# Bicester Gateway: Knowledge Economy Catalyst

Prepared for: Bloombridge LLP
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Date: 16th December 2019

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## Executive Summary

The economy is changing rapidly. This means that the nature of work is also evolving, and that the backdrop that we need for that work, the workplace, must also respond. This applies across sectors and geographies. But as we move relentlessly forward, it is also apparent that some old mores are coming back into fashion.

One of the most notable of these is the reversal of a planning assumption that we should separate, or zone, different activities and that we should instead, and where appropriate, integrate them more. Where once, many work activities were incompatible with living space (dues to noise, pollution and so on), in large parts of the knowledge economy this is not the case. And in an age when sustainability should be an underlying principle to all that we do, it is coming to be realised that we need more innovative development that addresses both working and living needs. Crucially, financial institutions and the property investment community are now beginning to accept the case for such mixed-use proposals, even outside London, so there is a link between social and economic trends, innovative property solutions and the all-important finance to fund construction and delivery.

Oxfordshire is a world-class locus of innovation. But, its commitment to innovation should extend beyond its University, its labs and its start-ups, to its approach to land use planning. This means a planning system that recognises change when it is happening and responds flexibly and/or with appropriate and timely policies to support innovative development that meets the radically changing needs of the Oxfordshire economy and society.

Against this challenging background (and difficulties in setting a cohesive vision), Bicester generally, and Bicester Gateway in particular, offers an opportunity to create a step change in the delivery of the knowledge economy in the county – by means of what could be described as a mixed use 'innovation community'. Such a fresh approach to emerging issues could help provide the step change that is needed to reverse the perception of Bicester as a 'tired, industrial' town, so that it becomes a vibrant town attractive to innovation and regionally significant inward investment. Given that commercial markets tend to evolve more quickly than spatial policy, it will be important that the application of policy, as expressed through the emerging Oxfordshire 2050 Plan, is visionary and aspirational in spatial terms, and reasonably flexible to respond to changing market conditions, to ensure that Bicester continues to evolve.

The Bicester Master Plan 2012 was a major achievement and step towards changing this perception of the town; but seven years on, the knowledge economy remains notable for its absence. Our suggestion is that Bicester can get over this cusp by making a major statement at Bicester Gateway through a scheme that is rooted in the knowledge economy, which embraces the latest social and economic trends, to create an 'innovation community' that retains and attracts 'inward innovators' – professionals and entrepreneurs.

There is now a weight of evidence to show that fundamental changes in the economy are changing work and how it is undertaken. Whether in retailing, logistics, corporate offices, industrial processes or life science labs, the nature of business is changing at a faster rate than ever before, with profound implications on demand for property. As business processes and structures evolve, so workplaces must evolve.

In short, it is becoming less and less appropriate to provide 'vanilla space' in which the same basic design and layout caters for a generic demand. The workplace is moving away from being a static backdrop for process-based, largely routine and solitary work, to an increasingly actively curated environment, managed more like a hotel than a traditional office, with a high level of service and experience for 'guests'. The emergence of WeWork, and growth of the flexible space market generally, demonstrate the enormous demand for new styles of working and living. But even this sector is highly dynamic and is evolving rapidly.

Today's workforce is more demanding and discerning than in the past: the knowledge worker has transferable skills and no longer feels tied to a single or limited number of employers. There is a 'war for talent', and talented workers demand choice and quality in the workplace. Similarly, as work, home and leisure become increasingly blurred in terms of when, where and how they are undertaken, so the workplace is having to provide workers with greater choice and freedom and, commensurate with this, mixed use and live/work environments are taking on a significant role, notably in innovation districts.

The profound changes taking place in the corporate and business landscape, which feed through to changing workplace needs, are part of a complex set of relationships that are also leading to a rapid growth of people working in independent businesses and the rapid expansion of people working at least part of the time from home. The critical point here is that large numbers of people are *doing things differently*. Such trends have profound implications for new developments like Bicester Gateway, where there is the opportunity to bring 'work' and 'live' close together in the form of an 'innovation community'.

In recent years there has been a significant growth in the number of 'innovation districts'. They tend to develop around a specific knowledge anchor, such as a hospital or university, or an industry sector, all of which create opportunities for collaborative innovation. Firms and talented workers congregate and co-locate, sometimes in tight, amenity-rich areas of city centres, other times in more extensive but specialist facilities on dense developments where knowledge-intensive companies locate key facilities close to other firms, research labs, and universities. Affordability is part of this mix, notably for entrepreneurs – and a lack of affordability is a well-documented problem with the Oxford economy.

Patterns of living and working are changing, and research suggests that the notion of residential areas solely as dormitories is on the decline, with more people spending more time where they live, leading to the need for different types of local services. Moreover, there is a strong and growing market for live/work districts, combinations of mixed-use units and work hubs. Live/work development will be an important consideration for new settlements and growth towns.

Live/work describes accommodation that is specifically designed to enable dual residential and business use. It differs from ordinary home working in so far as live/work premises are specifically designed to have a higher intensity of business use, notably on the ground floor. This might be simply in terms of the amount of space devoted to the work use, and it might also be the case that the work element is designed to accommodate more workers than just the resident and might be capable of accommodating company growth.

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Since the turn of the century, there has been a growing focus on sustainable development, which has cast a light on private car usage and the dependency of many business parks on generous parking standards and extensive travel-to-work areas. As a result, business parks are evolving and to remain competitive, larger, older parks are having to increase density and add a more diverse range of uses, including housing and lifestyle amenities. The Oxford Factory on Oxford Business Park is an attempt to tap into such changes in demand.

Innovation development therefore increasingly involves a blending of 'work, life and play' in mixed use and co-working/co-living environments. We describe such developments as 'business communities'; and in the Oxfordshire context there is the potential to plan for a sub-set, which we refer to as 'innovation communities'. The evidence suggests that such proposals will successfully attract 'inward innovators' (i.e. people) from knowledge hotspots such as central Oxford, especially young professionals and entrepreneurs who cannot afford Oxford's exceptionally high house prices and rents. With the 'war for talent' it is reasonable to conclude that knowledge-based inward investment (i.e. corporates/employers) will follow. There is therefore scope here for innovative planning – with wide-ranging benefits.

Such development will help the County spread the economic success across a wider selection of settlements, to include the so called 'Country Towns', thereby helping to ease commuting into central Oxford and benefiting parts of the county that need an economic stimulus. It is also likely that an 'innovation community' in Bicester (the first in Oxfordshire) will build on the changing perception and 'brand' of Bicester, which will be self-reinforcing and highly beneficial for the town so that it is fully-integrated into the wider Oxon innovation narrative, making the most of rapid and sustainable access to Oxford city centre (25 minutes from the 580 space Park & Ride) and London (44 trains a day).

This 'innovation community' proposal for Phase 1B of Bicester Gateway would aim to support a wider county effort to rise to the challenges and opportunities of 21st Century Oxfordshire with innovation development. Bicester Gateway is an ideal opportunity for innovative planning, not least because, as a gateway site, there is so much potential to broadcast the innovative potential of Bicester. Given that approximately half of Phase 1B is already allocated for development (Policy Bicester 10) and planning permission was granted in 2017 for the whole, it ought to be possible to move to a quick decision and therefore get on and deliver much needed knowledge economy development.

Finally, the election of a new Government in December, with a large majority in the House of Commons, will encourage investor confidence. The uncertainty of the Brexit process, and the direction of Government social and economic policy, has been clarified, bringing to a close a long and chaotic period in UK politics. From an investment perspective, this will bring an element of certainty, and is widely expected to lead to a significant growth in real estate investment. This will benefit Oxfordshire and Bicester as well as anywhere else.

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## 1. Introduction

This paper has been commissioned by Bloombridge LLP to examine the changing nature of work, evolving workstyles and the growing convergence of work and non-work activities. In particular, the paper examines trends in knowledge economy development generally, and the potential for innovative development at Bicester Gateway in particular.

Oxfordshire's status as a locus for innovation of national and international import is well-understood. A few figures illustrate the point. For example, Oxfordshire is

- one of three net contributors to the national exchequer, generating approximately £22bn gross GVA to the UK economy;
- one of the most competitive LEP areas in the country as well as the fastest growing, with over 40,000 new private sector jobs since 2011;
- designated as a scaled up 'Creative Industries Hotspot';
- at the heart of one of Europe's most successful life sciences clusters;
- a centre for Formula 1 and motorsport innovation;
- home to 1,500 high tech firms, and
- attracting around seven million people each year, including significant numbers of international visitors.

More specifically:

- Oxford University is the 2018 Times Higher Education number one-ranked university in the world;
- the University contributes £5.8bn to the UK economy and generates more technology spin-outs than any other UK university;
- Science Vale UK has the highest concentration of science research facilities and development activity in Western Europe, and
- Harwell Campus is home to the largest space cluster in Europe.[1]

Even these few statistics illustrate the significance of Oxfordshire and, therefore, the absolute requirement to support innovation and nurture the evolution and development of the county. This requires engagement by the University in local economic matters (to help planners plan) but, above all, it requires a planning system that is flexible and open to innovation. Put another way, innovation, by definition, cannot be prescribed, and it almost always involves, in Schumpeter's terms, a gale of "*creative destruction*", which will be best harnessed through a decision-making process that combines speed and flexibility.

### 1.1. Innovation development

One of the emerging issues is that innovative development to support Oxfordshire's burgeoning economy is concentrated spatially. In itself, this is not a particular problem. But it is becoming increasingly apparent that, in the context of local transport, housing, the Green Belt and social infrastructure, very significant pressure points are emerging.

