cambridgeshire – Hexcel is a significant aerospace occupier in Duxford (BRES data captures in advanced manufacturing)
- Luton Airport and surrounding business park area – occupiers include RSS Enterprises, Monarch Aircraft Engineering, Harrods Aviation, Moog Inc, Leonardo
- Leighton Buzzard (Central Bedfordshire) town centre and Pitstone Green Business Park – BE Aerospace, Sabeti Wain Aerospace.
- Bedford – Manton Industrial Estate (ARA), Oakley (BlueBear)

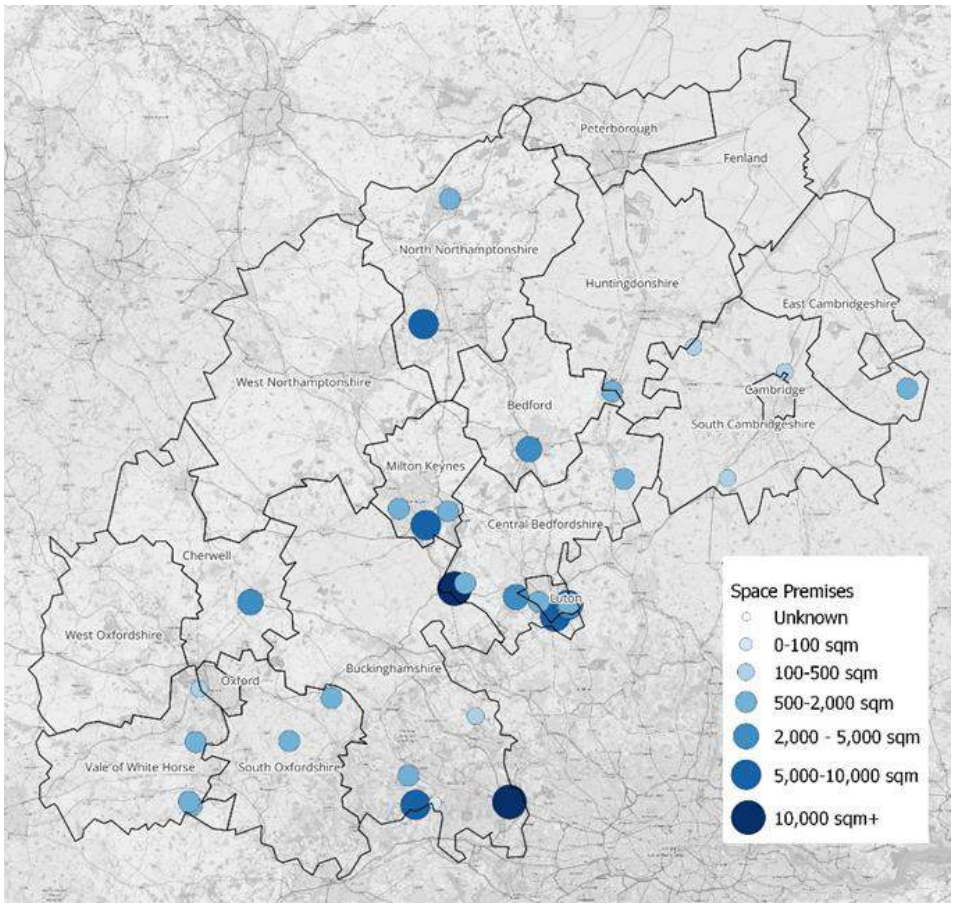
6.30 Vale of White Horse – Harwell Science and Innovation Campus which is home to multiple organisations within the Space and Satellite Applications sectors, including ESA (European Space Agency), Satellite Applications Catapult, Oxford Space Systems, RAL Space, Thales Alenia Space UK and more.

Figure 6.20 Space Sector Employment by LSOA



Source: Iceni analysis of BRES 2022

Figure 6.21 Space Tenant Premises



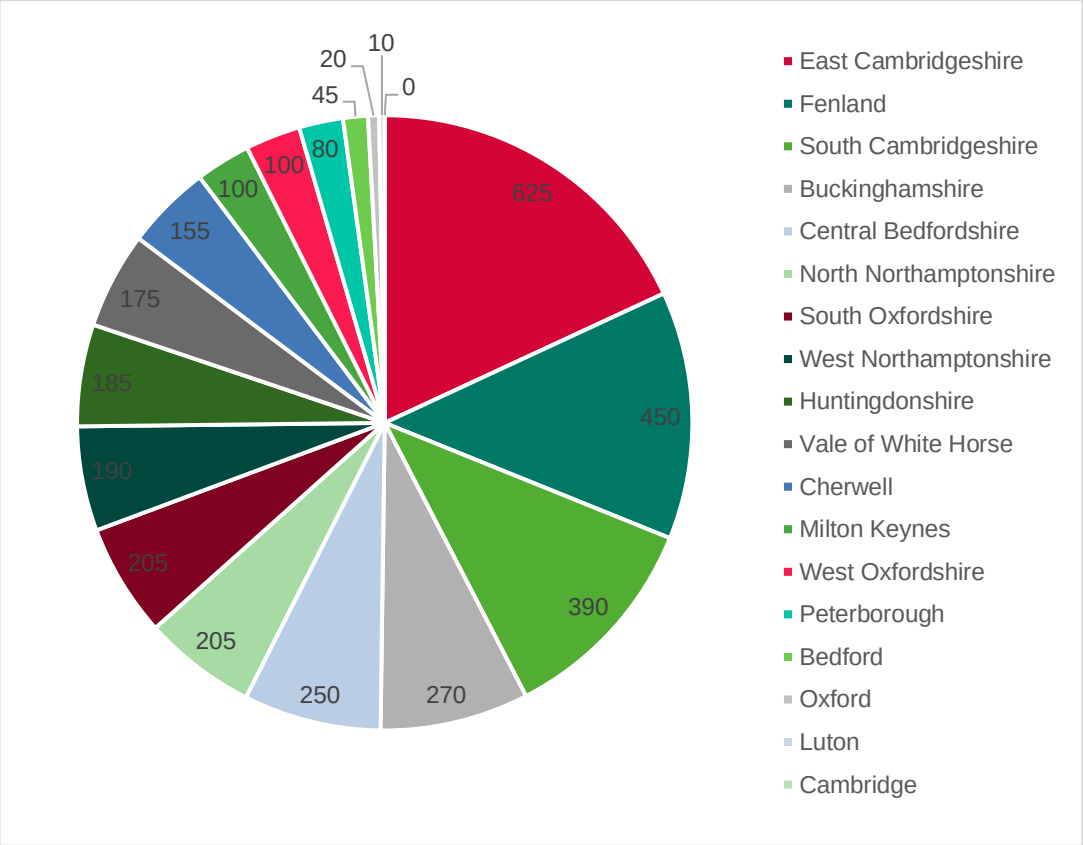
Source: CoStar 2024

Agri-tech

6.31 According to BRES there are 3,455 jobs in the agri-tech sector as of 2022. The sector has not grown notably since 2009, growing at an average rate of 0.1% since 2009. There has been contraction in the sector since 2017, declining by 18.5%.

6.32 East Cambridgeshire hosts the largest proportion of employment in the subsector with 18.1% of employment, closely followed by Fenland (13%) and South Cambridgeshire (11.3%). Historically, West Oxfordshire had a larger agri-tech presence, with 16.1% of regional employment in the previous decade in 2012, however this reduced the following year, presumably due to a closure of a large business (chemical manufacture).

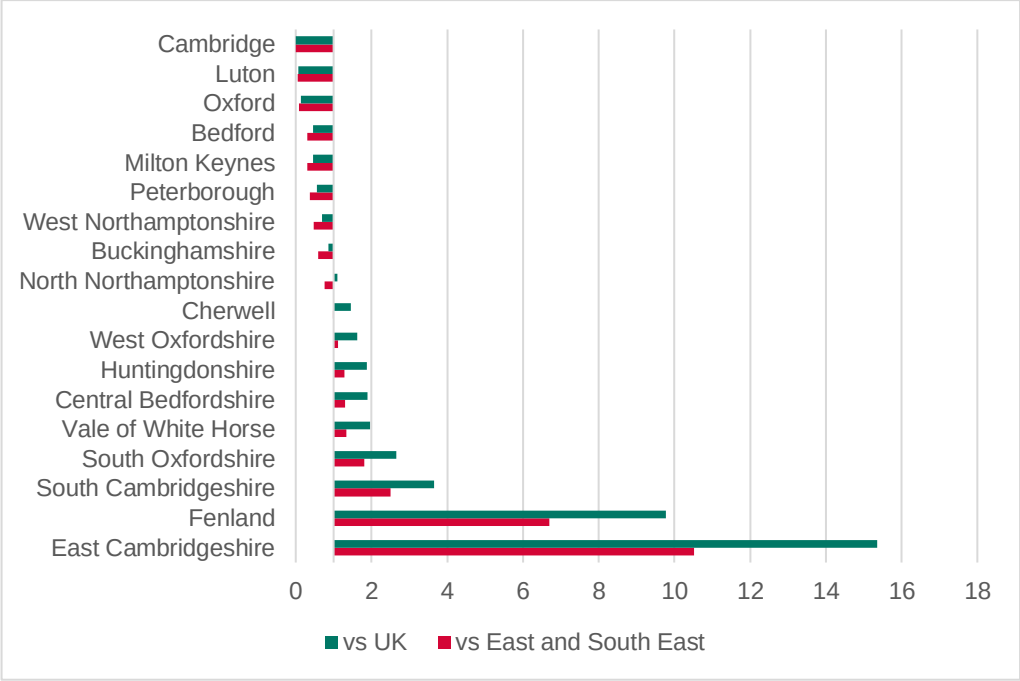
Figure 6.22 Agri-tech Employment by Local Authority



Source: Iceni Analysis of BRES 2022

6.33 East Cambridgeshire has over 10 times the concentration of agri-tech employment compared to the regions and England. Fenland also has a significantly higher employment concentration with a location quotient over 6. South Cambridgeshire, South Oxfordshire, Vale of White Horse, Central Bedfordshire, Huntingdonshire and West Oxfordshire all have above regional and national proportions of agri-tech employment based on this study's definition.

Figure 6.23 Agri-tech Location Quotient vs East and South East and vs UK



Source: Iceni analysis of BRES 2022

6.34 The maps below shows the spatial distribution of agri-tech employment (BRES) down to LSOA level. Key concentrations of employment include:

March, Fenland - Greenvale

Ely, East Cambridgeshire – Produce World

Cambridge and South Cambridgeshire – The National Institute of Agricultural Botany and Barn4 incubator space, Senceive

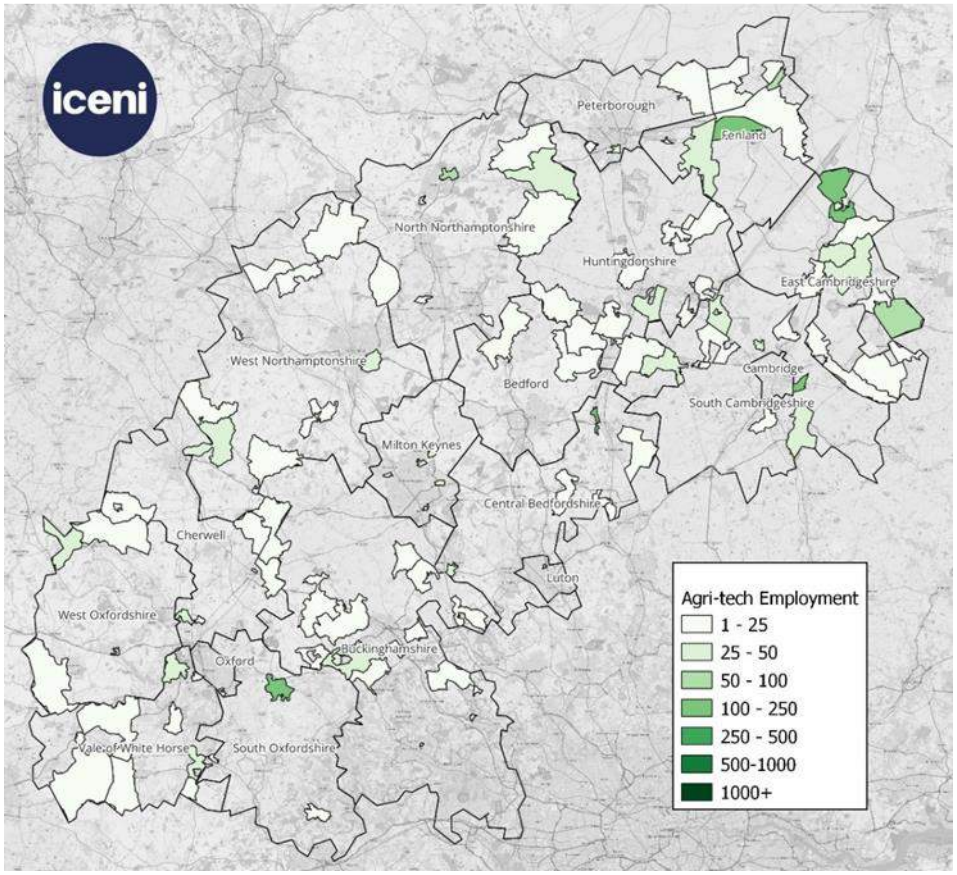
Oxfordshire - Milton Park – Gardin, Biocleave, Corteva Agriscience, Eden Research, Wild Bioscience

Bedford – GrowPura, Agri-Tech Services, Gastronomica

6.35 DSIT innovation cluster mapping identifies an agri-tech cluster across Cambridgeshire with 1,500 jobs and 93 companies.

6.36 There is insufficient CoStar data on agri-tech and agricultural occupation to map the premises typology.

Figure 6.24 Agri-tech Employment by LSOA



Source: Iceni analysis of BRES 2022

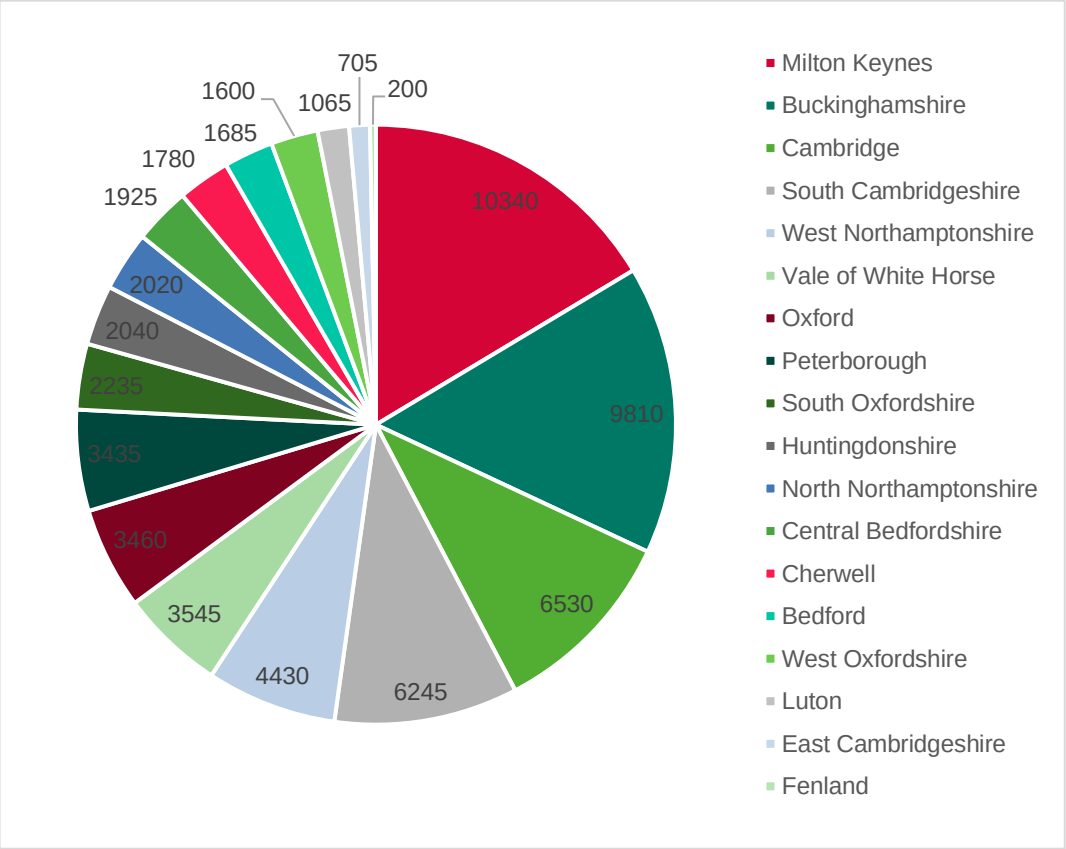
Digital and Technology

6.37 According to BRES as of 2022 there are 63,050 jobs in the digital and technology[15] across the study area. The sector has been steadily increasing at an average rate of 2.8% per annum since 2009; more recently in the past 5 years the sector has grown at an average of 5.5% per annum.

[15] Manufacture of computers and peripheral equipment; Publishing of computer games; Other software publishing; Ready-made interactive leisure and entertainment software development; Business and domestic software development; Computer consultancy activities; Computer facilities management activities; Other information technology and computer service activities; Data processing, hosting and related activities; Web portals

6.38 Milton Keynes has the highest proportion of jobs of local authorities in the region, with 16.4% of the study area's total, closely followed by Buckinghamshire (15.6%) and Cambridge (10.4%). The local authorities which have seen the greatest increases in employment over the past decade are Milton Keynes (+2,585 jobs), South Cambridgeshire (+2,325 jobs), West Northamptonshire (+2,250 jobs) and Buckinghamshire (+1,910 jobs).

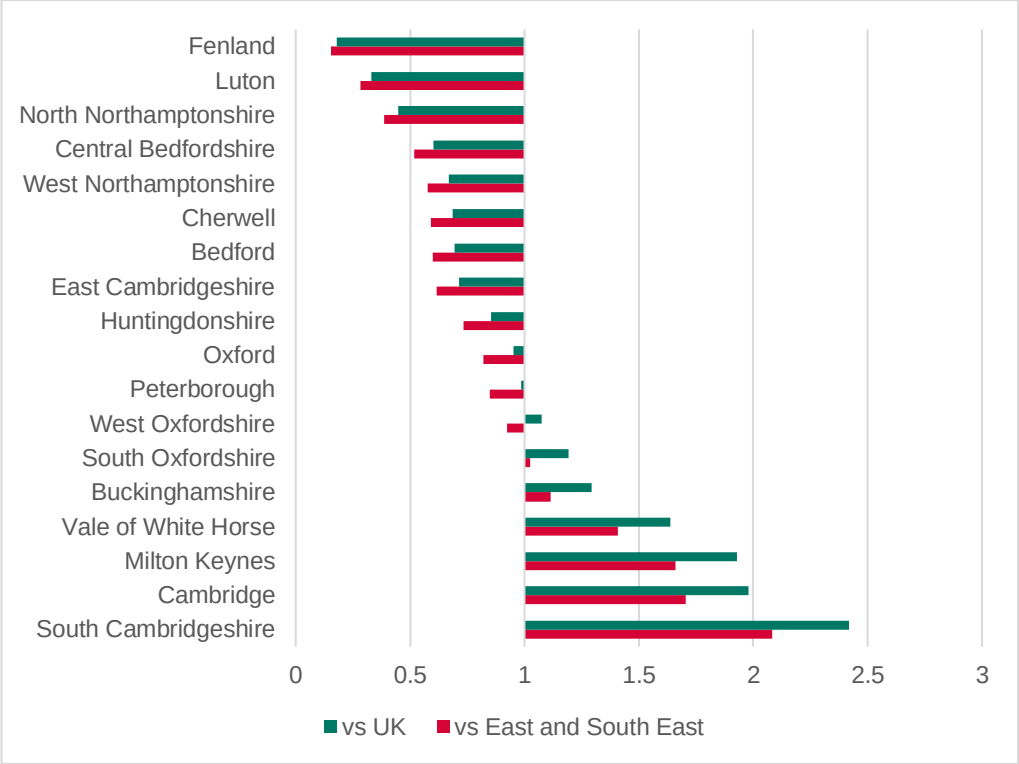
Figure 6.25 Digital and Technology Employment by Local Authority, 2022



Source: BRES 2022

6.39 South Cambridgeshire, Cambridge, Milton Keynes, Vale of White Horse, Buckinghamshire and South Oxfordshire have higher concentrations of employment in digital and technology than both the wider region and England.

Figure 6.26 Digital and Technology Location Quotient



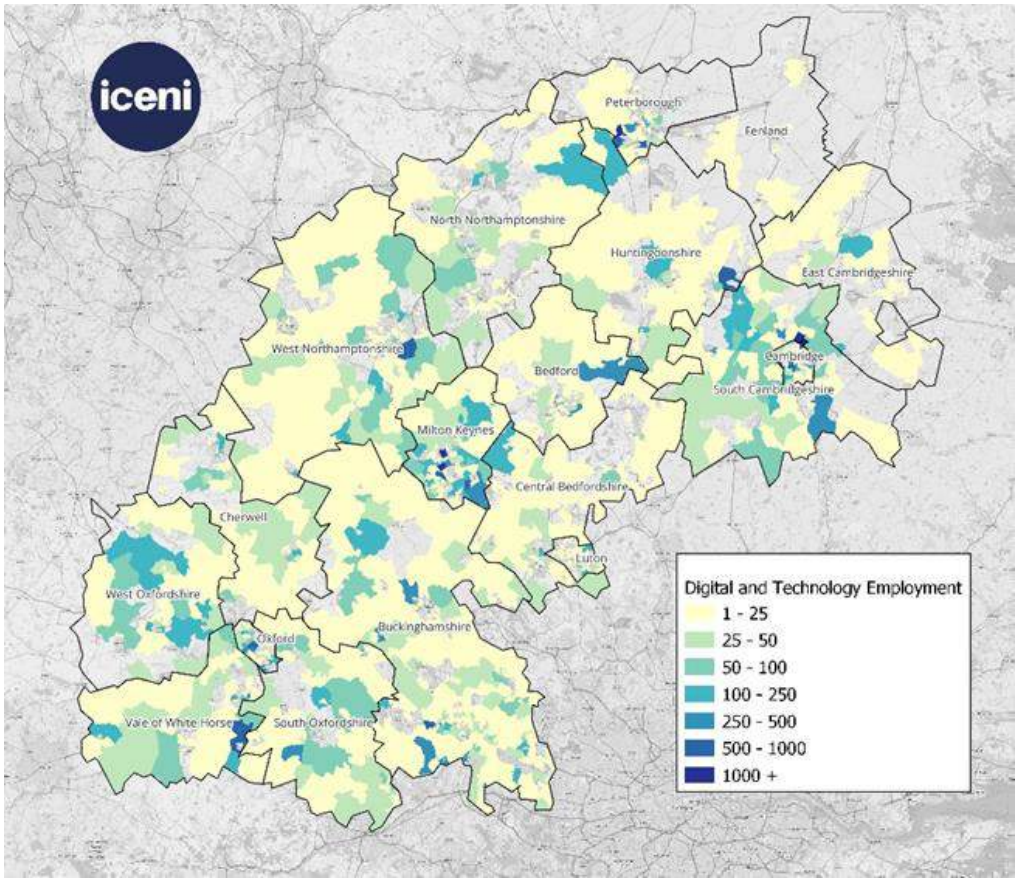
Source: Iceni analysis of BRES 2022

6.40 The figures below show the spatial distribution of digital and technology employment by LSOA and commercial premises occupied by digital and technology occupiers as classified by CoStar. This spatial mapping shows clustering in:

- Cambridge Science Park and Cambridge Business Park, Cambridge and South Cambridgeshire border
- University cluster (West Cambridge), Cambridge
- Milton Keynes City Centre – including Unity Place (largest office building in city)
- Woodlands Business Park, Integra Park, Sunrise Park, Hanslope Park – Linford Wood, Milton Keynes
- Lynch Wood Business Parks, Peterborough
- Milton Park, Vale of White Horse

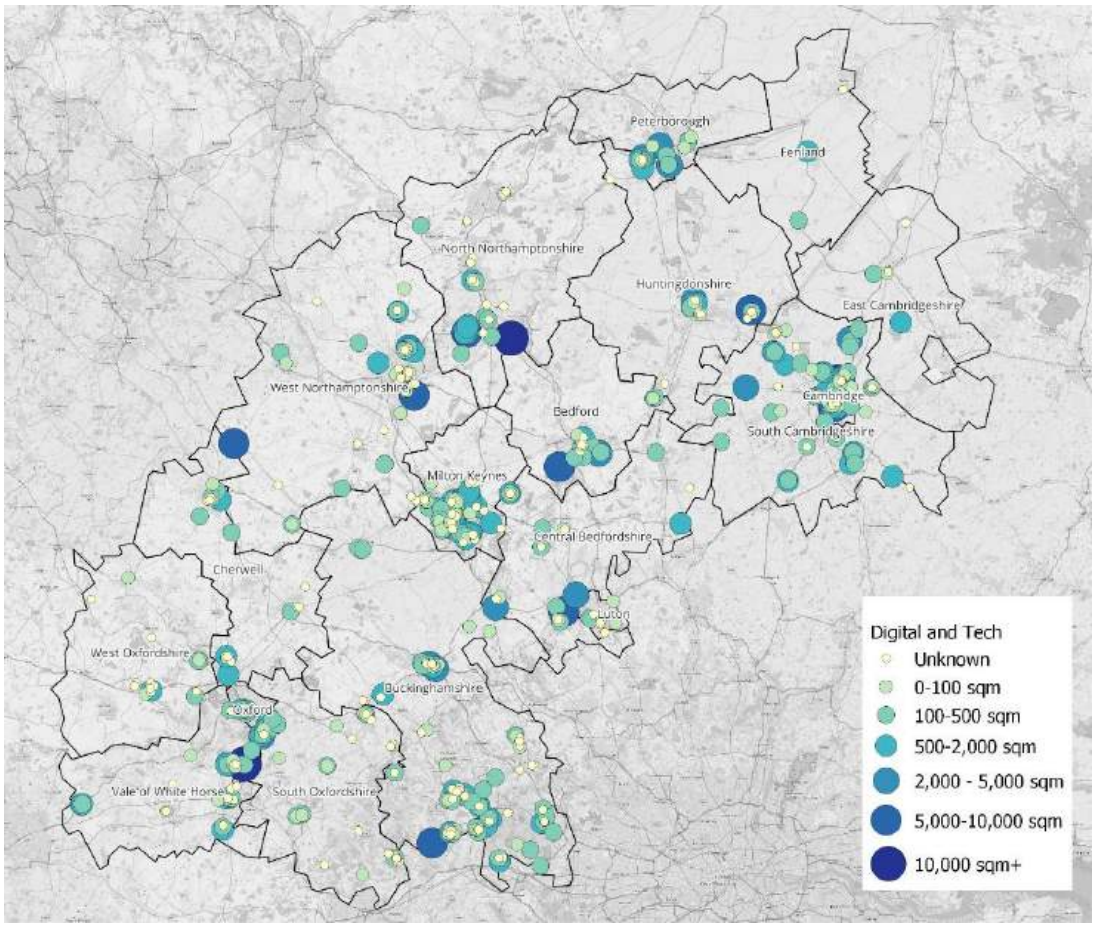
- CB1, Cambridge
- Brackmills Industrial Estate, West Northamptonshire

Figure 6.27 Digital and Technology Employment by LSOA



Source: BRES 2022

Figure 6.28 Digital and Technology Premises



Source: CoStar 2024

7. Sector Context: Skills

7.1 This chapter explores issues around skill requirements and availability. The work is largely based on a secondary review of Local Skills Improvement Plans (LSIPs) across the study area. It considers skills levels, provision and the existing gaps and key education infrastructure supporting the local economy.

7.2 Job estimates in the LSIPs may differ to those presented in the previous chapter due to differences in sector definitions, data sources and time periods referred to.

Local Skills Improvement Plan Oxfordshire Priorities 2023[16]

7.3 The Oxfordshire LSIP highlights a disconnect between local people and some local employment opportunities, as evidenced by fewer young people accessing better jobs and persistent inequalities. The report notes a tightening employment market with not enough candidates to fill places and a perceived disconnect between business and education.

7.4 The LSIP also includes a profile of different sectors some of which fall within SIT sectors. These are summarised below:

Manufacturing, Science & Innovation

7.5 In early 2022, the LSIP reports there were 120 businesses involved in Manufacturing (Science and Innovation) in Oxfordshire. This was an increase of 4% compared to the Business Register in 2017. At the same time, the total number of jobs in the Manufacturing (Science & Innovation) sector in Oxfordshire was 4,400. This is an increase of 600 (16%).

[16] https://www.oxfordshirelsip.co.uk/index.php/news/report/

7.6 The reported skill gaps were continuous improvement principles (CI), employability skills including, communication, listening, team-working and cross-skilling which is improving productivity through people undertaking more than one role or activity.

7.7 The table below sets out the recruitment difficulties reported by employers. As shown, this highlights a potential shortage in production and process engineers. There are also a number of roles with low numbers of starts and where there is no qualification developed and available.

Table 7.1 Oxfordshire: Manufacturing, Science & Innovation Skills Analysis

TABLE 1 Recruitment Difficulties Reported by Employers	Technical Occupations (Levels 2-3)	Higher Technical Occupations (Levels 4- 5)	Professional Occupations (Level 6+)	T Levels
Production Managers		Product Development Manager L4 Process Leader L4 MG		Design & Development- Mechanical Engineering
Mechanical Engineers	Engineering design and draughtsperson - Control & Instrumentation or Mechanical L3 MG	Engineering Manufacturing Technician L4 MG		Design & Development- Mechanical Engineering
Design & Development Engineers	Engineering Design & Draughtsperson L3 MG	Product development manager (L4) Senior CAD Engineer		Design & Development- Mechanical Engineering
Production & Process Engineers	Science Manufacturing Process Operative L2 MG Science Manufacturing Technician L3 MG			Engineering, Manufacturing, processing and Control
Electrical and Electronic Engineers	Battery Manufacturing Technician L3			Engineering, Manufacturing, processing and Control
Engineering Technicians	Science Manufacturing Process Operative L2 MG			Engineering, Manufacturing, processing and Control
Quality Assurance Technicians	Lean Manufacturing operative - Inspection/Quality L2 MG			Engineering, Manufacturing, processing and Control

Source: Local Skills Improvement Plan Oxfordshire Priorities 2023

Health and Life Sciences

7.8 Whilst the number of enterprises in Human Health fell by 4% between 2017 and 2022, the number of jobs increased by 12% (3,300). This included a 17% (2,700 jobs) increase in Hospital Activities and a 39% (2,300 jobs) increase in Other Human Health Activities.

7.9 In line with a 22% rise in the number of enterprises in Life Sciences, including Biotech firms doubling, there was a notable spike in the number of jobs in R&D in Biotech (120% / 1,200) and Other R&D in Natural Sciences & Engineering (48% / 3,200).

7.10 There was a notable 11% (900 jobs) rise in the number of Human Healthcare jobs in nursing and within Life Sciences, there was a notable 28% (600 jobs) rise in Biological Scientist and Biochemists.

7.11 The pipeline of new investment in the area is expected to further increase demand for skilled employees. The specific skill gaps included those providing routine testing and technical support (e.g., for batch testing), those performing specified methodologies (e.g. weighing), and those using standard software packages and applications or Laboratory Information Management systems. There is also a need for those using Health Care Information Management Systems using diagnostic equipment.

7.12 The table below sets out the recruitment difficulties reported by employers. As shown, this highlights a potential shortage of lab technicians and healthcare scientists, production scientists, nurses, radiographers and Occupational Therapists. There are also a number of roles with low numbers of starts and where there is no qualification offered in Oxfordshire.

