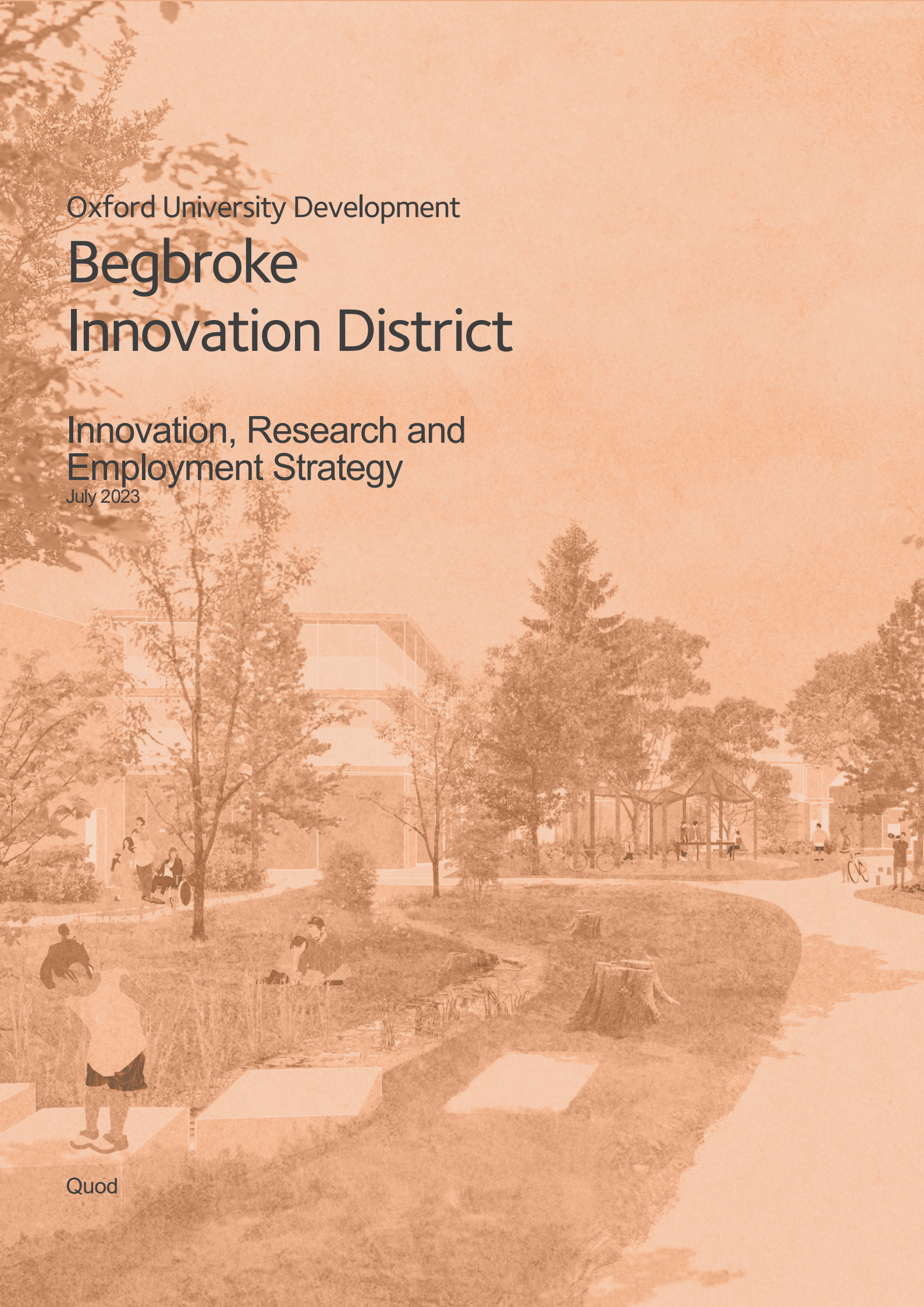


Oxford University Development

Begbroke Innovation District

Innovation, Research and
Employment Strategy

July 2023



Quod

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Executive Summary

Introduction

- ES1 Begbroke Science Park, wholly owned by the University of Oxford, will be expanded over the next decade to become a new ‘University Innovation District’.
- ES2 It will provide a significant increase in buildings for Innovation, Research and Business, capable of accommodating around 5,000 jobs and helping meet Oxford and Cherwell’s acute needs for specialist floorspace.
- ES3 The proposals will create a new centre to the Science Park, in which people who live, work, and visit the development can socialise, collaborate and use local shops and services. It will be outward facing with the intention that facilities can be shared rather than enclosed. The Science Park will co-exist with around 1,800 new homes. Many residents will work on the site. Together they will form the Begbroke Innovation District.
- ES4 This report sets out the current position at the Science Park and identifies the consistent policy objectives at all levels (local, sub-regional & national) to support innovation. It summarises the current activities being undertaken by partners in Oxfordshire, and how Begbroke Innovation District can add value to them.
- ES5 It then sets out what is proposed in this Planning Application and the wider activities that Oxford University Development Ltd (‘the Applicant’, a joint venture between the University of Oxford and Legal and General) will undertake to ensure that the development is delivered and managed in a high-quality way, and that the benefits of development can be widely spread to support ‘Inclusive Innovation’.

The Begbroke Opportunity

- ES6 Begbroke Science Park today provides a diverse and high-quality research and development facility for the University, led by the University’s Mathematical, Physics and Life Science Division.
- ES7 It is home to the Centre for Innovation and Enterprise and The Institute of Advanced Technology and Advanced Materials Research Laboratory. Two further new buildings are under construction. While the current Science Park undertakes world class science and innovation, it is on a significantly smaller scale than international competitors.
- ES8 The wider University of Oxford is the top ranked University in the world and the top ranked in the UK for the number of ‘Spinouts’ – businesses founded to commercialise research. It has helped develop a mature and effective innovation infrastructure including Oxford University Innovation and Oxford Science Enterprises.
- ES9 Along with London and Cambridge, it is one of the UK’s three globally competitive innovation ecosystems. Begbroke Innovation District is an important part of the University’s intention to scale up its innovation activity, which the UK Government sees as essential to our future prosperity.

The Oxfordshire Ecosystem

- ES10 The Begbroke site is to the north of Oxford, in Cherwell District. There is a strong history of collaboration between partners in Oxfordshire, (including the County and District Councils) and the University working together to support economic development.

- ES11 The site is part of an ‘Innovation Corridor’ or ‘Knowledge Spine’ stretching from Harwell and the Science Vale in the south through the City of Oxford to Cherwell.
- ES12 Both Cherwell District Council and Oxford City Council recognise that the economic centre of gravity of the area around Begbroke and Kidlington, is Oxford and that they are both part of the same Oxford and North Oxford Fringe economic area.
- ES13 Studies undertaken for the Councils, and other partners, over a decade have consistently shown that there is strong demand for R&D and innovation floorspace in this economic area. However, Oxford itself is tightly constrained.
- ES14 An expanded Begbroke site has been removed from the Green Belt to help meet Oxford’s housing needs and the allocation in the Local Plan also includes an expansion of the Science Park.
- ES15 Market evidence shows that available supply of commercial floorspace is at historically low levels and is significantly constraining Oxford’s economy, and its capacity for innovation and to secure inward investment.
- ES16 The Oxfordshire Industrial Strategy (2019) and the Oxford Innovation Engine reports (2013, 2016, 2023) further emphasise the need to pro-actively manage growth in a sustainable way, particularly through maximising the potential of growth hubs of which Begbroke is one.
- ES17 Reports also highlight the need for homes to be provided alongside employment in a mutually re-enforcing way. Oxfordshire calls for the promotion of ‘Inclusive Innovation’¹ – because it is one of the most unequal places in the country.