[1] OxLEP (2018) *Oxfordshire Local Industrial Strategy: A Trailblazer for the UK Economy*

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Bicester generally (and Bicester Gateway in particular) provides an opportunity to address this supply-side constraint by providing additional capacity for growth. At the moment however, the market for B1 business space in Bicester is very slow and lacks a raison d'être. New supply is severely constrained by viability issues (rents of less than £20 sq ft for B1 are too low to cover construction costs), which reinforces the town's market position as an 'industrial' and warehouse location.

There is a need for innovative planning, and/or the presence of the University of Oxford, both being within the grasp of the County and Cherwell. Bicester Gateway could be the focus for this innovation and, therefore, the catalyst to start to deliver the knowledge economy in Bicester (with all the sustainable development benefits that flow from this).

Five years on from its original thinking, Bloombridge's revised proposals for Bicester Gateway help meet knowledge economy objectives by delivering an 'innovation community' akin to what the University has proposed at Begbroke Science Park; following best practice in the delivery and management of first-class business communities. More significantly still, the proposals seek to extend the delivery of a high-quality business environment, to the provision of an innovative 'co-living/co-working' community – in a location that is remarkably well-connected to central Oxford by public transport.

The wider, innovative potential of Bicester could be guaranteed if there was some involvement in the town by the University, either in the form of residential space and/or innovation space. But this seems unlikely as it is not a stated aim of the University, nor is it in the University's Strategic Plan 2018-2023.[2] Something therefore needs to change in order to make a market for B1 knowledge economy jobs. Helpfully, there is the unique potential in Phase 1B of Bicester Gateway (in combination with innovation and employment space) to provide high density residential accommodation for young people and young professionals, a currently under-supplied segment of the housing market in Bicester, making the most of the accessibility to Oxford offered by the 25 minute bus journey on the S5 from the Park & Ride adjoining Bicester Gateway.

Bloombridge refers to its target community as "inward innovators", who should be seen as the first wave of innovation, akin to the artisans and entrepreneurs that started the regeneration of places like Shoreditch and Hackney in London, the Temple Quarter in Bristol, and Innovation Districts in Leeds, Salford and Birmingham Eastside, all of which are moving towards a co-working/co-living model.

In the Oxfordshire context, the 'innovation community' proposal for Phase 1B of Bicester Gateway aims to assist the evolution of the successful and long-established 'Country Towns' strategy so that Bicester responds to the challenges and opportunities of 21st Century Oxfordshire. It is entirely reasonable for the next generation of growth in Bicester, at the top of the 'Knowledge Spine', to be forged out of innovative, forward looking planning strategies.

Phase 1 of Bicester Gateway is an ideal opportunity for innovative planning, not least because, as a gateway site, there is so much potential to broadcast the innovative potential of Bicester. This sort of proposal could also attract the inward

[2] http://www.ox.ac.uk/about/organisation/strategic-plan-2018-23

innovators where currently the place-making potential and other measures proposed for Bicester have not yet been packaged in a way that appeals. For example, there is no housing (specifically no 'place') targeted at young professionals and/or entrepreneurs. In the context of Oxford's unmet housing need (and pressures on the Green Belt) this seems to present a major opportunity for innovation and sustainable development.

## 1.2. Market tensions

Mention was made above of the fact that the market for B1 business space in Bicester is very slow and that new supply is severely constrained by viability issues, which reinforces the town's market position as an 'industrial' and warehouse location. It is worth noting that this is not a new phenomenon. As long ago as 2006, in their *Employment Land Review*, consultants URS stated that while "*there has been some development over the last decade, the majority of premises would be at least 20 years old or older*". It then concluded that "*There appears to be a lack of good quality office stock that would be suitable to modern businesses and more aligned with the development objectives of the Council. Having observed the dated nature of property, the report concluded:*

> *Changes in the economy and the way businesses operate are presenting new challenges for the Cherwell property market. Modern businesses demand high quality design and a range of size requirements, which may be difficult to find in the current stock.*

Then, in 2009, in its report on *The Western Otmoor Eco Town*, Ove Arup & Partners stated that

> *available office space, the offer is dated and does not meet the current requirements and, further, that rental values are not high enough to justify further investment in existing stock. (Para 4.8.7)*

The report went on to state that

> *Historically, Bicester's location has favoured B8 development. It forms a significant element of the employment land take-up, and market pressures for this type of use are strong. (Para 4.8.11)*

Thus, tension in supply-demand dynamics was evident a decade and more ago, alongside the issue of the town's image as an 'industrial' centre. To underline the point, in its report for Oxford Technology Park, *Kidlington, Planning Policy and the Office Market* (April 2010), Ramidus observed that:

> *while the RSS and RES clearly identify the important role of the knowledge economy centred around Oxford (the Regional Hub), in Cherwell there is a clear shortfall in the type of accommodation required by knowledge economy occupiers and, more pertinently, no land use strategy for responding to the potential of the Regional Hub. It is hard to understand this anomaly, since even the out-of-date 2006 ELR provides some very clear pointers on the scale, type and location of economic growth in Cherwell.*

The supply constraints persist to the current time. A recent report for Bloombridge LLP from property consultants VSL & Partner demonstrated that over the past two years, Bicester has seen total take-up of just under 6,000 sq ft (in lettings over 3,000 sq ft). Over the same period, Abingdon experienced just over 100,000 sq ft of take-up, while Milton Park, Didcot enjoyed 170,000 sq ft of take-up.

There is therefore an on-going need for investment in the county's market towns, such as Bicester. With the new Oxon Plan 2050, there is an opportunity to look afresh at innovative approaches.

## 1.3. The proposals

Figure 1.1 shows the location of Bicester Gateway in the spatial context of Bicester town centre. The Park & Ride facility opposite the site offers a 25 minute journey into Oxford city centre via the S5 bus. Bicester Gateway is opposite the Park & Ride and no more than a 100m walk via the Toucan crossing to be constructed as part of the extant S106. A five minute walk is usually considered to be 400m; which makes Bicester Gateway more accessible to central Oxford than Begbroke Science Park. This is a remarkable fact and perhaps indicative of a lost opportunity.

**Figure 1.1 Bicester Gateway locational context**

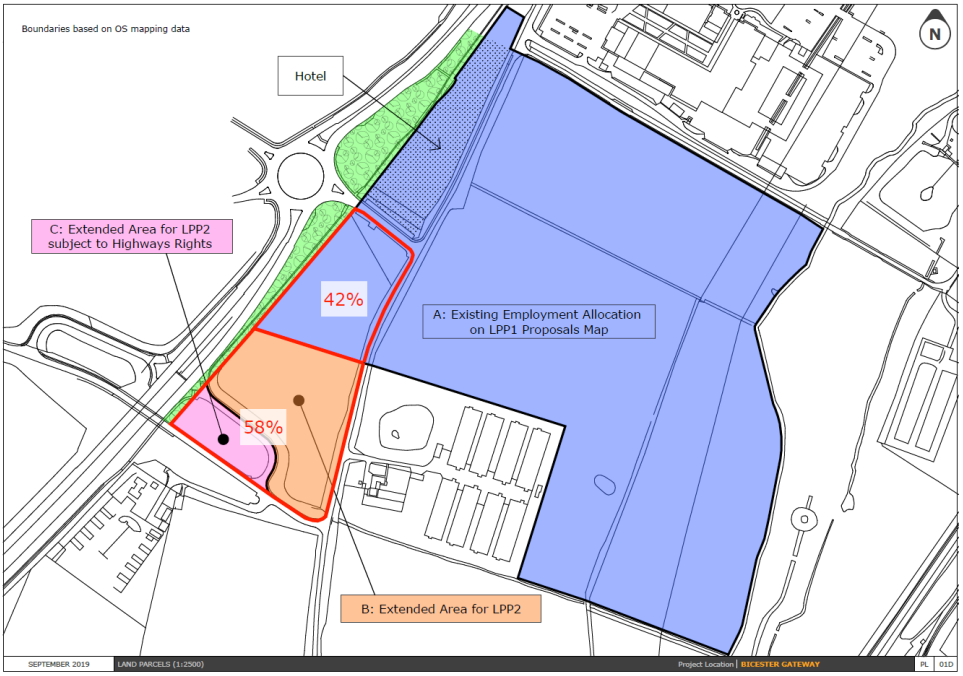

The Bloombridge proposals for Bicester Gateway include up to five buildings with a mix of uses aimed at creating an 'innovation community'. The designs will include an active ground floor with mix of uses above, and will provide for live-work. The commercial components will include provision for serviced/co-working space as well as corporate office space. The ground floor will include retail and gym. There will be green space and a multi-storey car park. In summary, the proposals include c50,000 sq ft of commercial space and 200,000 sq ft of residential, breaking down into c250 units.

It should also be noted that an application has been made, immediately to the north east of the Bicester Gateway site, for up to 23,400 sq m of employment floorspace

(aimed at "*knowledge-based, high tech companies*") and for a Health and Racquets Club. This application underlines the growing role of Bicester, and this part of Bicester in particular, to meet demand from the knowledge economy with accommodation that meets modern demand (albeit we have some concerns about the scale and design of the facility given its frontage onto the strategic A41). Nevertheless, it reinforces and complements the ambitions of the Bicester Gateway proposal.

Figure 1.2 shows the site layout for the Bicester Gateway scheme, highlighting the overall low density of employment use on the whole site. Relatively high density housing will complement the employment usage and there will be a design and management regime for linking jobs and homes, to create an innovation community, in the form of the hub.

**Figure 1.2 The land parcels at Bicester Gateway**




## 1.4. About the author

This report has been prepared by Rob Harris BA(Hons) MPhil PhD, Principal of Ramidus Consulting Limited, who has worked in commercial real estate for over thirty years. Rob established Ramidus in 2003, as a specialist, independent built environment research and advisory business. Before this, Rob worked at DEGW, DTZ, Gerald Eve and Stanhope Properties.