Table 7.2 Oxfordshire: Health and Life Sciences Skills Analysis

TABLE 1 Recruitment Difficulties Reported by Employers	Technical Occupations (Levels 2-3)	Higher Technical Occupations (Levels 4- 5)	Professional Occupations (Level 6+)	T Levels
Biologists			Biologist (L6)	T Level in Science
Chemists			Chemist (L6)	T Level in Science
Laboratory Technicians and Health Care Scientists	Healthcare Science Assistant (L2) Laboratory Technician (L3) Metrology Technician (L3)	Senior Metrology Technician (L5) Technician Scientist (L5)	Laboratory Scientist (L6)	T Level in Science
Production Scientists	Laboratory Technician (L3) Metrology Technician (L3)	Senior Metrology Technician (L5)	Laboratory Scientist (L6)	T Level in Science
Nurses and Nursing Associates	Senior Healthcare Support Worker (L3)	Nursing Associate (L5)	Registered Nurse (L6)	T Level Health
Radiographers			Diagnostic Radiographer (L6)	T Level in Science
Occupational Therapists			Occupational Therapist (L6)	T Level Health
Data Analysts	Data Technician (L3)	Data Analysts (L4)	Data Scientist (L6) Bioinformatics Scientist (L6) AI Data Specialist (L6)	T Level Digital Business Services

Local Skills Improvement Plan Oxfordshire Priorities 2023

ICT

7.13 Demand within the Information & Communication industry across Oxfordshire is expected to continue steadily increasing in size and will require an additional 2,800 workers by 2035 (from the 2020 base) as well as 7,100 replacement workers - summing to a total of 10,000 workers who will need to be trained and/or upskilled over the period.

7.14 The forecast growth and significant replacement demand up to 2035 will add pressure onto an employment market that is already tight as evidenced by businesses who report difficulties in recruiting to key roles.

7.15 The table below sets out the recruitment difficulties reported by employers. As shown, this highlights a potential shortage of Cyber Security, Software Developers/Programmers and trained professionals needed to meet the demands of AI.

Table 7.3 Oxfordshire: ICT Skills Analysis

TABLE 1 Recruitment Difficulties Reported by Employers	Technical Occupations (Levels 2-3)	Higher Technical Occupations (Levels 4- 5)	Professional Occupations (Level 6+)	T Levels
Cyber Security	Cyber Security Technician (L3)	Cyber Security Technologist (L4)		T Level in Digital Design, Production & Development
Software Developer/ Programmer	Software Development Technician (L3)			T Level in Digital Design, Production & Development
Data Technician	Data Technician(L3)	Data Analysts (L4)	HTQ Digital Modular Programme for Data Analysts	T Level in Digital Design, Production & Development

Local Skills Improvement Plan Oxfordshire Priorities 2023

7.16 As well the University of Oxford and Oxford Brookes, Oxfordshire benefits from a wide range of technical education and skills providers including Oxfordshire UTC, Activate Learning (City of Oxford College, Banbury & Bicester College), Abingdon & Witney College, Ruskin College, and The Henley College, and a large range of Independent Training Providers.

Buckinghamshire Local Skill Improvement Plan 2023[17]

7.17 The Buckinghamshire LSIP identifies the main skills and labour market needs of employers in the county for a number of key sectors several of which are SIT sectors or SIT adjacent sectors:

Engineering

7.18 The report identifies approximately 28,000 people employed in core engineering occupations, equivalent to about 11% of Buckinghamshire's employee workforce. A significant driver of growth in this sector has been HS2. There are 12,000 individuals employed specifically in high-performance engineering.

[17] https://bbf.uk.com/business-support/local-skills-improvement-plan

7.19 The report highlights a shortage of further and higher education provision in the county for engineering which has resulted in a lack of locally based apprenticeships. The lack of experienced teachers was also highlighted.

7.20 The LSIP identified skill gaps in engineering professional roles including supervisory skills, management skills, environmental impact/net zero awareness, and environmental impact/net zero management. The report also identified a need for 1,350 heat pump installers.

Digital Sector

7.21 Approximately 12,000 people are occupied in digital industries which is around 5% of the county's workforce. Despite a recent fall in employment, this is around 30% larger than the national average.

7.22 The LSIP identified intense competition for skilled employees from neighbouring areas. The skill gaps identified in the digital sector include a range of specific technical areas in order to keep pace with new technology.

Agriculture

7.23 The skill gaps in the Agricultural sector that were identified include environmental impact/carbon awareness, carbon management, environmental technical knowledge in relation to existing schemes such as ELMs and technical skills in relation to new technology and digitalisation.

7.24 The cross-sectoral themes in Buckinghamshire include recognition that 1 in 5 jobs will be affected by the transition to the green economy. Employers highlight an issue with higher education leavers being poorly prepared for work. Over 45% of employers expect a need for new digital skills over the next 12 months. Indeed, around a quarter of all non-digital jobs listed still require a digital skill.

7.25 There are several education providers in the county including the Buckinghamshire College Group (Wycombe, Amersham and Aylesbury),

Buckinghamshire New University, the University of Buckingham and the National Film and Television School in Beaconsfield.

7.26 Across all priority sectors, there are insufficient numbers of people developing their skills through full-time or work-based technical education pathways.

7.27 Employers believe that the preponderance of grammar schools in the county negatively impacts the number of students who start on a technical pathway. As a consequence, there are low numbers of apprenticeships.

7.28 Those employees in the north of the county tend to work with Milton Keynes College, which plays an important role in terms of engineering provision and digital skills across the whole county.

7.29 Employers, in the construction and engineering sectors in particular, have links with Brunel University, Uxbridge College and the College of North West London, amongst others.

Cambridgeshire and Peterborough Local Skills Improvement Plan 2023[18]

The Cambridgeshire and Peterborough LSIP priorities with a focus on a number of key sectors, all of which are SIT sectors.

Life Sciences

7.30 The life sciences sector is prominent in Cambridge and South Cambridgeshire and is home to several large international organisations in this field. The LSIP reports that there are 20,000 life-sciences jobs across

[18] https://www.cambridgeshirechamber.co.uk/sectors/localskills/

the Cambridgeshire and Peterborough area. In South Cambridgeshire, the sector accounts for 16% of turnover and 18% of employment.

7.31 There is a shortage of people with the technical skills to support the life science industry in the Cambridge area, especially in the convergence of AI and life sciences, which is seen as the key differentiator for the industry in the region.

7.32 There is also a shortage of people with the commercial management skills required to grow a life science company. This is supported by data analysis, conducted as part of the LSIP, which shows Manager, Director and Senior Officials level in Pharmaceuticals and Clinical Trials (part of life sciences) are in the top 10 sought-after specialised skills at 5% and 4% of job postings.

7.33 There is a large number of people enrolled in life science-related programmes in Cambridgeshire, but a significant proportion of these people tend to relocate to London once they finish.

7.34 The LSIP recognises that more work needs to be done to improve retention levels in the region.

Digital and IT Sector

7.35 The LSIP reports there are 25,000 Digital and IT jobs across Cambridgeshire and Peterborough. The region's Digital and IT sector is attractive at an international scale due to its home-grown success, such as ARM and major private investments including Microsoft and Apple.

7.36 Cambridge is also a key part of the £1bn invested in UK artificial intelligence start-ups. The sector delivers almost 9.0% of the area's revenue and 8.0% of employment.

7.37 There is ongoing and significant demand for Digital and IT skills across the region, particularly within Professional Occupations with Python being the most sought-after. Programmers and software development professionals

are in the highest demand across the region, which may indicate labour shortages.

Advanced Manufacturing and Materials Sector

7.38 As of 2019 (the most recent data available at the time of the LSIP) Cambridgeshire and Peterborough was home to 3,270 manufacturing and engineering firms employing 51,400 people. Advanced manufacturing employed around 20,700 life sciences jobs across the Cambridgeshire and Peterborough.

7.39 Advanced manufacturing and materials employment is growing at a faster rate than manufacturing in the region. Peterborough and Huntingdonshire have strong manufacturing backgrounds and large international firms are based in this area. Fenland is also a significant contributor to growth in this sector.

7.40 There is a national skills shortage for individuals in the manufacturing sector, and a large proportion of those currently employed in the sector are over 50, so retraining and upskilling is vital.

7.41 Training provision is strong and there are multiple skills initiatives already in place such as the College of West Anglia Technology Centre in Wisbech, the North Cambridge Training Centre in Chatteris and the new Anglia Ruskin University Peterborough Campus.

7.42 The skills agenda needs to focus on alignment, where significant investments in education may not necessarily be aligned to future skills needs and quality, reflecting a perception that there was a mismatch between the delivery of training and the way employers would prefer it to be delivered.

Agri-tech Sector

7.43 The LSIP reports that around 38,000 people are currently employed in the Agri-Tech sector in the local economy, generating approximately £4bn of economic value per annum.

7.44 The strength of the Agri-Tech sector in the region is based on a highly skilled and international workforce, attracted to Cambridgeshire by the reputation of centres such as Niab and the University of Cambridge.

7.45 There is a disparity in skills required within this sector from PhD level to vocational and seasonal work. There are several regional HE and FE delivery partners who are reflecting on how to offer courses and skills programmes to prepare the workforce for 21st Century agriculture, which includes emerging skills as well as traditional.

7.46 The report also addresses a range of wider challenges including national and local issues. The latter includes a lack of skills needed for entry to mid-level technical roles with a particular concern from employers about level 2 skills. The most immediate challenge is the need for lower-level technical provision.

7.47 A lack of Business skills in the region was noted e.g., leadership, business planning and financial accounting skills.

7.48 The area is home to the University of Cambridge, one of the world's leading academic centres and Anglia Ruskin University, an innovative global university. The area has a vast range of FE colleges across Cambridgeshire and Peterborough, delivering a wide variety of different courses. This includes Cambridge Regional College, the College of West Anglia, City College Peterborough and the Inspire Education Group (Peterborough College and University Centre Peterborough).

7.49 There are also two University Technical Colleges in the region for 14–19-year-olds and many more sixth-form colleges providing academic pathways.

7.50 As identified in previous chapters of this report, a large proportion of agri-tech jobs within the Oxford to Cambridge study area are located in Fenland. It is therefore worth highlighting that the LSIP notes that the proportion of

individuals in Fenland with no formal qualifications is 28% whereas across Cambridge, South Cambridgeshire and East Cambridgeshire this figure is 6%. It also notes that the Cambridgeshire and Peterborough Local Skills Report (2022) identified that within the Indices of Multiple Deprivation, Fenland is ranked third of all local authorities nationally for Education, Skills and Training need where 1 is most deprived.

Local Skills Improvement Plan (South East Midlands) 2023[19]

7.51 The report does not breakdown skills gaps by sector but does identify a number of relevant skills gaps for SIT sectors.

7.52 Consultation and business surveys indicated needs and challenges in securing people with skills for Leadership/management skills (24%), Digital skills (21%), English and Maths (14%) and Net Zero, Environmental (11%).

7.53 Employers also specified that the skills/roles they would need to consider over the next 5 to 10 years include Digital (45%), Environmental related roles (22%), Green technologies (20%), Automation/robotics (18%) and Decarbonisation (13%).

7.54 For the Agriculture sector the gaps identified include soft skills (communication, attitude, problem-solving, resilience), leadership and management and organisation-specific needs. Digital and technology require similar skills as well as digital skills themselves.

7.55 Energy and Renewables identified a need for Soft Skills, Organisation Specific Skills as well as English and to a lesser degree maths. Similarly the manufacturing and engineering sector identified a need for Soft Skills, Organisation Specific Skills.

[19] https://northants-chamber.co.uk/support/local-skills-improvement-plans-lsip/

7.56 The survey also revealed that at least 20% of employers sought the following types of training:

a. A mixture of work and college

b. Short non-accredited courses

c. Courses that have been designed and include input from businesses with the sector

d. Apprenticeships/Qualifications

Skills Summary

7.57 The LSIPs collectively identify a significant and growing presence of SIT jobs across the study area, although the full extent of this is not clear and it only appears to be in certain sub-sectors. Key gaps include:

Oxfordshire

- Manufacturing, Science & Innovation – need for a range of design and process engineers.
- Health and Life Sciences – lab technicians with skills such as testing and information management.
- ICT - shortage of Cyber Security, Software Developers/Programmers and data analysis.

Bucks

- Engineering – including management skills.
- Digital – range of technical areas in a changing field.
- Green economy – including agriculture – environmental impact/carbon awareness, carbon management, new technology and digitalisation.

Cambridgeshire and Peterborough

- Life sciences – technical support including data analysis, commercial management and AI / IT cross over.

- Digital / IT – professional and technical including programming and development.

- Advanced manufacturing – range of needs.

- Agritech – range of needs.

South East Midlands

- Cross cutting: Leadership/management, digital, soft skills, management.

- Key sectors: Digital, Environmental related, Green tech, Automation/robotics, and Decarbonisation.

7.58 Broader challenges facing the sector include replacing an ageing workforce and ensuring a sufficiently skilled workforce to grow the relevant industrial sectors. Brexit may have also had an adverse effect on some skill areas with a reduction of scientists incoming to the UK[20].

7.59 Despite a significant network of higher and further education establishments (although this is not uniform), there remains a misalignment between industry requirements and available skills.

7.60 The skills shortages are at a range of levels and are a combination of specific technical skills for specific industries as well as soft skills and management/leadership skills.

7.61 Some of the solutions proffered include a greater network of apprenticeships and collaborative working between businesses and education establishments to inform the courses being offered locally.

7.62 Local Plan area also seeing an introduction of training and skill / community employment plans, whereby larger developments are required to make

[20] https://royalsociety.org/-/media/news/2019/brexit-uk-science-impact.pdf

commitments in upskilling the local workforce (see for example research in West Oxfordshire[21]).

[21] https://www.westoxon.gov.uk/media/0uqpqxxq/community-employment-plan-evidence-paper-2023.pdf

8. SIT Floorspace: Past, Present and Future

8.1 This section seeks to review the historical rate of floorspace delivery as well as the future pipeline to identify where growth is planned. Due to the wide-ranging typologies involved and mixed availability of data, specific 'best fit' definitions are used for search parameters.

Historical development rates

8.2 The following section provides analysis on the historical completion of office (B1a – now E(g)(i)) and R&D (B1b – now E(g)(ii)) floorspace. The historical use classes have been referenced for completeness looking back across a decade of data.

8.3 As noted in previous sections, some of the sub-sectors explored in this study occupy the full range of B class uses including E(g)(iii), B2 and B8 premises. However, this chapter focuses on office and R&D use classes and not the wider industrial use classes. This keeps the focus on relevant use classes with the data available, although it is not necessarily true that all completed office (in particular) and R&D floorspace is relevant for SIT businesses. Inclusion of E(g)(iii), B2 and B8 data will inevitably result in the dilution of the analysis due to the range of non-SIT occupiers.

8.4 The data for each local authority varies in quality and detail, with some monitoring data broken down by scheme allowing for more in-depth analysis, whereas some monitoring provides just an annual total. Local authority monitoring data also varies in providing gross completion and net completion of floorspace figures.

8.5 Where local authority employment floorspace monitoring data was not available[22], CoStar data has been used to identify completed office and R&D schemes since 2012. CoStar does not provide information on the property's designated use class and therefore premises were assigned as R&D if they had an element of lab space within. The CoStar dataset is weaker in rural areas and for smaller properties, such that some completed floorspace is likely to be omitted.

8.6 Due to the reasons explained above, the analysis within this section provides a best estimate of past floorspace using the data available.

Completions - office

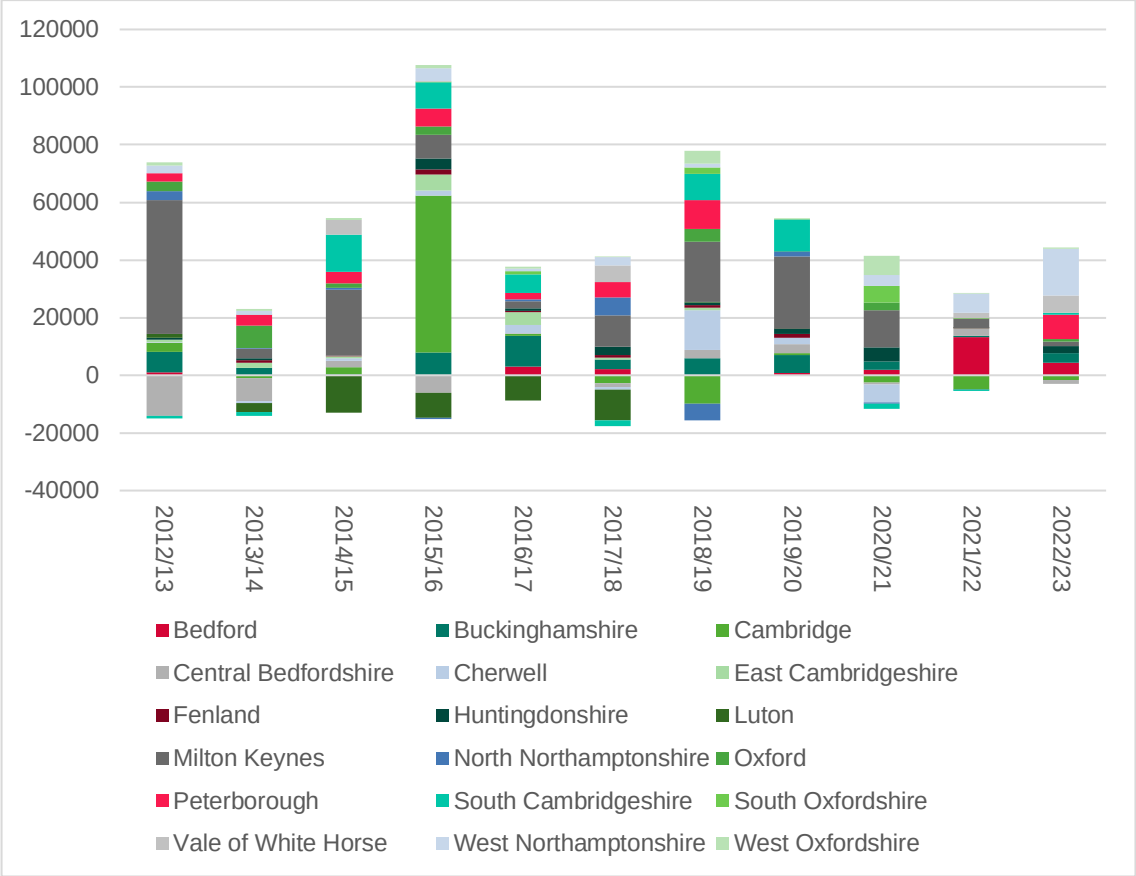
8.7 The figure below shows the completion of office floorspace since 2012/13 to 2022/23 in the whole study area by year and local authority. A total of 440,022 sqm of office floorspace was completed over the 11 year period, an average of 40,002 sqm per annum. A breakdown of the data in the form of a table can be found in the appendices.

8.8 In total the greatest proportion of office space was completed in Milton Keynes at 35.9%, equivalent to 157,887 sqm. This was likely driven by the major Santander's Unity Place development, the largest office building within the city centre of Central Milton Keynes (CMK). Buckinghamshire was home to 11.4% of the region's office completions, totalling 50,293 sqm, followed by Peterborough (9.8%) and South Cambridgeshire (9.7%).

8.9 Office floorspace completions peaked in 2015/16, driven by a large completion in Cambridge which can be attributed to 41,750 sqm completed in The Edinburgh Building, Shaftesbury Road, and 20,408 sqm at Peterhouse Technology Park. Since then, office floorspace completion has trended downwards.

[22] Beford, Buckinghamshire, Huntingdonshire, Oxford, Peterborough, South Oxfordshire, Vale of White Horse, West Northamptonshire

Figure 8.1 Completion of B1a floorspace (sqm)



Source: Local Authority Monitoring and CoStar

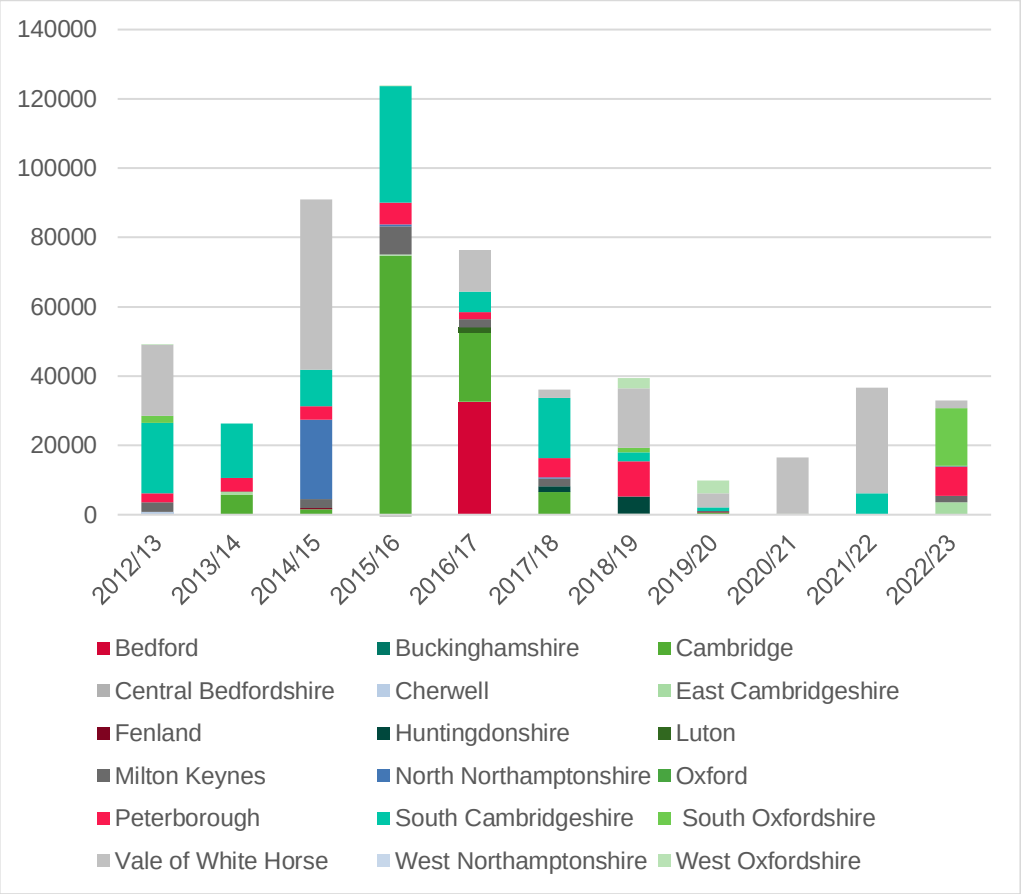
Completions – R&D

8.10 The figure below shows the completion of R&D (B1b) floorspace by local authority. Since 2012/23 a total of 622,961 sqm of R&D floorspace has been completed across the study region over the past decade, an average of 56,633 sqm per annum. A breakdown of the data in the form of a table can be found in the appendices.

8.11 Vale of White Horse saw the largest proportion of completed R&D floorspace at 24.7% of the regional total, totalling 153,927 sqm. Collectively, over a third has been completed in Cambridge (17.6%) and South Cambridgeshire (18.2%). Other authorities with significant completions include Oxford at 13.7% of completed floorspace, equivalent to 85,593 sqm and 6.9% in Peterborough (43,091 sqm).

8.12 Completion of R&D floorspace grew year on year from 2012/13, peaking in 2015/16, driven by the completion of 59,821 sqm of R&D floorspace on the Addenbrookes Hospital Campus in Cambridge. Following this annual completion of R&D floorspace fell each year, only beginning to increase in 2021/22.

Figure 8.2 Completion of B1b floorspace (sqm)



Source: Local Authority Monitoring and CoStar

8.13 Wider market intelligence in this report indicates that in 2021 there was a significant rise in demand for B1b / E(g)(ii) R&D space, particularly wet labs, driven by research requirements partly associated with the COVID-19 pandemic and venture capital available to fund research. This coincided with a slowdown (as above) with the delivery of new R&D space. As a result, through the 2021-23 period there has been a shortage of space and a considerable rise in applications and permissions of new wet lab space in particular – as explored below.

Future Commitments and Pipeline

8.14 Using a range of data sources including monitoring commitments data provided by local authorities, Carter Jonas, Glenigan[23] and CoStar, the pipeline of future supply has been identified. Floorspace has been defined as committed or pipeline – committed floorspace is currently under-construction or has a granted planning consent (full or outline). Pipeline floorspace includes pending applications, schemes in planning and schemes in the pre-planning stage – these schemes in particular have been identified by Carter Jonas, CoStar and Glenigan and in most cases there is marketing online to verify the schemes. Some schemes identified within this section may already be in development phase or built out at time of publication due to the speed of delivery of these types of schemes.

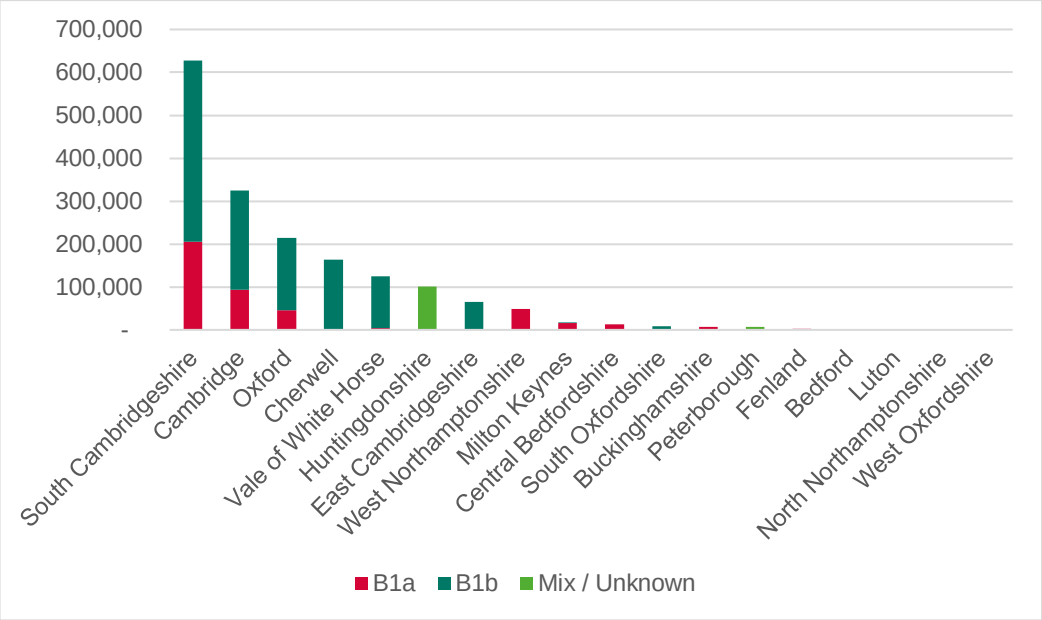
8.15 Floorspace classified as office and R&D may not necessarily have an explicit planning consent of E(g)(i)/B1(a) or E(g)(ii)/B1(b). Some schemes may contain a mix of both use classes, or Class e(g), but the floorspace has been classified as one or the other herein based on known information.

8.16 As with the completions data, this is an estimated (rather than exact) supply trajectory, due to gaps in monitoring data. Therefore, a variety of data sources have been used to build the best picture possible.

8.17 The figure below shows committed office and R&D floorspace, which totals 1.6 million sqm. South Cambridgeshire has a significant quantum of committed floorspace, totalling 627,130 sqm of which 206,081 sqm is office floorspace and 421,049 sqm R&D lab space. This is followed by Cambridge which has 325,431 sqm of committed floorspace of which a majority (232,195 sqm) is R&D floorspace. Oxfordshire has a strong R&D pipeline – Cherwell has 164,262 sqm of R&D floorspace; Vale of White Horse has 157,042 sqm and Oxford City has 146,837 sqm.

[23] Monitors construction sales, marketing data and provides commercial marketing insights

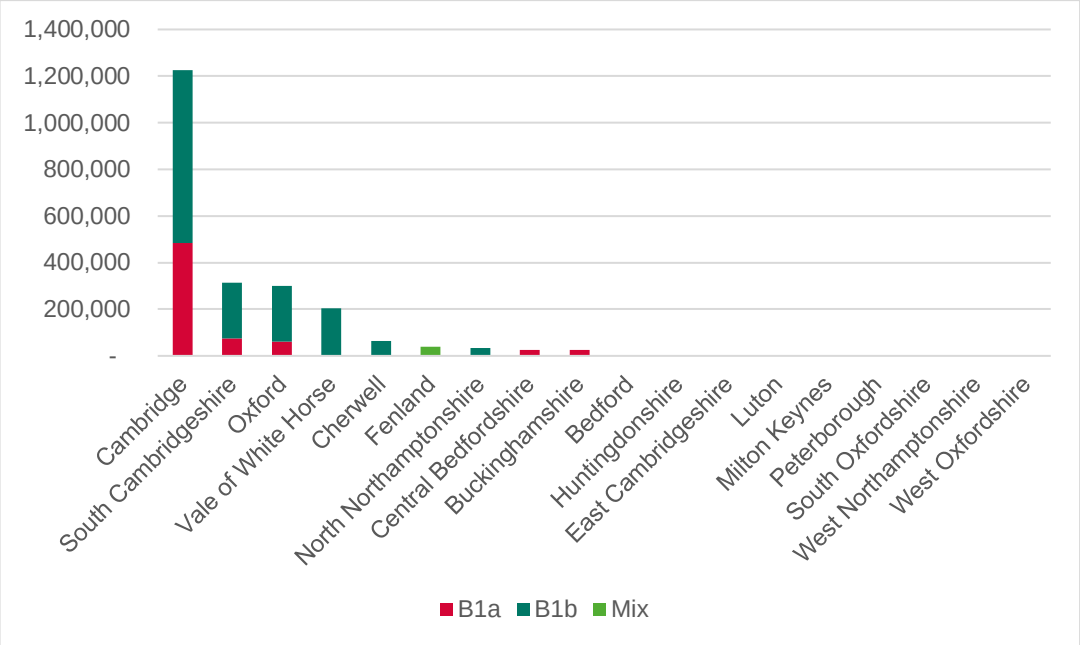
Figure 8.3 Committed Supply by Local Authority (sqm)



Source: Local Authority Monitoring, Glenigan, CoStar

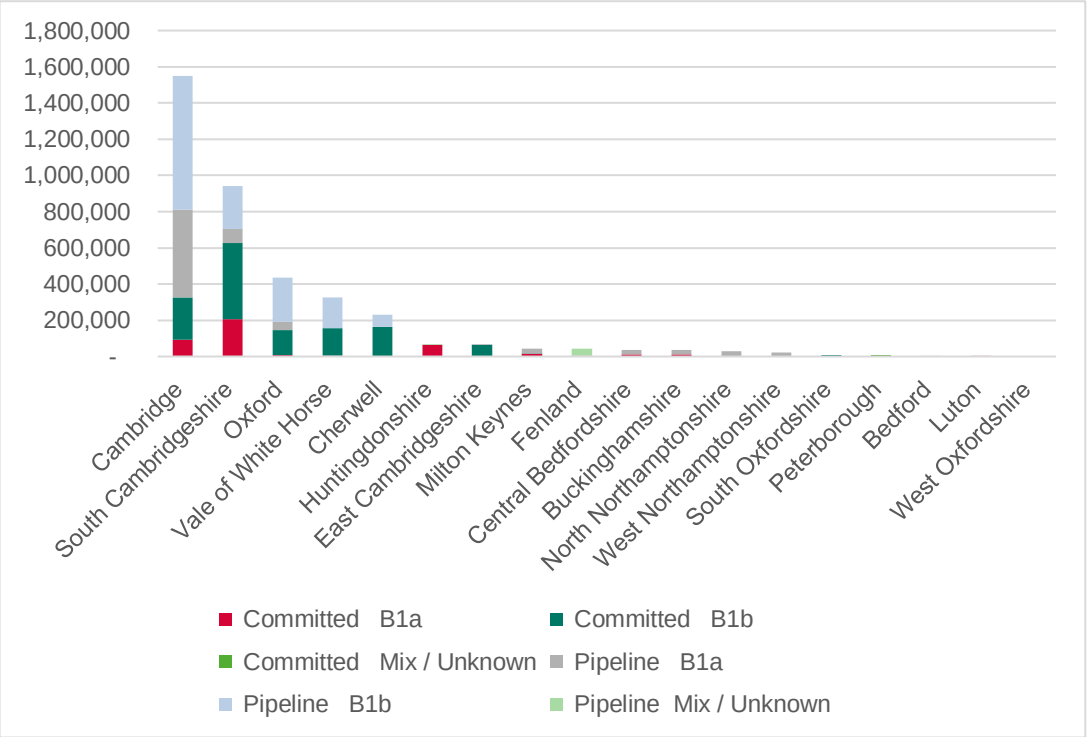
8.18 The figure below shows the estimated quantum of pipeline supply – schemes which do not have planning consent but are in the planning process or likely to be in the future. Not all of these will receive consent. It is forecast that there is 2.2 million sqm of office and R&D floorspace in the pipeline. Again, South Cambridgeshire and Cambridge have a strong trajectory of supply, in particular R&D space. There is a smaller forecasted pipeline in Oxfordshire. However, this is possibly driven by differences in detail in data provided. There is also strong ambition, opportunity, and capability, to develop SIT business premises in Milton Keynes, Bedfordshire and Northamptonshire.