A National Priority

- ES18 Innovation is a national priority. The Government has emphasised the need to capitalise on the UK’s world class research base. It has promised to update the National Planning Policy Framework to emphasise this further, albeit policy is already very strongly supportive of such development.
- ES19 The Government has also recently re-stated its support for the Oxford and Cambridge Arc and has encouraged the re-establishment of a pan regional partnership.
- ES20 Overall national policy could not be more supportive of the need for projects like the Begbroke Innovation District.

“The motivation behind our Science and Technology Superpower agenda is simple: science and technology will be the major driver of prosperity, power and history-making events this century².”

The Proposals

- ES21 The Planning Application includes up to:
- 155,000 sqm of Science Park Floorspace within 14.7 hectares of land. This includes several use classes (B2 and B8, E(g) and F1(a) to allow for the full potential range of building types accommodating academic, R&D, office and laboratory uses
 - 21,000 sqm of Ancillary/Supporting uses
 - 215,000 sqm for new homes
 - Supporting social infrastructure, including land for three new schools, open space and flexible floorspace.
- ES22 The core concept of the ‘Innovation District’ is a simple one: use the current

¹ Oxford Strategic Partnership and OxLEP, 2021. Oxfordshire Inclusive Economy Initiative Summary Report Findings

² Department for Science, Innovation and Technology, Science and Technology Framework, 2023.

Science Park as the centre on which to focus the shared and communal uses and provide activity and sense of place, with commercial and academic uses radiating out from this and blending into the new residential communities.

ES23 This combines some of the intensity of the urban models in the centre with open space and landscape. This takes advantage of a reduced car dependency - and the space typically given over to parking - to allow higher plot ratios and better use of land, making a meaningful contribution to Cherwell and Oxford's employment and housing need.

ES24 The proposals can accommodate the full range of space that might be required by the University, and its Departments, and by commercial occupiers.

ES25 This could include:

- Academic/Institutional Research Buildings
- Dry laboratories and engineering laboratories and 'mid-tech' buildings
- Wet laboratory space
- Office space, either incorporated into other buildings or provided separately.

ES26 Begbroke Innovation District will have the following quantifiable impacts:

- 1,600 Full Time Equivalent (FTE) jobs on average over the construction period. The exact requirements and skills mix will depend on the detailed design of the buildings and the programme
- 5,535 FTE jobs in R&D, and Innovation sectors as part of the expansion of the Science Park.
- 325 FTE jobs in the ancillary/supporting services in the Local Centre and wider development.

- Up to 450 jobs in the education sector, including nursery, primary and secondary schools.
- Annual Economic Output (Gross Value Added) of around £365 million.
- £27 million annual spending by new residents in the local economy and £20 million from employees.

ES27 If the Innovation District is to be successful it will need to go beyond 'bricks and mortar'. OUD will therefore ensure that:

- There is a pro-active strategy to enhance Innovation Capacity at Begbroke, linked with the wider ecosystem.
- Partners take a long-term approach to curation and stewardship, learning from best practice in placemaking in the early stages, whilst having long term arrangements in place to maintain the quality of the development.
- Partners adopt an 'Inclusive Innovation Strategy' addressing employment and training opportunities in the construction phase and completed development, an enhanced education programme, and work with young people on entrepreneurship and innovation.
- They work in partnership with local people and organisations to define community facilities provision on site and ensure that schools on site benefit educationally from the expansion of the Science Park.

ES28 If the Proposed Development is granted Planning Permission, it is expected to commence in 2025 and therefore can begin to make an early contribution to enhancing innovation for Oxfordshire and the UK.

1 Introduction & Vision

The Vision

- 1.1 Innovation is critical to the UK's economic future.
- 1.2 The UK Science and Technology Framework³ states:

“The motivation behind our Science and Technology Superpower agenda is simple: science and technology will be the major driver of prosperity, power, and history-making events this century. The United Kingdom’s future success as a rich, strong, influential country, whose citizens enjoy prosperity and security, and fulfilled, healthy and sustainable lives, will correspondingly depend on our ability to build on our existing strengths in science, technology, finance, and innovation.”
- 1.3 Begbroke Science Park is the only science park wholly owned and managed by Oxford University, one of the world's leading educational institutions.
- 1.4 It sits at the heart of the wider Oxford innovation 'ecosystem', one of the UK's few globally competitive places, and as such is precisely the type of opportunity that policy suggests must be capitalised on.
- 1.5 The site is allocated for development in the Cherwell District Local Plan⁴ to include an expansion of the Science Park, integrated with new homes, schools and other facilities.
- 1.6 The University of Oxford has joined up with Legal & General to form Oxford University Development ('OUD') to plan for and develop sites it owns including Begbroke Science Park.
- 1.7 Its Masterplan team, led by architects Hawkins\Brown has produced a Planning Application for the expansion of Begbroke Science Park to become an 'Innovation District'.
- 1.8 The Vision is:

“To transform the science park into a University Innovation District that reflects the excellence and scale of Oxfordshire’s talent; an internationally recognised location for innovation, research, education, and entrepreneurship. This will be a new type of environment to support collaborative working and will play a key role in delivering the University’s strategic commitments in innovation through accelerated development, economic growth and societal benefit across Oxfordshire and the UK”
- 1.9 The primary objective of the Masterplan is:

“Cultivating a place...in which a community can change the world”

³ Department for Science, Innovation and Technology, Science and Technology Framework, 2023.

⁴ Cherwell Local Plan 2011 to 2031 (Part 1) Partial Review – Oxford's Unmet Housing Need

The Strategic Case

- 1.10 This report sets out how the proposals address key policy drivers for Innovation, Research and Employment, building on the strong base of the current Science Park.
- 1.11 Chapter 2 sets out the background to the project, including Begbroke today, its place in the wider innovation ecosystem, and the need for new Research and Development ('R&D') business space and homes. It identifies the challenges facing Begbroke in creating an Innovation District and its links to the wider system.
- 1.12 Chapter 3 summarises National Policy.
- 1.13 Chapter 4 describes the proposals and how they address these issues and challenges and concludes by setting out the impacts of the development, and the wider work that OUD and the Science Park will undertake with its partners to ensure that the benefits of Begbroke Innovation District are spread widely and that they contribute to 'Inclusive Innovation' in Oxfordshire