Rob works with property investors, developers, advisors and policy makers, providing insights into property market dynamics, socio-economic trends, investment opportunities and the changing needs of occupiers. Much of Rob's work involves looking to the future and seeking to understand the implications of social, economic and technological change for the design, provision, occupation and management of real estate. He undertakes research on geographical markets and business sectors

to help clients understand how they are changing, and he specialises in understanding occupiers and their changing needs for property.

Recent clients have included: Bloombridge LLP, British Council for Offices, Buckinghamshire County Council, City of Westminster, City of London Corporation, Federation of Small Business, Government Property Unit, Greater London Authority, Hollybrook, Lipton Rogers, National Audit Office, Pocket Living, Roger Tym & Partners, Slough Urban Renewal, South London Partnership, Stanhope Properties, West Oxon District Council; and the London Boroughs of Barnet, Camden, Islington, Lewisham, Richmond, Tower Hamlets and Wandsworth.

Rob has published many articles on a wide range of property market issues, including a book, *Property and the Office Economy*. He presents widely on real estate matters, specialising in occupier issues, demand research and market trends. Rob's is a reviewer for the Journal of Corporate Real Estate. He was a Founder Member and Chair of the Workplace Consulting Organisation; Board Member of the Federation of Corporate Real Estate; Founder Committee Member of the Society of Property Researchers and a Board Director of CoreNet UK.

# 2. Knowledge economy work

There are fundamental changes occurring in the economy. It is widely understood, for example, that we are moving from a largely production-based to a largely knowledge-based economy. Equally, the role of technology and the internet is widely understood in terms of the impact on shopping patterns and the high street. Less widely appreciated is the impact of change on the demand for property.

Whether for working, living or leisure, society's demands on the built environment are evolving rapidly. This section summarises the drivers of the changes taking place in the commercial property sector and suggests an emerging typology of property products.

## 2.1. Knowledge work and connectivity

Management guru Peter Drucker predicted in the early-1990s that the traditional factors of production – land, labour and capital – would become secondary to knowledge.[3] His prediction was largely fulfilled within the same decade, when the number of service (or 'office economy') jobs exceeded manufacturing (or 'maker economy') jobs for the first time. The number of maker jobs has almost halved (from 4.87m to 2.72m) since 1990; while over the same period, the number of office economy jobs has grown from 3.83m to 6.28m.[4]

The UK now has a mature 'knowledge-based economy', within which Oxfordshire boasts one of the most intense clusters. Despite growing concerns over the potential for artificial intelligence and robotics to lay waste to great swathes of routine and not so routine, jobs (Oxford University academics suggested that 30% of jobs "*are at high risk of disappearing over the next two decades as a result of technology*"[5]), evidence to date suggests that new jobs will continue to be created.

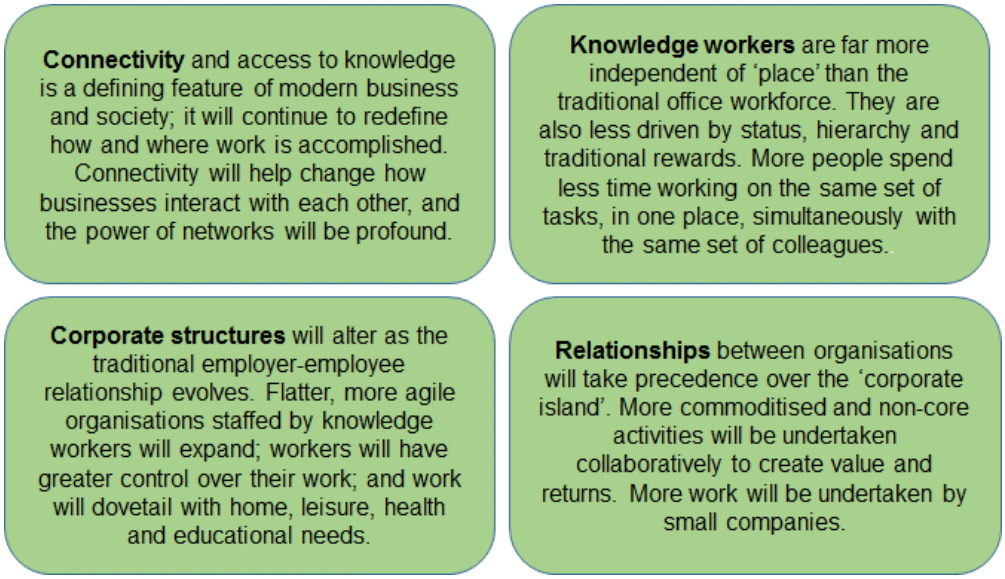
Most employment forecasts expect a continuing expansion of the workforce, and work will continue to play an important role in people's lives. But the nature of those jobs is evolving rapidly, as are relationships between employer and employee, as well as the kind of space in which work is undertaken.

Whether in retailing, logistics, corporate offices, industrial processes or life science labs, the nature of business is changing at a faster rate than ever before. One of the defining features of globalised, technology-enabled business in the 21st Century is the speed and ubiquity of change. Businesses must be capable of continuously adapting to changing market conditions, and this means that they must be agile.

This is achieved through flatter, leaner and more responsive organisational structures and business processes, as well as 'agile working' practices (combining speed and flexibility) which are more mobile and collaborative than in the past, and which depend upon a high level of connectivity. The need for such adaptability and responsiveness is common to both large and small firms. Figure 2.1 summarises the main features of the emerging corporate landscape.

[3] Drucker PF (1992) The New Society of Organisations *Harvard Business Review* Sept-Oct pp95-104
[4] ONS (2018) *Jobs02: Workforce Jobs by Industry* December 2018
[5] Deloitte (2014) *Agiletown: the Relentless March of Technology and London's Response*

**Figure 2.1 The evolving corporate landscape**




**Source: adapted from Ramidus Consulting (2015)**

This evolving corporate landscape means that business behave less like **'corporate islands'** – self-sufficient in labour, skills, resources and supply chains – and more like networked organisms – interacting with, and inter-dependent upon, a whole host of external relationships.

The critical nature of connectivity, changing corporate structures, the priorities of knowledge workers and the reduced importance of the 'corporate island' in favour of a more complex web of supply chain relationships alter the nature of demand for space which, in turn, is driving the need for innovation in the design and delivery of workspace (and increasingly living space too). To take one example of the increasing adaptability and flexibility of organisations: the growth of a 'contingent' workforce. In growing numbers of corporate organisations, an increasing proportion of the workforce is not directly employed; they are consultants, contractors, 'interims', part-timers and supply chain partners. How these staff are housed and managed raises important questions for demand planning and flexibility within buildings, including in relation to security and core and non-core functions.

Collectively, these features of corporate change are altering the traditional bedrock of demand: large, relatively unchanging and predictable 'corporate islands' that were largely process-based and which could plan ahead with a comparatively high degree of certainty. In doing so, the traditional market for 25-year leases is decreasing which, in turn, makes funding of new development difficult, and speculative schemes largely impossible in all but the most prime markets. Bicester is a very long way from being a prime office market – rents are too low to make B1 development viable.

Occupiers today operate within short-term planning horizons, responding to an ever-changing economic landscape and seeking to maximize their flexibility to adapt. The power of networks, involving collaborative production and multi-

disciplinary skills, is coming to be highly valued. More commoditised and non-core activities are being undertaken by specialists; more work is being undertaken collaboratively, and more work is being undertaken by small companies.

Indeed, the digital economy is transforming business structures by, for example, enabling small firms to compete directly with large corporates for the same business, as barriers to entry are lowered (see section 3.1 which discusses SMEs). The corollary is that small teams from within large corporates may now choose to look and behave like start-ups, in order to compete for business and to attract and retain staff. At the same time this is driving small-firm formation, encouraging people to work from home while making use of co-working space in urban centres and market-leading business parks.

## 2.2. A more demanding workforce

Today's workforce is more demanding and discerning than in the past: the knowledge worker has transferable skills and no longer feels tied to a single or limited number of employers as was the case historically. Such workers demand choice and quality in the workplace. Similarly, as work, home and leisure become increasingly blurred in terms of when, where and how these activities are undertaken (section 4.2 addresses the question of live/work environments), so the workplace is having to provide workers with greater flexibility, particularly the ability to work in an agile manner. In short, the workplace is having to work harder to attract and retain highly skilled workers: it is having to provide an experience and choice rather than simply a place to go to 'do work'.

The workplace is also having to respond to changing demographics, which have an important bearing on aspects of design. Government figures reveal the scale of growth in working people aged 50 and over: at over nine million, this cohort is 50% larger than it was in 1995.[6] The result is that the modern workplace is having to respond to the different demands of a multi-generation workforce.

At the same time, today's workplace is more multicultural; it has more working parents; it houses a workforce that is more diverse in terms of disability, ethnicity and gender, and it caters for a workforce that expects more in terms of quality, wellbeing and support.

In short, it is becoming less and less appropriate to provide a 'vanilla office-scape' in which the same basic design and layout caters for a generic demand. Growing numbers of reports highlight the importance of health and wellbeing in the workplace.[7,8,9] Employers and employees now recognise the importance of access to amenities such as nutrition, health and wellbeing and leisure. Growing concerns

[6] Department for Work & Pensions (2015) *Employment Statistics for Workers Aged 50 and Over, by 5-year Age Bands and Gender* November 2015
[7] The Helen Hamlyn Centre for Design & Gensler (2016) *Workplace & Wellbeing*
[8] Clements-Croome D; Aguilar A-M & Taub M (2015) *Putting People First: Designing for Health & Wellbeing in the Built Environment* British Council for Offices
[9] Brown R & Campbell J (2014) *Five Ways to Put More Wellness into Your Workplace* Work Design Magazine, 15th August

about the physical and mental health of workers is likely to encourage employers to rethink building interiors and work environments generally.[10]

The more demanding workforce has a new set of expectations in terms of workstyles. While in the past people commuted to the workplace to access the paraphernalia of work – phone, personal computer, filing and stationery – increasingly they do so for different reasons. These include socialising, collaboration, opportunity and culture. In this sense, the 'corporate HQ' is more akin to the 'club' environment propounded by Charles Handy[11], alongside a greater reliance on satellite offices occupied on flexible terms in lower cost environments.