Figure 8.4 Pipeline Supply by Local Authority (sq. m)



Source: Local Authority Monitoring, Glenigan, CoStar

Figure 8.5 Committed and Pipeline Supply by Local Authority (sq. m)

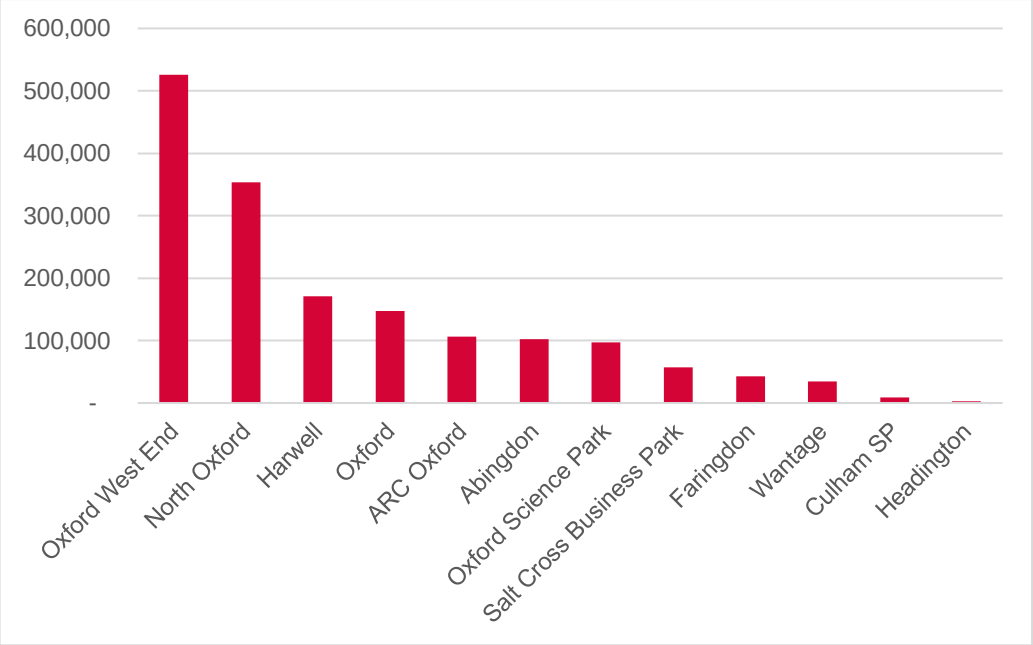


Source: Local Authority Monitoring, Glenigan, CoStar

Oxfordshire focus

8.19 The figure below shows a further breakdown of the Oxfordshire supply trajectory (committed and pipeline) of office and lab floorspace by cluster and status using data provided by Carter Jonas. A majority of this pipeline is classified as lab space, with just 5.7% floorspace solely office premises. There is a significant pipeline of space in Oxford West End (driven by Osney Mead) in addition to the north of Oxford which includes Oxford North, Begbroke Science Park and Oxford Technology Park, of which 69% has outline planning consent and 10.1% is under construction.

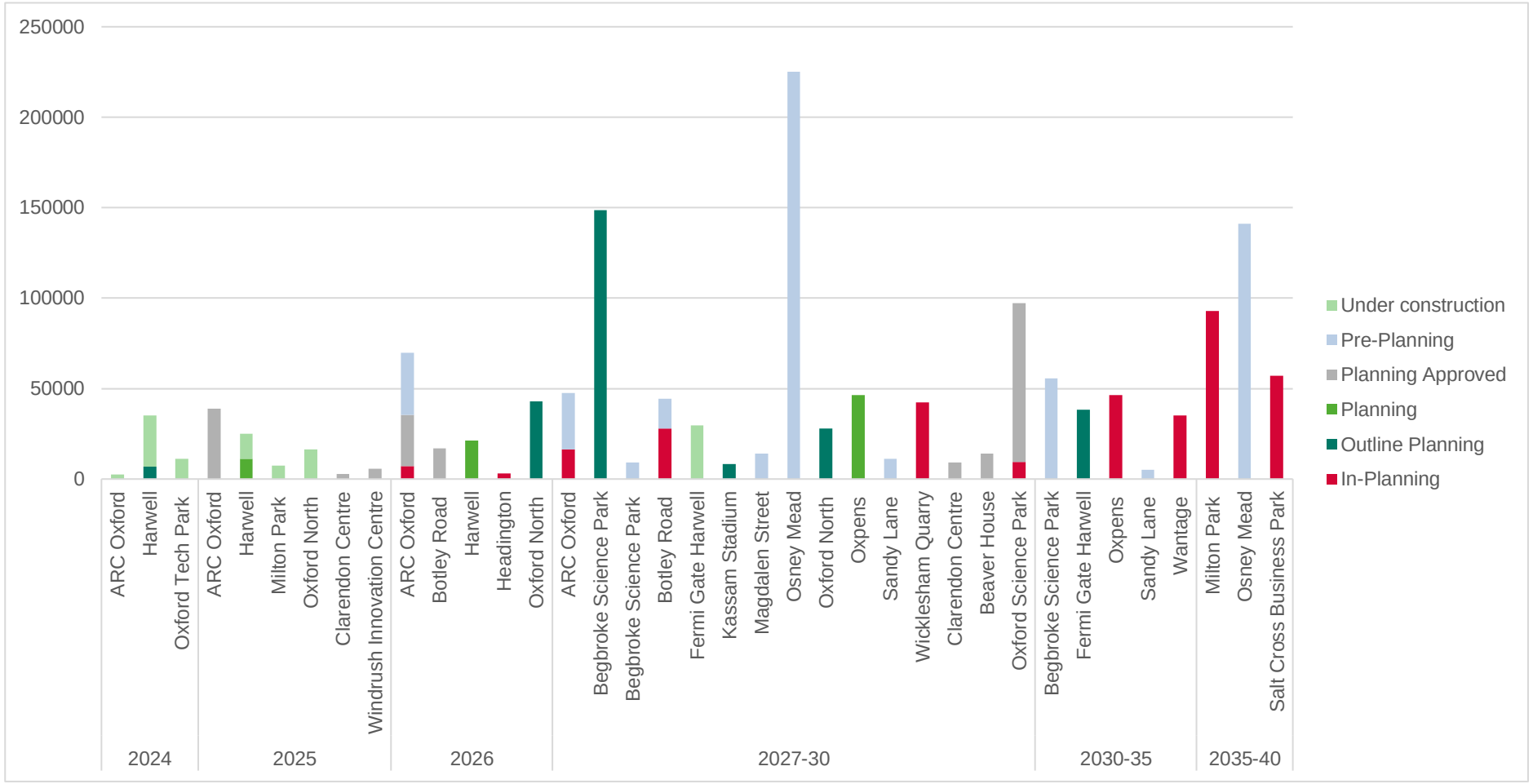
Figure 8.6 Oxfordshire Development Pipeline (sq. m)



Source: Carter Jonas 2024

8.20 The chart below shows the forecast phasing of the Oxfordshire development pipeline by scheme. In the short-term floorspace currently under construction will be delivered at Harwell, Milton Park, Oxford Technology Park and Oxford North. There is a considerable quantum of floorspace at Begbroke Science Park due to be delivered in the 2027-30 period that currently has outline planning status. Schemes forecasted to be delivered in later periods post-2030 are currently in the planning and pre-planning stage.

Figure 8.7 Oxfordshire Development Pipeline Phasing (sqm)

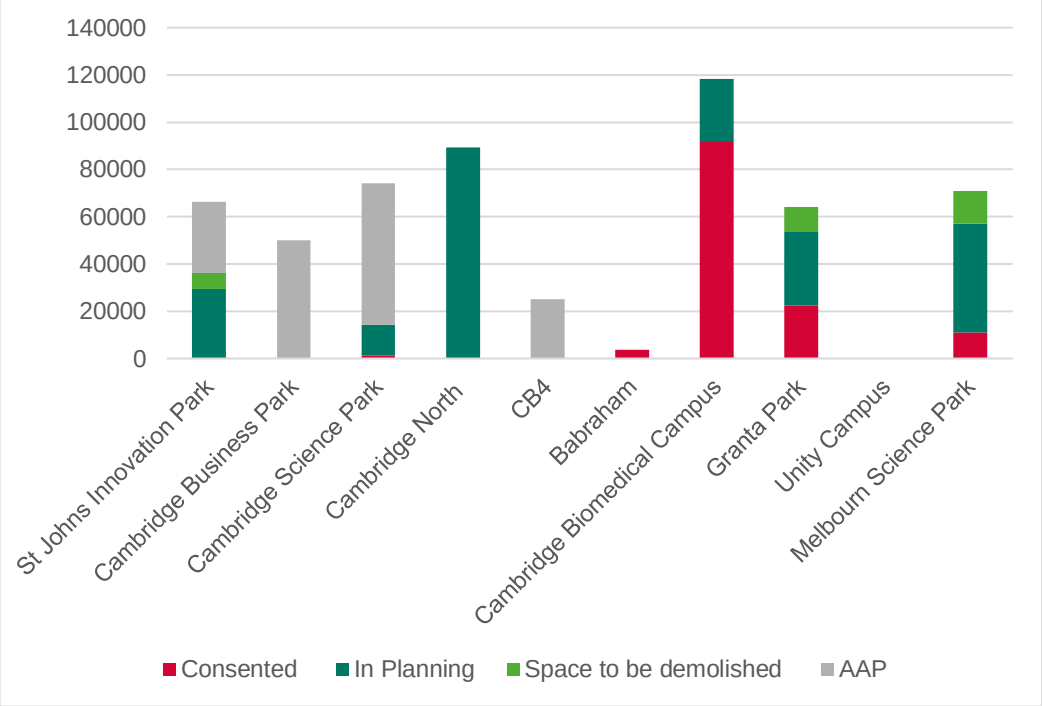


Source: Carter Jonas 2024

Greater Cambridge focus

8.21 The figure below shows the supply trajectory (committed and pipeline) of Greater Cambridge floorspace by business park. There is a significant quantum of consented floorspace on the Cambridge Biomedical Campus (c.118,000 sqm), including 46,000 sqm of wet lab (Phase 2) and 13,500 sqm of office floorspace for AstraZeneca. In addition there is a further 30,700 sqm wet lab as part of Phase 3 (currently unconsented). There is 165,000 sqm of floorspace set to be delivered as part of the North East Cambridge Action Plan which will affect Cambridge Business Park and Cambridge Science Park.

Figure 8.8 Greater Cambridge Supply Trajectory (sqm)

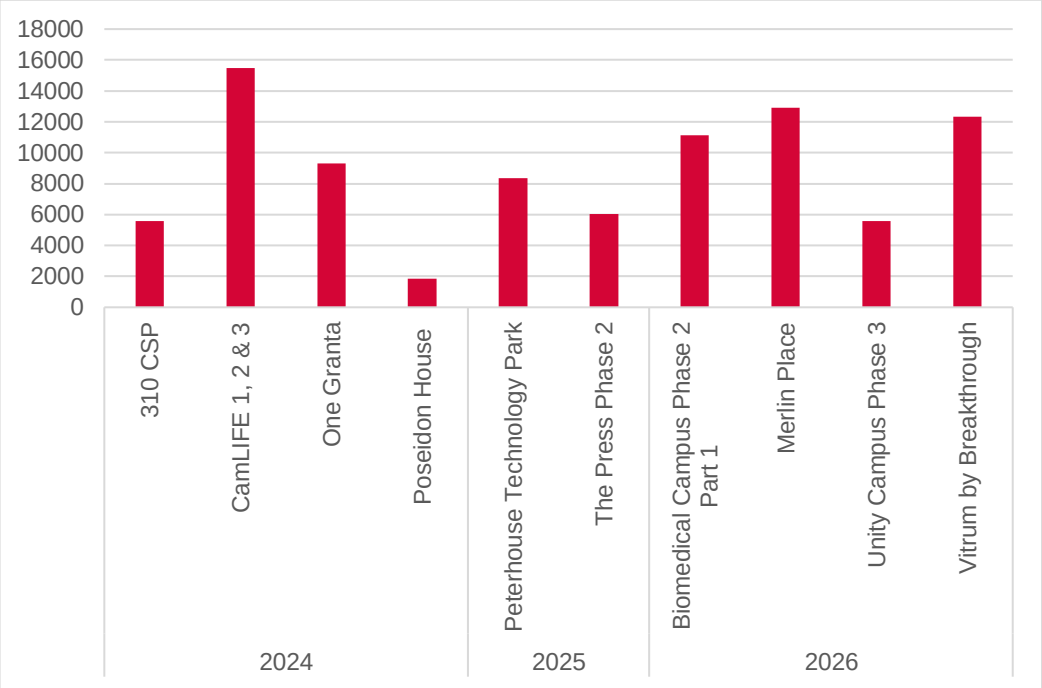


Source: Carter Jonas

8.22 The figure below shows the phasing of the Cambridge pipeline of floorspace up to 2026.CamLife at Capital Park will deliver 15,500 sqm of floorspace this year converting office to lab space; 8,300 sqm is forecast to be delivered in 2025 at Peterhouse Technology Park; in 2026 12,900 sqm is scheduled to be delivered at Merlin Place near Cambridge Science Park following the demolition of an existing

building; and 12,300 sqm is to be completed in the Vitrum Building at St John's Innovation Park.

Figure 8.9 Greater Cambridge Supply Trajectory - Expected Completion 2024-26 (sqm)



Source: Carter Jonas

South Midlands Focus

- Bedford Green Technology Park – the project will deliver low carbon, clean energy generation technologies on a 30ha former landfill site in Bedford Borough. The site will promote education through the joint working with two universities, local colleges and promote the wider acceptance of renewable energy technologies[24].

- Kempston Hardwick New Settlement – draft allocation in Bedford Borough Local Plan. It will deliver an innovation hub and business /

[24] https://www.bedford.gov.uk/environmental-issues/sustainability/sustainability-projects/sustainability-projects#:~:text=Bedford%20Green%20Technology%20%26%20Innovation%20Park,-Bedford%20Green%20Technology&text=The%20proposed%20development%20will%20promote,acceptance%20of%20renewable%20energy%20technologies.

science campus primarily focused on innovation, research, development and education, providing 70ha of employment land.

- MK Gateway – a mixed-use office, workspace and residential development, providing up to 180,000 sq.ft of floorspace

- New City Place – a mixed residential, office and leisure proposed development in Milton Keynes, providing up to 253,727 sq.ft of office floorspace.

- Hanwood Park SUE, North Northamptonshire – employment areas to potentially include an Innovation Centre

Buckinghamshire Focus

- Aylesbury Woodlands – outline consent for a garden village containing 102,800 sq.m of employment floorspace, of which some is assumed to be office.

- Stoke Mandeville Hospital, Aylesbury – 3 storey innovation centre and office space linked to existing Innovation Centre, providing 1,200 sq.m of floorspace

9. Current and future floorspace requirements and suitability

9.1 Iceni has worked with Carter Jonas and the stakeholder group (see Appendix A4) to develop reflections on the adequacy and suitability of the current and pipeline floorspace to meet the SIT sector needs. This is presented in the form of a SWOT analysis which includes considerations of the:

- Current supply, availability and suitability of SIT premises
- Changing preferences for SIT premises
- Barriers or challenges to growth

9.2 The analysis is categorised into two main groups which broadly reflect the way that the premises market operates, although evidently nuances are required by the specific sectors and these are highlighted where possible. The two groups are:

Life sciences: with a focus on wet labs and supported by office write up space. COVID-19 saw a strong increase in demand for these premises due to research demand combined with increase venture capital funding. Aa a result there has been a considerable increase in planning applications and permissions, particularly in and around Oxford and Cambridge.

Engineering, science and technology premises to support sectors notably Future Energy; Engineering / automotive; Space; Future Mobility; Robotics - and to a lesser degree - Quantum Computing; AI and Machine Learning. Whilst evidently differing in their specific sector and occupier needs, this group tends to seek a combination of dry labs, office space and workshop R&D / testing space including customised facilities. Demand and supply drivers link to a range of macroeconomic factors and tend to be cluster orientated at sector specific institutions or

science / tech parks. Research for this study has identified a reasonable pipeline of premises for many of these sectors with a number being location / cluster specific.

9.3 Missing from the above list from the sectors being considered is Agri-tech. This falls most closely under the latter category with a need for wet and dry labs, workshops and offices – but also requires particular farmland conditions and in some instances polytunnels for growing conditions. These are quite specific and do not readily fall under a wider analysis of market supply, being mainly concentrated in Cambridgeshire commercially and supported by Niab in Greater Cambridge.

9.4 One notably cross-sector focus is the need to maintain a funding and premises pipeline for the start-up and scale- up stage of businesses, with commercial markets drawn to funding premises for larger businesses, due to the improved viability associated with development. Across the study area there are many examples of sector start-up innovation centres (many of which are full) but with a less ready supply of next stage space which, while profitable, is less of a commercial priority compared to more profitable, large scale developments.

Life Science / Wet labs market dynamics

9.5 The life science (particularly wet lab) market is more tangible in terms of demand and supply data reported by commercial agents. Wider SIT sector property data is not readily published and tends to be monitored more at the local or sector level.

9.6 There is a distinction between the current state of the market at 2024 for wet lab space, and the market in 2021, at the peak of the COVID-19 pandemic. The COVID-19 pandemic saw heightened demand for wet lab premises as a result of increased demand and funding for scientific research and development. This aligned to a time of slower pipeline and availability in the relevant sectors leading to very low vacancy. One

occupier who specialises in biochemistry described very tight supply when they were attempting to relocate in 2022/23, noting that they felt fortunate that there was only a 1 year wait to move premises.

9.7 Most stakeholders reported supply/demand issues have begun to ease into 2024 – in part due to reduced demand as a result of a slow down in funding and in part due to an increase in permissions and developments coming forward.

9.8 Despite this easing in the market, which is particularly relevant to the wet lab life science sector, there broadly remains a perceived imbalance in supply and demand with a continued undersupply of good quality premises in preferable locations with amenity provision, coupled with continued high levels of demand. This is partly due to the need to build out space that is being permitted in planning.

9.9 Supply of space catering towards early stage/scaling life sciences businesses was reported to be particularly tight with very little choice for occupiers in the market. However, examples of good provision for early-stage companies was acknowledged, for example The Oxford Bioescalator, Cambridge Bio-Innovation Centre and Babraham Research Campus.

9.10 Supply constraints may have eased in comparison to recent years, although demand is highly contingent on venture capital funding which causes cycles of higher and lower demand for SIT premises. A solid pipeline of future development is required to support anticipated increases in funding in the future.

9.11 Looking forward, stakeholders acknowledged that there is a good variety of lab space coming through the pipeline due to a market response in relation to increased interest around the sciences sector and specifically within the Oxford to Cambridge region. A concern was also raised regarding international competitiveness, with one agent of the view that occupier choice in the UK market does not compete with the level observed in US markets.

9.12 Views were mixed regarding levels of future supply, with some stakeholders raising concerns around potential over-saturation of the market, whilst others did not believe there would be an oversupply given the “huge demand”. It is likely that despite a healthy pipeline of projects and developer appetite, the main issue is deliverability, with not a huge amount of lab space currently under construction - partly as a result of a challenging viability of construction costs. Infrastructure capacity may also pose a constraint to future development.

Engineering, science and technology premises supply

9.13 Across the sectors of future energy, engineering / automotive, space, future mobility, and robotics, the demand for space tends to largely, but not exclusively, manifest within specialised locations and clusters, particularly for start-up / scale ups. Key clusters, as identified elsewhere in this report, include (but are not limited to):

Space – notably Westcott Space Cluster which has a good local pipeline of space and Harwell Science and Innovation Campus

Energy - including Culham: with a good pipeline of larger space but in need of replacing and expanding the existing innovation centre; and Chelveston Energy and Innovation Park; which is nascent but has a good pipeline of development

Automotive – including Silverstone: with a good pipeline of larger space but high occupation levels in the Sports Engineering Hub and other small – mid units; as well as Bicester Motion

Future mobility – including expansion space at Wescott, a good range of relatively new facilities at Cranfield relating to aerospace, Culham Campus’ connected and autonomous vehicles (CAV) facility, UTAC Millbrook.

Robotics – diverse across the region from Cranfield’s Centre for Robotics and Assembly to clusters around Oxford with a range of suitable

Quantum computing – including some clustering at Harwell with the National Quantum Computing Centre and space pipeline there, as well as at Milton Park

ICT and digital tech – more focused on the traditional office market space and particularly focused in Milton Keynes as well as Cambridge and Oxford, with no space limitations identified but an ongoing market requirement for smaller managed workspace.

Table 9.1 SWOT – Engineering, science and technology premises

Sectors	Future Energy; Engineering / automotive; Space; Future Mobility; Robotics; Quantum Computing; AI and Machine Learning
Premises	Mix across office, dry lab, mid tech (high spec industrial) - subject to occupier specific requirements.
Strengths	• Overall the pipeline is considered reasonably strong, with a range of sector specific and non sector specific tech pipeline developments and expansions. These are concentrated in the west and central area and include Silverstone automotive tech cluster, Catalyst in Bicester, Bicester motion, Harwell, Culham and Westcott (alongside those in the prelude to this table for sector specific support and focus). • There are physical and institutional infrastructure assets that support clustering and pipeline development, such as Harwell's Diamond Light Source, Culham Centre for Fusion Energy, The Welding Institute, Silverstone Circuit, Addenbrookes Hospital and Research Centres and numerous universities including Oxford, Cambridge and Cranfield. • The presence of major international private sector players such as Microsoft and Apple which support the clustering of other SIT firms. • There are 3 Enterprise Zones in Buckinghamshire (Silverstone Park, Woodlands, Westcott Venture Park) with specialist facilities. • There is a tendency for sci-tech premises to follow the higher value life sciences, however the Oxfordshire cluster capability is deep on the tech / mid tech, engineering and clean tech and this has led to investment in a range of premises from across the spectrum, including importantly mid tech premises at Harwell and Bicester and in automotive at Silverstone.

	• Oxfordshire sci tech companies have tended to grow through the life cycle and market stages and have typically seen a provision to suit - Cambridge has had more international investment historically and has started to move more recently towards a diversified portfolio. • The Oxfordshire clusters are largely located on the arterial network benefitting from M40 connectivity. • Wide range of universities and R&D facilities available to businesses, adding value to SIT premises located in the region. • There is a skilled labour pool across the key towns and cities of Oxford, Cambridge, Milton Keynes, Bedford and Northampton. Notably Milton Keynes is one fastest growing local economies in the UK, located halfway between Oxford and Cambridge, London and Birmingham, and with excellent connections via the M1, A5 and West Coast mainline railway. It is the largest settlement and city economy in the Oxford to Cambridge study area.
Weaknesses	• There is a continuous need for a range of mid tech manufacturing, distribution, piloting / testing spaces. Mid tech type spaces do not give equal returns compared to life science / office / dry lab. These mid tech boxes typically would occupy a footprint comprising 2 floors of lower rent small industrial compared with a 5 storey life science building. This value dynamic remains a characteristic weakness. Despite the identified pipeline, further development in this typology would be beneficial. The Greater Cambridge area has only recently seen more manufacturing tech orientated development for example at Bourn Quarter. • Aligned to the above, there can be challenges in accessing affordable high quality start-up and grow on space. A number of innovation centres are full, including for example Culham Innovation Centre and Silverstone Sports Engineering Hub. Institutions or grant funding is usually required to support development of innovation and start-up space with only life science having recently seen privately funded start up space. • Some stock elements across all sectors are dated and will not meet future sustainability standards. There is a mixed picture on viability to refurbish or deliver new premises. Culham Innovation Centre for example is nearing its end of life

	and requires redevelopment. Refurbishment for 1980s/90s or older stock which does not meet modern sustainability requirements is often not financially viable. • Some areas report a lack of start-up catered space for general tech and digital, particularly outside of the Oxford and Cambridge clusters, with Northampton reported to have unmet demand for managed and supported start-up space in addition to Vulcan Works.
Opportunities	• There are considered to be opportunities for universities other than Oxford and Cambridge (and Cranfield) to develop tech related specialisation and partner with business. There could be an opportunity for universities to collaborate and discover successful approaches to delivering spin-outs, or promote their areas of specialisation to prioritise support. • Milton Keynes has a diverse tech / fin tech related emphasis and remains an 'untapped resource' in developing sector specialisms potentially in association with Cranfield. Red Bull, based in Milton Keynes, exemplifies this strength. • Milton Keynes has around 275 hectares of land allocated or proposed for employment related development, so Milton Keynes has considerable potential to accommodate new development. There is also scope within the city centre to accommodate additional office type development either on vacant land or by the refurbishment or demolition and rebuilding of existing office blocks. There is also a significant amount of land available in and around Bletchley town centre to accommodate development. • Although Milton Keynes is home to the Open University campus, it is the largest settlement in the country without an undergraduate university. A university focussed on STEM (Science, Technology, Engineering and Mathematics) could benefit not only Milton Keynes but the wider Oxford to Cambridge area.

	• The Bedford Economic Growth Ambitions – Supporting Evidence document[25] sets out a strong justification for the additional supply of SIT business premises in Bedford. • Although not yet approved, the proposed Universal theme park in Bedford has the potential to help develop the digital and technology sector within Bedford and in surrounding areas. • Government focus on some SIT sectors in the 2024 Industrial Strategy consultation indicates there is likely to be some additional funding available to support innovation. • Typically there is limited Green Belt land designation in the areas between Oxford and Cambridge (Milton Keynes, Bedfordshire, and Northamptonshire). This, combined with lower land values, may enhance the attractiveness of these locations for future development particularly in terms of supply chain supporting the highest value cluster sectors such as life science at Oxford/Cambridge. This could include general / advanced manufacture in instruments or pharmaceuticals. • Buckinghamshire council has aspirations to attract larger organisations from outside their area to supplement the local SMEs which the economy is currently more focussed on. Identifying appropriate development locations and anchor tenants will aid in this. • The Government commitment to East West Rail should be seen as an opportunity to enhance pan regional assets and labour / housing market integration.

[25]See: Bedford Economic Growth Ambitions – Supporting Evidence

Threats	• Broad threats to sector development can be considered in terms of resources: water, energy, housing, talent, skills, road infrastructure. As an example, infrastructure in Buckinghamshire has been highlighted as needing investment. • Development costs remain a threat - viability is a challenge at present due to current macroeconomic environment. Even a strong pipeline for higher value life science sectors can be threatened by build costs. • As noted, the market may focus away from smaller workshop high spec mid tech units – instead tending to be at the larger end of industrial or more commercial units with greater lease covenant certainty. • Scaling companies need to grow on space – this is a critical asset to avoid stagnation of being forced out of the region • There tends to be a first mover disadvantage in terms of infrastructure investment – for example, new development sites have to invest heavily for power infrastructure which can then serve a wider area and other developers. This acts as a disincentive generating higher overheads for developers. • UK Government has signalled greater investment potential in clean tech – this may lead to market expansion and greater general and specific premises demand in the mid tech clean industrial space. A good example is Chelveston Energy Park's accommodation of hydrogen fuel cell testing and production. A market leading location in this sector is yet to emerge. • Whilst there are evident benefits in clustering, it can be difficult for centres or parks to remain pure to a theme/sector due to a "who pays wins" premise, meaning landlords are keen to fill vacant properties with any tenant. • It is notoriously difficult in the science sectors to accurately quantify and demonstrate demand and therefore to know how much to build, with variable research, funding and macroeconomic cycles.

Table 9.2 SWOT – Life science premises

Sectors	Life Sciences and Healthcare
Premises	• Typically 60% wet lab CL2 with 40% office. Can include testing and manufacturing space when encompassing medi-tech and instruments which require more dry lab type space.
Strengths	• The Oxford and Cambridge clusters have depth and density, being global centres with global recognition. According to the Global Innovation Index 2024, Cambridge ranks 1st in the ranking of science and tech clusters by intensity globally, beating San Jose-San Francisco (2nd), with Oxford ranked 4th and Boston-Cambridge, MA ranked 5th. • Global recognition of these clusters around no1 and no2 universities in globally for life science research (Times List). Concentration of bioscience and health technology businesses in the region is double the national average.[26] • Pipeline for life sciences premises is now strong (Oxford and particularly Cambridge) following undersupply in 2020-2022, although this needs to translate into built premises. Later stage companies are notably in a better position – enough stock for larger firms to feel relatively confident – sufficient stock and spec of buildings broadly "right" according to stakeholder interviews. • The life sciences demand / premises pipeline is better tracked than others due to high values associated. Larger parks in Oxford have more of a rounded intake across science tech whereas Cambridge has some pure life science focus such as Granta Park and Babraham. • There is a depth of experienced developers bringing different spec of products forward across the region

[26] https://oxford-cambridge-data.org/data-library/6645d7ee45f6c7009e95dcab

	• There are growing companies, who wish to remain in the region and do not want to relocate to other parts of the UK
Weaknesses	• Important to avoid eco system over-specialisation. Lots of sites delivering similar types of space and risk of not enough diversity outside of mid sized CL2 wet labs. • Cambridge more segregated in transport terms than Oxford, in terms of road network. • It's more difficult to link into Europe from the UK post Brexit • Spaces tend to be for mid sized occupiers and above (but not always). There are some issues with the types of space coming forward and suitability for emerging companies – e.g. not fully fitted spaces. • Less provision for early stage companies – some starting to be delivered but landlords usually go for easiest, largest letting. Incubators including business support challenge the traditional business model of making a profit. These are best collocated with institutions to provide academic and wider support and knowledge.
Opportunities	• AI opportunity – may be a move towards not needing a wet lab but more like a data centre / dry lab computational • Continue to grow the cluster with wider regional sites being drawn into supply, if they can establish institutional or anchor tenant connections. • ESG is driving a lot of firm behaviour – creating an opportunity to develop sustainably in business premises. • Oxford and Cambridge may price out some people but this generates opportunities in other areas such as Milton Keynes - but this needs good transport provision like EWR. • Conversions (e.g. office to lab) can be possible – some buildings are well-suited to it however in other cases it can be very challenging. • Cross over between pharmaceuticals and agri-tech – particularly where the high energy costs of vertical farming can be justified when growing pharmaceutical related products.