2 The Begbroke Opportunity

Begbroke Science Park Today

- 2.1 Oxford University Science Park Begbroke is the only science park wholly owned and managed by Oxford University. It is just north of the City, off the A44 in Cherwell District.
- 2.2 The six hectare site was bought by the University in 1998 and has expanded incrementally since. It currently has around 13,500 sqm of floorspace across several buildings. Around 700 people currently work on the site.
- 2.3 The *Centre for Innovation and Enterprise* ('CIE') offers high-tech, knowledge-based, start-up and spin-out companies a unique professional environment in which to expand and grow. It provides both office and laboratory space on flexible terms and access to the Science Park's other facilities and expertise. The CIE is fully let and has a waiting list.
- 2.4 The *Institute of Advanced Technology and Advanced Materials Research Laboratory* hosts the *Oxford Materials Classification Service* which provides specialist services to leading businesses across a range of sectors, a nano-fabrication cleanroom, the Impact Engineering Laboratory, and the Advanced Materials Processing laboratory.
- 2.5 The park also includes conference and meeting space, a café and restaurant and management space, facilitating interactions between people working on the site.
- 2.6 Begbroke is home to 20 research groups and over 30 businesses across key growth sectors led by the University's Mathematical, Physics and Life Science

Division ('MPLS'). On site specialisms include:

- Materials, Engineering and Physics Research Groups
- Advanced Materials and Nano-Technology
- Energy Generation, Capture and Storage
- Automotive Research and Development
- Big data and energy efficient computing
- Life Sciences, Genomics, Synthetic Biology and MedTech.

- 2.7 This breadth of approaches and disciplines, combined with a core strength in materials and physical sciences, means Begbroke plays a unique and specialist role in the Oxfordshire and wider UK innovation ecosystem, where much of the discussion has focussed narrowly on Life Sciences.
- 2.8 Two further buildings are under construction, one for University Research and Development and Academic uses (c. 5,000 sqm) and the other for commercial spin offs and innovation (c. 7,500 sqm). The completion of these buildings in 2025 will effectively 'fill' the current site. This combined floorspace of c. 25,000 sqm of innovation space will still leave Begbroke relatively small compared to national and global competitors (with an estimated 700 jobs on the site).
- 2.9 The wider site, which is allocated in the Cherwell Local Plan is 170 hectares and is mainly in agricultural use. Two other sites – owned by 'Newcore' and 'Hallam Land Management' are part of the same Local Plan allocation but do not form part of this Planning Application.

2.10 Before going on to look at the specific proposals for Begbroke Innovation District, it is important to consider them in the wider context of the University's approach to Innovation and the wider Oxfordshire ecosystem. The picture is complex and operates at a series of spatial scales - it is important to recognise that the Begbroke Innovation District will need to interact with and complement other hubs and clusters if its benefits are to be maximised.

The University of Oxford and Innovation

2.11 The University of Oxford is a world-leading centre of learning, teaching and research. It is ranked first in the *THES World University Rankings (2023)*.⁵

2.12 It also ranks first in the '*Spotlight on Spinouts report of British Universities*' for total spinouts tracked since 2011⁶. The top 10 academic institutions are responsible for over half of UK spinouts.

2.13 Oxford, is world leading and a huge asset for the UK economy. The UK is regularly seen, along with the US, as supporting world leading technology innovation systems. These institutions are on a par with quality of research and by some metrics the number of spinouts with leading US institutions, although matching the value and size of US spinouts remains a challenge⁷.

2.14 The University has taken a strongly proactive role in developing its spinouts, as part of the wider Oxfordshire ecosystem. This includes the development of two critical institutions: Oxford University Innovation Limited ('OUI'), and Oxford Science Enterprises ("OSE").

Oxford University Innovation

2.15 OUI is a wholly owned subsidiary of the University of Oxford, founded in 1987 to enable the University to maximise the impact of its research and expertise. It does this through licensing, research commercialisation and academic consulting.

2.16 OUI's vision is for Oxford to be:

"A world-leading innovation ecosystem with Oxford University at its heart."

2.17 This includes:

- actively engaging with staff throughout the University who wish to commercialise technology and expertise
- operating a 'Start Up Incubator' to support non-patent led businesses
- the provision of consultancy services to public and private sectors
- licensing of intellectual property
- establishing and operating networks and engagement.

2.18 OUI takes equity stakes in spinout businesses and helps them secure funding, both through funds in which it is involved, and through third parties. As well as enabling spinouts, OUI delivers financial returns to the University.

Oxford Science Enterprises

2.19 OUI works with, among others, OSE, an independent investment company created in 2015 by Oxford alumni and Oxford University (which has a 5% share) to significantly boost investment capital for OU spinouts.

⁵ <https://www.timeshighereducation.com/world-university-rankings/2023/world-ranking>
⁶ <https://www.beaurost.com/wp-content/uploads/2023/05/Beaurost-Spotlight-on-Spinouts-2023.pdf>

⁷ Developing University Spinouts in the UK Key Trends in Spinout Activity, Investments and Investor Involvement (2019) Coates Ulrichsen, Technical Note for Research England

2.20 OSE has raised more than £850m to be invested in OU spinouts. It has invested in over 80 spinouts built on Oxford science, bringing in over £1.5bn of co-investment. Future investment in the coming five years is expected exceed £1bn per year.

2.21 Since 2013, OSE has featured as a top spinout investor in the UK (by value of deal participations into spinouts), it has participated in fundraisings worth a total of £1.45 billion and is a leading “early investor”.⁸

2.22 Both organisations have invested in businesses in a range of sectors including:

- Life sciences, Health Tech and Diagnostics
- Energy Batteries and Electric Motors
- Biodiversity
- Sustainable Agriculture
- Education
- Computing
- Industrial capability and materials.

2.23 Again, these sectors demonstrate the breadth of Oxford’s innovation base and include several of the specialisms at Begbroke Science Park. The expansion of the science park offers the potential to deepen the relationships with these ‘intermediary’ institutions with the benefits to both academics and business that that will bring.

Economic Impact of the University

2.24 The University of Oxford published a report by London Economics in 2021⁹ which summarises its economic impacts. This identified a 'headline' impact of £15.7 billion to the UK economy in 2018-19. From this, the impact of the University's 'Research and Knowledge' activities constituted over half or £7.9 billion. This was made up of:

- £385 million from direct research
- £4.1 billion from productivity spillovers generated from that research
- £216 million from licensing activities
- £2.7 billion from spinouts
- £496 million from the companies at Oxford Science Park and Begbroke Science Park.

2.25 The University aims to enhance this impact through its Knowledge Exchange Strategy (2021 to 2025) and in doing so work with partners to create a world-class regional innovation ecosystem, through a strong and constructive relationship with the local and regional community. The University is not focussed narrowly on the economic benefits but also its wider desire to connect research with social and cultural benefits, public policy and public good globally.

2.26 The University has worked with partners to both commission research and develop policies and activities to develop the wider Oxfordshire Innovation Ecosystem.

⁸ <https://www.beauhurst.com/wp-content/uploads/2023/05/Beauhurst-Spotlight-on-Spinouts-2023.pdf>

⁹ The Economic Impact of the University of Oxford, London Economics for University of Oxford, 2019.