The emerging workplace provides an interesting blend of business and domestic design attributes; a pleasant, welcoming atmosphere in which to collaborate, innovate, socialise and learn. Agile working is supported through a palette of work settings, which might be tailored to individual requirements and available 'on demand', is provided in a highly connected environment, with a far more sophisticated, or smarter, management regime. Buildings are greener and healthier; they have become more 'mixed use', with more public access, and have the ability to create experiences rather than simply static backdrops.

Agile working is not a single workstyle: it is an approach that allows work to be undertaken where, when and in what kind of setting is most conducive to completing whatever tasks a worker has to undertake. For some, work might continue to involve sitting at the same desk in the same building for most of the typical day. But for growing numbers it means something different. It is for these reasons that the traditional desk phone a once indispensable piece of office equipment, will disappear altogether during the coming decade. The role of the office is changing.

Finally, it is also clear that growing numbers of people are managing their work-life balance and out-of-work commitments by working at least part of their week from home. In 2016, the TUC published research showing that the number of employees who say they work from home had increased by a fifth (19%) over the previous decade. The analysis showed that nearly a quarter of a million (241,000) more people worked from home than ten years previously. It has been estimated that over four million people in the UK work from home in one form or another for at least part of the week.[12]

It follows from these trends as business processes and structures evolve and workstyles adapt, so workplaces must keep pace with appropriate settings within which to work.

## 2.3. The changing role of the workplace

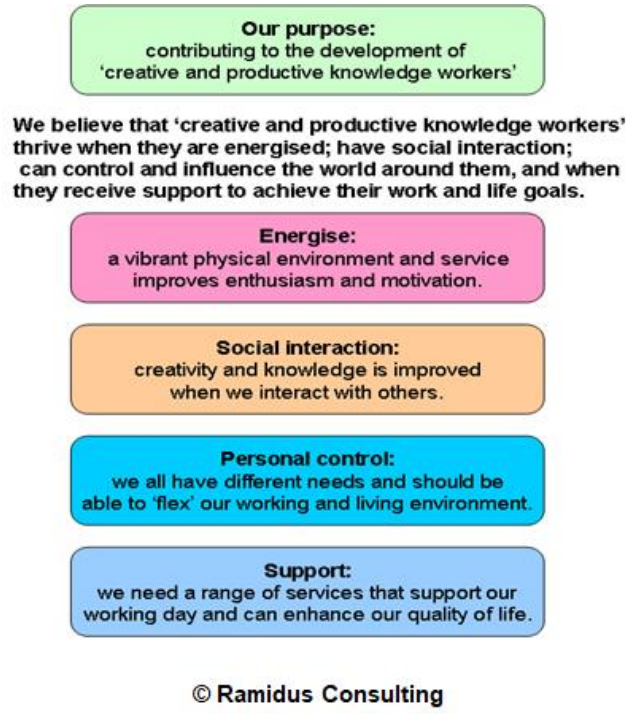
There has been much debate about the future role of the workplace, and much of this has focused on its demise. The premise for this thinking, broadly, is that as technology dispenses with the need to be tied to a place, knowledge workers will become nomadic, moving from place to place, connected only by wireless data and smart devices. However, the draw of the 'office' remains strong.

[10] Ramidus Consulting (2015) *Future Workstyles and Future Workplaces in the City of London* Corporation of London
[11] Handy C (1994) *The Empty Raincoat: Making Sense of the Future* Hutchinson, London
[12] https://www.thehrdirector.com/business-news/health-and-wellbeing/four-million-working-from-home/

Just as computers did not lead to the paperless office, neither are mobile communications leading to the demise of the office. The place of work, and the interactions that occur there, remain strong draws for most people. But, the *role* of the workplace is changing rapidly. It is rapidly becoming more of a hub for an increasingly mobile workforce that also utilises a range of alternative work settings for collaboration, knowledge sharing, mentoring and so on.

The office workplace is rapidly moving away from being a static backdrop for process-based, largely routine and solitary work, to an increasingly actively curated environment, managed more like a hotel than a traditional office, with a high level of service and experience for 'guests' (Figure 2.2). The role of the workplace is increasingly acknowledged as enabling people to interact and collaborate; it is "*expected to provide a wider range of settings in which individuals and groups [can] work in more dynamic ways compared with much of the more solitary work of the past*", and the workplace is "*becoming less a place to go to work on a set of prescribed tasks, and more somewhere to visit and interact with colleagues*".[13]

**Figure 2.2 The emerging role of the workplace**




This section has thus far described a rapidly changing economy and corporate landscape; an increasingly demanding workforce and an evolving role for the workplace. Together these forces of change are having a major disruptive influence on traditional approaches to the supply of workspace; the amount of space required, workplace design and workplace management.

For example, as corporate organisations discard their 'corporate island' approach in favour of a more agile, networked approach, office buildings will become 'less

[13] Ramidus Consulting (2015) *Future Workstyles and Future Workplaces in the City of London* Corporation of London

generic' and less single purpose, and will instead work harder to provide choice and flexibility for the individual and the firm. Owners will have to work harder, and they will need to mirror the 'experience management' of the flexible space sector.

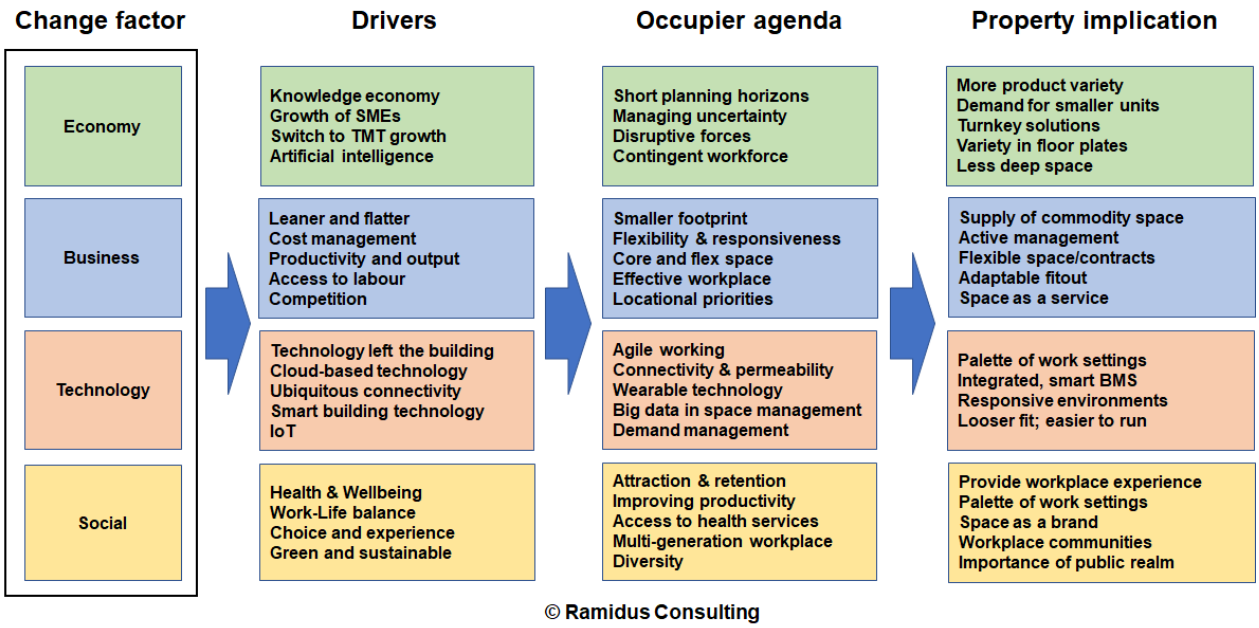
New approaches to workplace supply are evolving and it is possible to detect a new workplace typology to describe the range of emerging 'property products'. Occupiers and developers need to be cognisant of these typologies if they are going to be successful in meeting market demand/need with the right supply of products and services.

## 2.4. An emerging workplace typology

Figure 2.3 seeks to capture some of the meta trends, or change factors, within which more specific drivers help shape the property implications, or occupier agenda, which feeds through to workplace needs.

For example, as businesses become leaner, cost conscious, and focussed on productivity and access to skilled labour, so they seek to search for flexibility, reduce their overall footprints, create a more effective workforce and shift their locational priorities. In turn, these have property implications in terms of the provision of commodity space, more active management of the workplace experience and an adaptable fitout.