Threats	• There are broad threats in terms of resources: water, energy, housing, talent, skills, road infrastructure. • Wet labs can be energy intensive – air handling etc – making sustainability more challenging. • Dealing with water waste – a recent objection in Cherwell District which specified a requirement to upgrade sewerage system in Oxford. • AI across all sector typologies is highly energy dependent, which may limit the availability of supporting the computing power. • Big clusters – if they are to keep growing, they need an ongoing supply of talent, and over competition (with demand exceeding labour supply) will send investors elsewhere. Ability to keep providing capacity for opportunities in co-research and co-testing – if the cluster keeps scaling the unis of OxC – only a certain number of people who can do the commercialisation. Capacity to undertake research in terms of organisational and persons. Joint research with universities demand drain. • It is uncertain as to whether there is enough talent to satisfy the volume of space coming forward. • AI is a potential threat to employment on some skill levels. • Funding, particularly cyclical seed funding, remains an issue that may limit investment and growth in the sector. Demand for SIT highly reliant on funding rounds/macroeconomics – venture capitalist confidence and levels of cautiousness. • Most of the incubators, particularly in Cambridge, are full and businesses may need to stay longer because proof of concept taking longer. • Easier to raise money in the US than UK creating a risk of losing companies as they are acquired • Concern around large pharma companies coming in and taking large amounts of space, leaving little for early stage companies. • Inherently difficult to predict growth in life sciences in future and demand for premises (although better for data than tech) – could be shortage of supply if demand grows at current level but could be oversupply if it slows down.

	• Planning process – in a fast-moving industry – can be frustrating gaining planning consent by which time requirements may have changed. LDOs are a way of overcoming this – e.g. at Milton Park.

10. Understanding SIT Premises: Locational Preferences

Understanding Locational Requirements

10.1 Iceni undertook engagement with 31 stakeholders, both online and in person, between May and October 2024 to understand their views on the conditions and opportunities for the long-term development of the SIT sectors within the region.

10.2 To gain insight into premises locational requirements, stakeholders were asked to share their views on ideal features for SIT premises. This Chapter collates and summarises the key findings from these discussions. Many of the findings were broadly consistent across sectors, however there are also some important sector-specific nuances.

10.3 Stakeholders included agents, business representative organisations, investment and development companies, relevant government departments and premises owners and occupiers in the region. A full list of stakeholders is provided in Appendix A4 and the Topic Guide used to structure and guide the conversations is provided in Appendix A9. The key topics covered below are:

- Place
- Amenity
- Transport
- Housing
- Lease terms
- Clustering
- Ecosystem
- Shared specialist facilities
- Start-up space – including incubators and support systems

- Ability to grow on site
- Utilities – Power, Water & Digital Infrastructure

10.4 **Place** – as a principle, placemaking is an important concept to apply to locations that support SIT business growth and innovation, meaning that many of the ingredients outlined below (amenity, transport, housing) should be crossed over with the more technical specialist facilities, premises, clusters and innovation networks. Historically the edge / out of town science / business park has hosted many SIT businesses, having available space and land. Urban locations are seeing increasing emphasis, advantaged in their connectivity to workforce and wider amenities.

10.5 The recently approved Oxpens redevelopment, which forms part of wider plans for the west end of Oxford, provides a good example of placemaking. In addition to 500,000 sqft of office and lab space, the plans include residential provision (a large proportion of which will be affordable), student accommodation, a hotel, retail, food and beverage units and new public open spaces.

10.6 **Amenity provision** – Amenity provision was commonly stated as a key feature to enhance the work environment within SIT premises. Amenities such as on-site cafes, restaurants, on-site childcare, gyms, etc. can help to encourage workers back into the office post-covid, attract and retain top quality staff and be used as venues to host clients. Communal areas were also stated as important for allowing collaboration, perhaps between different tenants within a building or cluster. High quality outdoor space is also attractive to occupiers and employees given the potential benefits to physical and mental health.

10.7 The importance of amenity is reflected in the masterplan for Oxford North. The Red Hall is designed to act as “the heart of Oxford North” and will provide a café-bar, retail units, community space and co-working spaces on the ground floor. Further amenity space is provisioned by Fallaize Square (pop-up markets, food vendors, sports and cultural events) and Fallaize Park (green space hosting wellbeing events).

10.8 Many existing parks offer a range of amenities, for example in Bedford Colworth Science Park offers a café, gym, nursery and various sports including football and rugby pitches and tennis courts.

10.9 **Transport –** Public transport accessibility was described as “really crucial” and something that requires improvement across the region, with a focus on frequency and reliability. Public transport connectivity was primarily identified as being important in relation to labour catchments, with many stakeholders emphasising the importance of access to talent. Transport connections between SIT premises and educational institutions are also important.

10.10 Improved transport connections can help to attract and retain talent in the local area by ensuring that, if someone were to relocate from abroad/elsewhere in the UK, they can base themselves in one location and access multiple economic opportunities without needing to move and uproot their family - e.g. initially work in Milton Keynes, then move to work in Cambridge without needing to move house, or vice-versa.

10.11 For the tech and deep tech sectors, public transport was highlighted as key for connecting talent to jobs as these sectors often choose to locate in city centres where car travel is often impractical and unsustainable.

Improved public transport accessibility was also noted as an important factor in improving sustainability, with many sites currently very car reliant, for example Westcott Venture Park and Silverstone Technology Cluster. In Greater Cambridge there are bus services, however many of the out-of-town parks remain relatively car reliant such as Granta Park, Babraham Research Campus and the Wellcome Genome Campus. Cambridge Biomedical Campus will soon benefit from the completion of Cambridge South rail station. Improvements to the bus network are also planned, with the Cambridge South East transport (CSET) scheme, which will link Cambridge South Station to Granta Park and Babraham Research Campus. A Transport and Works Act Order application was submitted to DfT on 9 January 2025.

10.12 Facilities and infrastructure to support active travel such as cycle routes and bike storage facilities are also key to improving the sustainability to employee travel.

10.13 It was acknowledged that connectivity between settlements across the area is improving. The subnational transport body, England's Economic Heartland, recently published a series of Connecting Economies brochures for the region[27], setting out various projects to enhance transport across the region, such as the proposed Mass Rapid Transit (MRT) system in Milton Keynes and the proposed re-opening of the Cowley Branch Line in Oxford which will see two new stations at 'Oxford Littlemore' and 'Oxford Cowley', improving connections between significant SIT employment sites such as The Oxford Science Park, ARC Oxford and Oxford North[28]..

10.14 East-West Rail was widely advocated by businesses as an important investment to help realise the full potential of the Oxford to Cambridge partnership region. Services from Bicester to Milton Keynes via Bletchley are due to commence in 2025 and services between Oxford and Bedford are expected to begin running in 2030, with full Oxford to Cambridge services introduced at a later date. East-West routes such as the A421 linking Oxford to Cambridge via Milton Keynes have improved in recent years and will improve further in the future with the completion of the A428 Black Cat to Caxton Gibbet scheme currently under construction.

10.15 In addition to within-region connectivity, access to London was noted as important in enabling connections with investors – especially for start-ups. International connectivity was also mentioned, noting a lack of international flights between nearby London Stansted and locations such as the US where many major SIT businesses are located.

[27] https://www.englandseconomicheartland.com/our-work/connecting-economies/

[28] For more info, see Connecting Economics: Peterborough-Northampton-Oxford, https://www.englandseconomicheartland.com/our-work/connecting-economies/

10.16 **Housing –** Multiple stakeholders raised local housing provision as an issue, specifically identifying the affordability of housing as problematic. Oxford and Cambridge have particularly high house price to earnings ratios. Some staff have to commute relatively long distances, for example from Swindon, to jobs in Oxfordshire. Good quality residential accommodation with flexibility of tenure and a range of affordability levels is required in order to attract talent to the region and house a growing local workforce. Given the significantly more affordable housing, as well as competitive rents, between Oxford and Cambridge (Milton Keynes, Bedfordshire and Northamptonshire) there are locational advantages to these areas.

10.17 Oxford North – a new innovation district in Oxford set to open in 2025 – provides an example of a scheme which includes an element of residential development alongside new laboratories, workspaces and amenities to form a new community. The Oxford North Masterplan includes 480 new homes, of which a minimum of 35% will be affordable.

10.18 In Greater Cambridge, the Wellcome Trust Genome Campus has permission to deliver around 1,500 homes to house staff.

10.19 One stakeholder suggested that housing issues could be solved via investment in transport connections, with East West Rail connecting relatively affordable areas, such as Bedford and Milton Keynes, to Oxford and Cambridge SIT centres.

10.20 **Lease terms** – Stakeholders highlighted the importance of flexible lease terms – especially for smaller and growing businesses within SIT. These businesses often grow rapidly and may quickly outgrow their space. Therefore, short-term leases (weeks/months rather than years) are often preferable. This is also the case for spin-outs and start-ups whose future may be less certain. As businesses mature and receive greater funding they may require greater security of tenure and prefer longer leases of up to 5 years. Business Incubation premises usually offer flexible leases as standard for these reasons.

10.21 **Clustering** – Multiple stakeholders highlighted the importance of being part of a cluster or community for the optimised growth of SIT occupiers. Co-location of similar businesses is beneficial as it enables and encourages networking, collaboration and sharing of ideas – all of which are vital for innovation and business growth. Anecdotally, one company located at Harwell has sites across the UK, but has grown the fastest at Harwell – this is believed by the business to be due to the clustering of similar firms at the Harwell Campus.

10.22 To protect and develop clusters of similar businesses, many existing sites operate gateway policies whereby only specific types of businesses may occupy space within the premises – examples include Culham Innovation Centre and The Wood Centre for Innovation. Anecdotally, commercial landlords are more likely to accept any tenant willing to occupy a building which can make cluster development more difficult in the private sector.

10.23 Physical co-location alone is not necessarily sufficient to foster collaboration, and multiple stakeholders emphasised the role of amenity space and the active involvement of the landlord/management company in helping businesses to form connections. One occupier located at ARC Oxford noted that they were appreciative of ARC as a landlord pushing for collaboration between occupiers by setting up cross-company activities. Managers of other SIT premises such as Culham Innovation Centre also arrange regular social activities to encourage occupiers to network. It should be noted that these initiatives require investment from the landlord or developer, but are likely to play a role in attracting and retaining tenants.

10.24 **Ecosystem environment** – Closely linked to clustering is the concept of an ecosystem environment. For many SIT businesses, it is vital to be located in close proximity not only to other similar businesses, but also to learning institutions such as universities, research centres, key technical infrastructure or other facilities such as hospitals. This is particularly important for early-stage companies where academics are managing their academic roles alongside the commercialisation of products. The figure below illustrates a standard innovation ecosystem.

Figure 10.1 A standard innovation ecosystem

Source: United Nations Development Programme[29]

10.25 The Wood Centre for Innovation provides an example of a site that is well-located as part of an ecosystem within The Headington Science Cluster. The site is located nearby to the University of Oxford's Old Road Campus, clinical research facilities at local hospitals (John Radcliffe Hospital) and Oxford Brookes University.

10.26 Cambridge Biomedical Campus (CBC) is a world class location for life sciences with a clinical focus. It is located on the same site as the teaching hospitals of the University of Cambridge and other research organisations including the Cancer Research UK Cambridge Institute, Clinical Research

[29] https://www.undp.org/ethiopia/blog/network-effect-how-we-are-engaging-innovation-ecosystem-during-covid19-pandemic

Centre and Medical Research Council Laboratory of Molecular Biology, creating an optimum environment for the rapid and effective translation of research into routine clinical practice. It is the largest employment site in Cambridge, located to the south of the city centre and contains Addenbrookes Hospital. Astrazeneca and Abcam both have their HQ buildings located at CBC and GSK (GlaxoSmithKline - a global biopharma company) are located within the hospital campus. It is undergoing major expansion.

10.27 **Shared specialist facilities** – SIT businesses often have unique requirements for specialist equipment associated with testing and development. This equipment is often costly and space-intensive and therefore not a feasible investment for smaller firms. The provision of shared specialist facilities can help to alleviate this market failure but usually requires an element of public funding.

10.28 Westcott Venture Park, Silverstone Technology Park, Heyford Park Innovation Centre and Babraham Research Centre are leading real-world examples of SIT premises that offer the use of specialist facilities. For example, Silverstone Technology Park offers a Metrology Facility, 3D printing at the Digital Manufacturing Centre and various testing facilities such as wind tunnels and a Pedalling Efficiency Rig at the Sports Engineering Hub. Other examples include the Cambridge-1 supercomputer designed for external research access specifically for healthcare and life sciences research and the recently opened National Quantum Computing Centre at the Harwell Campus in Oxfordshire which will offer open access to a wide range of quantum computing platforms. The DiagnOx Laboratory located at Heyford Park Innovation Centre offers a managed and equipped laboratory facility.

10.29 Generally, it would not be feasible for small businesses to invest in these types of facilities for their personal R&D activities. Clustering, as explored earlier in this chapter, helps to enable the viability of these shared facilities by bringing together multiple occupiers with similar facilities requirements to a single location. Innovate UK's Catapults play an important role in bringing

together innovators and providing resources and infrastructure necessary to support early development.

10.30 **Ability to grow on-site –** SIT businesses often experience rapid growth and multiple stakeholders indicated a preference for premises where there is expansion potential on-site. This reduces relocation costs and importantly enables firms to retain their existing workforce.

10.31 Culham Campus provides a good example of a site where businesses can scale-up their operations on-site, with examples of start-ups such as Reaction Engines[30] who have grown from small spaces provided by the Culham Innovation Centre into significantly large premises whilst being able to remain on the Culham Campus. Babraham Research Campus is similar, having developed a range of buildings that support start-up and scale up businesses.

10.32 **Start-up space and incubation support** – Start-up spaces are important for entrepreneurs and small businesses as they provide small, affordable spaces with acceleration support to help in the commercialisation of scientific ideas. This therefore includes both the physical space but also wider support services that are designed to help new businesses succeed via assistance across: Mentoring, Seed funding, Training, Equipment, High-speed internet access, Marketing and finance assistance, Networking opportunities and Access to services and events.

10.33 An incubator will usually start to work with businesses at a very early stage, typically when the entrepreneur is still developing their business model and their product is just starting to take shape. St Johns Innovation Centre in Cambridge is just one example of many offering tailored business support across the whole study area.

[30] Fuelling Success: Culham Innovation Centre Celebrates Milestone in Advancing Fusion Energy Businesses - Culham Culham (culham-ic.co.uk)

10.34 Stakeholders noted that these types of spaces should be offered at all science parks, however also highlighted that these types of spaces challenge the traditional profit-focussed business model. Start-up space tends not to be financially viable, with larger units being more profitable for developers to deliver and manage. Whilst there are examples of successful schemes, they often require subsidisation. For example, the Innovation Centre at Westcott Venture Park is funded by the Local Growth Fund, and Buckinghamshire Enterprise Zone and managed by the Satellite Applications Catapult. Similarly, Vulcan Works – a Northampton-based collaborative workspace for individuals and SMEs in the digital and creative industries - was funded by West Northamptonshire Council and Local Growth Fund and European Regional Development Fund contributions. Facilities such as shared lab bench space were noted only to be viable if delivered by a non-commercial landlord such as a university.

10.35 **Locational requirements vary by occupier maturity -** for science and technology smaller businesses and start-ups, there is a need to be located alongside institutions or research centres that can provide a range of support including appropriate space at affordable cost, which is often not viable in fully commercialised centres. For digital type start-ups and smaller businesses, there are specific needs in terms of incubator or innovation centre support and potential mentoring; and as a minimum flexible hot desking space.

10.36 **Utilities – Power, Water & Digital Infrastructure -** unsurprisingly, electricity, water and digital infrastructure and supply were described as “absolutely vital” and a “top priority” for SIT premises.

10.37 Many businesses within SIT are energy intensive, for example wet labs which require air changes and fridges and deep tech which may require specialist energy-intensive facilities such as fusion energy reactors and quantum computers. It is imperative for SIT premises to have sufficient energy supply, but also for this supply to be stable. If the power supply is unstable, the resilience of equipment and facilities such as fridges is compromised which creates risk of research being lost.

10.38 Developers are aware of the importance of power provision, with a growing trend in developers putting in applications for power before planning permission is granted. However, regulation can often act as a barrier to grid connections deemed speculative by Ofgem. This reflects the difficulty that developers will experience in attracting occupiers if they cannot guarantee power supply once the development is built. One occupier working in future mobility described discounting a number of potential sites due to grid capacity issues.

10.39 Digital connectivity was described as “absolutely crucial” to a successful SIT location, particularly in relation to the growing impact of AI in SIT sectors such as life sciences. Ensuring that rural areas are well-connected was noted as important with rural capacity issues noted, for example weak mobile signal at Westcott Venture Park. Some businesses within SIT sectors, e.g. tech firms, can often work remotely from home, however this is also reliant on sufficient broadband facilities.

10.40 As highlighted within the SWOT analysis, water supply is a particular issue in Cambridgeshire. Consistent supply and regular water pressure is important for SIT business premises, where insurance premiums can increase substantially if regular water pressure cannot be guaranteed as this creates risks of fire prevention devices not working.

11. Case Studies and Premises Characteristics

11.1 Several case studies are set out below which are designed to highlight a range of different premises types covering a variety of sectors and locations across the Oxford to Cambridge partnership area. This is not an exhaustive of science and business parks in the region (see Chapter 5 for the full atlas).

Figure 11.1 Map of case studies undertaken

Source: Iceni

Westcott Venture Park, Aylesbury, Buckinghamshire

Image source: https://www.westcottvp.com/

Image source: https://westcottspacecluster.org.uk/centres/innovation-centre/

11.2 **Summary –** Westcott Venture Park comprises a total of 650 acres of land, 75 acres of which are located within the Buckinghamshire Enterprise Zone. The

Westcott Space Cluster is located in the Buckinghamshire Enterprise Zone of the Park and is home to a growing number of space-related companies. The Space Centre offers specialist capabilities including The Future Networks Development Centre, National Space Propulsion Test Facility, In-orbit Servicing and Manufacturing and Drone Test and Development Centre. There is capacity for further development on-site, and further development within the Space Cluster has recently been consented.

11.3 **History –** Westcott Venture Park is located on a former RAF airfield built in 1941/42 during the 2nd World War. Post WW2, the site was used for the development and testing of rocket engines and motors before becoming known as Westcott Venture Park in 1995. In 2018, the Westcott Space Cluster was launched leading to the establishment of various specialist facilities aiming to create a powerful ecosystem for high tech businesses and start-ups.

11.4 **Type of space –** The site contains a mix of office, industrial and open storage space. Units across the site vary significantly in terms of age and quality. Whilst there are some recently built, good quality units (e.g. Nammo, the Innovation Centre) there are also some very aged, poor-quality buildings, some of which are listed. Notably however, many such buildings/spaces are occupied (e.g. site occupied by Protolaunch) demonstrating demand for more affordable spaces.

11.5 **Location –** The site is rurally located between Aylesbury and Bicester off the A41 and approximately 12 miles from J9 of the M40. Public transport accessibility is poor, with 1-2 buses per hour serving the site.

11.6 **Activities / occupiers** – Clustering of space-related occupiers (approx. 30) including Nammo, URA thrusters and Protolaunch. Other occupiers include Portakabin (portable building hire centre), UKP Worldwide (customs broker) and Green Retreats (garden building supplier).

11.7 **Occupancy and demand –** No evident vacancy across the site, at time of writing.

What features make this an attractive site for SIT businesses?

- Site area – a large site with plenty of space between units providing privacy and safety.
- Clustering – an established cluster of aerospace-related companies developing new innovative technologies such as rocket propulsion, in-orbit servicing and manufacturing and communications. Also located relatively near to Harwell allowing collaboration with larger aerospace companies.
- Specialist facilities – provision of specialist, shared facilities (including The Future Networks Development Centre, Agri Living Lab, National Space Propulsion Test Facility, In-orbit Servicing and Manufacturing and Drone Test and Development Centre) – important for smaller companies where it isn't feasible to invest in these facilities themselves.
- Security – secure site with security services.
- Range of price points / building specifications – Offers more affordable spaces as well as modern new build units.
- Enterprise Zone Status – on a portion of the site providing benefits such as tax reliefs – attractive to business.

11.8 **Example**: Drone Test and Development Centre

Three large workshops for technical development – full and half hangars are available for long and short term lease, and flexible workbench options available for rent by the day.

A 270-metre runway for horizontal take-off.

Four dedicated landing pads for vertical, or vertical to horizontal take-off.

Multiple flying areas offering real world flying environments.

11.9 **Expansion plans –** There are plans for further development on the site with an approved hybrid planning application (4/00860/APP) for 1) full application

for the erection of two buildings for Use Classes E and/or B2 and/or B8); 2) outline application for the erection of one building for Use Classes E and buildings for Use Classes E and/or B2 and/or B8. The development is planned to act as a hub with various amenities in addition to space for occupiers.

11.10 **Challenges / issues –** Public transport provision; lack of housing provision nearby; would be preferable for the Enterprise Zone to cover the whole site; would be preferable to focus occupation on the aerospace cluster.

Culham Innovation Centre

Image source: https://www.culham-ic.co.uk/contact/

11.11 **Summary –** Culham Innovation Centre is located at Culham Campus - a purpose-built site for the UK Fusion programme which houses a unique collection of global partners working together to create clean, sustainable energy sources for future generations. The Innovation Centre provides small workshop / office / lab spaces for entrepreneurs and SMEs within the science and technology sector.

11.12 **Type of space** – Culham Innovation Centre provides a mix of flexible office, workshop space and dry labs. Floorspaces range from approx. 60 – 640 sqft. The current building has served its purpose well over the years, and

opportunities are now being explored to relocate to more modern premises within the Culham Campus to better support future growth and innovation.

11.13 **Location** – Culham Campus is located rurally south of Oxford. The site is served by Culham train station with trains to/from Oxford, Banbury and Didcot Parkway.

11.14 **Activities / Occupiers** – Occupiers are all entrepreneurs / SMEs working within science and technology. Occupiers include Oxitec – a developer of biological solutions to control pests, ActiveNeedle – developing cancer detection solutions and Oxford Sigma – Innovation in the development of fusion energy.

11.15 **Occupancy and Demand –** The Centre is popular and full at summer 2024.

What features make this an attractive site for SIT businesses?

- **Flexible workspace –** Occupiers can choose to keep units as office space or transform it into a technical workspace if required for development, testing, light manufacturing and assembly. The Centre also offers specialist dry laboratories from 150 sq ft – 640 sq ft with the potential to upgrade to wet lab space. Custom lab fit outs are available to meet occupier requirements. The Centre offers small spaces ideal for early-stage innovation businesses.

- **Flexible rental agreements** – The Centre offers a 3-month notice period which is well-suited to early-stage businesses who may be unable to commit to longer lease terms, especially given funding constraints.

- **Science cluster and business support –** Occupiers benefit from being part of the Culham Campus ecosystem, with access to specialist expertise, equipment and signposting to industry experts, connections, recommended suppliers, partners and investors. The Centre also organises regular events and networking opportunities to encourage occupiers to connect and collaborate with one another.

- **Opportunity for on-site growth** – Occupiers at Culham have access to larger floorspaces, allowing businesses to expand as they grow.
- **Security –** Culham Campus is a secure facility with a manned, gated entrance. There is also on-site security and 24-hour access.
- **Amenities on site –** Culham Campus offers a restaurant, café, nursery and sports facilities.

11.16 **Expansion plans** – Options are being explored to relocate the Innovation Centre to an alternative, more modern building on the Campus which could also provide greater floorspace than the current premises.

11.17 **Challenges / Issues** – Limited space to accommodate all enquiries, coupled with an ageing building means that new premises will likely be required in the short to medium term.

Chelveston Renewable Energy & Innovation Park

Image source: https://www.bbc.co.uk/news/uk-england-northamptonshire-59119721

11.18 **Summary** – Chelveston Renewable Energy & Innovation Park is located on a former MOD (Ministry of Defence) airfield covering some 750 acres in

North Northamptonshire. The Energy Park combines multiple renewable energy technologies including 9 wind turbines and 500,000 solar panels, with an installed capacity of up to 200MWh. An additional solar array has been completed with an installed capacity of up to 60MW dedicated to green hydrogen production and is capable of generating up to 3 tonnes per day. In a unique JV with JLR, second life batteries from Jaguar I-PACE vehicles are combined into large-scale energy storage systems to store and stabilise renewable energy on site. The Energy Park also benefits from 2 grid connections (export & import).

11.19 The Innovation Park provides for up to 32,900 sqm of commercial/business floor space with a direct power feed from the renewable energy park and will become a centre for businesses to accelerate towards a zero-carbon future.

11.20 **History** – Chelveston Aerodrome was originally opened in August 1941 by the Air Ministry for use as a wartime RAF base. The American Army Air Force used it from 1942 and later during the cold war. The site was sold by the Ministry of Defence in 2005.

11.21 **Type of space** – The first industrial building of 84,560 sqft (7,858 sqm) including 8,160 sqft (758 sqm) of offices has been completed in the first phase of the park, with planning permission for 354,142 sqft (32,900 sqm). The building benefits from a roof mounted bi-faced solar array and an EPC rating of A+ (-92) making it a Carbon Negative property. It is available To Let. Further phases of the Innovation Park are planned.

11.22 Construction is also underway on an additional unit to house Intelligent Energy's new test facility and electrolyser, which will use renewable solar energy generated by the park to produce more than 100,000kg of green hydrogen annually, powering the fuel cells, a key technology that is central to the UK's renewable energy strategy.

11.23 **Location** – Former MOD site in Chelveston, North Northamptonshire, east of Rushden.

11.24 **Activities / Occupiers** – The park is focused on attracting occupiers complimenting the sustainable ethos and large-scale renewable energy generation & storage on site. This is likely to suit specific green and energy orientated businesses such as Manufacturing, Vertical Farming, Frozen Goods, Research and Development, Data, Healthcare (pharma) and Specialist Recycling.

11.25 **What features make this an attractive site for SIT businesse**s? The site has developed truly unique energy generating and large-scale storage capabilities which means that businesses locating at the Innovation Park will benefit from a direct wire renewable energy supply. The park currently saves some 40,000 tonnes of carbon a year being released into the environment.

11.26 **Expansion plans** – Construction of the first phase of the Innovation Park has commenced and offers bespoke solutions to occupier demands providing commercial units permitted within Use Classes E/B2/B8 & Agricultural. Further phases are planned.

Image source: www.prop-search.com

11.27 **Challenges / issues** – The Park has worked through complex technical issues to achieve power balancing and grid integration. The focus is now developing premises for occupiers with a direct wire feed from the renewable energy park. The park managers have an occupier theme policy around future energy and related activities, which may slow down the occupation rate but maintains the park integrity.

Silverstone Park and Sports Engineering Hub

Image source: https://silverstone-park.com/

11.28 **Summary** – Silverstone Park is a technology and advanced engineering campus with a focus on innovation. It is located adjacent to the Silverstone race track.

11.29 **Type of space** – age/quality/floorspace – Silverstone Park offers both office and industrial space with floorspaces range from approximately 1,500 sqft – 100,000 sqft. Most industrial units include 10% office space within the base build, however the majority of occupiers add mezzanines to increase this provision to approx. 15-20%. All buildings have attained EPC A and BREAAM excellent ratings.

11.30 The Sports Engineering Hub is a sports innovation start-up centre with offices and workshops alongside specialist facilities such as a dedicated wind tunnel and pedalling efficiency rig. It has benefited from several rounds of Local Growth Funding. At summer 2024 the Hub is at full occupancy.

Figure 11.2 Silverstone Sports Engineering Hub Wind Tunnel

Figure 11.3 Silverstone Sports Engineering Hub Pedalling Efficiency Rig

11.31 **Location –**Silverstone Park is located rurally south of Towcester in Northamptonshire. The Park is not well served by public transport.

11.32 **Activities / Occupiers** – The Park takes a sector-agnostic approach, attracting high-profile businesses across diverse sectors that include aerospace, agritech, automotive, defence, energy, marine, motorsport, medical and scientific research. Examples of occupiers include Vorteq Sports (research and product development in sports performance products), Danecca (custom battery development) and Silverstone Composites (design and manufacture of carbon fibre for motorsport and automotive uses).

11.33 What features make this an attractive site for SIT businesses?

- **Global reputation –** The site's location alongside the world-renowned Silverstone race circuit makes it an attractive address, especially for sports and automotive-related businesses and supply chains.

- **Specialist shared facilities –** Silverstone Park offers world-class specialist facilities such as Electromagnetic Testing, Industrial Metrology, Sports Engineering Testing and Digitalised Additive Manufacturing. Access to these facilities provide companies located on the campus a competitive edge over others.

- **Clustering –** The cluster of advanced engineering and technology firms on-site create a hub of expertise which can help to maximise productivity through knowledge sharing.

- **Quality of premises –** The premises on-site are all built to a high specification and are high quality premises. This is driven by a long-term investment strategy.

- **Single ownership –** The single ownership structure of the Park enables flexible leasing with the ability to allow occupiers to move between premises more readily.

- **Amenities –** The Park offers a hotel, meeting and conference facilities, catering and hospitality offerings and a gym. These facilities cater both for occupiers and visitors to the site and are increasingly important features in relation to staff retention.

- **Enterprise Zone Status –** A portion of the Park is located within the Buckinghamshire Enterprise Zone which has provided ongoing finance and support to develop the site and provided support to occupiers such as funding and rates relief. This has assisted growth and contributed to the sites overall success.

11.34 **Expansion plans** Silverstone Park has planning consent for a further 1.5m sq. ft of commercial space on 75.59 acres of development land[31]. Phase 4 of

[31] Occupiers and Innovators at Silverstone Park (silverstone-park.com)

the Park has been granted planning consent and will house hybrid style industrial R&D units with ancillary office space, a new café, gym and nursery. A planning application has been approved for Phase 5 which is planned to comprise four large industrial units built to shell and core.

11.35 **Challenges / issues** – Whilst a portion of the park lies within the Buckinghamshire Enterprise Zone, other parts of the park do not as they lie within Northamptonshire - it would be beneficial for the whole park to have Enterprise Zone Status. Public transport accessibility is poor, reducing the sustainability of the park.

UTAC Millbrook (formerly Millbrook Proving Ground), Central Bedfordshire

Figure 11.4 UTAC workshops

Figure 11.5 UTAC test track

Figure 11.6 UTAC electric battery test facility

11.36 **Summary –** The UTAC site is based in Central Bedfordshire and was formally known as the Millbrook Proving Ground before being acquired by UTAC international mobility consultants and engineers. UTAC Millbrook offers over 70 km of unique vehicle test tracks: high speed circuit, 4×4 tracks, alpine tracks and more. UTAC Millbrook has a range of advanced technical

facilities including industrial and lab premises including: a battery test centre, laboratories specialised in crash tests and others leased by a range of specialist automotive occupiers.

11.37 **History** – Modelled on the Milford Proving Ground operated by General Motors (GM) in Michigan, Millbrook was opened in the 1960s by the GM subsidiary Bedford before passing over to Vauxhall. In 1988 the site was transferred to a new company, Millbrook Proving Ground Limited as part of Lotus and offered its facilities to non-GM companies and has changed ownership a number of times since. The proving ground maintains a high standard of security and secrecy to protect the commercial interests of its customers.

11.38 **Type of space** – aside from tracks, there are multiple units which can be hired on short or long leases. These include traditional vehicle workshops, a dedicated crash test facility, a custom electric battery testing centre, and large premises containing a range of facilities including dry laboratories for emissions testing under range of temperature-controlled conditions. There are also events facilities typically used for a range of car launches.

11.39 **Location** – UTAC Millbrook is located in Central Bedfordshire, in semi screened valley environment enabling alpine type vehicle testing.

11.40 **Activities / Occupiers** – there are a wide range of private and public sector occupiers however due to commercial sensitivities they are typically not listed. They include many of the leading vehicle manufacturers, who test vehicles across a wide range of driving and in lab circumstances.

11.41 **Occupancy/demand for space/success** – over the years substantial private investment has gone into UTAC Millbrook to provide state of the art facilities, such as the electric battery testing centre. Demand for space varies and does have some correlation with the macroeconomic cycles, both in terms of demand for automotive vehicles as well as access to finance for R&D and innovation.

11.42 **What features make this an attractive site for SIT businesses**? UTAC Millbrook offer premises and facilities that are unique at the national and European level. It helps contribute to the automotive cluster in the sub region as part of the network of facilities and manufacturers.

The Wood Centre for Innovation

11.43 **Summary –** The Oxford Trust's Wood Centre for Innovation offers flexible workspaces for start-ups and early-stage businesses specialising in science and technology.