The Oxfordshire Innovation Ecosystem

2.27 The City of Oxford is a small City with a population 162,000 according to the 2021 Census. It sits at the centre of the county which has a total population of 725,291.

2.28 The county is usually used to define the 'local economy' and the Oxford Travel to Work Area ('TTWA') – self-contained areas in which most people both live and work – is similar to the County boundary (with the exception of the area around Banbury which is its own TTWA).

2.29 The Local Enterprise Partnership, and previous 'City Deal' used the county as the definition of the 'City Region'.

2.30 Within this, there have been numerous studies over the last decade which have considered the innovation ecosystem, including its spatial and sectoral dimensions.

'The Oxfordshire Innovation Engine' and Advanced Oxford

2.31 In 2013 the University of Oxford with partners commissioned the 'Oxfordshire Innovation Engine' report to consider how the growth potential of Oxfordshire could be realised¹⁰.

2.32 It identified four measures of success for the innovation economy. These were:

- A positive contribution to the national economy of at least £1bn Gross Added Value (GVA) at constant prices within 10 years.
- Stronger and more productive relationships between Oxfordshire's high-tech businesses, the universities and research institutions.

- Substantially higher levels of private and public investment in Oxfordshire.
- A perception of Oxfordshire, both internally and externally, as a place that is committed to sustainable growth and which reflects the scale and success of the high-tech community with local, national and global impact.

2.33 'Advanced Oxford' was subsequently founded as a membership group, of which the University of Oxford was a founding member, with an interest in the 'innovation economy'. Its intention is to support the development of the Oxford and Oxfordshire Economy as a 'Scientific Supercluster'.

2.34 It has recently published a 2023 report¹¹ which reviews, a decade on, the extent to which the objectives in the original 2013 report have been achieved.

2.35 It concludes, having reviewed several measures, that the £1 billion GVA target has been hit. It then runs through the recent developments in collaboration and finds significant advances, albeit that there is room for continued improvement particularly for those trying to navigate the innovation system. It finds very significant public and private investment in innovation and infrastructure over the period.

2.36 It warns though that, although Oxfordshire has been successful in many respects, there is still a definite need to make the positive case for investment. Investment is required not only to bring economic benefits but also address "pressing societal, technological, environmental, health and sustainability challenges¹²" which are of global importance.

¹⁰ SQW for University of Oxford and Science Oxford (2013) The Oxfordshire Innovation Engine

¹¹ Advanced Oxford (2023) Oxfordshire's Innovation Engine 2023, A scientific super-cluster, looking back, looking forward

¹² Advanced Oxford (2023) Oxfordshire's Innovation Engine 2023, A scientific super-cluster, looking back, looking forward p.16

2.37 The report re-enforces the point that the importance of the cluster goes beyond life sciences. Fusion energy, autonomous vehicles, quantum technologies, materials science, and data science all play an important role, and this is an often-overlooked strength.

2.38 In relation to inward investment, it finds that Oxford's recent growth has tended to be 'bottom up' with the creation and growth of spinouts. It hasn't attracted, or generally had the offer to attract, large single external investors. It states:

".....it could be argued that Oxfordshire's failure so far to land a significant R&D heavyweight inward investment project has been, in part, due to the lack of a suitable location for such a development."

Oxfordshire Local Industrial Strategy

2.39 OxLEP, the Oxfordshire Local Enterprise Partnership was founded in 2011. It brings together the Local Authorities, and private and education sector partners "to champion Oxfordshire's economic potential, acting as a catalyst and convener to drive a dynamic, sustainable and growing economy."

The Industrial Strategy is driven by an ambition for Oxfordshire to be:

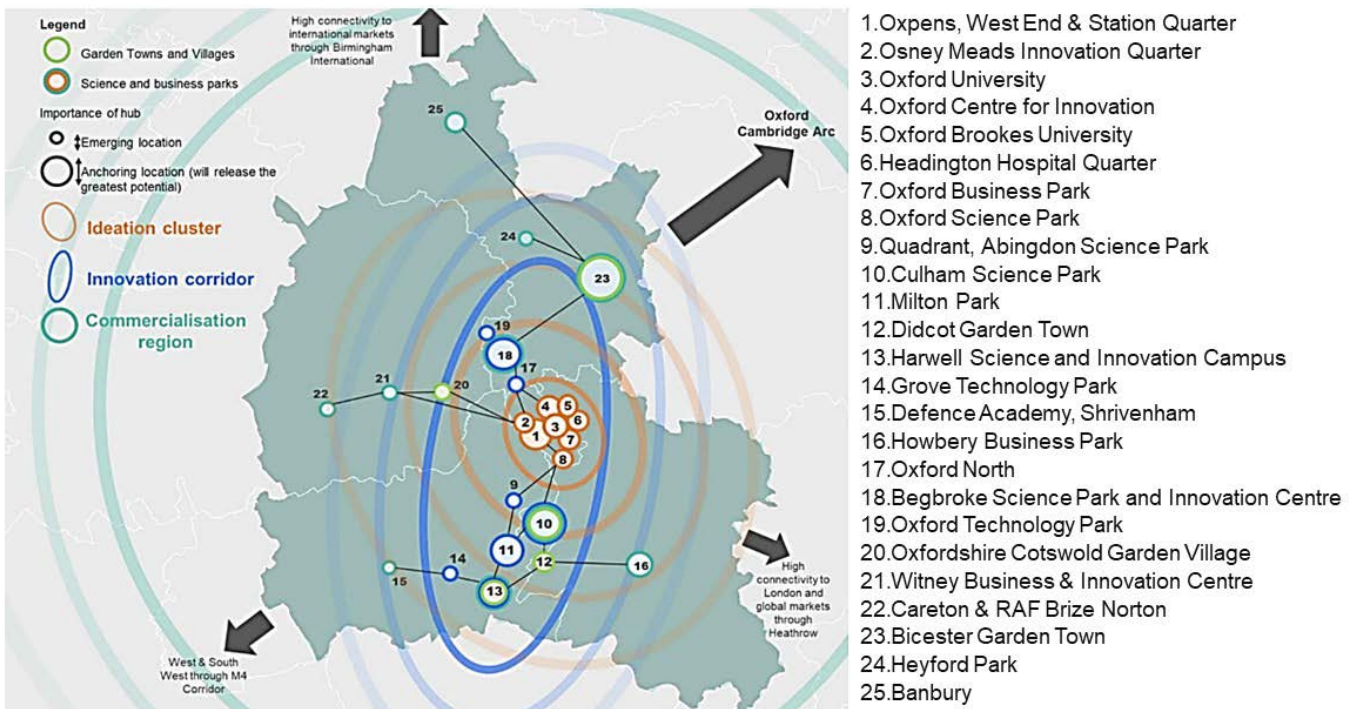
"a top three global innovation ecosystem by 2040"

2.41 This will be done by applying the five foundations of productivity to the current world class science and technology base.

- Ideas,
- People,
- Infrastructure,
- Business Environment, and
- Places.