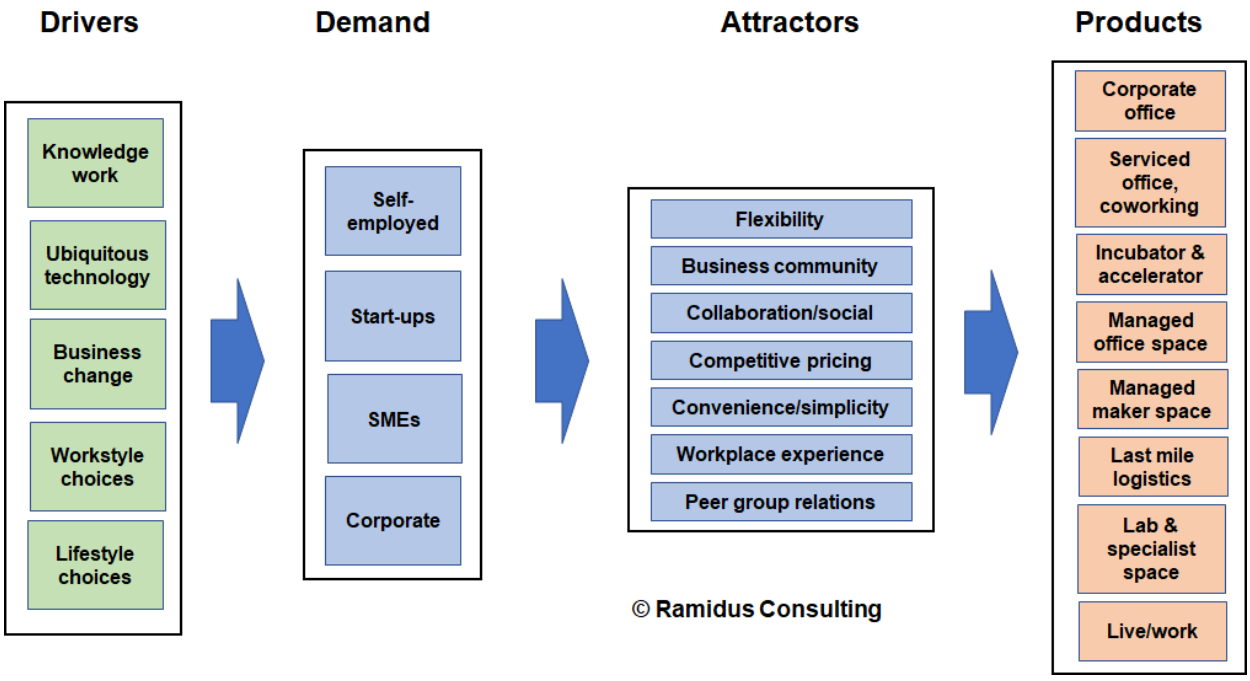
**Figure 2.3 Change factors, drivers and property implications**




The chart illustrates the direct relationship between things that are happening in the wider economy and their more specific workplace and property development outcomes. This direct link between economy and workplace has major implications for Bicester. Figure 2.4 seeks to demonstrate the tangible links between changes in the economy and the emergence of demand for property products.

Thus, the diagram shows a range of different drivers (which might vary according to the business sector being analysed). The companies that respond to the drivers cover a broad spectrum of types (from self-employed, start-ups and SMEs to larger firms). They will be influenced in their locational and premises choices by a range of factors (attractors), and they have available to them a range of 'property products'.

**Figure 2.4 Drivers of change, demand, attractors and property products**




The range of products, or workplace typology, shown above reflect a spectrum of offers that has only recently emerged. Up to the 1990s, choice was binary: long leasehold or freehold. The emergence of serviced offices began to change things, but it was not until the 2000s that multiple products emerged. Today, an expanding array of products offers occupiers a degree of choice in the form of their commitment to real estate with a spread, that is widening, between the needs of 'big business' (straightforward for developers to fund) and the needs of entrepreneurs and small businesses (more niche and higher risk), the latter being the bedrock of the knowledge economy.

## 2.5. Summary

We have seen in this section how a rapidly changing economy and corporate landscape are combining with changing workforce expectations to force an evolution in the role of the workplace. The result is a major disruptive influence on traditional approaches to the supply of workspace, and we have presented one perspective on the typology of 'property products' that is emerging.

The overriding message is that the way in which people engage with work; how they blend work and non-work activities, and where and when work us undertaken are all evolving. New approaches to the supply of workspace are, as a result, also evolving; and it is clear that this process has some time yet to run. Innovation in

workspace provision will be a feature of development for the foreseeable future and, in many instances, will be a pre-requisite.

For Bicester Gateway, the fundamental point is that workplace provision today must be far more innovative than it has been in the past. It will not be sufficient simply to produce a 'better' building, or a more modern version of an old format (such as a typical B1 business park unit). The requirements of employers and employees have changed radically.

One side effect of the changes taking place is that, in anything but prime commercial locations, the funding and delivery of workspace has become more difficult because the occupier, the covenant, and the length of lease/commitment, are more difficult to value. This increases risk for developers and mitigates against speculative development. Such uncertainties make new development in a relatively untested market like Bicester increasingly unlikely; thereby underlining the need for more innovative approaches.

# 3. Small businesses and flexible space

The previous section focused on the changing corporate landscape, the shifting demands of the workforce and the changing role of the workplace. It is also clear that there is something equally pervasive underway that is not tied directly into the traditional workplace. And this is the growth of people working in independent businesses; the growth of people working at least part of the time from home, and the explosive growth of the flexible space market. Such trends have profound implications for new developments like Bicester, where there is the opportunity to bring 'work' and 'live' closer together.

## 3.1. The rise of small businesses

The technological revolution that has seen the rise of the knowledge economy has acted as a spur to the growth of small businesses by stripping away many of the 'barriers to entry' that setting up a new business once implied.

Instead, it allows individuals to trade their intellectual capital using cheap and ubiquitous ICT infrastructure. While in the past new businesses "*used to face difficult choices about when to invest in large and lumpy assets such as property and computer systems*", today they can exploit new technology to enable them "*to go global without being big themselves*".[14]

> *Today they can expand very fast by buying in services as and when they need them. They can incorporate online for a few hundred dollars, raise money from crowdsourcing … hire programmers from Upwork, rent computer processing power from Amazon, find manufacturers on Alibaba, arrange payments at Square, and immediately set about conquering the world.*[15]

The fundamental role of technology in driving new business formation has been accompanied by a more human trait – the exercise of choice. The knowledge economy allows more people to choose how, when and for whom they work. "*Most people in the UK who start up a business do so because they view it as an opportunity rather than a necessity*".[16] Thus, greater numbers of people are choosing to control their own destiny by exploiting technology.

The critical point here is that large numbers of people are *doing things differently*. They are part of a growing, contingent, workforce that owes no allegiance to a particular employer or a particular place. This element of the economy could be a major influence on the nature of employment space provision at Bicester Gateway.

Moreover, from a land use planning perspective, the emerging onus may be better placed on attracting 'inward innovators' (people) rather than 'inward investors' (corporates/employers). The main themes in this regard centre around the sense of place and community, akin to the local culture and entrepreneurship that economic geographers first noted in the 'Third Italy' phenomenon of industrial districts – spatial clusters of mutually supporting, mostly small and medium-sized, flexibly specialized

[14] The Economist (2015) Reinventing the Company *The Economist* 24th October 2015
[15] *Ibid*
[16] Lord Young (2013) *Growing Your Business: A Report on Growing Micro Businesses* HM Government

enterprises, held together by virtue of their deep local embedding and relations of trust. Some modern co-working environments are facsimiles of such communities, but in a building, rather than a district.

**Small- and medium-sized enterprises** SMEs comprise 99% of all UK businesses; 60% of private sector jobs, and around 50% of total value-added.[17] They have been described as "*a vital catalyst for technological diffusion, entrepreneurial achievement, competition promotion, and raising innovative capacity*".[18] The scale of the SME sector is often overlooked in the property market, where there is an emphasis on providing for the corporate sector (traditionally owing to the availability of 25 year 'institutional' leases). However, its importance has recently been realised through the growth of the flexible space market.

More importantly still, the SME sector is growing. Overall the number of SMEs has increased by 2.2 million (+64%) since 2000, including 278,000 SME employers (+25%). Over this period: the number of small employing businesses grew by +25%, while the number of medium-sized employers grew by +30%. [19]

Between 2010 and 2018, the number of SMEs grew by nearly 30%, from around two million businesses to around 2.7m businesses. At the start of 2018, there were there were 5.6 million small businesses (with 0 to 49 employees), which is 99.3% of the total business population, and 35,000 medium-sized businesses (with 50 to 249 employees), representing 0.6% of the total business population. These two groups employed 12.9m and 3.4m people, respectively.

**Micro businesses** One of the most visible symptoms of the evolving economy in recent years has been the explosion of small, independent businesses, particularly micro-businesses (fewer than nine jobs) and self-employed, one-person firms. Figure 3.1 shows both VAT registered and unregistered businesses with no employees (i.e. with just the founding principal). It shows that the number of such firms across the UK has grown by 82% since 2000, from 2.36m businesses to 4.28m businesses.

The chart also belies the myth that the growth of small businesses was prompted by the economic fallout of the global financial crisis in 2008. The upward trends was well-established by then. There is also no definitive evidence yet that the prospect of Brexit has caused small firm formation to slow down.

A further sub-set of the SME business population is micro businesses with 1-9 employees. There are today around 1.13m micro-businesses across the country, employing around 4.1m people (17.6% of the workforce). This group of firms accounted for £552bn of sales in 2017, 14.7% of that by all UK firms.

The picture that emerges is that most micro-businesses are mature, and many are home-based. They are closely related to the families which own and run them and, in most cases, the founder is still involved. Nearly two-thirds of micro-businesses rely solely on internal funding, with around a third using external funding sources.