11.44 **History** – The Wood Centre for Innovation in Headington was opened by The Oxford Trust in 2019 and offers 19,500 sq ft of office, CL II laboratories, and technical workspace as well as co-working space. It is now home to The Oxford Trust and nine pioneering science and tech companies as well as Barclays Eagle Labs, which together employ 191 people. Also opened by The Oxford Trust in 2019, the adjoining Science Oxford Centre is the UK's

first indoor-outdoor primary science education centre. The complex is surrounded by 15 acres of woodland, ponds and grassland.

11.45 **Type of space** – The Wood Centre for Innovation offers a high spec premises and facilities. It includes a variety of workspaces - offices, R&D laboratories (wet lab, CL2), technical workshop space and co-working in Barclays Eagle Labs. Spaces range from approximately 300 sqft to 1700 sqft.

Figure 11.7 Wood Centre lab facilities

11.46 **Location** – The Wood Centre for Innovation is in Headington, on the eastern side of Oxford. It is part of the Headington Science Cluster and in easy reach of leading centres of scientific research at the University of Oxford's Old Road Campus and clinical research facilities at local hospitals such as the John Radcliffe.

11.47 **Activities / occupiers** – The Centre operates a gateway policy that predominantly focuses on life science and deep tech. Current occupiers include companies such as Helio Display Materials (R&D firm commercialising materials for display screens), Samsara Therapeutics (drug

discovery) and Pictura Bio (commercialisation of innovative diagnostic imaging technology).

11.48 **Occupancy and demand** – Space at the Wood Centre for Innovation is in high demand for companies that want to be located within the city and close to research facilities in the Headington area.

What features make this an attractive site for SIT businesses?

- **Flexible leases –** The Wood Centre for Innovation offer flexible lease and licences to suit different levels of business maturity.
- **Space designed to occupier requirements –** There is some flexibility and bespoke elements are possible for future clients.
- **Business support provision –** Oxford Innovation Space's Innovation Director offers companies based in the Centre 1:1 business support. Barclays has partnered with The Oxford Trust and provides an Eagle Lab on site. The Eagle Lab offers co-working space, mentoring and business support to spinout scientists, university graduates and entrepreneurs to help their businesses grow.
- **Mix of lab and office space –** The Wood Centre for Innovation offers both lab and office space and occupiers can vary the ratio of the space that they lease. Typically, occupiers lease approximately 30:70 office:lab space.
- **Location** – The Wood Centre for Innovation's location enables businesses to be part of a wider ecosystem of Oxford's leading research centres.
- **Shared services –** Occupiers are able to benefit from shared services such as goods handling and reception services, enabling occupiers to focus their time on their research and business growth. There are also shared technical facilities such as a dark room and liquid nitrogen storage.

- **Amenity provision -** The Wood Centre for Innovation offers more than services workspace. It is set within 15 acres of woodlands and ponds providing quality outdoor space. There is also an on-site café providing food and drinks. The Oxford Trust and Oxford Innovation Space organise regular events, helping to create a thriving business community. Site management emphasised the importance of the site not just being a place to work, but a quality space with amenity value.

11.49 **Expansion plans** - The Oxford Trust has now been given the green light for the new Aspen Building, which will provide science and tech companies with additional start-up and grow-on laboratory and office space at the Wood Centre for Innovation.

Niab Barn4 incubator

Source: https://www.niab.com/about/locations/cambridge

11.50 **Summary** – Niab is based in Histon on the outskirts of Cambridge. Niab is at the forefront of plant genetics and genomics, farming systems, data science and much more. The Cambridge site includes offices, laboratories, growth room facilities and meeting rooms. Barn4 is Niab's agritech incubator. Co-located with Niab, the incubator is a 700 sqm facility over 2 floors, offices over labs. Space within the facility is currently oversubscribed. Additional lab incubator space is available at Niab's building near the Huntingdon Road

site. This is managed by an external company specialising in facilities of this sort.

11.51 **History –** Niab was founded in 1919 to support the British agriculture sector with regards to crop health and productivity. Headquartered in Cambridge, Niab has a horticulture focused site in East Malling, Kent and further regional trials centres across England. Niab has grown significantly in recent years and now has approximately 400 staff and students working across its network of sites.

11.52 **Type of space** – Barn4 is Niab's agritech incubator that opened in spring 2021 at the Park Farm site in Histon supporting start-ups and SMEs. The facility includes office and laboratory space, meeting rooms and workshop space. Members of the incubator are able to access Niab's specialist laboratory facilities, high performance computing facility, glasshouses, vertical farming, and outdoor trial space.

11.53 **Activities / Occupiers** – Niab employs around 300 people directly in Greater Cambridge. Numerous businesses are based at the Barn4 incubator.

11.54 **Occupancy/demand for space/success** – The Barn4 incubator is at capacity. A second incubator has opened in Niab's buildings with additional lab space manged by third party provider CoLabs.

11.55 What features make this an attractive site for SIT businesses? Niab provides a range of specialist facilities as well as the unique knowledge and research associated with the crop sciences sector.

11.56 Expansion plans – Niab hope to continue to support start-ups moving into scale-up phase as they leave Barn4. This support would be both at a technical level and through the provision of facilities.

Bio-Innovation Centre at Cambridge Science Park

Image Source: https://www.cambridgesciencepark.co.uk, *Credit: Hundven-Clements Photography*

11.57 **Summary –** Cambridge Science Park was established in 1970 by Trinity College Cambridge and is located on the northern edge of Cambridge. It covers an area of 60 ha including 180,000 sqm of R&D lab and office space, which house 170 companies across 58 buildings. Examples of successful businesses at the Science Park include:

- AMD Limited: Founded in 1969 as a Silicon Valley start-up, AMD has grown into a global company setting the standard for modern computing. AMD has recently taken occupation of 45,000 sq ft in Building 196 at the Cambridge Science Park.

- Dassault Systèmes is the world leader in 3D design software, 3D Digital Mock Up and Product Lifecycle Management (PLM) solutions. They now occupy 30,000 sq ft of space in Unit 22.

- The Raspberry Pi Foundation is a UK-based charity with the mission to enable young people to realise their full potential through the power of computing and digital technologies. They lease 30,000 sq ft at 194 Cambridge Science Park.

- XGenomes was founded in 2017 with the mission to revolutionize precision research and medicine through streamlined sample-to-answer solutions that exceed existing technologies across several metrics.

- Amgen has been a biotechnology pioneer since 1980 and are now one of the world's leading independent biotechnology companies. Cambridge Science Park was home to Amgen's first UK office more than 25 years ago and is one of the company's largest hubs outside its global headquarters in California.

11.58 **Amenities** at the science park include: The Bradfield Centre, home to the Lakeside Café, with auditorium facilities for occupiers on the park; The Trinity Centre venue for conferences and exhibitions; Bright Horizons Nursery and Revolution Health & Fitness club.

11.59 TusPark Cambridge's **Bio-Innovation Centre** was opened in 2019 being the first bio-incubator on the Cambridge Science Park.

11.60 **History –** The Bio-Innovation Centre was opened in collaboration with Trinity College, the owners of the science park, as part of regeneration of the south eastern corner, replacing outdated buildings. It fulfils a need to ensure life science start up space alongside the more tech focused Bradfield Centre. One of the 5 buildings delivered through TusPark is the dedicated Bio-Innovation Centre.

11.61 **Type of space –** the offer is 40,000 sqft over 3 floors comprised largely of individual lab units of 600-700 sqft designed for 4-8 people, with most tenants occupying multiple units. Units are wet labs with supporting office space and include co-working bench labs with pre fitted biology equipment for cost effective co-working space. Wet labs and chem labs with fume cupboard

extraction are available. There is also general networking space and a café restaurant on site.

11.62 **Occupancy and demand -** since completing in 2019 occupation rapidly progressed and was effectively assisted by COVID-19 insofar as work from home policies did not suit life science activities based in labs (compared to offices). By 2021 the centre was effectively full and has remained that way since.

11.63 **What features make this an attractive site for SIT businesses?** The Bio-Innovation Centre benefits from links to Cambridge University providing start up space for students. Babraham Research Campus offers a comparable set up in Greater Cambridge and is also full much of the time. The Centre is highly flexible and can be physically altered to suit. Being located in the Science Park means it is accessible by walking, bike and public transport for the Cambridge commuter which is highly advantageous for the first job graduates utilising the rental housing market.

Tilbrook Industrial Estate, Milton Keynes

11.64 **Summary –** Tilbrook Industrial Estate in Milton Keynes is a well-established business and industrial estate and is home to Red Bull's Technology Campus. It is located in the southeast of Milton Keynes, close to vital

transport links such as the A5 and M1 motorways, making it conveniently accessible to occupiers.

11.65 **History –** The estate was developed during the 1970s and 1980s as part of Milton Keynes' strategic planning. The goal was to create designated industrial zones that could support a variety of businesses, particularly in manufacturing, distribution, and technology sectors.

11.66 **Type of space –**There are 29 buildings on the estate ranging in size from 40,000 sq ft to 80,000 sq ft. The properties vary in condition due to redevelopments and refurbishments that have taken place since the initial development of the estate.

11.67 **Activities / Occupiers –** The Estate has two key sector specialisms with clustering of firms in Precision engineering and advanced manufacturing and Distribution.

11.68 Red Bull currently owns the freehold of just over a third of the entire industrial estate having purchased Jaguar Racing Formula 1 team in 2004. Since then, the Red Bull team has begun to invest heavily in the facilities at Tilbrook, including the expansion of the factory, enhancement of the wind tunnels, and development of state-of-the-art manufacturing and testing equipment. Red Bull's technology campus includes a dedicated facility for Red Bull Advanced Technologies – a sister business of Red Bull Racing which applies engineering, design and technology from Formula 1 development to a diverse set of industries. OBJ

11.69 Other occupiers include Oerlikon Balzers Coating UK – a supplier of surface technologies for sectors such as mobility and aerospace and Swisspacer who specialise in energy-efficient components for double/triple glazed windows.

11.70 **What features make this an attractive site for SIT businesses?**

- **Transport connections –** The site benefits from excellent road connectivity with the A5 dual carriageway within 1.5 miles to the west and Junction 13 and 14 of the M1 motorway approximately 5 miles to the

northeast. Bletchley railway station is approx. 3 miles from the estate, with multiple direct services to London Euston every hour.

- **Location –** As identified in Chapter 5, a significant part of Milton Keynes' economy is made up of tech related firms. This clustering of tech innovation is attractive for firms within the same sector or within supply chains. Who may be able to benefit from knowledge sharing and a well skilled labour supply pool.

11.71 **Expansion plans –** Due to the lack of any further expansion space, there are no further phases of development planned on site, however there have been a number of planning applications for extensions to existing premises. Red Bull have recently submitted a planning application to refurbish and partly redevelop one of their existing sites into a motor sport testing facility (24/00397/FUL) and an application for change of use from storage and distribution to a motorsport R&D/storage facility (24/00404/FUL).

Milton Park, Oxfordshire

Image Source: Milton Park / MEPC

11.72 **Summary –** Milton Park is a science, technology and business park, located south of Oxford near Abingdon and Didcot. The park describes itself as a 'hub of innovation', supporting collaboration and networking to support business connections and discoveries.

11.73 **History –** Milton Park was initially part of the Milton Manor Estate before being requisitioned by the Ministry of Defence in 1915. The site's military use ended in 1963 and the site was sold to EPC, later to be bought by MEPC who have owned and managed the Park since. In 1988, it was decided that the Park would support science uses and since then has grown to be a successful science, business and technology park supporting over 9,000 employees.

11.74 **Type of space –** There are currently 86 buildings on the Site, with a range of building types including industrial, office, laboratories (over 800,000 sq ft / 74,300 sqm), R&D and warehousing units.

11.75 **Activities / Occupiers –** The Park is home to over 250 companies ranging in size from start-ups to large corporates. Approximately 50% of occupiers are life sciences focussed, however there are also companies from a variety of sectors such as green energy (including fusion energy and battery technology), Healthtech, advanced engineering, technology, AI, Agritech, quantum computing, retail, publishing, distribution and professional services.

11.76 **Occupancy and demand –** Milton Park is well-occupied with a healthy level of vacancy whereby there is sufficient availability to accommodate new occupiers or occupier expansions/moves within the site.

11.77 **What features make this an attractive site for SIT businesses?**

Location – Milton Park is located within the heart of the Science Vale – an area of economic growth and a global hotspot for enterprise and innovation. This area includes the Harwell and Culham Campuses.

Business Incentives - There are a number of sites within Milton Park which form part of the Science Vale UK Enterprise Zone which offers incentives to businesses to establish or expand their operations in these locations. In the case of Science Vale UK, business rates within these zones is retained by the local authority to be reinvested in local economic priorities.

Local Development Order – The Milton Park Local Development Order (LDO) was adopted in 2012 with the aim of simplifying and fast-tracking planning control to give greater flexibility for businesses to develop new premises and facilities or adapt existing premises. The 2012 LDO has been very successful to date. A new LDO has now been agreed for Milton Park (January 2025)[32] which will support the future growth ambitions in its 2040 Vision.

Scale and Single ownership structure – Milton Park is the UK's largest single ownership business community. This, plus the large scale of the Park, enables the Park to be highly flexible in supporting the growth of businesses on-site. This is especially important given the dynamic and fast-moving nature of SIT businesses. The single-ownership structure also enables the Park to plan future growth in a holistic way across the Park, as evidenced by Milton Park's 2040 Vision[33].

Infrastructure – Milton Park have invested heavily into infrastructure – in particular, power supply, given the greater power requirements of SIT businesses. The Park continues to plan ahead with regard to energy requirements to ensure sufficient future supply.

Public transport accessibility – The Park is easily accessible via public transport. There are frequent bus services (every 8-10mins) to and from Didcot Parkway railway station to Milton Park. Milton Park have partnered with a local bus network to enable employees to apply for an annual bus

[32] New Milton Park LDO will shape future travel | UK Property Forums

[33] For more information, visit: https://www.miltonpark.co.uk/2040-vision/

pass for £20 which enables them to unlimited travel between Milton Park and Didcot Parkway and stops within Didcot Zone. Milton Park occupiers can also hire bikes and eBikes from the station's cycle hub for free. From Didcot Parkway, there are frequent services to a number of major cities including London, Oxford, Reading and Bristol.

Amenities – There are currently a range of amenities on-site including multiple cafes, a gym, nursery, hotel and a post office. In addition to this, Milton Park are investing £14m into a new amenity hub – Signal Yard - which will offer a mix of food, drinks, retail services and outdoor events space.

Bespoke build offer – Milton Park offer opportunities to build bespoke buildings for larger companies (requirements of approx. 50,000 sq. ft / 4,600 sqm and upwards) and have a record of doing this for a variety of sectors, with developments of bespoke, flagship laboratories and headquarters.

11.78 **Expansion plans –** Milton Park have a strong pipeline of developments forming part of their 2040 Vision including a mix of flexible laboratory and office space and R&D workshops. A new development 'Nebula' is currently under construction, comprising seven high-tech R&D spaces with offices with sustainability at the forefront of design.

Colworth Science Park

11.79 **Summary –** Colworth Science Park is a campus style science park located rurally in Bedford. The campus is home to one of Unilever's six global R&D facilities.

11.80 **History** - Colworth Science Park has a history of scientific discovery and innovation that dates back to the 1940s. The park is centered around Colworth House, an 18th-century Grade II* listed building.

11.81 **Type of Space -** Colworth Science Park provides high-spec R&D lab and office space to help drive the commercialisation of food, drink and agri-tech research into market-ready products. The campus is composed of 12 buildings, located at the north-west of Bedford town centre, and offers a total of 350,000 sqft of innovation space.

11.82 **Activities / occupiers** – Many of the tenants at the Park are involved in R&D activities relating to food and drink development, with global brands such as Unilever, Firmenich and Symrise occupying office and lab space on site. Tenants also include a range of professional services firms.

11.83 **What features make this an attractive site for SIT businesses?**

R&D Cluster – Colworth Science Park is home to a range of R&D activity, including many businesses in the food and nutrition sectors. Occupiers benefit from being located on a campus-style park as part of a community.

Amenities – The park is set in 91 acres of parkland and offers a range of amenities including a café, nursery, gym and a wide range of sports facilities including tennis courts, a football pitch, rugby pitch and 9-hole golf course.

Presence of a global brand – The presence of Unilever – a global consumer brand - is attractive to other businesses who may be able to benefit from co-location.

Flexible and secure space – Pioneer Group, who own Colworth Science Park, can help occupiers to customise space to suit their requirements and offer flexible lease terms. All buildings have an electronic security system and 24-hour security.

11.84 **Expansion plans** – Pioneer Group have announced plans to open a new cutting-edge incubator at Colworth Science Park that will house pioneering future food and beverage businesses. The incubator, named Gastronomica, is being created through a cooperation between Pioneer and Unilever. The 16,000 sq ft ground floor of the Magniac building on the Colworth campus is undergoing extensive refurbishment to transform it into a shared lab facility that will be fully kitted out with high-tech equipment donated by Unilever. This will include state-of-the-art microbiology and innovation suites, featuring centrifugation, imaging, chromatography and drying systems, and a utility room available for use by start-ups. The facility is due to open in Q1 2025[34].

[34] https://thepioneergroup.com/new-incubator-set-to-fuel-future-food-and-drink-initiatives/

12. Sustainable premises and future proofing

12.1 This section seeks to draw together some common threads in terms of building typologies and identify key issues looking ahead.

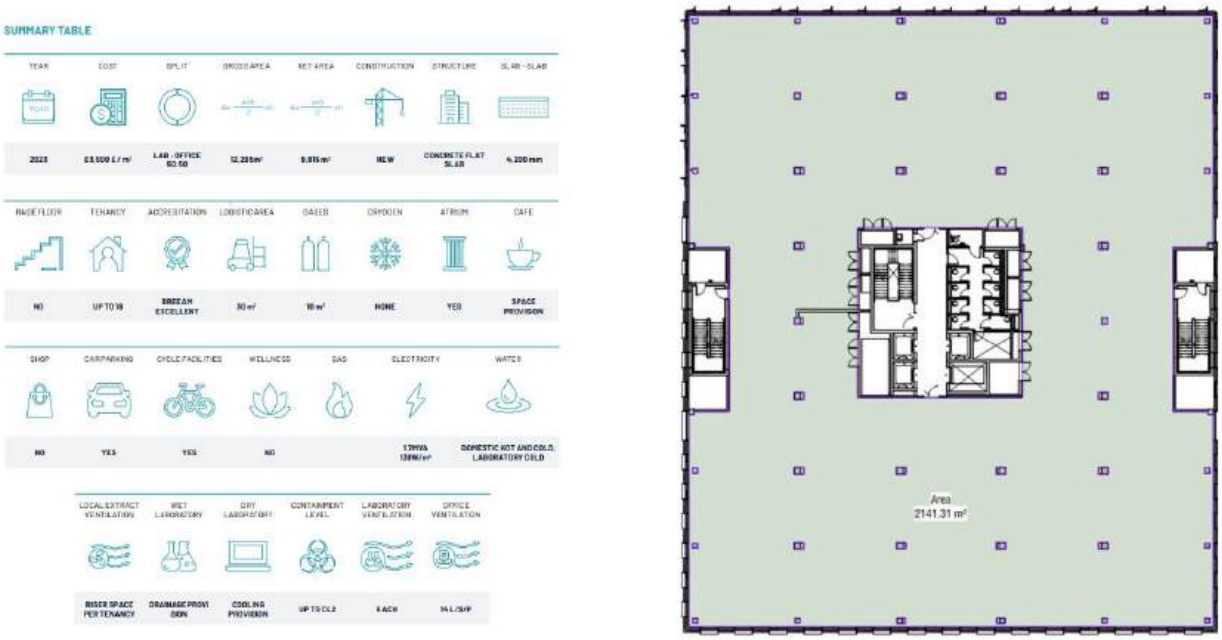
Building Specifications

12.2 There is no ‘one-size fits all’ building specification, with SIT occupiers generally having unique needs and requirements. One developer stated that there is “no consistency in occupier requirements”, with a wide range of factors determining build specifications.

12.3 Lab space tends to have more specific specifications and technical requirements compared to other types of SIT premises – see Appendix 6 for an example of a typical lab spec – however these parameters can vary as exemplified by life sciences lab construction guidance “Constructing Science”[35] published in 2023. This Guidance tool and document differentiates lab specification guidance by sector group (e.g. pharmaceutical, biotech, medical tech) and maturity level (size of business). The constructing science website provides a dynamic model to produce specific requirements.

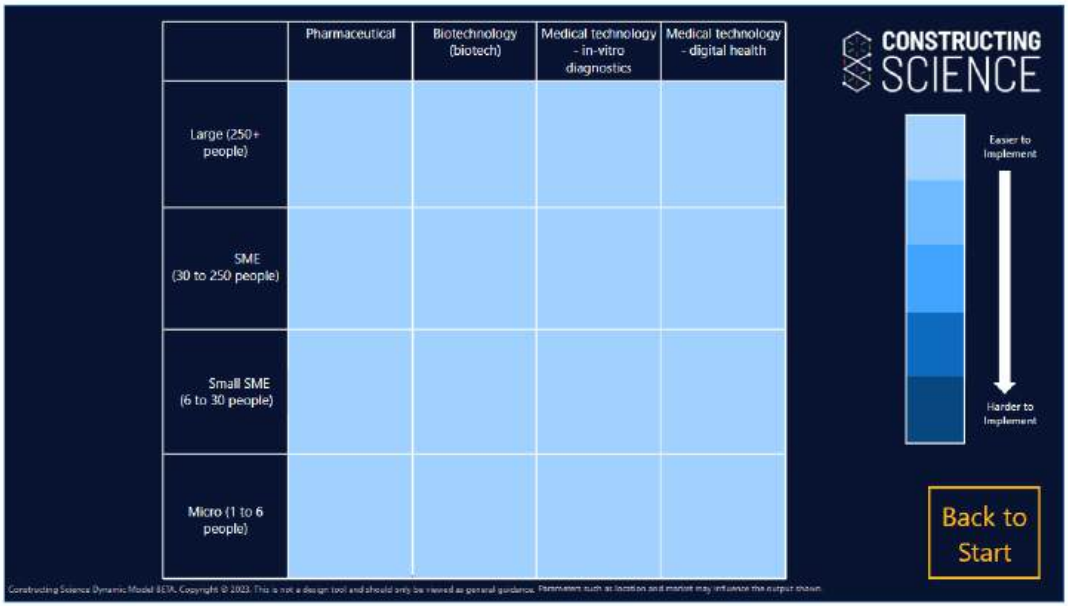
[35] https://constructingscience.com/our-publications

Figure 12.1 1000 Discovery Drive, Cambridge Biomedical Campus, Floorplate



Source: Setting Guidance for Life Sciences Laboratories Report

Figure 12.2 Constructing Science building specifications Dynamic Model



Source: https://constructingscience.com/dynamic-model

12.4 There are also varying occupier requirements regarding fit out, with a mix in demand for shell and core vs fitted out space. Smaller floorplates, which tend to be occupied by smaller businesses, are often fitted out on a speculative basis as these small companies do not wish to invest in the fabric of a building as they may not have the funding to do so and may grow rapidly and move on to alternative premises.

12.5 In contrast to this, larger corporate occupiers often take more of a medium- to longer-term view, are more capital rich and have more bespoke needs and therefore often prefer a shell and core premises that they can fit out to suit their specific needs.

A changing outlook

12.6 Multiple stakeholders noted that for SIT sectors it is preferable to build premises flexible enough to be capable of retrofit in the future to ensure adaptability over time for changing uses. SIT sectors are dynamic and rapidly changing and it is therefore important for developers to build premises which have flexibility of usage.

12.7 The typically 60:40 lab to office ratio will continue to flex as automation and AI continue to develop, likely impacting the design, layout and configuration of research buildings. This will further push for more flexible design in buildings.

12.8 The current ‘lab grid’ used in most development is based on personnel scientists/ laboratory technicians undertaking the work. Automation comes in different sizes and loads and as it evolves it will require various space requirements.

Figure 12.3 Example small lab grid layout

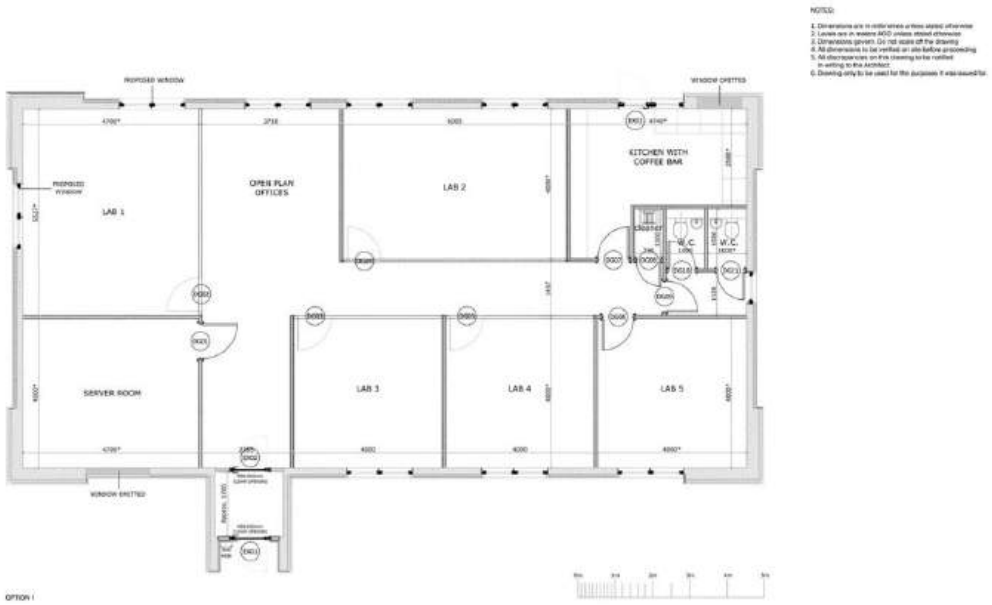


Image source: www.westcottvp.com/

12.9 Technology development continues to break the boundary between wet labs and dry labs. In the USA there are emerging buildings with ‘damp-labs’, space suitable for both wet and dry research work.

Flexibility in Design Case Study: Nova Oxford

Nova is a new build “future-focused” mid-tech/R&D building located on the south-eastern side of Oxford located nearby to Oxford Science Park and ARC Oxford. Flexibility is a key feature of the development and is highlighted throughout marketing. The building combines a contemporary office style frontage with flexible internal space, suitable for uses such as R&D, lab, mid-tech and advanced manufacturing.

The plans below, provided by the developer, provide indicative space plans for how the space could be used for a tech tenant and a life sciences tenant respectively.

Image source: https://novaoxford.com/

Sustainability and design quality

12.10 The increasing importance of sustainability in the design of SIT premises emerged as a common theme throughout stakeholder engagement. ESG

(Environmental, Social and Governance) was stated to be a significant driver of firm behaviour.

12.11 ESG policies typically and increasingly include requirements to deploy operations within assets having green credentials. Design configuration needs to consider green certification to maximise the potential for the highest rating possible. The SIT market sector generally requires an entry level of BREEAM ‘Excellent’ with the aspiration to Outstanding. The LEED (Leadership in Energy and Environmental Design)[36] equivalent is ‘Gold’ with the aspiration to ‘Platinum’. Whilst BREEAM ratings are typically a requirement of most local authorities, Health and Wellbeing ratings, such as WELL and Fitwel, are becoming increasingly common as an additional rating, partly as a differentiator, partly in response to the recent Covid-19 pandemic concerns and partly to promote employee contentment, productivity and retention.

12.12 Green Certification ratings are also seen as the primary - if not the only - mechanism for ‘independent, third party’ verification of sustainability credentials, hence their importance to this sector.

[36] Widely-used green building certification program used worldwide.

Sustainability in build Case Study: Nova, Oxford

Image Source: https://novaoxford.com/

Nova Oxford has recently been developed by im Properties and is being marketed as a “unique, best in class, environmentally-conscious building suitable for R&D, lab, high-tech and manufacturing uses”[37].

It is the first building of its kind to achieve 100% BREEAM outstanding and has also achieved an EPC A+ rating. Design features include:

- 15% rooflights to provide natural light, reducing energy consumption
- Solar panels mounted on the roof
- A wildlife pond and garden to the rear of the building
- Green roof cycle shelters

[37] https://novaoxford.com/

- Internal and external LED lighting to improve energy-efficiency
- 25% EV charging point provision in the car park with capacity for 100% in the future/as per occupier demands.

Sustainability in build Case Study: Trinity House by Breakthrough in Oxford

Figure 12.4 Trinity House by Breakthrough in Oxford

Image source: btprop.com

At the gateway of the 88-acre ARC Oxford Business Park, Breakthrough plans to transform Trinity House into a unique life sciences environment featuring 169,000 sqft of bespoke labs and offices. The six-story building will incorporate a distinctive and expressive architectural design.

With its creative use of glass, incorporation of pocket spaces and terraces, and a jettied ground floor to enhance the sense of arrival and maximize the public outdoor landscape, Trinity House is designed to ensure the science conducted within the building is on full visual display.

Breakthrough's plans for Trinity House, which it submitted to Oxford City Council for approval in late December, reflect energy efficiency, reducing carbon emissions, and providing healthy workspaces. The design includes a series of living walls and dedicated amenity and well-being centres. Breakthrough commits to at least BREEAM Excellent certification, while striving to reach BREEAM Outstanding.

12.13 Energy Performance Certification (EPC) in the 'non-domestic' sector has transformed due to the Minimum Energy Efficiency Standards (MEES) consultation garnering industry support for a transition to a minimum 'B' rating by 2030. Most clients involved in new build / major refurbishment activities are targeting an 'A' rating, which suggests that this level can be achieved in this sector for the majority of assets.

12.14 Operational Energy, distinct from compliance-based energy assessments such as Part L and EPC requirements, presents more of a challenge. This type of assessment would bring in the energy consumption associated with the process side of these assets and can be the most significant energy consumer. The future may see a carbon taxation system that addresses operational carbon rather than just Part L based 'regulated energy' carbon offset payments that are the mainstay of projects within the London area amongst other regions. Projects built today should therefore anticipate the potential for future carbon offset payment requirements based on a worst-case scenario linked to operational energy which draws in process energy consumption. Efficiencies in building designs coupled with process energy efficiencies should be targeted now to safeguard against costly future policy change.

12.15 The UK construction industry is one of the global leaders in addressing embodied carbon, however the challenge of operational carbon will take some time to address, due to high demand for power (and water for specific sciences) within SIT sectors.

12.16 Approaches such as reducing the air changes in labs, reducing sizes of cabinets and fume hoods, and more energy efficient lab equipment, have greatly contributed to carbon reduction.

12.17 With many science / tech parks having access / control over outdoor space, in addition to the potential to add biodiversity onto the fabric of some buildings, the opportunity exists to contribute / exceed the Environment Act 2021 policy of a 10% biodiversity net gain requirement for development.

12.18 Net Zero Carbon is being driven primarily via electrification; hence it is important to ensure new builds are designed within this framework, and potential refurbishments can feasibly support this transition. Electrification efforts need to be supported by a minimisation of energy demand which translates as ‘passive measures’, often seen as the first step, to mitigate an assets energy draw. Examples of passive measures include the use of ambient energy sources like daylight and natural ventilation or the use of insulation. Any residual energy and its associated carbon emissions can then be offset via renewables and / or carbon offsets and / or by differing Net Zero aspirations to a future time in line with decarbonisation of the electricity supply. Often, process equipment and process requirements can result in higher energy demand requirements than the remainder of the building, hence expertise in minimising this energy draw will be beneficial.

12.19 Both the biodiversity net gain and net zero carbon goals are components that can be captured and reported in organisation level ESG policies of the developer / funder entities. The opportunity to align with and attract potential tenants in conjunction with their ESG aspirations should not be overlooked.