2.42 It also considers the geography of the Innovation Ecosystem and identifies a series of inter-related levels.

Figure 2.1 – Key Locations within the Innovation Ecosystem



2.43 The core ‘area’ of the ecosystem is described in that report as the *Innovation Corridor* and stretching from ‘The Science Vale’ in the south, (incorporating Harwell, Milton Park and Culham) through the City of Oxford and to Begbroke, Kidlington and Bicester in Cherwell. This has elsewhere been described as the *Knowledge Spine*^{13, 14} and the *Central Oxfordshire Property Market Area*.

2.44 Begbroke Science Park is identified as an important ‘hub’ within the ‘Innovation Ecosystem’, with the characteristics shown in Box 1. Beyond its academic and commercial role, specific reference is made to meeting Oxford’s unmet housing need in Cherwell and the need for enhanced transport connectivity in that area.

2.45 Oxford City Council’s Economic Development Strategy identifies ‘Planned Areas for Development’ including ‘Oxford North’ and southern Cherwell.

2.46 The Oxford North development is within the boundaries of Oxford City Council. It has Planning Permission for 480 homes and around 90,000 sqm of commercial floorspace including labs, offices and shops, restaurants and bars.

2.47 Cherwell District Council’s economic assessments identify the southern part of the District, around Kidlington as having unique economic characteristics related to Oxford with demand for different types of employment floorspace (R&D and offices) compared to Bicester and Banbury¹⁵.

2.48 Cherwell District Council recognises the significance of Oxford as one of the major drivers of the County economy. It identifies significant interdependencies between Cherwell and Oxford. In recognition of this,

Begbroke Science Park

Key sectors: advanced engineering, medical tech. 60+ world leading research and technology companies employing 900+ staff

Begbroke Innovation Escalator spinout hub.

Proposed 4,000 homes as part of wider A44 corridor vision to double capacity at Begbroke including new station and linking to Oxford Airport and Oxford Parkway

Source: Oxfordshire Local Industrial Strategy

the Council has made a commitment to its neighbouring authorities to help meet Oxford’s unmet need by releasing sites immediately to the north of Oxford.

2.49 This released land comprises seven sites with a total target of 4,400 homes. Begbroke (PR8) is the largest single site with 1,950 homes. The Plan recognises the significance of the Science Park as an important economic asset and therefore seeks to secure delivery of housing needs ‘in close association with the expansion of one of the University of Oxford’s key economic assets’. The policy thus reserves 14.7 ha of land for the expansion of the Science Park.

2.50 This area also includes the large village of Kidlington which has a population of around 13,500 and most of the area’s community facilities including a Secondary School, doctors’ surgeries and community facilities. For economic purposes, it partly operates as a suburb of Oxford with half of working residents working in Oxford.

¹³ Oxfordshire LEP Strategic Economic Plan (Fig 2.1)
¹⁴ Oxford City Council, Oxford’s Economic Strategy 2022-32 p.9
¹⁵ Cherwell Economic Analysis Study (2012) and Addendum (2014) Cherwell District Council, Cherwell Employment Land Study Updated Forecasts (2014) Green Belt Review:

Accommodating Employment Needs (2016), Strategic Economic Growth Study (2017), Economic Needs Assessment (September 2021)

- 2.51 Oxford Parkway station lies just to the south with direct Chiltern Line trains to Bicester and London. Oxford Airport lies to the north and is primarily used for business and private flights and training. The area around the Airport includes Oxford Technology Park with planning permission for around 40,000 sqm of 'high technology' business space, as well as offices, car showrooms and 'trade counter' retail.
- 2.52 At present, despite being close together these places are disconnected, operating largely independently, but the work being undertaken by partners to deliver coherent infrastructure, and particularly transport investment, offers the potential for them to operate as a more coherent and integrated network. This will mean Begbroke, Kidlington and North Oxford linked with new homes with more sustainable and self-contained travel patterns, new innovation floorspace and social and community facilities.

Need for Innovation Space

- 2.53 The Oxfordshire Local Authorities, both individually and collectively, have commissioned a series of reports over the last decade all of which have identified the importance of accommodating knowledge intensive and innovation sectors.
- 2.54 In Cherwell, they have collectively identified the importance of the south of the District in contributing to higher value added, higher quality jobs, and the potential expansion of Begbroke. This is an important location for the delivery of more land for high-tech, science and research based industries around Kidlington¹⁶.

- 2.55 In Oxford, studies have consistently shown that demand for employment land is in excess of current supply and allocations. This emphasises the need to retain and develop currently allocated sites and, where possible, to secure modernisation and intensification of existing sites through redevelopment, expansion and/or increasing density¹⁷.
- 2.56 At an Oxfordshire County level, studies have considered various methods for forecasting employment growth over the coming decades - and identifying the locations where that might be accommodated. The Oxfordshire Economic Forecasting Report (2014)¹⁸ identified 'trend growth', but also key sectors likely to exceed that trend and the locations where that could be accommodated.
- 2.57 This included University growth, Satellite Technology, Bioscience, Healthcare, Environmental Technologies focussed mainly on Oxford and Cherwell. The balance was anticipated in the Enterprise Zone and at Culham in Vale of White Horse.
- 2.58 Subsequent assessments taken following the adoption of the Oxfordshire Industrial Strategy demonstrate that, in the 2011 to 2018 period, the majority of additional jobs in the County have been in the City of Oxford and Knowledge Spine, with nearly half in the City Centre and 'City Fringe' with continued demand for space to 2031 and beyond¹⁹.
- 2.59 The most recent Local Authority analysis is the Housing and Economic Needs Assessment (2022) produced for Cherwell and Oxford City Councils²⁰. This includes three scenarios for future employment in the County which includes an Economic

¹⁶ Cherwell Economic Analysis Study (2012) and Addendum (2014) Cherwell District Council, Cherwell Employment Land Study Updated Forecasts (2014) Green Belt Review: Accommodating Employment Needs (2016), Strategic Economic Growth Study (2017), Economic Needs Assessment (September 2021)

¹⁷ Oxford City Council, Oxford Employment Land Assessment (2016), Oxford Employment Land Needs Assessment (2018)

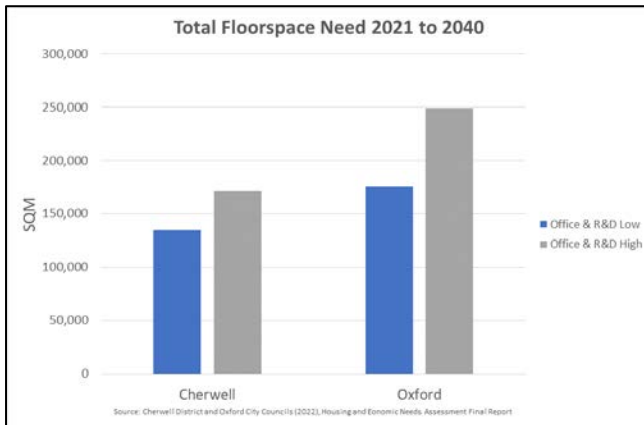
¹⁸ Economic Forecasting to Inform the Oxfordshire Strategic Economic Plan and Strategic Housing Market Assessment, Final report for Vale of White Horse District Council and partners, 28 February 2014

¹⁹ Oxfordshire Councils Growth Needs Assessment (2021)

²⁰ Cherwell and Oxford City Councils (2022), Housing and Economic Needs Assessment

Development led scenario, consistent with delivering the ambitions of the Industrial Strategy. This suggests that a need for between c, 300,000 sqm and 425,000 sqm of Office and R& D floorspace in Cherwell and Oxford over the next 20 years.