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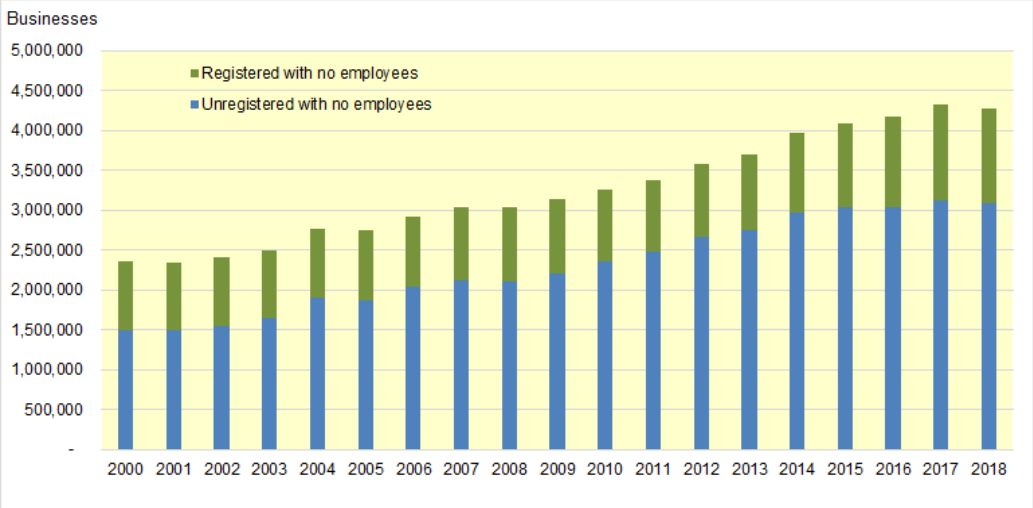
[17] Note: SMEs refers to businesses employing less the 250 people.
[18] Llewellyn Consulting (2015) *Enhancing the Ability of UK SMEs to Export* The City UK
[19] ONS (2018) *Business Population Estimates for the UK and Regions 2018* Dept for Business, Energy & Industrial Strategy 11th October 2018

**Figure 3.1 Firms with no employees, 2000-2018, United Kingdom**




**Source: BEIS, 2018[20]**

ERC research identifies individuals' aspirations for their own future and for the future of their business. Notable contrasts are evident in terms of ambition with 73.7% of all respondents aiming to 'keep their business similar to how it operates now', and a more ambitious 22.1% of respondents aim to build a 'national or international business'. Little difference is evident between male and female business owners. Individuals' personal ambitions suggest a rather different set of priorities, with a marked emphasis on 'freedom' and 'flexibility'.[21]

**Solo self-employed businesses** Those who work on their own-account without employees are known as the 'solo self-employed', and they make up 84% of all self-employed, or 3.9m of the 4.7m self-employed.

One recent study identified nine segments of the solo self-employed, which were distinguished by key indicators including economic wellbeing, independence and security. The segments range from low-paid, dependent and insecure, through to high-paid, independent and secure.[22] The four highest paid, most secure categories comprised the following.

- Mid pay, independent and secure (trainers and coaches, IT professionals, financial advisers, business professionals, manufacturing managers, hair and beauty workers, skilled makers and restaurant and B&B owners).
- High pay, regulated and secure (medical professionals).
- High pay, mid-independence and secure (functional managers, construction and property managers, book-keepers, and TV/film technical roles).
- High pay, independent and secure (legal and business professionals).

Together, these comprise 1.2m people, or 30% of all solo self-employed people. The report argues that people in these segments are, by and large, much happier in

[20] Dept for Business, Energy & Industrial Strategy (2018) *Business Population Estimates for the UK and Regions 2018* 11th October 2018
[21] Enterprise Research Centre (2019) *State of Small Business Britain Report 2018*
[22] Centre for Research on Self-Employment (2017) *The True Diversity of Self-Employment*

their work than employees in similar roles, and have a high degree of control over their working practices.

Reference was made above to the growing numbers of people who work at least part of their time from home. In this sense the home becomes an extension, or a satellite, of the corporate office. While technology has enabled this to happen on an informal basis – whereby people manage their email in the evening, or stay at home for the a few hours to do a concentrated piece of work – there is a nascent tendency to provide a more formal work environment, either in the home or in a shared space close to home.

Frances Holliss coined the term 'workhome' to describe a place that combines 'dwelling and workplace'. She made the point that: "*while industrial capitalism depended on a spatial separation between workplace and dwelling, informational capitalism tends to bring these spheres back together"*.[23] Such trends are now emerging in the form of home-based businesses**.** They are a fundamental part of the knowledge economy.

**Home-based businesses** Within the overall rise of SMEs, there has been a rapid growth in the number of home-based businesses (HBBs). There are currently around 2.8m HBBs, a figure that has grown by 40% since 2000.[24] Estimates suggest that one in ten homes are host to at least one business; that HBBs represent over 50% of the total number of SMEs in the UK, and that their contribution to the UK economy (based on turnover only) amounts to £300bn.[25] Enterprise Nation identify a number of misleading stereotypes of HBBs, including that:

- they involve people aged 50 and over, who have become self-employed in order to continue working after their retirement;
- they are more suitable for women with no strong financial needs, i.e., hobby businesses;
- that they involve people mainly based in rural areas, and
- that, like people on zero-hours contracts, their earnings are marginal and provide the bare minimum, and they were forced to become self-employed due to the lack of available employment opportunities.

However, these stereotypes badly misrepresent the sector. For example, the survey suggests that 26% of HBB owners are aged 35-44, while 32% are aged 45-54.

HBBs are dominated by creative, business services, retail and professional consulting industries. However, the types of firms involved are highly diverse, and the report suggests that opportunities for starting up a home business are vast and not limited to only a few categories of professionals. Over 17% of HBBs are based in London, with a further 30% elsewhere in the South East.

A stronger consideration of the shifts in the business and economic environment provide a far more reliable comprehension of what is driving increasingly large numbers of people to start-up from home.

[23] Holliss F (2015) *Beyond Live/Work: the Architecture of Home-based Work* Routledge
[24] Vonage (2018) *The Step Ups: Unlocking the UK's Home Business Potential*
[25] Enterprise Nation (2014) *Home Business Survey*

Generally speaking, the increasing dominance of services over manufacturing in the past thirty years has opened up a huge number of opportunities for services sector professionals to work as freelancers. A growing number of professionals is more and more willing to work as independent consultants. In the past five years, some 237,000 people from the knowledge-intensive services sector, including professional, scientific and technical activities such as management consulting, accounting, etc, have become self-employed, many based from home.

The growth of the knowledge economy, the expansion of co-working and a general desire for a more 'collegiate' approach to work all support the growth of what now might be more accurately described as 'home-proximate' businesses. In turn, in the Oxford context, this evolution is interesting because it suggests support for a more community-based approach to living and working; which is also consistent with the social and cultural preferences of many workers today.

The growth in SMEs, micro businesses and home-based businesses is symptomatic of the economic crossover referred to above. And just as opportunities are opening up for a this hugely diverse cadre of businesses, so too is the economic crossover driving change in firms occupying more traditional forms of real estate.

### 3.2. The rise of the flexible space market

The flexible space market comprises a number of different workplace formats, unified by the common theme of flexibility around terms and tenure. The market has grown rapidly in recent years and looks set to continue growing. Across the UK, there is now around 5.5m sq m of flexible space in around 3,000 centres. The popularity of the flexible space market is evidenced in the scale of take-up in Central London. Between 2007 and 2019, the total amount of flexible office stock tripled, from around 400,000 sq m to 1.2m sq m (over 4% of stock).[26]

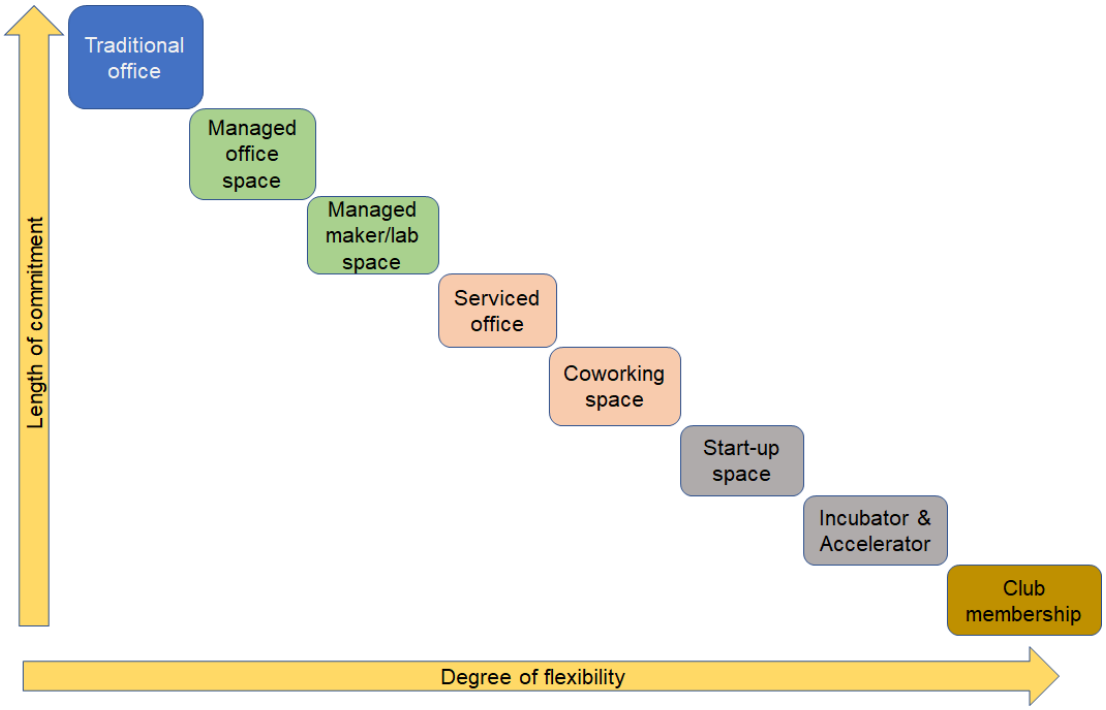
Figure 3.2 provides a high-level typology of the flexible space market. It should be recognised that the spectrum of types is not, in reality a line of discrete types, because there are overlaps and grey areas. However, the diagram is a useful tool for conceptualising the various offerings.

Smaller occupiers have been limited to lower quality space. This is partly due to cost constraint, but also to the reluctance of landlords to let space to smaller occupiers who were perceived to lack covenant strength and to require more intensive management. This has begun to change, and the flexible space market has emerged to provide small occupiers with better quality space on terms that suit their business needs. Indeed, even traditional landlords have begun to include some form of flexible space allocation in their new developments.