Sustainability on campus Case study: Harwell

Harwell has a vision to develop a sustainable Campus with its 2030 headline targets as:

- Net Zero Carbon Buildings: Designing new developments for net zero operational carbon & reducing upfront embodied carbon by at least 50%
- Carbon Intensity Reduction: Reducing operational carbon emissions in our control by at least 50% per square metre (GIA)

- Biodiversity Gain: Delivering additional biodiversity enhancements, above and beyond statutory Net Gain
- Zero Landfill: Exporting zero waste to landfill & diverting over 90% of construction waste towards recycling or recovery for purposes other than energy generation
- Sustainable travel: Reducing Average Commuter Emissions Level (ACEL©) by at least 30%

Quod 2, Harwell Campus. Image Source: https://www.harwellcampus.com/planning-permission-quad-two-building/

Retrofit vs new build

12.20 In sustainability terms, Retrofit has the advantage over new build in that embodied carbon mitigation opportunities can be exploited. Where this is possible, care needs to be exercised to ascertain the maximum retention / reuse of existing building elements to capitalise in this regard.

12.21 New build presents opportunities to design facilities that can encompass other important design concepts relevant to green certification such as

design for disassembly and adaptability, design for durability and resilience and design for material efficiency and circularity principles.

12.22 In practical terms, whether a building is a retrofit or a new build is not the challenge, rather it is the particular and different approaches to their development, which safeguard and optimise sustainability integration, that is important.

13. SIT Premises - Infrastructure Implications

13.1 This section considers the infrastructure requirements that are likely to be associated with the expanding sector in terms of premises development.

13.2 The approach to considering the growth effects on infrastructure has been developed by looking at benchmark requirements for water, digital, transport and energy associated with office and lab premises, and testing these against future floorspace scenarios derived from past completions and future pipeline data.

Developing scenarios

13.3 Iceni Project has developed two potential scenarios for considering future SIT floorspace delivery. These are not intended to be comprehensive but rather illustrative in terms of effects – they are not to be used for plan making purposes.

13.4 The scenarios focus on B1b / E(g)(ii) R&D floorspace, having the most distinctive association with SIT type requirements.

13.5 The first scenario is simply a roll forward of past completions in R&D premises at the historic rate from the past decade.

The second scenario uses commitments data, schemes that are currently permitted. For the purposes of this exercise, it is assumed that all commitments will be exhausted over the next 5 years, which may not necessarily be the case. This 5-year delivery rate is then extrapolated forward to 2030 and 2040.

Table 13.1 Future R&D Floorspace Scenarios

	Avg. p.a. (sqm)	Projection to 2030 (sqm)	Projection to 2040 (sqm)
Completions	56,633	396,430	962,758
Commitments	263,370	1,654,593	4,018,296

Source: Iceni analysis of LPA Monitoring, Glenigan and CoStar data

The above provide two extremes. Completions data is likely to underestimate future delivery given the heightened demand compared to the past, whereas the commitments will overestimate the delivery as some build out will be beyond a 5-year period, and some schemes may not be built at all. However, there will be non R&D premises that also influence the total take up. As a result, the true delivery of floorspace will likely exist between these upper and lower estimates, which is sufficient to provide outline predictions of infrastructure requirements.

13.6 The table below reflects the scenarios when aligned to the infrastructure assumptions for lab type utilisation. The infrastructure assumptions are set out in Appendix A7.

Table 13.2 Indicative infrastructure implications from R&D premises scenarios

Category	Forecast Period	Premise	Electricity Supply Capacity	Water		Digital	Transport Journeys
				Supply Water	Wastewater	Typical connection types to data infrastructure	Return journeys per day
		Occupancy	w	L/Day	L/Day		
Completions Trend	**2023-30**	13,214	92.4 million	264,300	264,300	Dual comms intake for 2N redundancy – As best practice and to support Wiredscore certification	13,214
	2023-40	32,092	224.3 million	641,800	641,800		32,092
Commitments Trend	**2023-30**	55,153	385.5 million	1.1 million	1.1 million		55,153
	2023-40	133,944	936.3 million	2.7 million	2.7 million		133,944

Source: Iceni Projects, HDR Inc

13.7 The above will have implications for managing infrastructure planning across the sub region and will need to be considered alongside the wider need for planning for new homes and a range of other commercial and non-commercial developments.

13.8 This report is supportive of further research in this area, which builds a more accurate perspective on the infrastructure requirements of business premises in the region. For example, the Environment Agency have recently proposed a study of Future Water Demand in non-household settings in the Oxford to Cambridge region, using a broader sector focus than this study and a deeper analysis of water infrastructure requirements, including a range of future scenarios, analysis of patterns in water usage, and more. It is expected this study will be completed in 2025 Q1. Some of the issues, based on existing Infrastructure Delivery Plans (some of which are now dated), include:

Broadband:

- **Milton Keynes** super-fast broadband well supplied in urban area, but further work required in rural areas for achieving super-fast connections[38]

- **West Northamptonshire** has 70% superfast broad band coverage with roll out targeted for end 2017. North Northamptonshire anticipated to be 98% coverage by 2018.

- **Oxfordshire** have had challenges in connectivity in rural areas but also targeted end 2017 for full coverage. Mobile connectivity weak in places.

- **Oxford** has 99% coverage of superfast broadband.

- **Cambridgeshire** area is mostly a rural county meaning that a large number of settlements within the hinterlands of these cities are dispersed and often have first generation broadband infrastructure, although

[38] Milton Keynes Infrastructure Delivery Plan (IDP) July 2023. Evidence Base | Milton Keynes City Council

improvements have been rolled out since 2016. Other forms of telecommunication such as appropriate new masts may also be required to ensure that 'not spots' are eliminated and coverage enhanced to ensure that 4G is the norm throughout the area.

Water:

- **West Oxfordshire** have identified a baseline deficit of water supply over demand (with target headroom) from 2020 within the Swindon and Oxfordshire Water Resource Zone. To address this, the Water Resources Management Plan provides for investment in measures to restore security of supply. The investment involves a significant programme of demand management and the development of new sources of supply.

- **Oxford** – sewage treatment capacity constraints in Oxford have led to the Environment Agency (EA) objecting to major planning applications in and around Oxford that would add pressure to the system. Thames Water has started to require restrictive conditions that would prevent occupation of developments prior to the Oxford sewage treatment works (STW) being upgraded. The Environment Agency has also objected to Oxford's draft Local Plan 2040 on grounds of insufficient sewage capacity. The lack of sewage capacity could significantly constrain the delivery of commercial premises (including SIT premises). Parts of Cherwell, South Oxfordshire and Vale of White Horse are also connected to the Oxford sewage treatment works and could therefore also be affected[39].

- **Cambridgeshire** –Greater Cambridge faces water supply issues which have caused delays to existing plans for housebuilding and commercial development. Government has now established a Cambridge Water

[39] Source: https://www.oxford.gov.uk/news/article/1524/statement-on-the-state-of-oxfords-sewage-treatment-system-and-related-planning-objections#:~:text=The%20Environment%20Agency%20has%20also,a%20solution%20can%20be%20found.

Scarcity Group and allocated funding to help address the issue, but work is in the early stages to alleviate water constraints.

Energy:

- **North Northamptonshire -** National Grid has been in discussion with a number of developers to identify grid connection and capacity issues and how the associated reinforcement costs will impact their project. There does remain an issue with the network and connecting more sustainable energy generation. Some parts of the network have become saturated when considering further demand or distributed generation connections.

- **West Northamptonshire** - Northampton will require works in the medium term to increase its energy supply.

- **Oxford** – Oxford (and central Oxfordshire more widely) are experiencing significant grid connectivity issues that are already placing constraints on new development. Capital programmes across Oxfordshire including commercial developments have seen delays due to issues in securing electricity grid connections. Grid capacity is highly constrained with 4-6 year lead times typical for projects to be awarded a grid connection. With regard to SIT premises, this issue will limit the supply of stock until resolved.

- **Greater Cambridge -** Electricity grid capacity constraints in the Greater Cambridge area also represent a significant barrier to growth with the area experiencing significant delays in both housing and commercial development. Greater Cambridge Partnership (GCP) has worked collaboratively with its DNO UKPN to accelerate necessary grid reinforcement works which will facilitate the development of c5,700 new homes and c270,000m2 R&D, commercial and clinical floorspace. The case for UKPN to install two additional grid substations was approved by the regulator in December 2022, and while the delivery of the substations is underway, completion isn’t until due until post 2026. Work is currently

underway on a Cambridgeshire Local Area Energy Plan, which will also consider the additional grid infrastructure required to support growth.

14. Recommendations

14.1 There are wider ranging and complex issues across the SIT sector development both in terms of premises and wider issues. This section looks to draw out recommendations and opportunities derived from the study. This includes a focus on opportunities to improves premises demand information flow, to ensure information is available to provide a sufficient pipeline.

Start-up and scale-up space

14.2 **Start-up space**, typically hosted in **innovation / incubation centres** is critical infrastructure to the SIT ecosystem. In most instances this requires public or third sector funding for development, maintenance and wider business support. There is an ongoing need for public bodies to identify the need for new, expanded or maintained spaces. In most instances these sector spaces are currently well provided across the study area however many are full and not all have expansion solutions, including at Silverstone Sports Engineering Hub, Culham Innovation Centre and Cambridge Bio Innovation Centre. The case for funding will need to be made to continue to support and grow these spaces and it is of note that some funds such as the Local Growth Fund that have successfully supported centres in this study area are no longer available.

14.3 **Scale-up space** enables business to grow from a start-up concept into an expanding and self-sufficient SME in own leased premises. However these space, which vary in type and size by sector, can also experience market failure as, whilst viable for delivery by the private sector, it can be overlooked due to poorer income / tenancy profiles and higher delivery costs compared to alternatives. Working with private partners to ensure an appropriate mix of space delivery is recommended, including where necessary through the use of planning policy and allocations that seek to deliver a percentage of smaller spaces on a site or set a site threshold.

14.4 **Affordable workspace** planning policies may have a role to play in ensuring start-up and scale-up space delivery. These policies, successfully adopted in London Boroughs[40], seek to ensure a provision or commuted sum of an affordable space component, defined as offering rents at 50% of market rate, typically being 10% of commercial or mixed used space delivery over a set threshold. Affordable space may be better delivered holistically on a single site in an area rather than proliferated on schemes; and may require dedicated management. Such policies may require viability testing but can be a platform in supporting investment in start-up / affordable space market failure. Due to viability, a minimum size threshold for applying this on-site, or ability to pool off-site contributions may be required.

Growing SIT outside of existing clusters

14.5 Growing and developing a SIT offer outside of existing centres – in areas such as Buckinghamshire and Northamptonshire - is important in terms of driving economic growth and improving the economic resilience of places. These locations - such as Northampton or Bedford - will tend to have the advantage of cheaper land and property (including housing), potentially a greater quantum of available land and marginally improved labour availability. Local evidence covering identification of existing local strengths, market failures (including in property provision) and importantly value chain opportunities are all components of growth. Value chains include, for example, the provision of pharmaceuticals or medical instruments advanced manufacturing that may suit a certain proximity to the Oxford / Cambridge clusters, identifying automotive / aerospace supply chain inputs, or back-office support activities.

14.6 The prototyping, industrial sector and 'mid tech' components of SIT premises may also work well in non-core locations (such as Silverstone) and need to

[40] See for example https://hackney.gov.uk/affordable-workspace and https://www.brent.gov.uk/business/regeneration/affordable-workspace/affordable-workspace-supplementary-planning

be differentiated from pure B8 / logistics development, potentially in planning policy terms by managing unit sizes and size thresholds. Masterplanning or establishing a vision for sites and locations may also play a role in encouraging investment particularly where these are based on well evidence strategy, as noted below.

Skills

14.7 Long term skills plans and strategies are essential for the future success of the SIT sector in this area and the UK as a whole. University and Colleges, along with their spin out support services, are primary components of the SIT infrastructure. Both within Oxford and Cambridge but potentially more importantly outside of these core clusters the FE / HE institutes offer long term opportunities to develop local SIT assets, albeit this is challenging with higher and further education funding pressures. Where possible, business partnerships with education may offer ways to access local value chains and develop workforce ready technical skills. Cambridge Enterprise and Oxford Science Enterprises are both examples of existing organisations that successfully develop partnerships between universities and business. Local Skills Improvements Plans should provide part of the pathway to connecting young people to 'in demand' vocations both in and outside of SIT vocations.

14.8 The development of a STEM-focussed university in Milton Keynes may help to support the clustering of SIT business both in Milton Keynes and more broadly across the Oxford to Cambridge area.

Sustainability – low carbon development

14.9 New government regulations including EPC requirements will require the next generation of SIT premises to achieve higher levels of sustainable development than in the past. In some sectors, including life sciences, the energy and infrastructure requirements will be relatively high. Seeking to exceed requirements to provide building level and campus level solutions should be encouraged where possible, from solar panels to rainwater harvesting and district heating. Chelveston Energy Park, whilst unique,

provides a next generation example of how sustainable technology can provide on site and local solutions.

Evidence and Strategy

14.10 This report covers a wider range of topics across a large study area and is not a substitution for local evidence on sector make up, business need or growth opportunities. A detailed understanding through qualitative and quantitative research should be undertaken to justify planning allocations and funding decisions at the planning authority geographic level. The UK Industrial Strategy consultation indicates that Local Growth Plans at the Mayoral Combined Authority level are likely to be a key element of this.

Place

14.11 Prioritising ‘place based’ business destinations for SIT premises creates an optimal environment for the growth and retention of businesses. This means creating places that offer: high quality modern workspaces; preferably form part of a larger cluster / community to enable knowledge exchange; are in attractive settings; offer a range of amenities including food and beverage; and are well served by public transport as well as car. Urban and edge of urban locations are advantaged in their connectivity to workforce and amenities, whereas rural settings, whilst offering attractive environments, typically have greater connectivity challenges.

Wider infrastructure issues

14.12 Beyond the scope of this study but recognised as critical to the success of the SIT sectors, are various infrastructure issues related to transport, power, water, labour, skills, housing and planning. Many of these fall under the responsibility of central government, local government, or third-party providers but are recognised by stakeholders as a part of this work.

14.13 **Transport** is essential to labour market movements and the sector cannot realise its full potential in the region unless there is improved labour mobility. East West Rail has the potential to play a critical role including by connecting

different housing markets and labour markets. This was recognised by the government in the Autumn Budget 2024, where it was announced that:

14.14 ‘East West Rail will connect Oxford, Milton Keynes, and Cambridge and unlock land for housing and laboratories, supporting the wider Cambridge life sciences cluster. The first East West Rail services will begin operations next year, running between Oxford, Bletchley, and Milton Keynes. The acceleration of the Marston Vale Line will ensure these services extend to Bedford from 2030. The Government committed to delivering East West Rail in full in its 2024 Autumn budget..’

14.15 The Oxford and Cambridge housing markets are typically over heated. Improved connectivity can assist with this by enabling people to live in more affordable locations across the Oxford to Cambridge region whilst remaining able to work elsewhere in the region. Connectivity is also important at the level local to science parks both public transport and private vehicle. Public transport makes places attractive, particularly to the next generation of workers, and also has an essential role to play in sustainable travel. Urban and urban fringe SIT developments will tend to offer advantages in this regard.

14.16 **Water** availability is a specific issue for Greater Cambridge impacting residential and commercial future development.

14.17 **Power supply** has been identified as an issue across multiple areas, including Oxford, Greater Cambridge, North Northamptonshire and West Northamptonshire. This poses a significant barrier to growth by placing constraints on new development.

14.18 **Planning** can be a challenge for industry – although the broad SIT pipeline is generally considered to have expanded in recent years to meet requirements, there will be a continuous need to deliver new premises in the longer term. Enterprise zones and local development orders have been cited as advantageous both in funding and planning terms.

Monitoring demand and supply

14.19 Perhaps the single clearest emerging opportunity for premises is to improve information flow around demand and supply across the diverse SIT sector.

14.20 A recognised difficulty is developing and maintaining a clear understanding of broad SIT and sector specific demand and occupier requirements. This is due to the vulnerability of the sector to macroeconomic cycles and funding availability, as well as the diverse groupings involved.

14.21 Looking across the start up, scale up and SME through to maturing stages of SIT occupier needs, signals tend to be strongest at the larger end where specialist commercial developers can make viable proposals and draw on agent based occupier enquiries. Even this can be sporadic and development proposals lag market signals in part due to planning and development timelines.

14.22 At the start-up phases, there are diffusive networks of occupiers drawing often on university graduates and spin off businesses, that are not necessarily connected into single systems or agencies to readily connect requirements to premises of centres. Networks across academia and institutions tend to bridge this gap linking to innovation centres.

14.23 There is potential for a dedicated **information database** that enables occupiers and future occupiers to register demand and understand existing and future supply. For this to work it would require a single entity to manage the database and get buy-in from:

- Universities – signalling demand (start up)
- Sector umbrella organisations and institutions – signalling demand / future demand (cross sector scale)
- Innovation centre managers – signalling demand and capacity (start-up / scale up)
- Science park managers - signalling demand, current capacity and future supply (planning permissions)
- Local authority planning / economic development officers - signalling future supply

- Potentially commercial agents – advising on demand profiles

14.24 At present information monitoring systems are diverse and ad hoc – largely reliant on the networks between academics, institutions and science parks at the cluster level (such as Oxford or Cambridge) which is not to say they are ineffective. However, an outcome tends to be that premises supply, particularly start-up and scale up, has a long lag in catching up with demand. This usually includes the need to draw down funding for new innovation space which is typically not provided by the market. Conversely, delays in supply can avoid over provision, which has reportedly occurred in the United States.

14.25 Through this report, Iceni has engaged with over 30 sector representatives. However a much deeper network can be developed to enhance information around demand and supply. Ultimately, the purpose of this would be to monitor:

- Levels of premises demand across sectors, for differing types of premises and business scales

- Supply / capacity at innovation centre level and then scale up and larger premises. This could cover current capacity at science parks and innovation centres, as well as the pipeline of relevant development typologies.

A1. Sector SIC Definitions

A1.1 The table below contains the sector definitions at 5-digit SIC code level.

Sector	5 Digit SIC code	5 Digit SIC Definition
Digital and Tech	26200	Manufacture of computers and peripheral equipment
Digital and Tech	58210	Publishing of computer games
Digital and Tech	58290	Other software publishing
Digital and Tech	62011	Ready-made interactive leisure and entertainment software development
Digital and Tech	62012	Business and domestic software development
Digital and Tech	62020	Computer consultancy activities
Digital and Tech	62030	Computer facilities management activities
Digital and Tech	62090	Other information technology and computer service activities
Digital and Tech	63110	Data processing, hosting and related activities
Digital and Tech	63120	Web portals
Life Sciences	21100	Manufacture of basic pharmaceutical products
Life Sciences	21200	Manufacture of pharmaceutical preparations
Life Sciences	71200	Technical testing and analysis
Life Sciences	72110	Research and experimental development on biotechnology

Life Sciences	72190	Other research and experimental development on natural sciences and engineering
Agritech	01300	Plant propagation
Agritech	01610	Support activities for crop production
Agritech	01629	Support activities for animal production (other than farm animal boarding and care) nec
Agritech	01630	Post-harvest crop activities
Agritech	01640	Seed processing for propagation
Agritech	20200	Manufacture of pesticides and other agrochemical products
Agritech	20590	Manufacture of other chemical products nec
Agritech	28301	Manufacture of agricultural tractors
Agritech	28302	Manufacture of agricultural and forestry machinery (other than agricultural tractors)
Future Energy	24460	Processing of nuclear fuel
Future Energy	27120	Manufacture of electricity distribution and control apparatus
Future Energy	27200	Manufacture of batteries and accumulators
Future Energy	35110	Production of electricity
Future Energy	35120	Transmission of electricity
Future Energy	35130	Distribution of electricity
Future Energy	35140	Trade of electricity
Future Energy	35210	Manufacture of gas
Future Energy	35220	Distribution of gaseous fuels through mains
Future Energy	35230	Trade of gas through mains
Future Energy	35300	Steam and air conditioning supply
Automotive	29100	Manufacture of motor vehicles
Automotive	29201	Manufacture of bodies (coachwork) for motor vehicles (except caravans)
Automotive	29310	Manufacture of electrical and electronic equipment for motor vehicles
Automotive	29320	Manufacture of other parts and accessories for motor vehicles
Space	30300	Manufacture of air and spacecraft and related machinery
Space	51220	Space transport

Advanced Manufacturing	26511	Manufacture of electronic instruments and appliances for measuring, testing, and navigation, except industrial process control equipment
Advanced Manufacturing	26512	Manufacture of electronic industrial process control equipment
Advanced Manufacturing	26600	Manufacture of irradiation, electromedical and electrotherapeutic equipment
Advanced Manufacturing	26701	Manufacture of optical precision instruments
Advanced Manufacturing	26702	Manufacture of photographic and cinematographic equipment
Advanced Manufacturing	26800	Manufacture of magnetic and optical media
Advanced Manufacturing	27110	Manufacture of electric motors, generators and transformers
Advanced Manufacturing	27120	Manufacture of electricity distribution and control apparatus
Advanced Manufacturing	27200	Manufacture of batteries and accumulators
Advanced Manufacturing	27310	Manufacture of fibre optic cables
Advanced Manufacturing	27320	Manufacture of other electronic and electric wires and cables
Advanced Manufacturing	30110	Building of ships and floating structures
Advanced Manufacturing	30120	Building of pleasure and sporting boats
Advanced Manufacturing	30200	Manufacture of railway locomotives and rolling stock
Advanced Manufacturing	30400	Manufacture of military fighting vehicles
Advanced Manufacturing	30910	Manufacture of motorcycles

Advanced Manufacturing	33120	Repair of machinery
Advanced Manufacturing	33130	Repair of electronic and optical equipment
Advanced Manufacturing	33140	Repair of electrical equipment
Advanced Manufacturing	33150	Repair and maintenance of ships and boats
Advanced Manufacturing	33160	Repair and maintenance of aircraft and spacecraft
Advanced Manufacturing	33200	Installation of industrial machinery and equipment
Advanced Manufacturing	71121	Engineering design activities for industrial process and production
Advanced Manufacturing	71122	Engineering related scientific and technical consulting activities
Advanced Manufacturing	71129	Other engineering activities

A2. Employment by Sector

Table A2.1 Life Science Employment by Local Authority

	2009		2022		Change 2009-22	
	No.	%	No.	%	No.	%
South Cambridgeshire	8,585	34.5%	13,200	26.7%	4,615	54%
Vale of White Horse	3,755	15.1%	8,835	17.8%	5,080	135%
Cambridge	3,080	12.4%	6,520	13.2%	3,440	112%
Oxford	625	2.5%	4,225	8.5%	3,600	576%
South Oxfordshire	1,310	5.3%	2,960	6.0%	1,650	126%
Buckinghamshire	1,560	6.3%	2,900	5.9%	1,340	86%
Cherwell	305	1.2%	1,940	3.9%	1,635	536%
Huntingdonshire	1,520	6.1%	1,505	3.0%	-15	-1%
West Northamptonshire	680	2.7%	1,500	3.0%	820	121%
Bedford	980	3.9%	1,250	2.5%	270	28%
Milton Keynes	115	0.5%	1,015	2.0%	900	783%
West Oxfordshire	235	0.9%	875	1.8%	640	272%
Central Bedfordshire	770	3.1%	830	1.7%	60	8%
Luton	60	0.2%	610	1.2%	550	917%
Fenland	130	0.5%	500	1.0%	370	285%
East Cambridgeshire	645	2.6%	460	0.9%	-185	-29%
North Northamptonshire	230	0.9%	300	0.6%	70	30%
Peterborough	285	1.1%	100	0.2%	-185	-65%
Total	**24,870**		**49,525**		**4,615**	

Source: Iceni analysis of BRES 2022

Table A2.2 Automotive Employment by Local Authority

	2009		2022		Change 2009-22	
	No.	%	No.	%	No.	%
Oxford	3,150	36.0%	3,020	29.3%	-130	-4%
Cherwell	70	0.8%	1,425	13.8%	1,355	1936%
Luton	1,505	17.2%	1,200	11.6%	-305	-20%
West Northamptonshire	1,730	19.8%	1,180	11.4%	-550	-32%
Milton Keynes	400	4.6%	960	9.3%	560	140%
North Northamptonshire	895	10.2%	525	5.1%	-370	-41%

Buckinghamshire	170	1.9%	510	4.9%	340	200%
Peterborough	55	0.6%	445	4.3%	390	709%
Fenland	95	1.1%	340	3.3%	245	258%
Huntingdonshire	275	3.1%	175	1.7%	-100	-36%
Central Bedfordshire	200	2.3%	165	1.6%	-35	-18%
West Oxfordshire	50	0.6%	150	1.5%	100	200%
East Cambridgeshire	25	0.3%	70	0.7%	45	180%
South Cambridgeshire	105	1.2%	60	0.6%	-45	-43%
Bedford	0	0.0%	40	0.4%	40	0%
South Oxfordshire	20	0.2%	30	0.3%	10	50%
Vale of White Horse	10	0.1%	20	0.2%	10	100%
Cambridge	0	0.0%	0	0.0%	0	0%
Total	**8755**		**10,315**		**1,560**	

Source: Iceni analysis of BRES 2022

Table A2.3 Advanced Manufacturing Employment by Local Authority

	2009		**2022**		**Change 2009-22**	
	No.	**%**	**No.**	**%**	**No.**	**%**
Buckinghamshire	5975	14.8%	5255	11.6%	-720	-12%
Cambridge	2290	5.7%	5125	11.3%	2835	124%
South Cambridgeshire	2770	6.9%	3740	8.3%	970	35%
Vale of White Horse	3045	7.6%	3705	8.2%	660	22%
West Northamptonshire	2510	6.2%	3130	6.9%	620	25%
Cherwell	910	2.3%	3055	6.7%	2145	236%
North Northamptonshire	2695	6.7%	2750	6.1%	55	2%
Central Bedfordshire	2800	7.0%	2710	6.0%	-90	-3%
Milton Keynes	3640	9.0%	2435	5.4%	-1205	-33%
South Oxfordshire	1730	4.3%	2175	4.8%	445	26%
Luton	3600	8.9%	2080	4.6%	-1520	-42%
Huntingdonshire	2375	5.9%	1730	3.8%	-645	-27%
Bedford	1435	3.6%	1705	3.8%	270	19%
West Oxfordshire	900	2.2%	1600	3.5%	700	78%
Peterborough	1450	3.6%	1455	3.2%	5	0%

East Cambridgeshire	935	2.3%	1265	2.8%	330	35%
Oxford	865	2.1%	1125	2.5%	260	30%
Fenland	315		270	0.6%	-45	0%
Total	**40240**		**45,310**		**5070**	

Source: Iceni analysis of BRES 2022

Table A2.4 Future Energy Employment by Local Authority

	2009		**2022**		**Change 2009-22**	
	No.	**%**	**No.**	**%**	**No.**	**%**
West Northamptonshire	1,410	27.1%	1,405	32.5%	-5	0%
South Oxfordshire	110	2.1%	400	9.2%	290	264%
Milton Keynes	400	7.7%	370	8.6%	-30	-8%
Bedford	625	12.0%	360	8.3%	-265	-42%
Cherwell	475	9.1%	345	8.0%	-130	-27%
North Northamptonshire	190	3.7%	325	7.5%	135	71%
Central Bedfordshire	85	1.6%	200	4.6%	115	135%
Buckinghamshire	400	7.7%	170	3.9%	-230	-58%
Peterborough	180	3.5%	145	3.4%	-35	-19%
Vale of White Horse	480	9.2%	120	2.8%	-360	-75%
Huntingdonshire	60	1.2%	115	2.7%	55	92%
East Cambridgeshire	60	1.2%	105	2.4%	45	75%
South Cambridgeshire	50	1.0%	100	2.3%	50	100%
Fenland	0	0.0%	80	1.8%	80	0%
Luton	180	3.5%	40	0.9%	-140	0%
West Oxfordshire	0	0.0%	20	0.5%	20	0%
Oxford	430	8.3%	15	0.3%	-415	-97%
Cambridge	60	1.2%	10	0.2%	-50	0%
Total	**5,195**		**4,325**		**-870**	

Source: Iceni analysis of BRES 2022

Table A2.5 Space Employment by Local Authority

	2009		2022		Change 2009-22	
	No.	%	No.	%	No.	%
Buckinghamshire	835	23.6%	1500	35.5%	665	80%
South Cambridgeshire	1500	42.4%	1000	23.7%	-500	-33%
Central Bedfordshire	500	14.1%	500	11.8%	0	0%
Luton	10	0.3%	400	9.5%	390	3900%
West Oxfordshire	0	0.0%	250	5.9%	250	0%
West Northamptonshire	20	0.6%	150	3.6%	130	650%
Cherwell	125	3.5%	100	2.4%	-25	-20%
Vale of White Horse	0	0.0%	75	1.8%	75	0%
Fenland	0	0.0%	50	1.2%	50	0%
Huntingdonshire	100	2.8%	50	1.2%	-50	-50%
Milton Keynes	0	0.0%	50	1.2%	50	0%
South Oxfordshire	75	2.1%	50	1.2%	-25	-33%
Cambridge	50	1.4%	40	0.9%	-10	-20%
Bedford	0	0.0%	10	0.2%	10	0%
East Cambridgeshire	0	0.0%	0	0.0%	0	0%
Peterborough	10	0.3%	0	0.0%	-10	0%
North Northamptonshire	310	8.8%	0	0.0%	-310	-100%
Oxford	0	0.0%	0	0.0%	0	0%
Total	**3535**		**4225**		**690**	

A2.2 Source: Iceni analysis of BRES 2022

Table A2.6 Agri-tech Employment by Local Authority

	2009		2022		Change 2009-22	
	No.	%	No.	%	No.	%
East Cambridgeshire	335	8.7%	625	18.1%	290	87%
Fenland	365	9.5%	450	13.0%	85	23%
South Cambridgeshire	165	4.3%	390	11.3%	225	136%
Buckinghamshire	125	3.3%	270	7.8%	145	116%

Central Bedfordshire	225	5.9%	250	7.2%	25	0%
North Northamptonshire	180	4.7%	205	5.9%	25	14%
South Oxfordshire	430	11.2%	205	5.9%	-225	-52%
West Northamptonshire	210	5.5%	190	5.5%	-20	0%
Huntingdonshire	135	3.5%	185	5.4%	50	0%
Vale of White Horse	425	11.1%	175	5.1%	-250	-59%
Cherwell	205	5.3%	155	4.5%	-50	0%
Milton Keynes	235	6.1%	100	2.9%	-135	-57%
West Oxfordshire	60	1.6%	100	2.9%	40	67%
Peterborough	95	2.5%	80	2.3%	-15	0%
Bedford	645	16.8%	45	1.3%	-600	0%
Oxford	0	0.0%	20	0.6%	20	0%
Luton	10	0.3%	10	0.3%	0	0%
Cambridge	0	0.0%	0	0.0%	0	0%
Total	**3845**		**3455**		**-390**	