Figure 2.2 – R&D and Office Floorspace Need, Cherwell and Oxford, 2021 to 2040



2.60 Current availability of floorspace in Oxford (including adjacent parts of Cherwell and Vale of White Horse) is, as it has been widely reported, extremely low. Bidwell’s ‘Data Book’ for Oxford for January 2023 showed availability of lab space at under 5%, at just over 20,000 sqft (1,900 sqm) of space, of which less than half is of the highest quality (‘Grade A’). This compares to average take up over the last five years of c. 180,000 sqft (17,000 sqm). Office availability is greater at just under 10% but again under half of that space is ‘Grade A’ stock.

2.61 Research and development, office and some types of industrial floorspace are not clearly defined as separate categories. Increasingly R&D type buildings will have significant office space. What is clear however, is that there is and will be significant demand for flexible floorspace of

this type in the Oxford knowledge spine and in Cherwell specifically at Begbroke.

2.62 Given the very significant development constraints both in Oxford itself and surrounding districts, it is critical that allocated sites are ‘optimised’ and can deliver this space in a format which makes the best use of the land.

Homes to Support Innovation

2.63 New homes are an essential part of supporting innovation. Oxford and Oxfordshire compete globally for talent, both to attract the best students, researchers and entrepreneurs, and to retain them.

2.64 In recent years, there has been a significant mismatch between the locations of new jobs – mainly in the ‘innovation corridor’ and Oxford and its fringes - and new homes which have been more dispersed in district and wider region.

2.65 This leads to extended travel to work distances and also impacts on the age structure of the population.

2.66 Oxford itself has been significantly constrained by the Green Belt, heritage and environmental designations. As a result it has seen only around 225 new homes built each year over the last decade²¹. This has affected both the total population of Oxford and its composition.

2.67 Between the 2011 and 2021 Censuses, the population of Oxford grew by around 10,000 or 7%. Within that, the city saw absolute declines in the number of 0 to 4 year olds and of 20 to 29 year olds, with the most growth in older age groups: 55 to 59 and 70 to 74. The most recent population projections (2018 based) suggest that

²¹ DLUHC, Net Additional Dwellings, Live Tables, 2012-23 to 2021-22, New Build Dwellings

without intervention the working age population will fall over the next 30 years.

2.68 The Oxfordshire Industrial Strategy identifies the need, as proposed at Begbroke, to link new housing provision with the innovation network. It states:

“Capitalising on innovation and infrastructure investments, Oxfordshire will become a ‘polycentric network of innovation clusters. This will be based on exemplar new housing communities, linked to innovation parks and assets throughout the county and country.”

2.69 **The Housing Statement** submitted with this application sets out how the delivery of new homes can contribute to meeting Oxford’s economic and housing needs.

Inclusive Growth

2.70 Innovation can have profound impacts on the economy, and while, in aggregate, it can contribute to the welfare of society locally and globally, it can have distributional impacts meaning that some people, groups and places do not benefit.

2.71 The University of Oxford and Blavatnik School of Government recently ran a Commission on Technology and Inclusive Development, which considered the global challenges for creating inclusive growth. This concluded that there was a need to ensure that gains from growth are inclusive through pro-active intervention including through education and lifelong learning.

2.72 These principles apply equally within countries and globally.

2.73 The Oxfordshire Inclusive Economy Partnership, which includes Cherwell District Council, Oxford City Council and Oxfordshire County Council, have been working together to produce an Oxfordshire Inclusive Economic Charter to help address

the significant inequalities in the County and the City of Oxford. This has six broad actions that organisations can take to promote inclusiveness:

- Improve training and educational attainment
- Recruit inclusively
- Offer opportunities into work
- Support local and social economy
- Provide fair wages
- Sharing resources skills and assets.

2.74 Begbroke Science Park already undertakes a range of initiatives relevant to these issues including a Schools Event programme, outreach with local schools and workshops for teachers in incorporating science into the curriculum.

Summary

2.75 Begbroke Science Park has great potential as an Innovation District. It is part of a wider, complex, multi-level, innovation eco-system which provides a unique opportunity for UK growth.

2.76 It benefits from all of the features of successful clusters and innovation districts (see Box 2) including a strong existing science base, both ‘intensive’ (specialist and sectoral) and extensive (wider network) benefits, and a sophisticated and maturing institutional network. The plans for the site need to address the ‘quality of environment’ test.

Box 2: Clusters and Innovation Districts

Economic theory has identified the benefits of concentrations of economic activity in particular places since Alfred Marshall's identification of industrial districts in the 1890s. There has been a resurgence in this thinking since the early 1990s, with Krugman's Nobel prize winning work on the 'New Economic Geography' and Michael Porter's influential paper on 'Clusters'.

More recently this thinking has been synthesised with ideas about the importance of innovation to support the idea of 'Innovation Districts'. These are defined as:

"geographic areas where leading-edge anchor institutions and companies cluster and connect with start-up businesses and accelerators. They are also physically compact, transit accessible, and technically wired and offer mixed housing, office and retail."

(Katz, B., & Wagner, J. (2014). The rise of innovation districts: A new geography of innovation in America. Brookings Institution–Metropolitan Policy Program.)

A lot of research has been undertaken into innovation districts, including their features and characteristics, and what makes them successful. Because of the unique economic and institutional base of each there are no simple lessons, but the research does identify some key issues and features of relevance to Begbroke and Oxford:

It is very rare for them to be deliberately created. Instead they evolve over time based on existing assets. Governments and other stakeholders therefore need to nurture and build their existing clusters.

Cluster benefits can broadly be of two kinds. 'Intensive', usually on a smaller geographic scale with a specific sectoral focus. However, over-concentration on specific sectors can make a cluster vulnerable to structural economic change. 'Extensive' or 'Agglomeration' effects over a larger geographical area are also therefore important. Smaller clusters can 'borrow' the benefits of larger ones, for example specialist skills or services;

Quality of environment, infrastructure and housing availability – at all levels and price points – is important to attracting and retaining businesses and people. Formal and informal institutions and networks are critical for success. Strong networks and culture can enable sharing of information, collaboration, development of standards, finance and access to capital

2.77 Key issues to be addressed in master planning include:

- The need to link, both physically and institutionally with the wider network particularly in Oxford, north Oxford and Kidlington.
- The provision of flexible workspace for a range of sectors, types and sizes of business allowing for spinouts and potential inward investment.
- The need for new homes to support innovation and ensure a growing working age population.
- The need for 'Inclusive Growth' with activities and programmes to secure benefits for wider communities.

3 A National Priority

National Policy on Innovation

3.1 The Government's Innovation Strategy²² defines innovation as:

'the creation and application of new knowledge to improve the world'

3.2 As part of this strategy the Chancellor of the Exchequer has recently made an announcement on a 'Life Sci for Growth Package'²³. This includes a series of targeted industry investments, as well as further details of transport investment and planning reform to support growth in the life sciences sector.