The Centre for Cities[27] noted that many SMEs operating in the creative and digital industries are sole traders or employ a small number of staff, and that they "*often prefer smaller, more flexible premises*", and that increasingly flexible work spaces "*are allowing for co-location, lower overheads and the capacity for businesses to grow quickly*".

[26] Cushman & Wakefield (2018) *Co-working 2018*
[27] Centre for Cities & Cambridge Econometrics (2015) *The Future of the City of London's Economy* Corporation of London

**Figure 3.2 Flexible space typology**




While small firms are benefitting from the changes, larger firms are also adopting a more flexible approach to space procurement. According to recent research from JLL, upwards of 30% of all commercial office space might be consumed as "flexible space" by 2030.[28] Just like Airbnb is the largest "hotelier" and owns no physical room inventory, Simonetti & Braseth predict that the largest commercial landlord of the future will own no physical space. They argue that the rise of co-working, serviced offices and on demand meeting spaces enables a flexible real estate strategy that seamlessly connects a corporate headquarters to a network of on-demand workspaces. They predict that, by 2030, most companies' real estate requirements will be outsourced and consumed on-demand while only 20% taken via traditional long-term obligations.[29]

Signs that these predictions have credence are evident in the fact that the mainstream landlord market is overcoming scepticism and moving into market with a range of products. British Land, Brockton Capital, Crown Estate, Great Portland Estates, HB Reavis, Grainger and Land Securities are all developing their own product offerings.

**Club membership** offers high quality, high service space often associated with another function such as an institution, hotel or leisure facility. Touch down space is available on a fixed monthly or annual fee, combining costs for desk, business rates, services and support. Examples include hotel group Ennismore and serviced operator IWG's brand, No18 Club. The market is growing and is likely to diversify further in the future.

[28] JLL (2017) *Workspace, Reworked: Ride the Wave of Tech Driven Change*
[29] Simonetti R & Braseth H (2017) *Your Workplace, On Demand: Five Predictions for the Future of Work* Convene

Charles Handy has been one of the most influential writers on corporate culture and organisation over the past three decades. He popularised the notion of the social office, and recognised the important role of club environments and co-working. There is likely to be a growing role for club environments within serviced spaces as the market matures, and as customers opt for quality over the 'noisier' environments in coworking spaces.

**Start-up space** is often associated with affordable space in secondary spaces, made available to small firms seeking to become established in formal property. Start-up facilities include: Bathtub 2 Boardroom; Bootstrap; Camden Collective; Chocolate Factory and Cockpit Arts. Start-up spaces provide the space and resources needed to test and nurture ideas. Many offer different workspaces including labs and light industrial/studio space.

**Incubators and accelerators** are more based around business support and mentoring than networking opportunities of co-working spaces (below). They might include training and business support, advice or mentoring. In many schemes, rents will be reduced – on occasions this is linked to the provider taking an equity in the business in return for the reduced rent. As such, they are usually focused on young businesses and may include an incentive for businesses to move on as they mature and grow – by escalating rents to market rent or even above for example.

Incubators and accelerators involve the additional provision of mentoring, advice and business support, and occupiers are encouraged to enter into formal growth programmes. Incubators and Accelerators include: Barclays Accelerator; Digital Enterprise; Edtech; Impact Hub; QMB Innovation Centre and Warner Yard. The St John's Innovation Centre in Cambridge was one of the first UK examples.

Accelerators involve experienced business owners and investors accelerating firms through an intensive programme over three to six months ending in a pitch to potential investors. Accelerators often invest in cohorts in exchange for a share of equity. Sometimes they are sector-based such as the London BioScience Innovation Centre (veterinary science); Dephna (food industry) and Fab Lab (digital manufacture). Unilever's Colworth Park (Bedfordshire) is another example.

**Serviced offices** form the largest component of the flexible space market, and their growth underlines the attraction of flexible space. The serviced office sector offers 'easy-in, easy-out' terms, and allows small businesses to avoid the capital costs normally associated with establishing a new office, including fit out, furniture and fixings. Businesses in serviced offices combine their buying power for services such as a reception; ICT; security; telephony and meeting rooms.

Serviced offices allow small businesses to avoid the cost of expansion space which might be needed at a future date, and for space that it uses only occasionally such as large meeting rooms or conference facilities. They gain flexibility and the opportunity to have a presence at the heart of their market cluster, on terms that suit their business models.[30]

[30] Ramidus Consulting (2016) *Clusters and Connectivity: the City as a Place for SMEs* Corporation of London

**Co-working** The serviced office market has been complemented recently by the rise of the co-working market, which offers, primarily small businesses, spaces that encourage interaction and collaboration. Co-working involves the sharing of workspace, typically but not exclusively, by self-employed people, very small firms and start-ups. Large organisations also use co-working spaces for project teams and ad hoc requirements, as well as for start-up operations.

Operators in London include Hoxton Mix, Liquidspace, NearDesk and WeWork. Also, providers of more traditional serviced/managed office space (such as Regus, The Office Group and Workspace Group) are allocating more of their buildings to co-working environments. Corporate occupiers have also entered the co-working market in London, a move exemplified by the Google Campus in East London and the O2 Workshops in the West End. The scale of this activity in just one city indicates that co-working as a growing global trend is unlikely to be reversed.

Most spaces charge monthly rental fees for desks and/or other types of office space and equipment. Many share a goal of creating environments that foster connections and creativity. The co-working workplace is largely shared rather than segregated for different firms, and designed to encourage collaboration, interaction and knowledge sharing among members with cafes, informal seating areas shared workspace.

The co-working market provides a 'less corporate' style of space than serviced offices, and responds to "*technology enablement, the growth of the tech, online and creative industries … and an increase in micro businesses and independent workers*".[31] It provides "*clubs where members can work alone or interact with like-minded people on a pay-as-you-go basis".*[32]

Co-working spaces are seeing new work communities develop in which digital-enabled people are working free of the traditional corporation and clustering with others in more radical social space that brings like-minded people together and mentors entrepreneurship. This combination of individual independence and group sharing is what makes co-working so attractive to so many people around the world.

**Managed** In addition to serviced offices, there are managed spaces which are similar to serviced offices in terms of flexible occupation, but which also provide for larger occupiers and for more specialist users. For example, some occupiers require specialist equipment or support services. These centres provide businesses with flexibility, they reduce start-up costs and they support small scale (technology dependent) manufacturing and product prototyping that is otherwise unaffordable. Incubators and accelerators involve the additional provision of mentoring, advice and business support, and occupiers are encouraged to enter into formal growth programmes.

The flexible space market will also provide further agility for larger corporate organisations that wish to take temporary, or project space, on less onerous terms than those offered by traditional leases. Over the next decade, most large, corporate organisations will migrate towards some form of networked, "hub and spoke" model.

[31] DTZ (2014) *The Co-working Revolution* DTZ
[32] Aecom (2014) *See Further: the Next Generation Occupier Issue* Aecom

The largest occupiers will maintain at least one corporate headquarters in a key city to provide a 'corporate hub', to bring employees and clients together, nurture the corporate culture, encourage collaboration and learning, and to instil a sense of 'shared purpose'. Elsewhere, they will occupy flexible space which will afford them the ability to change their occupational footprint speedily and cost effectively.

WeWork is a leading example of the new kind of provider. While only arriving in London in 2014, it has grown to be its largest private sector occupier, with over two million square feet of space. It has been busy signing-up start-ups and micro-businesses, but its ambitions are much greater. It is now signing up 'Enterprise Customers', providing 'whole occupancy' solutions to corporate customers and providing the WeWork 'experience'. In the USA, WeWork has already signed up large corporates including Bank of America, HSBC, IBM, Mastercard, Microsoft and Salesforce. WeWork started its Enterprise product in mid-2016, and it now contributes nearly one-third of its revenue.

Workspace plc is perhaps the biggest provider of managed space. In London for example, Workspace has in excess of 4 million sq ft of managed workspace in a wide range of schemes – from a few thousand sq ft to their flagship Kennington Park scheme at the Oval which is around 300,000 sq ft. Such schemes do not necessarily require a town centre focus, the connectivity of businesses, or the wider 'ecosystem' although larger schemes such as Kennington Park may build that in. Terms tend to be easy in easy out arrangements.

**Sector outlook**

There has been some negative press coverage of the flexible space market in recent months, particularly around the problems at We Work. There have also been reports of a few smaller operators either withdrawing from the market or going into administration. The response of the wider market to We Work's travails has been phlegmatic, largely recognising that its business model was unique, and that its planned expansion was unsustainable, notably in relation to its funding model.

At the other end of the size spectrum, there will continue to be consolidation among small operators. The barriers to entry are relatively low, but the operating environment is a very demanding one. There is likely to be further corporate activity with larger operators acquiring smaller firms, and there will be a further news of smaller operators failing. This does not signal the demise of the sector.

There is a widespread perception that the flexible space market reflects a structural change and that it is here to stay. It will have to respond to changing economic conditions, but it is now firmly established sub-sector of the wider property market.

## 3.3. Flexible workspace in Oxfordshire

Economic consultants SQW recently undertook a review of innovation space in Oxfordshire, on behalf of the Oxfordshire LEP.[33] The following definition was adopted in order to focus the work.

[33] SQW (2017) *A Review of Innovation Spaces in Oxfordshire*

> *Innovation spaces provide entrepreneurs and businesses with accommodation on flexible terms and access to supporting administrative, business and innovation support services and networks.*

This definition rules out coffee shops, internet cafes and similar facilities which may be used informally by entrepreneurs for business purposes but whose primary purpose is not to provide business space and innovation support. It includes science and technology parks which provide flexible terms on space and access to supporting business and innovation services, but excludes office, business and industrial parks run simply as property schemes. It also excludes managed workspace such as that provided by Regus which provides only space on flexible terms and basic services such as a reception desk and access to meeting rooms.