Source: Iceni Analysis of BRES 2022

Table A2.7 Digital and Technology Employment by Local Authority

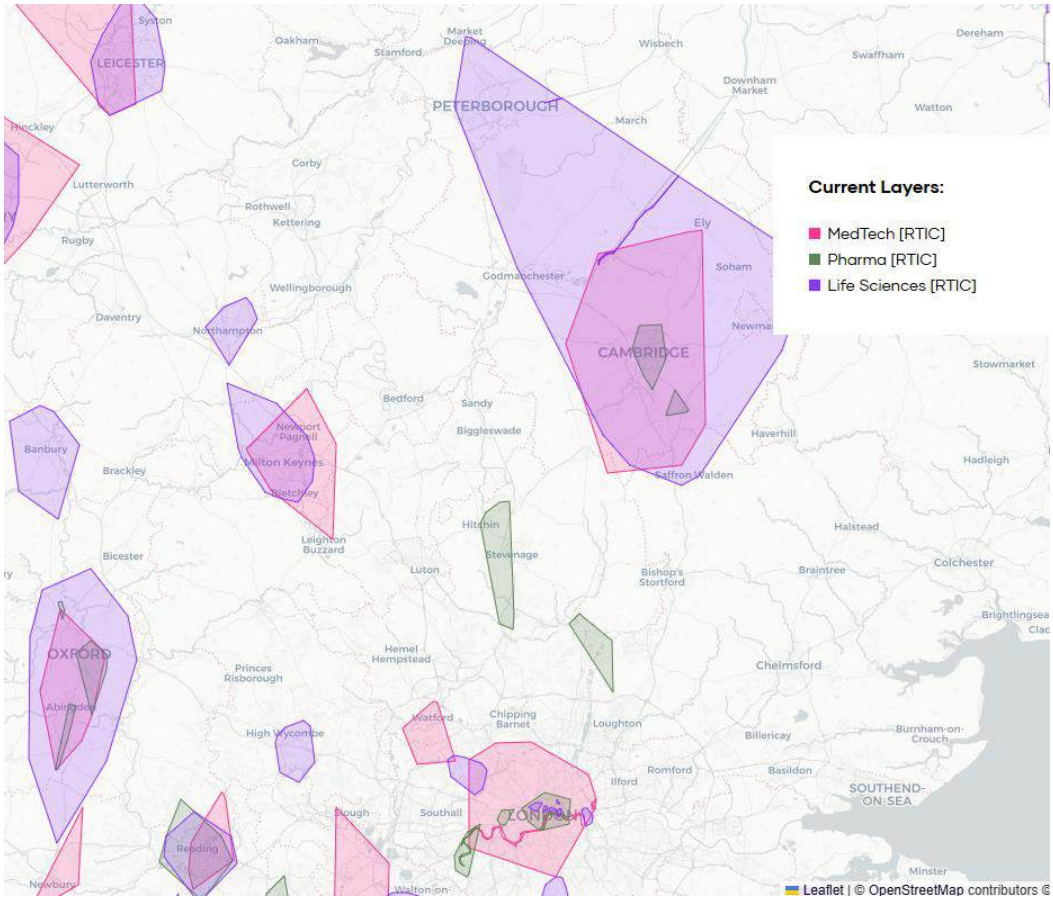
	2009		2022		Change 2009-22	
	No.	**%**	**No.**	**%**	**No.**	**%**
Milton Keynes	7,910	17.8%	10,340	16.4%	2,430	31%
Buckinghamshire	7,130	16.0%	9,810	15.6%	2,680	38%
Cambridge	4,140	9.3%	6,530	10.4%	2,390	58%
South Cambridgeshire	3,785	8.5%	6,245	9.9%	2,460	65%
West Northamptonshire	2,785	6.3%	4,430	7.0%	1,645	0%
Vale of White Horse	3,260	7.3%	3,545	5.6%	285	9%
Oxford	1,710	3.8%	3,460	5.5%	1,750	102%
Peterborough	1,545	3.5%	3,435	5.4%	1,890	0%
South Oxfordshire	2,245	5.1%	2,235	3.5%	-10	0%
Huntingdonshire	1,535	3.5%	2,040	3.2%	505	33%
North Northamptonshire	1,245	2.8%	2,020	3.2%	775	0%
Central Bedfordshire	1,820	4.1%	1,925	3.1%	105	6%
Cherwell	1,625	3.7%	1,780	2.8%	155	10%

Bedford	935	2.1%	1,685	2.7%	750	0%
West Oxfordshire	1,110	2.5%	1,600	2.5%	490	0%
Luton	1,175	2.6%	1,065	1.7%	-110	0%
East Cambridgeshire	310	0.7%	705	1.1%	395	127%
Fenland	165	0.4%	200	0.3%	35	0%
Total	**44,430**		**63,050**		**18,620**	

Source: Iceni analysis of BRES 2022

A3. Innovation Clusters Maps[41]

Figure 14.1 Life Science Clusters



[41] https://www.innovationclusters.dsit.gov.uk/

Figure 14.2 Advanced Manufacturing Clusters

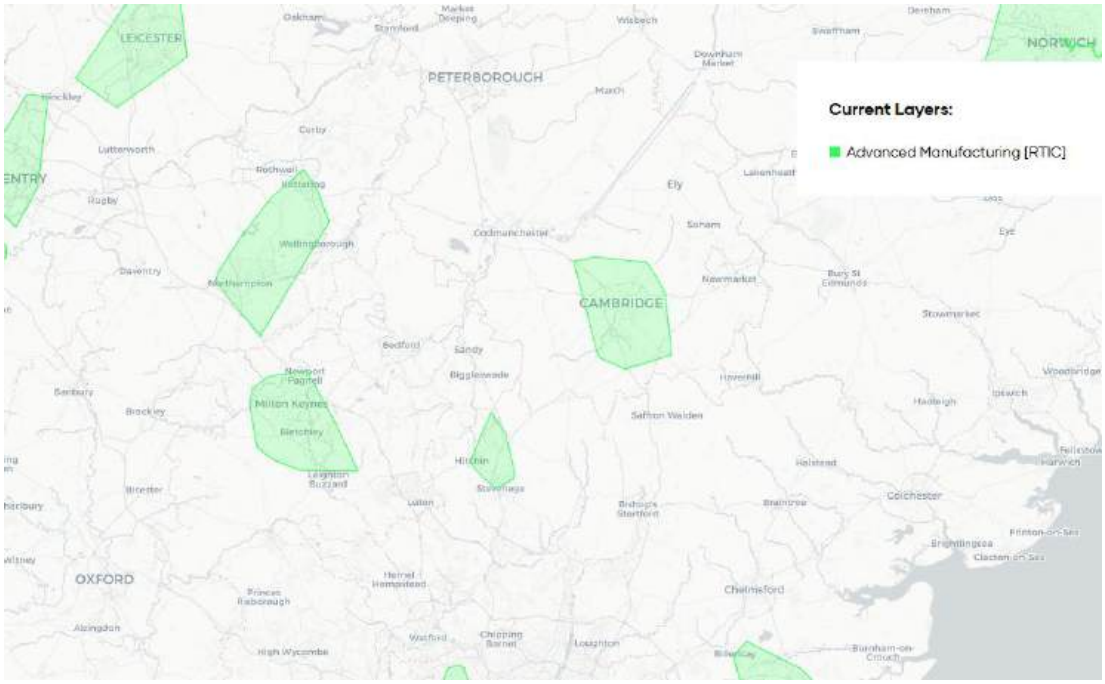


Figure 14.3 Future Energy Clusters

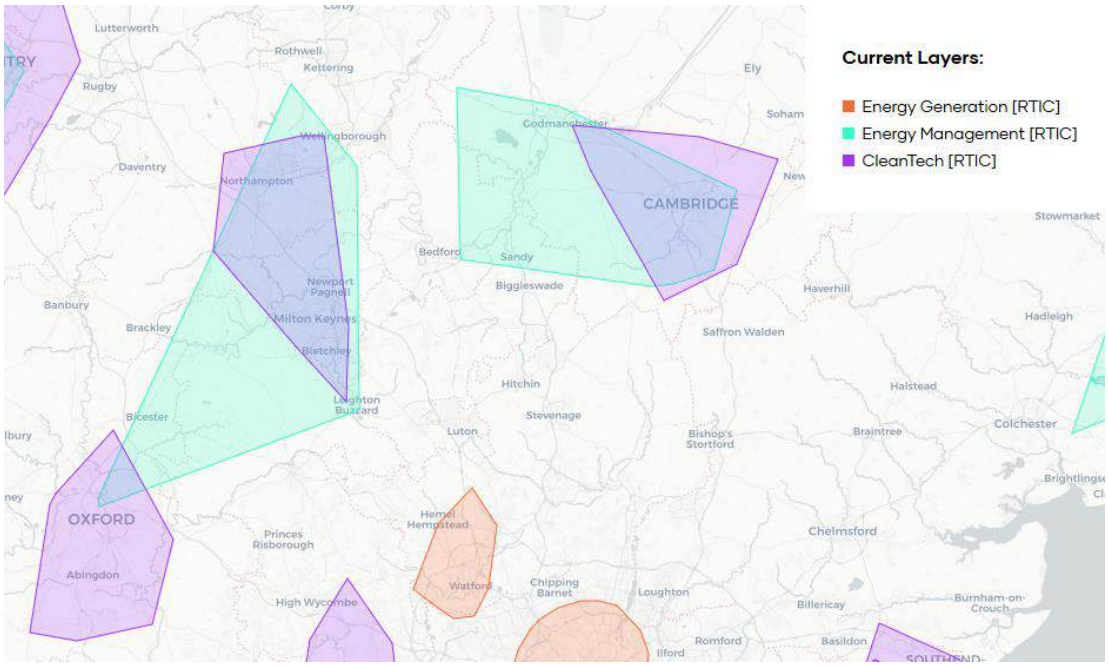


Figure 14.4 Agri-tech Clusters

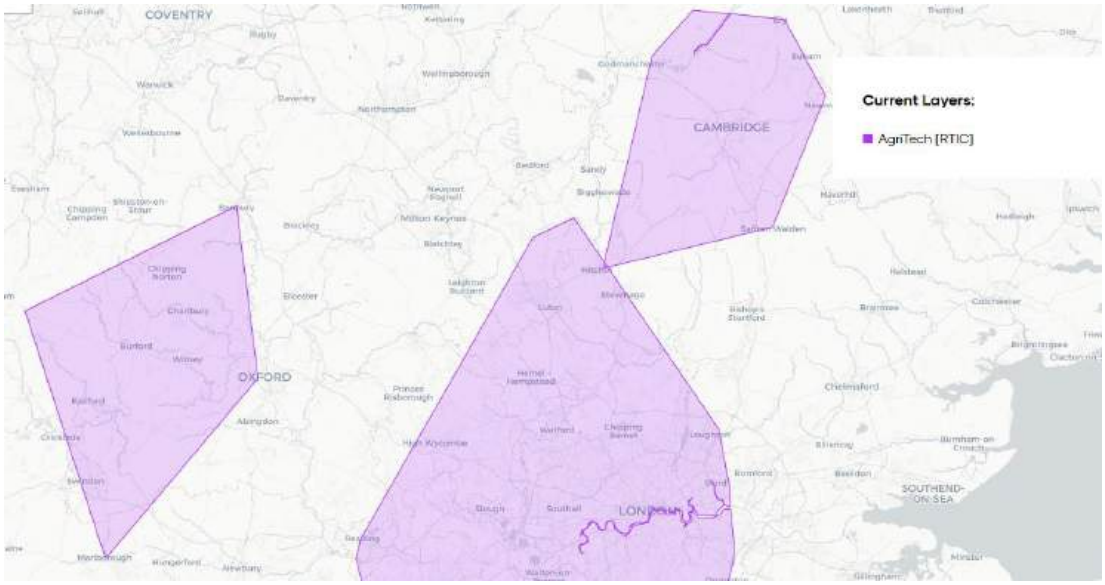
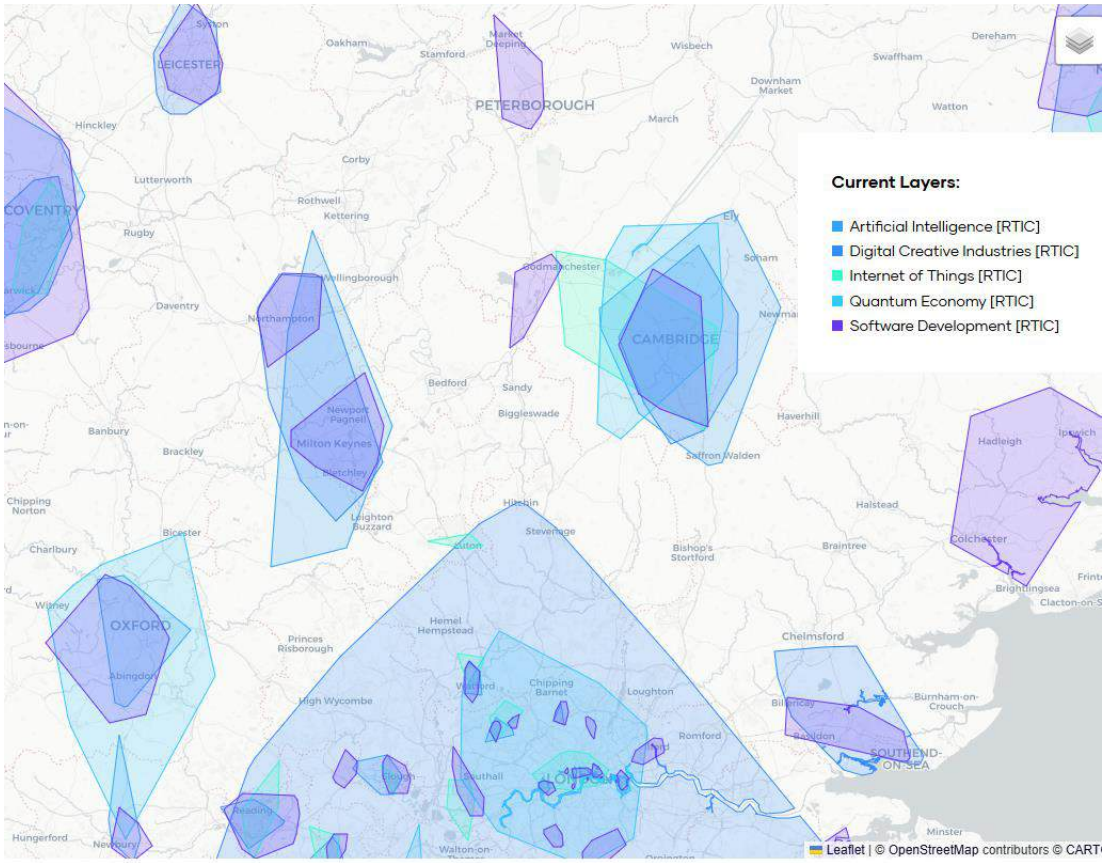


Figure 14.5 Digital and Technology Clusters



A4. Stakeholders

A4.1 The following stakeholders were engaged as part of this project:

- Advanced Oxford
- Agri-TechE
- BioMed Realty
- Bidwells
- British Land
- Buckingham Business First
- Chelveston Renewable Energy & Innovation Park
- Cambridge&
- Department for Business and Trade
- MEPC Limited
- Milton Park
- Mission Street
- National Institute of Agricultural Botany
- OMass Therapeutics
- Oxford Science Enterprises

- Salamanca Group
- Savills
- Silverstone Sports Engineering Hub
- Silverstone Technology Cluster
- Silverstone Technology Park
- Skyports
- Thomas White Oxford Ltd.
- The Culham Innovation Centre
- The Wood Centre for Innovation
- TusPark Bio-Innovation Centre, Cambridge Science Park
- UKRI Science and Technology Facilities Council
- UK Property Forums
- University of Oxford Mathematical, Physical and Life Sciences Division (MPLS)
- UTAC Millbrook
- Westcott Venture Park
- West Northamptonshire Council
- Wyboston Lakes Resort

A5. Literature review

Supporting Evidence

A5.1 This section provides a round-up of relevant studies and market intelligence.

'Momentum markets' drive South East office deals, by Tim Burke 28.05.2024

A5.2 Nine markets across the South East have become the main focus of office occupiers and investors, accounting for almost two-thirds of transactions over the past three years.

A5.3 Of 33 leasings larger than 50,000 sq ft, 22 were in one of those markets, as were 12 of 16 investment transactions of more than £100m. Some 82% of space under offer today is in one of the nine markets, as are four in five active requirements and 94% of space under construction.

A5.4 Life sciences activity has been a significant driver of deals. Cambridge and Oxford accounted for 48 of 142 transaction and half of investment within the momentum markets since 2020.

2024's life sciences agenda – more and better space, by EG Radius 22.12.2023

A5.5 The UK life sciences sector is set for a busy 2024 as new purpose-built stock comes out of the ground over the year, boosting activity across the key markets of Cambridge, Oxford and London.

A5.6 Prologis's 1,000 Discovery Drive, part of the second phase of the Cambridge Biomedical Campus development, is expected to be ready for occupation in the summer.

A5.7 Also in Cambridge, occupiers are likely to be eager for space at BioMed Realty's One Granta, scheduled for completion in the third quarter of 2024.

A5.8 The life sciences sector is expected to face challenges in the coming year. While industry experts expect supply constraints to be alleviated by larger life sciences schemes, the delivery is expected to be slower than projected owing to increased construction and debt financing costs.

South of Harwell Commercial Market Review, by Savills 02.2024

A5.9 In Harwell Campus there is already an identified pipeline of future development that will increase its current employment space threefold.

A5.10 Savills method for estimating suppressed demand for office and industrial use types indicates that between 2013-2023 low availability has decreased demand by 27% and 22% respectively. This suggests that if the availability rate is increased, core demand could be approximately 25% higher than estimated by the ELNA methodology.

A5.11 Their assessment is that there is a risk that the surplus of around 80 ha of land identified in the ELNA is not sufficient to address the scale of demand that could arise from a step-change in investment and growth. This can be resolved by this additional land south of Harwell site being used.

Accelerating Innovation - A FIVE-POINT PLAN TO BOOST LIFE SCIENCES REAL ESTATE, by Savills

A5.12 In the UK, there is evidence that the supply of life sciences real estate is failing to keep up with demand, particularly for early stage business with high growth potential.

A5.13 The right life sciences facilities with the right specifications in the right places will mean higher and sustainable economic growth, employment and R&D.

Albion Land files plans for next Catalyst Bicester phase, by Pui-Guan Man 10.06.2024

A5.14 Albion Land has lodged plans to add 128,000 sq ft of employment space at Catalyst Bicester technology park in Oxfordshire, marking phase four of the project. A planning application has been submitted to Cherwell District Council for three “distinctive and highly sustainable” buildings. Those will add to the 180,000 sq ft already built or under construction in the first and second phases, and the 110,000 sq ft to be built in phase three, which is starting in late 2024.

ARC gets nod for more labs at Harwell Campus, by Evelina Grecenko 01.07.2024

A5.15 ARC is set to embark on the next step of development at Harwell Campus in Didcot, Oxfordshire, after securing planning approval for Quad Three. Quad Three, designed by Hawkins Brown, forms a part of the Quad masterplan and sits next to Quad Two, a 47,000 sq ft workspace, delivered in 2022 and occupied by UK Space Agency. Quad One measures 27,000 sq ft and is home to multiple tenants including Rezatec, Haydale Graphene, Longwall Venture and Faraday Institution.

A5.16 The site has facilities targeted at early-stage companies and spin-outs, including its accelerator offering known as Motherlabs, with a dedicated lab manager and shared services that make it easy to start-up a science business.

ARC Oxford gets nod for Ascent lab scheme, by Evelina Grecenko 22.05.2024

A5.17 Planners have given ARC Oxford the nod to develop a new facility for the science, technology and innovation sector. The scheme, which will offer 105,000 sq ft of lab-ready space, will be known as Ascent.

A5.18 It will involve demolishing seven buildings at the Oxford campus and construction of a new building featuring a rooftop lounge, wellness spaces and gym facilities.

Begbroke life sciences scheme set for approval, by Evelina Grecenko 30.08.2024

A5.19 Planning officers at Cherwell District Council have recommended the approval of Oxford University Development's plans for a 1.7m sq ft life sciences-led scheme in Begbroke.

A5.20 If approved, the construction of the project is scheduled to begin in 2025.

Bidwells and DTRE launch tenant hunt for Cambridge's Alchemy, by EG Radius 17.04.2024

A5.21 The 125,00sq ft life sciences scheme secured planning consent in November 2023 and construction is expected to start end of 2024. The campus is expected to be ready for occupation from the second quarter of 2026.

A5.22 The scheme will compromise 8 self-contained laboratory suites, which could be combined to provide a larger headquarters facilities.

A5.23 The scheme is aiming to secure BREEAM Excellent Certification upon completion.

Breakthrough unveils plans for Cambridge lab scheme, by EG Radius 25.04.2023

A5.24 Breakthrough Properties has set out its development plans for a 132,588 sq ft research and development facility at St John's Innovation Park in Cambridge.

A5.25 The development will offer "maximum flexibility and adaptability" for a range of scientific uses. Works are expected to start next year, with occupancy to begin in 2026.

A5.26 The project is targeting a BREEAM Outstanding rating, as well as WELL Platinum, WiredScore and ActiveScore credentials.

British Land reveals its first lab scheme in Oxford, by EG Radius 18.07.2024

A5.27 British Land is drafting proposals for its first life sciences scheme in Oxford, this includes a 300,000 sq ft development that will sit on the 23-acre Botley Road Retail Park.

A5.28 The FTSE 100-listed developer plans to knock down the existing facilities to allow the construction of three buildings providing lab-enabled space for mature occupiers in the sector.

A5.29 British Land will hold a public consultation in the summer and expects to submit a planning application to the council in autumn.

Cambridge and Oxford drive South East office take-up in, by EG Radius Q2 12.07.2023

A5.30 Cambridge and Oxford drove a rise in South East office take-up in Q2, but the region as a whole struggled and saw take-up drop 51% below the 10-year quarterly average.

A5.31 Lease events continue to dictate market interest across the broader market, but key markets for life sciences such as west London, Cambridge and Oxford continue to benefit from an expansion of the sector.

Cambridge Q1 life sciences take-up hits record high, by Evelina Grecenko 23.04.2024

A5.32 Life sciences take-up in Cambridge hit its highest Q1 level this year, according to Savills.

A5.33 Savills tracked 200,000 sq ft of offices, laboratories and office space set to be converted into labs, let in Cambridge over the first three months of

2024. Across the Golden Triangle markets of Cambridge, Oxford and London, some 424,000 sq ft was let during the first quarter of this year. Oxford also experienced a strong start to the year, with take-up reaching 182,000 sq ft.

A5.34 They anticipate good activity this year within Cambridge, with 185,000 sq ft of requirements currently touring buildings. In Oxford, another 100,000 sq ft is currently under offer, with active requirements of 450,000 sq ft from 41 companies.

Canmoor and Tristan get nod for phase two of Accelerator Park, by Evelina Grecenko 10.07.2024

A5.35 The latest phase comprises 86,000 sq ft of research and development, office and lab space across three buildings.

A5.36 The development is targeting BREEAM Excellent and an EPC A rating.

Catalent, Oxfordshire – Former Vaccine Manufacturing & Innovation Centre (VMIC), by Glencar

A5.37 The 150,000 sq ft centre is the first-ever, state-of-the-art biologics development and manufacturing facility in the UK.

A5.38 The centre serves as the national response capability for the UK government in order to produce vaccines against future pandemics/ emerging infectious diseases, and deliberate/accidental release of biological agents.

Crown Estate forms exclusive life sciences partnership, by Evelina Grecenko 25.07.2024

A5.39 The Crown Estate, Oxford Science Enterprises and Pioneer Group have signed an exclusive long-term life sciences mandate.

A5.40 Under the deal, all future developments acquired by OSE will be delivered through Pioneer and financed by the Crown Estate.

Syncona-backed oncology start-up picks ARC Oxford, by Evelina Grecenko 05.08.2024

A5.41 Oncology firm Yellowstone Biosciences has chosen the ARC Oxford science campus as its first home.

A5.42 The newly formed company has taken 8,152 sq ft of fully fitted CL2 lab and office space at Building 4100 at ARC Oxford.

Turnaround of Cambridge's Brookmount Court approved, by Evelina Grecenko 17.05.2024

A5.43 Columbia Threadneedle Real Estate's proposed redevelopment of Brookmount Court in Cambridge has received planning approval.

A5.44 The scheme, spanning 106,563 sq ft across basement, ground and four upper floors, is expected to help address the shortage of laboratory space in the north Cambridge research and development cluster.

UBS Reef jv gets nod for £360m Cambridge life science hub, by Evelina Grecenko 25.07.2024

A5.45 Forge_Kn, a joint venture between Reef and UBS, has secured planning approval to transform the Westbrook Centre in Cambridge into a life sciences campus.

A5.46 The proposed scheme features three buildings offering 369,000 sq ft of laboratories, offices and associated facilities, including co-working meeting spaces and a publicly accessible café. In total providing 1,050 new jobs.

UK doesn't have the space to be a science superpower, by Piers Wehner 13.02.2023

A5.47 Oxford and Cambridge now have almost no lab space available, according to two reports published at the beginning of 2023.

A5.48 Bidwells estimates that there is just 10,000 sq ft of available space in Cambridge, compared with 2m sq ft of demand. Cambridge has more than 5m sq ft in the pipe, this has remained unchanged since the start of 2022.

A5.49 Similarly, in Oxford, there is about 25,000 sq ft available compared with requirements from businesses of 845,000 sq ft. There is currently 1.7m sq ft of lab space in the pipeline for Oxford, a 21% increase on last year's levels.

UK urged to speed up lab development amid global competition, by Evelina Grecenko 07.08.2023

A5.50 Industry experts have urged the government to devise a solution that will boost life sciences-related real estate development across the UK's key regions.

A5.51 New research by Aviva Investors shows that London and Oxford are the top-ranked favourable locations in Europe for life sciences development, based on metrics including the quality of their clusters, scale, access to talent, funding and governance.

A5.52 However, experts have flagged concerns about whether the UK can keep up with the competition it is facing from mainland Europe.

A5.53 Further research from Cushman & Wakefield showed that all life sciences schemes being brought forward total 1.6m sq ft, a third of which, measuring 504,300 sq ft, has already been pre-let. A further 3.7m sq ft of life sciences schemes are consented but have not yet started.

UK venture capital funding boom to translate into lab demand, by Evelina Grecenko 25.07.2024

A5.54 Knight Frank has forecast an increase in lab and office demand across the UK, owing to a boost in venture capital funding for the pharma and biotech sectors.

A5.55 So far, the consultancy has tracked positive signs in Oxford, where lab demand has jumped by 63% quarter-on-quarter to 387,000 sq ft.

A5.56 In July 2024, EG revealed that Danish pharma giant Novo Nordisk has launched a hunt for 60,000 sq ft of lab space in Oxford and has instructed Colliers to find a space by mid-2025.

Railpen's Oxford plans move forward – The Construction Index, 22.10.24

14.26 Oxford City Council has granted planning permission for Eastpoint Business Park in the city to become a 200,000 sq ft life sciences campus.

14.27 The scheme two miles southeast of Oxford city centre will comprise three four-storey laboratory buildings and a single-storey amenity building. The space will suit a wide range of tenants and provide occupiers with flexibility, with 55% CL2 laboratories and 45% offices.

14.28 It is being developed by Railpen, the institution that manages the £34bn railways pension scheme. Railpen bought the park in 2023 as its first entry into the Oxford life sciences market, following a significant investment in the Cambridge innovation sector.

14.29 Railpen is targeting BREEAM 'Outstanding', WELL, Wired and Smart Platinum ratings for the development. The latest intelligent building technologies, renewable energy, and biodiverse balconies and roofscapes will reduce embodied carbon and enhance biodiversity.

New city centre life science site gets go-ahead – BBC News, 22.09.24

14.30 A plan to demolish two prominent Oxford city centre buildings and replace them with a new science hub has been given the go-ahead.

14.31

14.32 Beaver House, which is used as offices, and other buildings on Hythe Bridge Street, currently used as restaurants, will be replaced by a new life sciences building. The new Bridge Labs would be part of the Forge Knowledge Platform, which also has facilities in Cambridge and Stevenage.

14.33 The site features a public garden, a cafe and a community space and is close to the city's train station and Oxford University's Saïd Business School.

Market Summary

A5.1 The area has a significant opportunity to capitalise on demand for additional high-quality employment space, particularly lab space.

A5.2 The availability of this type of space is low in the key centres of Oxford and Cambridge. Although, both cities are responding to demand through the delivery of additional space.

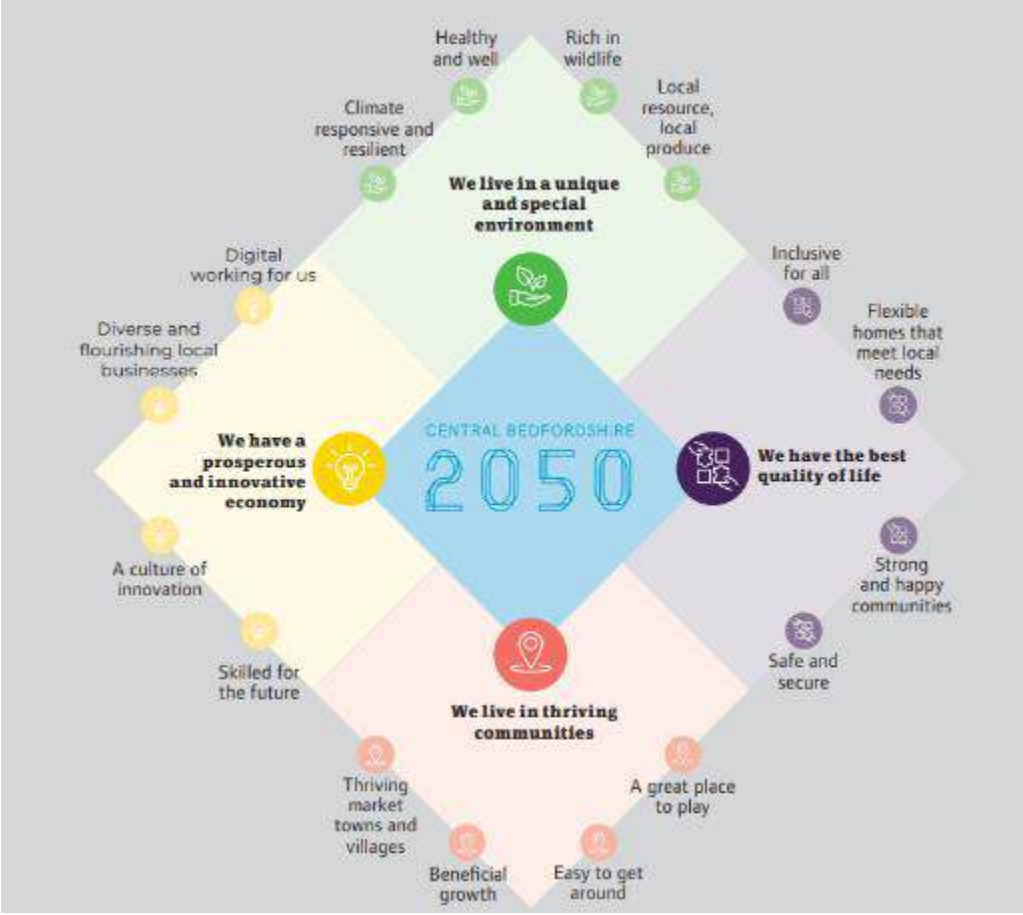
Local evidence and strategy

A5.3 This section provides a high-level review of local economic development strategies and similar studies.

Central Bedfordshire Economic Strategy Building Local Prosperity

A5.4 This strategy is centred on the notion of building local prosperity for communities in Central Bedfordshire and ensuring its residents and businesses share in the benefits of economic growth.

A5.5 The strategy is structured around six key themes covering skills, businesses, places, infrastructure, partnerships and the council itself.



A5.6 The diagram above sets out the Council's 2050 visions and includes an ambitious view of what they want the economy to be – prosperous, innovative and inclusive.

A5.7 The report also notes that Central Bedfordshire is facing a considerable skills deficit, with 34% of employers reporting that young people are 'poorly' prepared for work (higher than the national average).

A5.8 Central Bedfordshire faces demanding growth targets, with the council needing to deliver 24,000 new jobs requiring 240,000m² of new floorspace by 2031 and over 39,000 new homes by 2039.

A5.9 Actions are grouped under six priority themes as seen below.

A5.10 Skills for the future:

- Refresh the Central Bedfordshire All Age Skills Strategy

- Enhancing pathways to employment
- Invest in Schools for the Future
- Promote opportunities for high-skilled people late in their career

A5.11 Supporting businesses:

- Refresh Priority Sectors
- Reinvigorate the inward Investment website and prospectus
- Enhancing relationships with key businesses
- Explore business incubation and innovation opportunities
- Support local businesses to access affordable spaces in market town centres

A5.12 Creating sustainable places for the future:

- Joint place strategies
- Best practice design guidance for new developments
- Refresh of the Local Plan
- Modern methods of construction

A5.13 Making strategic relationships work for Central Bedfordshire:

- Ensuring priority sectors align with the region's priorities
- Shaping the proposition of the Arc?