3.3 As noted above, although Oxfordshire has significant strength in Life Sciences, it also has significant potential across a range of sectors and this diversity is a strength. However many of the actions announced have wider applicability beyond life sciences.

3.4 For example, the announcement re-affirmed the Government's commitment to the Oxford/Cambridge corridor as "a globally renowned hub of science, research and innovation" and that the rail link between the two will support job creation and growth at towns and cities along the route.

3.5 It also stated that the Government will update the National Planning Policy Framework (NPPF) to emphasise that planning decision makers need to pay particular regard to R&D needs. This will include the need for additional laboratory space; the need to proactively engage with potential applicants; and Planning Practice

Guidance updates to ensure authorities take fuller account of commercial requirements such as inward and higher value investment.

3.6 The Chancellor of the Exchequer and Secretary of State for Science, Innovation and Technology have asked Professor Irene Tracey, Vice Chancellor of the University of Oxford, and Dr Andrew Williamson of Cambridge, to lead an independent review of how UK universities spin-out companies. This aim of this review is to ensure that the Government is able to provide the right incentives for such spinouts. That review is underway and will inform future policy.

3.7 The NPPF already provides very strong guidance to planning authorities, including:

- Significant weight should be placed on the need to support economic growth and productivity, taking into account both local business needs and wider opportunities for development with a particular importance where Britain can be a global leader in driving innovation, and in areas with high levels of productivity, which should be able to capitalise on their performance and potential (Paragraph 81);
- Plans should set out an economic vision having regard to Local Industrial Strategies, identify strategic sites, address particular barriers to investment, including housing, and be flexible enough to accommodate needs not anticipated in the plan, allow for new and flexible working practices (such as live-work accommodation), and to enable a rapid response to changes in

²² Department for Business, Energy and Industrial Strategy, UK Innovation Strategy, 2021 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1009577/uk-innovation-strategy.pdf

²³ Jeremy Hunt, Chancellor of the Exchequer, May 2023. <https://www.gov.uk/government/news/chancellor-reveals-life-sciences-growth-package-to-fire-up-economy>

economic circumstances (Paragraph 82)

- Planning policies and decisions should recognise and address the specific locational requirements of different sectors. This includes making provision for clusters or networks of knowledge and data-driven, creative, or high technology industries; and for storage and distribution operations at a variety of scales and in suitably accessible locations (Paragraph 83) .

Oxford and Cambridge Arc

3.8 Oxford and Cambridge are, along with London, two of the three UK ‘innovation’ clusters identified as being of global significance in the Global Innovation Index²⁴.

3.9 They are only 65 miles apart, very close for two global clusters, and in many countries would be part of the same functional economic ‘cluster’. But connectivity between the two is very poor – both by public and private transport.

3.10 The Government asked the National Infrastructure Commission (NIC) in 2016 to consider how to maximise the potential of the corridor, incorporating Milton Keynes, as “a single, knowledge-intensive cluster that competes on a global stage, protecting the area’s high-quality environment, and securing the homes and jobs the area needs”. The report, *Partnering for Prosperity*, published in 2017, recommended a series of actions. These include investment in new transport infrastructure; increasing housebuilding, and developing thriving, well connected communities based on quality of life and

wellbeing; and, respecting the natural environment.

3.11 Following the report, the Government asked Highways England to undertake a cost-benefit analysis of a new high quality road link between Oxford and Milton Keynes which concluded that there were no cost-effective options.

3.12 The Government also established the East West Railway Company (EWR) in 2018 to progress the plans for the link in stages building on the completed upgrades to the Oxford to Bicester line. Work is underway on the second stage from Bicester to Bletchley. EWR has consulted on upgrades to the Bletchley to Bedford phase and recently confirmed the preferred route from Bedford to Cambridge. The Government has also been working with groups of Authorities within the Arc on plans for their areas including ‘City Deals’ for Oxford and Oxfordshire and Greater Cambridge, and the ‘South East Midlands LEP Growth Deal’

3.13 Local partners, including the local authorities, academic institutions and Local Enterprise Partnerships, have been collaborating since the publication of the NIC report and in 2019 published an ‘Economic Prospectus’ for the Arc.

3.14 In January 2023 the Government confirmed its support for an Oxford to Cambridge Pan Regional Partnership by March 2023 and committed funding. The partnership is currently being formally established and Governance arrangements agreed. The Arc Universities Group (AUG), of which Oxford University is an active partner, and will be represented on the Board and see this collaboration as essential to grow the ‘Super Cluster’.

²⁴ Global Innovation Index (2022), World Intellectual Property Organisation

4 The Proposals

The Site and Policy Requirements

- 4.1 The Begbroke Science Park currently occupies approximately 6 hectares of land within the 'hedge' at Begbroke with around 50,000 sqm of floorspace completed or under construction.
- 4.2 This forms approximately four per cent of the wider site, in total encompassing 170 hectares, which has been released from the Green Belt to accommodate:
- 1,950 homes
 - 14.7ha of land for the expansion of the Begbroke Science Park
 - A new local centre
 - A secondary school
 - Two primary schools.

The Design Approach

- 4.3 The **Design and Access Statement** sets out the approach of the Masterplan team to accommodating these requirements with an exemplary new approach to creating an Innovation District in the UK.
- 4.4 The aim is to facilitate the interaction of academic, research, commercial and residential communities and make the best and most sustainable use of scarce land on the edge of Oxford.
- 4.5 Recognising the world class research which happens at Begbroke today and in the wider 'knowledge spine', the primary objective of the Masterplan is:

"Cultivating a place...in which a community can change the world"

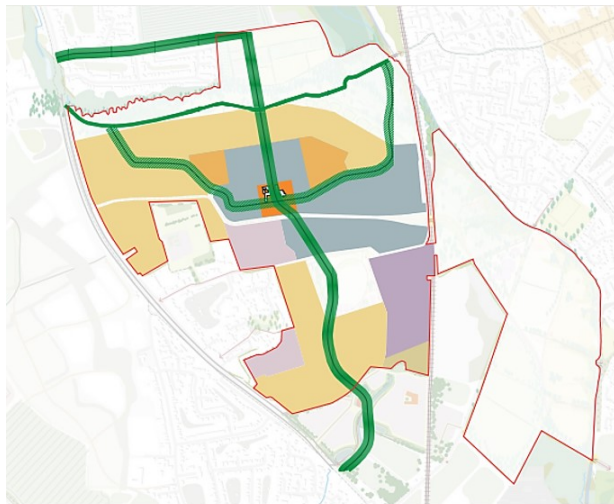
- 4.6 The proposals have been developed over the past year through an intensive process of consultation within the team, the Science Park and University, the community, and other stakeholders.
- 4.7 This has included specialist advice and consideration of national and international comparators in central cities and business and science parks on the edge of settlements.

The Core Concept

- 4.8 The core concept of the Begbroke Innovation District is a simple one: using the current Science Park as the centre on which to focus the shared and communal uses and provide activity and sense of place, while commercial and academic uses radiate out from this and blend into the new residential communities.
- 4.9 This combines some of the intensity of the urban models in the centre with open space and landscape. It takes advantage of a reduced car dependency - and the space typically given over to parking - to allow higher plot ratios and better use of land, making a meaningful contribution to Cherwell and Oxford's employment and housing need.
- 4.10 The Figure below, from the **Design and Access Statement** illustrates this. It shows the 'Local Centre' which could include shops, restaurants and cafes, a gym, community, and other facilities around the current farm buildings. The existing Science Park is around that, mainly to the north and west. It is suggested that the R&D and commercial floorspace will pre-dominantly expand to the east in the 'Parkers Farm' neighbourhood.

4.11 The proposed site for the Secondary School would be adjacent to this to the south, allowing both strong physical and educational connections.

Figure 4.1 – Illustrative Main Land Uses



- Land Use**
- Mainly Residential
 - Mainly R&D
 - Mixed Use
 - Primary School
 - Secondary School
 - Local Centre

Ability to Respond to Changing Demands

4.12 The proposals are, by necessity, flexible. As we have already seen, Begbroke already hosts a diversity of sectors and will continue to do so. Proposals will need to be adaptable to meet their needs. But the science itself is also inherently unpredictable – and therefore the types of building that will be required will change over time.

4.13 The Planning Application therefore includes maximum floor areas by use, and ‘Development Zones’ with descriptive uses.

4.14 This includes:

- 155,000 sqm of Science Park Floorspace within 14.7 hectares of land. This includes several use classes (B2 and B8, E(g) and F1(a) to allow for the full potential range of building types accommodating academic, R&D, office and laboratory uses
- 21,000 sqm of ancillary and supporting uses
- 215,000 sqm for new homes
- Sites and floorspace for three schools.

4.15 The ‘Development Principles’ set out that the Science Park expansion floorspace will primarily be accommodated in the Begbroke Science Park (Zone 02), and Parkers Farm (Zone 03) areas of the Illustrative Masterplan and may also be provided in the Begbroke Hill (Zone 01) areas.

Delivery

4.16 The detailed design of buildings will be undertaken at the Reserved Matters Application stage, consistent with the Development Specification, Strategic Design Guide, the Development Area Briefs and the approved Parameters.

4.17 The Illustrative Masterplan can accommodate the full range of space that might be required, by the University and its Departments and by commercial occupiers. This could include:

- Academic/Institutional Research Buildings
- Dry laboratories and engineering laboratories and ‘mid-tech’ buildings
- Wet laboratory space

- Office space, either incorporated into other buildings or provided separately.

4.18 The proposals can accommodate a range of typologies and sizes of building ranging from 2,500 to 10,000 sqm (30,000 to 100,000 sqft) and, in later phases, could accommodate larger buildings in some locations in response to the maturing Oxfordshire market. Some buildings are likely to be sub-divided to provide smaller suites and lab space (as is currently the case in the current Centre for Innovation and Enterprise).

4.19 In many current science and business parks and in large office buildings shops, services, gyms and social and meeting spaces are provided within buildings. It is intended at Begbroke, in line with the Local Plan policy, that such provision is provided at ground floor level predominantly in the buildings in the Farmstead/Local Centre area.

4.20 They will be accessible to people who work in and visit the science park but also to people who live at Begbroke. This will support informal interactions associated with innovation, building on the success of current facilities at Begbroke. But it will also make the place as a whole more attractive, particularly for people moving from the centre of Oxford, and make facilities more viable.

Economic Impacts

4.21 Quod has assessed the likely economic impacts of the proposals based on the construction costs and programme (estimated at eight years) and the floorspace proposed in the Development Specification²⁵.

4.22 Begbroke Innovation District will have the following impacts:

- 1,600 Full Time Equivalent (FTE) jobs on average over the construction period. The exact requirements and skills mix will depend on the detailed design of the buildings and the programme
- 5,535 FTE jobs in R&D, and Innovation sectors as part of the expansion of the Science Park
- 325 FTE jobs in the ancillary/supporting services in the Local Centre and wider development
- Up to 450 jobs in the education sector, including nursery, primary and secondary schools
- Annual Economic Output (Gross Value Added) of around £365 million²⁶
- £27 million annual spending by new residents in the local economy and £20 million from employees.

Managing Impacts and Maximising Benefits

Innovation Support, Curation and Stewardship

4.23 The University of Oxford has made substantial investments in the Science Park at Begbroke as well as supporting the active management of innovation on the site as well as management and maintenance.

4.24 Such a pro-active approach will continue to be required in order for it to develop as intended as a University Innovation District. Physical investment in bricks and mortar is not sufficient to nurture and sustain an academic or residential community.

²⁵ See Environmental Statement Volume 1, Chapter 7: Socio-Economics.

²⁶ Quod estimate based on BRES and Regional GVA by Sector (ITL/ONS)

4.25 The University will therefore adopt an active strategy to support its innovation capabilities at Begbroke and ensure that they are linked and networked into the wider Oxford and Oxfordshire eco-systems.

4.26 This will inform the development, delivery and marketing strategies for the site and the types of businesses and investors that OUD seeks to target.

4.27 The University, along with OUD, will also take a long-term approach to animation and stewardship including best practice in using events, meanwhile uses and community development activities as the place develops. In this, compared to other new sites, it has an advantage in starting from an existing base.

Inclusive Innovation

4.28 OUD, working with the University and partners will also develop its approach to enabling 'Inclusive Innovation'. This will be informed by the wider approach it is developing across its sites.

4.29 The approach will build on the current work with schools, described above, but also consider new elements relating to Begbroke Innovation District and the specific opportunities that it provides. This is likely to include:

- Construction employment and training programmes, including skills forecasting and work with local providers and contractors to target roles at local people.
- Supply chain activity both in the construction phase and the completed development, exploring opportunities for example in the management and use of open space and ecology.
- Targeted employment and skills activity for jobs in the completed phases of development. Jobs in the

R&D and innovation sectors are by their nature specific and highly skilled but there is the potential to undertake targeted support for specific roles. There will also be a wide range of jobs in supporting sectors which can be targeted.

- An enhanced education programme, with potential engagement in further targeted work with local schools and involvement with potential schools on the site.
- Work with young people on science, and innovation.

Social and Community Infrastructure

4.30 OUD will explore with partners the scope of social provision, including shared spaces and sport and recreation facilities that are provided in the Local Centre in the early phases of the development.

4.31 Such facilities have the potential to help bring together the new residents, with people working on the Proposed Development and people from the villages and Kidlington. At the same time, it will be important to ensure that any facilities meet need, are sustainable and do not undermine provision in existing communities.

4.32 There is significant potential for shared use of spaces to support this approach.

4.33 The Local Plan policy for the site envisages that new schools will benefit educationally from the expanding Science Park and that schools should be designed in consultation with the University of Oxford.

4.34 OUD will work with Oxfordshire County Council (the Local Authority with Education Responsibility) to understand likely school delivery timings based on monitoring of take up and wider school place planning. It and the University will engage with stakeholders on Governance and delivery issues as soon as that becomes relevant.

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