A5.14 Investing in infrastructure:

- Deliver infrastructure projects with secured funding
- Development of a project pipeline and integrated infrastructure plan
- Investment in Digital Infrastructure
- Flagship active/green travel investment

A5.15 Embedding the Council in the Local Economy:

- Further develop the new progressive approaches to procurement
- Ensuring the council's internal employment practices are contributing to a fair and secure labour market

- Maximising value from council assets
- Better using the increased council income from NNDR growth and increased control to deliver social value objectives
- Increase the number of apprenticeships and work experience places at the council

Bedford Economic Growth Ambitions – Supporting Evidence, March 2023

A5.16 This report, commissioned by Bedford Borough Council (BBC), provides a review of the existing evidence base for the need for strategic warehousing and innovation space in Bedford.

A5.17 It forms part of the evidence base informing the delivery of the Council's Economic Prosperity Plan.

A5.18 The report states that historically Bedford has been performing well in attracting employment in innovation sectors (science and technology), however limited stock of pure innovation space in Bedford could inhibit future growth.

A5.19 The study highlights a number of Bedford's strengths which provide opportunities for growth in innovation employment, including:

- Strategic location within the Oxford-Cambridge corridor and the Golden Triangle (Oxford, Cambridge and London)
- Market rental values which are below those observed in Oxford, London and Cambridge
- A highly educated workforce
- Substantial opportunity associated with East West Rail – although there is a risk that this could result in further out-commuting rather than attracting investment to the Borough.

Bedford Borough Economic Prosperity Plan 2023-28

A5.20 The Economic Prosperity Plan outlines the strategic ambitions for economic growth in Bedford Borough. It focuses on the following three core elements from the Council's Corporate Plan:

- Provide the right support for sustainable business growth
- Sustain the vitality of our town centres, and
- Support educational attainment and skills development for all ages.

A5.21 The emerging priority sectors have been identified as green technologies, medical diagnostics, food and drink manufacturing, high-value manufacturing and engineering and creative industries.

A5.22 The intention is that prioritising these sectors which yield a higher income will increase wage opportunities for the local population and increase spend locally with consequent economic and employment benefits.

A5.23 The challenges identified have been split into three key themes: business, place and people. "Business" covers business investment and business growth; "Place" covers infrastructure, place shaping and the town centre regeneration. "People" covers jobs, skills and wellbeing.

Oxfordshire's Strategic Economic Plan: 2023-2033

A5.24 The Oxfordshire Strategic Economic Plan 2023-33 (SEP) is a plan that outlines the economic priorities for Oxfordshire created in response to the need to evaluate the impacts of both Brexit and the COVID-19 pandemic. The SEP was developed through a collaborative process involving local authorities, businesses, universities, and community groups, and it aims to promote sustainable growth that benefits all residents.

A5.25 The plan seeks to build upon Oxfordshire's strengths in innovation and research while addressing the challenges of housing affordability, environmental sustainability, and social inclusion.

A5.26 The report identifies four key objectives:

A5.27 1. Enable Oxfordshire's businesses to thrive and encourage pervasive innovation

A5.28 2. Widen access to current opportunities and equip people and places as jobs change over the next decade

A5.29 3. Secure resilient infrastructure for planned growth, consistent with Oxfordshire's commitment to net zero carbon by 2050

A5.30 4. Ensure that Oxfordshire's places are sustainable and inclusive, and that local communities flourish

A5.31 The four delivery Objectives will be shaped through four cross-cutting Themes:

A5.32 **Theme 1: Recognising our assets and using them well**. This focuses on productivity, aiming to utilise resources efficiently to improve well-being and build economic resilience for communities.

A5.33 **Theme 2: Supporting innovation across Oxfordshire**. This theme concentrates on fostering innovation across all sectors including scientific research and technology, with a focus on developing new solutions to local and global challenges.

A5.34 **Theme 3: Advancing Oxfordshire globally.** This theme emphasizes strengthening and expanding Oxfordshire's international presence by attracting international investment, fostering global entrepreneurship, promoting sustainable tourism, and collaborating with other regions in the UK and internationally.

A5.35 **Theme 4: Strengthening our communities locally.** This theme centres on guaranteeing that the advantages of economic growth are felt at the local level, enabling communities across Oxfordshire to thrive by supporting social

entrepreneurship, community wealth building, and local supply chains, while focusing on sustainability and inclusivity for all residents.

Oxford’s Economic Strategy (2022-32)

A5.36 This report presents Oxford's Economic Strategy for 2022-2032, highlighting the city's strengths and challenges.

A5.37 The strategy is guided by the existing cooperation and joint planning of all of Oxfordshire's Local Authorities, who have allocated sites for development through their aligned Local Plans.

A5.38 Flood plain and green belt mean space for development in parts of the city is severely constrained, however there are distinct areas where they can accommodate future growth of economic activity, diversification and a growing workforce that need affordable homes.

A5.39 The Strategy seeks to establish a three-pronged approach, as follows:

A5.40 1. Inclusive Economy

- Highlights that inequality is a significant challenge for Oxford, setting out that Oxford is the second most unequal city in the country in terms of income, only marginally behind Cambridge and that the city’s neighbourhoods, some of which are among the richest in the country sit alongside some of the most deprived. 8 LSOA are within the 10% most deprived nationally. State schools across Oxford, and particularly in deprived areas, generally underperform compared to regional and national averages too.

- Aims to address inequality by ensuring prosperity for all residents.

- Proposes developing an Inclusive Economy Charter to establish minimum standards for housing, income, employment, and participation.

- Emphasises community wealth building, giving people more control over their local economy.

- Focuses on improving access to skills, training, and education, affordable workspace, and transport

A5.41 2. Zero-Carbon Economy

- Aims to achieve Net Zero emissions by 2040, as outlined by the Zero Carbon Oxford Partnership (ZCOP).
- Focuses on reducing emissions from buildings through retrofitting and promoting energy efficiency.
- Prioritises investment in sustainable transport options, including electric buses, active travel infrastructure, and a Zero Emission Zone.
- Supports the growth of green and low-carbon sectors through innovation, partnerships, and targeted business support

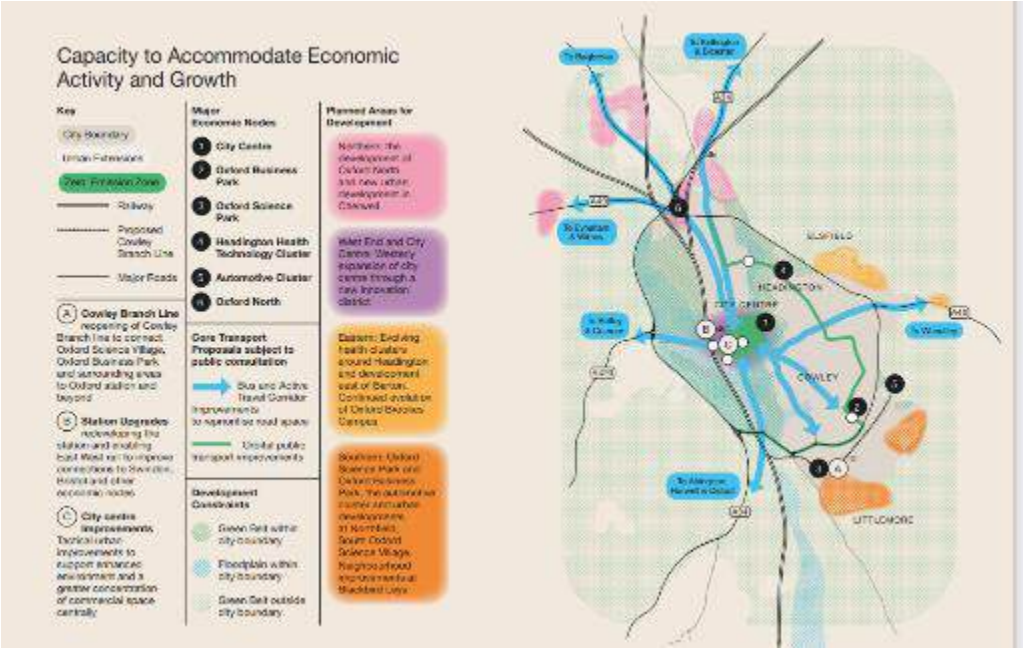
A5.42 3. Global Impact and Purpose-Driven Economy

- Seeks to enhance Oxford's global influence and build a more purposeful economy.
- Focuses on increasing the quantity and quality of commercial space, particularly in Life Sciences, Low Carbon, Digital, and knowledge-driven sectors.
- Supports business adaptation to changing economic conditions and prioritises attracting talent and investment from socially responsible businesses.
- Aims to retain a greater proportion of spin-out companies and support the recovery of the visitor economy

A5.43 Without the following five investments they believe the Inclusive, Global and Net Zero ambitions could be compromised:

- Investment in a new station for Oxford
- Investment in the Cowley Branch line extension
- Deliver city centre wide Zero Emission Zone, traffic filters and a city-wide workplace parking levy to enable net zero transport (see below)
- Improved bus provision, information and infrastructure, to better connect people to jobs, including electric fleet

- Major investment in active travel modes, to mobilise a greener workforce



A5.44 The four priority sectors highlighted in the strategy are health and life sciences, technology and digital, creative production and green and low carbon.

Sector	Drivers and Trends	Example existing assets	Future opportunities in and around Oxford
Health and Life Sciences	Increasing public health expenditure; ageing population; COVID-19; break-through technologies in drug discovery, diagnostics, medi-cal devices, digital health, precision and regenerative medi-cine. Oxford has a role delivering the Government's Life Science's Vision	• Oxford Science Park • John Radcliffe Hospital • Oxford University Science Quarter • Churchill Hospital	• West End Innovation District • Warneford Hospital • Headington Global Health and Life Sciences Quarter • Oxford Science Park & South Oxford Science Village • Oxford Business Park expansion
Technology and Digital	5G technology; increasing demand for e-commerce; artificial Intelligence; big data, quantum computing development, automation materials and nano-technology	• Oxford Business Park • Oxford Science Park • Oxford Centre for Innovation • Oxford City Centre	• West End Innovation District • Oxford Business Park expansion • Oxford North development • Oxford Science Park • Begbroke Science Park
Creative Production	Rise in e-commerce providing new opportunities; technological innovation increasing productivity and possibilities (e.g. 3D printing); growth in creative and cultural consumption	• Oxford City Centre • Osney Mead • East Oxford • Makespace Oxford	• Creative and digital industries hub • Red Hall at Oxford North • Covered Market redevelopment • West End Innovation District

Sector	Drivers and Trends	Example existing assets	Future opportunities in and around Oxford
Green and Low Carbon	Climate emergency; energy security ; shift in consumer sentiment; Government Policy; University research technology and innovations in renewables, grid technology and battery storage	• Oxford Science Park • Oxford Centre for Innovation • Osney Mead Industrial Estate • Project Low Energy Oxford	• Oxford North development • West End Innovation District • Oxford Science Park (expansion and 2030 Net Zero ambition) • Begbroke Science Park expansion building retrofit and re-use
Visitor Economy	Already a successful and attractive destination with strong resilience. Ongoing strength of UK as an international tourism location post pandemic. Potential opportunity limited by the size and capacity of the city.	• Heritage offer • Cultural resonance and strong local offer (film, TV, literature, music and theatre). • Access to waterways and green space city-wide and nearby Cotswolds	• Support more systematic entry level jobs and career progression in the sector • Create more hotel capacity for higher value overnight stays • Drive innovation in sustainable tourism and support new attractions in-line with Local Plan
Social enterprise and co-operative businesses	Rapid growth in social enterprise, entrepreneurship and purposeful business in response to societal challenges and inequalities. Oxfordshire is the UK's first Social Enterprise Place (Social Enterprise UK).	• Neighbourhood Centres • Oxfordshire Social Enterprise Partnership (OSEP), OSEP Hubs, Makespace at Aristotle House, Community Centres, Common Ground Cafe. • Oxford Hub • High volunteering • Philanthropy	• Use of publicly owned spaces; Meanwhile space, Participatory activities linked to new developments; Enhanced ESG commitments; 'New Workspaces' in city centre and neighbourhood centres

A5.45 The delivery plan aims to significantly increase the quantity of commercial space around the city through:

- continuing to support the evolution of employment sites such as Oxford Business Park and Oxford Science Park to best meet the needs of an evolving market.

- Bring forward the West End Innovation District at pace, as a major business district for the city and the UK

- Support good quality workspace across the city for small businesses, start-ups and innovative businesses (including university spin outs)

- Focus on meeting the requirements of the Health & Life Sciences sector (e.g. Lab, R&D and office space) in Oxford Science Park, Oxford Business Park Headington, the Northern Gateway and West End

- Focus on meeting the requirements of Green and Low Carbon Sectors (e.g. Lab, R&D and office space) in the West End and Northern Gateway

- Recognising the role that new spaces can play in supporting the evolution of local neighbourhoods and district centres. (e.g. office and co-working space) across the city

Luton Inclusive Economy Strategy

A5.46 The Strategy seeks to help secure a strong recovery following the COVID-19 pandemic, as well as reforming the economy to ensure that everyone in Luton can benefit from economic growth and opportunities in future.

A5.47 The Inclusive Economy Board seeks to work with everyone in the town to grow the economy sustainably, by developing growth in key sectors, creating more well-paid jobs and enhancing the skills of residents to meet the needs of employers.

A5.48 The strategy highlights Luton's strong and diverse local economy, which has experienced significant growth in recent years, including in key sectors such as advanced manufacturing.

A5.49 The key outcomes of the strategy are the growth of key sectors, building resilience in those sectors and continued investment into Luton to create more high-value, well-paid jobs.

A5.50 The strategy focuses on developing skills to meet the needs of Luton's future jobs market, while the Council's Economic Recovery Plan supports businesses and training providers to work together to create retraining opportunities for employees impacted by COVID-19.

A5.51 The strategy also seeks to secure the airport's recovery and achieving the Future Luton plan to grow the airport sustainably, support further economic growth, as well as create 16,000 new jobs for local people.

Cambridgeshire and Peterborough Economic Growth Strategy

A5.52 The primary objective of the growth strategy is to reduce inequality between and within Greater Cambridge, The Fens and Greater Peterborough.

A5.53 The objective also seeks to increase productivity and delivering the goal of doubling GVA by 2040, create additional jobs and with higher wages.

A5.54 Greater Peterborough, Greater Cambridge and The Fens are three distinct but overlapping and interconnected economies. Each has very different strengths, opportunities and challenges.

A5.55 The strategy highlights many barriers to growth, including the high cost of power connectivity and coverage in potential development sites, and poor digital infrastructure outside urban centres.

A5.56 The strategy also highlights core sectors for each local authority (as shown in the table below). This includes IT and Telecoms, Life Sciences and Healthcare, Agritech and food and manufacturing.

Figure 7. Core Business sectors by Local Authority Area[3]

	Cambridge	South Cambridge	East Cambridge	Peterborough	Fenland	Huntingdonshire
1st	IT & Telecoms	Life sciences & healthcare	Agriculture and food	Equipment and machinery Manufacturing	Agriculture and food	IT and health related manufacturing
2nd	Other science and research	Other science and research	Business Services	Insurance, Reinsurance an pension funding	Construction & utilities	Construction & utilities
3rd	Education, arts, publishing	Manufacturing – health and IT	Transport & travel	Construction and Utilities	Distribution	Business services

A5.57 Cambridge and Peterborough together have adopted a "six capitals" approach to investment. These include:

- Reducing inequalities: investing in the community and building social capital to complement improved skills and connectivity as part of the effort to narrow the big gaps in life expectancy and people's income between places

- Infrastructure: from digital and public transport connectivity to water and energy, building out the networks needed to support a successful future

- Innovation: building on our reputation for new thinking, new technology and new ideas in Cambridgeshire and Peterborough to ensure the area can continue to be one of the most dynamic and dense knowledge economies in Europe

- Financial and systems: improving our institutional capital and ability to attract inward investment

A5.58 The objectives and priorities will be delivered through investment in major programmes of activity. These programmes are grouped under three headings depending on the main target: Business, People, and Infrastructure & Place.

East Cambridgeshire Economic Development Service Delivery Plan

A5.59 The Economic Development service (ED) is responsible for facilitating improvement of the district's economy including related skills and employment prospects. It achieves this by:

- project and program management of a number of growth delivery projects and corporate objectives such as the CPCA's market towns programme

- facilitation of skills and employment projects working with the CPCA and other stakeholders

- being the first point of contact for those seeking funding or business advice services Working to encourage inward investment to the area, for example, new businesses or infrastructure funding

- working with partners to develop digital infrastructure and accessibility, for example, public WiFi networks, future IoT technologies and mobile coverage

- working with organisations such as the Chamber of Commerce, FSB and local businesses/organisations as part of our business engagement activity

- managing the e-space business centres at Littleport and Ely

- developing economic strategy and priorities through collaboration with the CPCA and local monitoring of the district's economy

Fenland Economic Growth

A5.60 The strategy sets out how the Council's Economic Growth Team, other Council departments and public and private partners will continue to work together to drive forward economic growth in Fenland and ensure that we are open for business.

A5.61 The strategy sets out the following commitments for the council:

- Growing businesses - Through engagement with existing local businesses the Council will target the support that is available to help enable each business to grow and assist them to overcome any barriers to growth or to develop opportunities. This will include ensuring that businesses are aware of and supported in applying for financial support for which they are eligible.

- More business start-ups – Help ensure that the support is in place to help enable local people to start a business and to stay in business including the possible availability of grant funding.

- Attract new businesses - Help attract new businesses into the district from supermarkets and fast-food brands to businesses seeking a UK base. The Council will proactively engage with targeted new business opportunities to ascertain each businesses future plans and location requirements.

- Available workforce – Help ensure that supply of and skills of the available workforce are appropriate for the Fenland marketplace, as well as offering young people improved aspirations, increased wage levels and alternative career paths. Represent companies' skills requirements for the development of skills support funding and development of relevant courses.

- Available serviced land and premises - Acquiring technical and specialist support to bring forward employment sites and premises to include

infrastructure, highway, and market/commercial assessments. To bring together these and other similar requirements into an “Investment Prospectus” for Fenland.

MK City Plan 2050

A5.62 The draft Milton Keynes City Plan 2050 was consulted for a period of 12 weeks, from 17 July to 9 October.

A5.63 The aim of the Plan is to get the right type of development in the right places to meet the growing needs of local people and businesses, while protecting our green spaces and rural areas. They want to make sure infrastructure is put first (such as health facilities, schools and shops).

A5.64 They intend to consult on a final regulation 19 version of the MK City Plan 2050 in September 2025.

Milton Keynes Tech, Smart City, Digital, and Creative Industries Strategy

A5.65 This strategy has been prepared to set out the way forward for Milton Keynes to build its leadership in Tech and innovation. The aim will be to enable opportunities that can provide real benefits to our citizens, grow the economy, build talent and protect the environment. They have set out a vision with an initial set of projects to be delivered over the next five years, and a direction that shows how further projects and interventions will help achieve those aims.

A5.66 The Strategy explains how partners across the city will work together to take a future-facing, pro-active approach to harness the benefits of these sectors.

A5.67 Milton Keynes has a very strong city economy, generating £14 billion a year for the UK. The tech sector already makes up a significant part of Milton Keynes’ economy, with reports showing that as many as one in three jobs in the city are in tech.

A5.68 They will encourage joint working, investment, and collaboration from the private sector on the issues facing the city. They will highlight opportunities for environmental, social, and corporate governance (ESG) investment and where the tech being developed in the city can make a real difference to its citizens.

They are also pushing for the city to be known as a Smart City and a Digital City and they are aiming to expand the creative industries.BIG50 North Northamptonshire Vision – Draft[42]

14.34 This document is a draft of the North Northamptonshire Vision for 2050. The vision is structured around three main priorities:

- Proud Place – Aiming to create a place where people are proud to live and work, with a strong sense of community and safety
- Prosperous Place – Focusing on creating a thriving economy with skilled local people employed in well-paid, secure jobs. This includes attracting innovative businesses, investing in education and skills improving transport links, promoting green growth and supporting entrepreneurs.
- Proactive Place - Emphasises the need to act early to address the root causes of problems and create a preventative approach

14.35 In relation to the 'Prosperous Place' priority, the Vision states that North Northamptonshire's central location and affordable land continues to bring in great businesses and jobs. Whilst North Northamptonshire continues to attract traditional manufacturing and logistics jobs, the vision looks to attract headquarters and research facilities to access the skilled workforce and affordable land. The vision sees new industries locating in the area including high-tech and green businesses.

[42] To note: North Northamptonshire's Economic Growth Strategy 2025-30 and Space to Grow prospectus are both nearing completion but unavailable to review at the time of this report.

Economic Development Strategies Summary

A5.1 The various economic strategies reflect the local challenges and opportunities in each area and each has responded in their own unique way.

A5.2 There are however overarching themes of infrastructure, people (skills) and place and all areas are ambitious for growth. Some of the strategies however have a focus on recovery rather than growth.

A5.3 Even in the non-core Cities of Cambridge and Oxford the priority sectors include many SIT sectors including green technologies, life sciences, high-value manufacturing and engineering and digital creative industries.

A5.4 The infrastructure elements include digital connectivity as well as transport infrastructure. This includes building on the areas only nationally significant transport hub at Luton Airport.

A6. Typical Lab Specification

The following features make up a typical lab specification:

A6.1 Floor to ceiling height (distance between the finished floor level to the underside of a suspended ceiling):

Typical range of: 2700 – 3000 mm

Ceiling void zone: 800 - 1000 mm

Structural slab: 325 mm to achieve ISO-1/VC-A vibration spec

Slab to slab 4000 mm+

Image: Georgia Institute of technology, Carbon-Neutral Energy Solutions Laboratory

A6.2 Structural loading:

New builds typically 4 kN/m2

Above loading based on high-spec vibration performance, without this the loading allowance would have to be greater – upwards of 7 kN/m2.

Lowest floor usually higher than 4 kN/m2– heaviest plant can be located here for efficient structural design

Reduced loading allowance 3 kN/m2 + internal partitions (this will limit clustering of heavy items)

Ceiling, services, and floor finishes typically 1.5 kN/m2

Image: Georgia Institute of Technology, Carbon-Neutral Energy Solutions Laboratory

A6.3 Typical MEP and associated systems / requirements:

Requiring elevated electrical load:

High air change rate

Humidity close control (+/- 5% minimum)

Airflow regime – pressure control

High grade air filtration

Process cooling

Image: University of Massachusetts at Lowell, Emerging Technologies & Innovation Centre

A6.4 Potential additional building needs:

Purified water supply plant

Corrosive resistant drainage pipework

Drainage collection tank for off-site processing

Logistics areas

Compressed air

Laboratory gases

Gas storage and exclusion zones

Security barriers and access control

Ventilation exhaust at high level

Cryogenic facilities with backup power requirements

Dual electrical grid and data connections for redundancy.

A7. Infrastructure benchmarks

Table 14.1 Infrastructure benchmarks

Category	Premises			Electricity Supply Capacity		Water			Digital		Transport Journeys
	Occupancy Density					Supply Water	Waste-water	Occupancy Density	Typical connection types to data infrastructure		
	m2/per person		Comment	w/m²	Comment	L//P/Day	L//P/Day	Comment			Comment
Offices / business incubators /innovation centres	**10**	BCO Spec	**104**	BCO Spec	**15**	**15**	Units are litres/person/day BCO Spec	Dual comms intake for 2N redundancy	As best practice and to support Wiredscore certification	**1 return car journey per person**	
Lab space, light industrial space [technical testing and engineering activities], advanced manufacturing R&D / science and technology parks	**30**	Based on HDR portfolio	**233**	Based on HDR portfolio	**20**	**20**	Units are litres/person/day Based on HDR portfolio	Dual comms intake for 2N redundancy	As best practice and to support Wiredscore certification	**1 return car journey per person**	

Source: HDR Inc

A8. Completions Data

Table A8.1 B1a Completions (sq.m)

	Bedford	Buckinghamshire	Cambridge	Central Bedfordshire	Cherwell	East Cambridgeshire	Fenland	Huntingdonshire	Luton	Milton Keynes	North Northamptonshire*	Oxford	Peterborough	South Cambridgeshire	South Oxfordshire	Vale of White Horse	West Northamptonshire	West Oxfordshire
2012/13	933	7192	3156	-14015	197	929	0	570	1471	46400	3090	3356	2763	-1056	-	-	2709	1176
2013/14	-	2563	-1016	-7979	-566	1896	822	557	-3146	3413	122	7782	3749	-1462	-	190	1156	805
2014/15	200	198	2327	2306	963	544	353	-	-13089	22779	602	1661	4016	12820	-	5158		630
2015/16	233	7750	54318	-5992	1873	5422	1789	3871	-8809	8215	-382	2852	6198	9219	99	189	4607	1030
2016/17	3064	10529	666	286	2859	4422	540	785	-8809	2638	632	-	2112	6492	1208	-	836	615
2017/18	2119	3383	-2660	-1483	-861	668	840	2785	-10736	10888	6239	-	5532	-1880	-	5568	2932	388
2018/19	230	5686	-9876	2947	13714	922	859	909	135	20845	-5734	4500	10145	9099	2204	-	1152	4576
2019/20	770	6247	774	3045	2134	-	1318	1761	155	25092	1616	42	-	11106	22	-	-	6
2020/21	2003	2772	-2594	-618	-6162	-	0	4983	0	12796	-493	2687	-	-1831	5690	-	3883	6603
2021/22	13192	548	-4876	2573	0	-	23	-	50	3269	-183	-	-	-310	191	1906	6632	233
2022/23	4297	3425	-1592	-1489	0			2326		1552	0	907	8576	674		5993	16185	475
Total	26641	**50293**	**38627**	**-20420**	**14152**	**14803**	**6544**	**18547**	**-42777**	**157887**	**5509**	**23787**	**43091**	**42871**	**9414**	**19005**	**40092**	**16537**

Source: Local authority monitoring, Gleningan, CoStar

*missing East Northants area data 2018/19-2022/23

Table A8.2 B1b completions (sq.m)

	Bedford	Buckinghamshire	Cambridge	Central Bedfordshire	Cherwell	East Cambridgeshire	Fenland	Huntingdonshire	Luton	Milton Keynes	North Northamptonshire	Oxford*	Peterborough	South Cambridgeshire	South Oxfordshire	Vale of White Horse	West Northamptonshire	West Oxfordshire
2012/13	-	-	-	-	750	-	-	-	-	2754	-	-	2763	20260	2063	20438	-	282
2013/14	-	-	5736	-	-	1020	63	-	-	-	-	-	3749	15753	-	-	-	-
2014/15	-	-	1473	-	-	104	402	-	-	2523	22845	-	4016	10558	-	49052	-	-
2015/16	-	-	74710	-569	-	307	-	-	-	8160	638	-	6198	33605	-	-	-	117
2016/17	-	-	20022	-175	-	-	-	-	1426	2478	-	-	2112	5904	-	11898	-	-
2017/18	-	-	6520	-	-	100	-	1669	-	2151	360	-	5532	17372	-	2482	-	-
2018/19	-	-	350	-	-	-	-	4949	-	-	-	-	10145	2565	1250	17158	-	2925
2019/20	-	-	719	-	-	-	267	-	-	-	-	-	-	1087	-	4067	-	3790
2020/21	-	-	238	-	-	-	-	-	-	-	-	-	-	-	-	16258	-	-
2021/22	-	-	-	-	-	-	-	-	-	-	-	-	-	6226	-	30345	-	-
2022/23	-	-	-	-	-	3600	-	-	-	1800	-	-	8576	141	16546	2229	-	-
Total	**0**	**-**	**109768**	**-744**	**750**	**5131**	**732**	**6618**	**1426**	**19866**	**23843**	**85593***	**43091**	**113471**	**19859**	**153927**	**-**	**7114**

Source: Local authority monitoring, Gleningan, CoStar

*annual breakdown unavailable

A9. Stakeholder Engagement Topic Guide

Oxford to Cambridge Science, Innovation and Technology Business Premises Study

Stakeholder Topic guide

About this study

Iceni Projects (in conjunction with Carter Jonas and HDR Inc) have been appointed to undertake a strategic study of the supply, availability and quality of Science, Innovation and Technology (SIT) premises across Oxfordshire, Bucks, Milton Keynes, Northamptonshire, Bedfordshire, Cambridgeshire and Peterborough. Your contact details were provided to us by the Oxford to Cambridge pan-Regional Partnership.

The purpose of the interview is to understand your views on the conditions and opportunities for the long-term development of the sector, by ensuring that premises, location, and infrastructure factors do not limit its growth.

SIT encompasses those relating to life sciences, digital and creative, future energy, future mobility, Agritech, quantum computing, space, robotics and Artificial Intelligence (AI).

Note to interviewer - the below questions should be tailored depending on stakeholder area of interest/expertise, however exploring different sectors / typologies is important

In the form of a semi-structured discussion, I'd like to cover the following topics today:

- Preferences for SIT premises
- Preferences for SIT location
- Current and future demands
- Any barriers/challenges to growth

Introduction

1. Can you tell me about your role and experience in the sectors set out previously? (i.e.: life sciences, digital and creative, future energy, future mobility, Agritech, quantum computing, space, robotics and Artificial Intelligence (AI).)

Premises

1. How would you describe the current supply and availability of SIT premises in the region? How does this vary by location? How does this vary by premises type / the specific sectors they service?

2. To what extent are the current premises suitable for science, innovation, and technology activities? Why do you say that? How does it vary by type / location?

3. We're interested in your views on requirements for SIT premises. Could you outline what you see as ideal features for SIT premises? *Prompts:*

    - Facilities type (e.g. wet/dry labs, research facilities, office space, collaborative spaces)
    - Size and layout of the premises
        - spectrum of requirements for different operators at different life cycle stages (start up, scale up, maturing)
        - where market pressure / gaps exists for different types
    - Amenities – town centre, retail, leisure, quality of life etc.
    - Structural requirements (e.g. height)
    - Access (e.g. parking and public transport links)
    - Need for flexibility to alter or expand premises
    - Electricity / grid capacity
    - Water resources
    - Digital connectivity
    - Availability of manufacturing space
    - Other

4. Which of these features would you regard as key requirements, and which would you regard as nice-to-haves?

5. Which of these features are most likely to change over the business life cycle (i.e. start-up, growth, maturity)?

6. Is there anything you would suggest that developers could do to configure existing commercial space to better meet the sector's needs?

Location

7. What do you regard as the optimal location features for SIT premises within the region? *Prompts: Clustering, Proximity to research institution / universities, Proximity to workforce, Road/ rail /cycling connectivity*

8. Do these features change depending on the type of commercial unit / occupier?

Future needs

9. How do you foresee SIT premises preferences in terms of location and features evolving in the future (i.e. over the next 10 years)? What would you regard as the drivers for these changes?

10. Looking ahead, how (if at all) would you see the demand for the following features changing over time (i.e. over the next 5-15 years):

    - electrical grid capacity
    - digital infrastructure
    - water resources (including waste water and sewage requirements)
    - transport infrastructure

11. Do you have insight regarding the technical specification / requirements for the above infrastructure for different premises types? (if so, see HDR baseline inputs for discussion)

12. What could be done to ensure sustainability in future premise design? *Prompts: best practice, BNG, net zero carbon to ventilation, floor loads, reconfigure existing space, energy storage / flexible electricity contracts*

Final questions

13. Do you have any final recommendations to enhance premises in order to further attract investment in the Oxford to Cambridge region?

14. Is there anything else you think that the Oxford to Cambridge pan-regional Partnership should be aware of as part of this study?

15. As part of this study, we will be conducting a short business survey targeted at occupiers. Would you be happy for us to send it to you to disseminate to occupier contacts?

16. Would you like you or your organisation to be attributed to these responses within the final report of this study?

Thanks and close