The survey of innovation spaces enabled respondents to include more than one type of space in their response. This was to cover cases which provide a mix of types of spaces: for example, an innovation centre with small office units which also includes co-working space, or a science park which also includes an innovation centre.

The report gathered together information on all existing and planned innovation spaces in Oxfordshire; the spaces were categorised and the main features of each described (Figure 3.3). The work identified 48 innovation spaces in Oxfordshire, including 35 existing and 13 planned. The spaces ranged from small co-working spaces to large science parks. They were spread across the county, but with a notable concentration on Oxford and around Abingdon and Didcot.

In addition, SQW identified a further 25 workspaces which, although making a significant contribution to the flexible space market, do not fall within the definition of innovation spaces because they do not provide business and innovation support services in addition to the property offer.

Oxfordshire was an early beneficiary of innovation spaces: the first innovation centre in Oxfordshire was created in 1985 by the Oxford Trust under Sir Martin and Lady Audrey Wood. Over the years the number of innovation spaces has continued to increase, including five science parks – Begbroke, Culham Harwell, Milton Park and Oxford Science Park. Most recently, various co-working spaces have been created in Oxford (including for office based and workshop-based activities), together with some new innovation centres (e.g. 1 St Aldgates) and some which have been expanded (e.g. at Begbroke), and a conversion at Oxford Business Park.

**Figure 3.3 Existing innovation spaces in Oxfordshire**

| | | | |
|---|---|---|---|
| **Oxford City** | | Bioinnovation Hub, Oxford Brookes University | Co-working labs |
| 1 St Aldates, Oxford | Incubator | Oxford Science Park, incl. Magdalen Centre | Small office units |
| Oxford Centre for Innovation | Incubator/small office units | **Oxfordshire** | |
| 16-17 Turl Street | Co-working | Oxford Wood Recycling, Abingdon | Workshops |
| Oxford Innospace | Co-working | Banbury Innovation Centre, Banbury | Small office units |
| The Old Music Hall | Co-working | Begbroke Science Park, Begbroke | Small office units |
| Launchpad, Said Business School | Co-working | Bicester Innovation Centre, Bicester | Small office units |
| Openworks, Oxford | Co-working | Culham Science Centre, Culham | Small office units |
| Oxford Sciences Innovation | Co-working | Milton Park Innovation Centre, Didcot | Small office units |
| Pow Wow, Grant Thornton | Co-working | Harwell Campus, Harwell | Small office units |
| Oxford University Innovation Start-up Incubator | Co-working | Sylva Wood Centre, Long Wittenham | Workshop and co-working |
| Oxford Hack Space | Hack Space | Cherwell Innovation Centre, Upper Heyford | Small office units |
| Oxford Enterprise Centre | Offices/workshops | Witney Business & Innovation Centre, Witney | Small office units |
| Oxford VIEW | Workshops | | |

**Source SQW (2017)**

**Planned innovation spaces** In addition to the existing innovation spaces, the research identified 13 new innovation spaces either under construction or planned (Figure 3.4). This includes four new business incubation facilities announced as part of the Oxford & Oxfordshire City Deal in early 2014: an Innovation Accelerator for advanced engineering businesses at Begbroke (above); a Bioescalator on the Old Road site adjacent to existing research facilities and the Churchill Hospital; the Harwell Innovation Hub, focused on open innovation; and the UKAEA Culham Advanced Manufacturing Hub, focused on remote handling technologies.

In addition, a new business centre, planned to be focused on environmental and green technologies, is planned for the NW Bicester Eco Development, the proposed Oxford Technology Park near the airport includes provision for an innovation centre as part of the Premier Inn, and the Oxford Northern Gateway development is expected to provide around 90,000 sq m of business park space. The Oxford Trust is developing a new innovation centre in Headington. Oxford Innovation is also planning to provide more informal co-working and drop-in workspace in their existing centres as they are gradually remodelled.

**Figure 3.4 Planned innovation spaces in Oxfordshire**

| Oxford City | | Oxfordshire | |
|---|---|---|---|
| Activate MySpace | Co-working | **Bicester** | |
| The Oxford Foundry | Co-working | NW Bicester Eco centre | Small office units |
| POD2@Town Hall | Co working | **Culham** | |
| Smart Oxford Incubator | Co-working | Advanced Manufacturing Hub | Workshop units |
| Oxford Bioescalator | Wet labs | **Harwell** | |
| The Hill, Headington | Accelerator | Harwell Genesis 2 | Workshop units |
| Wood Centre for Innovation | Small office units | **Kidlington** | |
| Oxford Northern Gateway | Science Park | Oxford Technology Park | Science Park |
| Centre for Islamic Studies | Unknown | | |

**Source SQW (2017)**

**Science parks** The science parks in Oxfordshire are particularly important contributors to innovation space in the county, because of the scale and variety of premises and related services available to firms. They are also complex, because all include smaller innovation spaces, in the form of incubator or innovation centres, within the range of premises they offer.

There are five existing science parks in Oxfordshire, and two planned. The five existing science parks are:

- Begbroke Science Park – owned and operated by the University of Oxford, some three miles north west of the city centre and surrounded by Green Belt. It includes an innovation centre which has recently been expanded, University research centres, and a wide range of firms, but take up has been slow over the years.
- Culham Science Centre comprises primarily the United Kingdom Atomic Energy Authority's laboratory for plasma physics and fusion research with a new Materials Research Facility (MRF) and RACE (Remote Applications in Challenging Environments) facility as recent additions. There is also a range of property available for commercial uses, amounting currently to around 25,000 sq m, and including Culham Innovation Centre, run by Oxford Innovation.
- Harwell Campus, which includes extensive scientific research facilities operated by STFC, national and international organisations such as the Satellite Applications Catapult and the European Centre for Space Applications and Telecommunications, several incubators and innovation centres (including Harwell Innovation Centre, the ESA BIC, the incubator space within the STFC area, and Genesis 1 and 2), and large premises for more established firms.
- Milton Park, which has evolved into the largest science park in Oxfordshire over time as more traditional industrial and logistics organisations have been replaced by science and technology-based firms. Milton Park Innovation Centre is located within the Park.

- Oxford Science Park is located on the southern edge of the city and owned and managed by Magdalen College. The Magdalen Centre within the Park provides incubator space for new and small firms, and the remainder of the Park larger premises for more established firms.

In addition, there are two science parks in the pipeline:

- Oxford Northern Gateway, which is on the northern edge of the city and is planned to be developed as a mixed-use innovation district providing around 90,000 sq m of business premises, including innovation, incubator and co-working spaces, plus housing and ancillary uses.
- Oxford Technology Park, a relatively small development promoted by Bloombridge LLP, close to Oxford Airport and planned to include an innovation centre within the first main building which is currently under construction.

**Accelerator programmes** There are various accelerator programmes available in Oxfordshire, which offer business support without any provision of physical space. The number and variety of accelerator programmes is increasing, following a general trend nationally and internationally. Examples include:

- Fab Accelerator, which has just run its first programme in Oxford, involving 15 participants attending 12 weekly sessions covering business growth and development. In future it is planned to run three programmes a year in Oxford.
- Oxfordshire Social Entrepreneurship Partnership (OSEP), which runs programmes and provides funding to support the formation of social enterprise businesses, including with students from the two universities in Oxford.
- Biostars and Bethnal Green Ventures, which are both national accelerator programmes offering their services to Oxfordshire firms.

### 3.4. Summary

The rapidly evolving corporate landscape outlined in the previous section has also led to a structural shift in employment patterns. As ubiquitous and cheap technology have lowered the barriers to entry, so many more people are opting to ‘do their own thing’ – set up their own company and exercise a greater degree of choice and flexibility than traditional employment allows.

This has been accompanied not only by a rapid rise in home-based businesses and small business generally, but also by a burgeoning flexible space market sector, with a growing number of product offerings to suit a variety of needs. The evidence presented here shows that Oxfordshire is no exception to this trend, although the southern part of the county, around Science Vale, appears to have a greater representation of innovation centres.

However, we are only just beginning to see a major shift in the direction of mixed-use developments, where homes and jobs are provided for within balanced communities. There are a number of reasons for inertia around mixed use development, but the number of reasons is reducing as technology changes the nature of work, and as social preferences begin to have greater impact, not least via

# Bicester Gateway: Knowledge Economy Catalyst

Generation Z. There is an opportunity for Bicester to be at the forefront of change here and, in doing so, vastly improve its economic profile and ‘brand’.

The following section examines how innovation development is beginning to deliver the kinds of real estate that allows homes and work to mix, either by providing both within physical space or by providing flexible products that allow greater freedom to work in a more agile manner.

# 4. Innovation development

The previous sections have demonstrated how the world of work is changing fundamentally, and how many more people are exercising choice in how and where they engage with the process of work. We have also seen how the knowledge economy is spawning a rapidly growing population of small businesses, which are increasingly being catered for by an expanding flexible space market.

In this section, we turn to look at how new forms of real estate are being delivered to support changing working and living preferences. The section begins by looking at the trend from zoning activities to mixing activities. We then review the emergence of 'innovation districts', before examining live/work initiatives. We finish by looking at the latest trends in business park/community provision.

## 4.1. From Moses to Jacobs: from zoning to mixing

Perhaps the greatest battle of wills in urban planning ever fought was that between Robert Moses and Jane Jacobs in the US during the 1950s and 1960s. It was a struggle between a man who had amassed vast bureaucratic powers, and a woman who assembled neighbours and public opinion. He was an avatar of the early 20th-century vision that the only salvation of cities was the large-scale destruction of their existing features; she maintained that the future success of cities rested on preserving exactly those qualities.

The essence of this debate resonates through urban planning to this day. How do we strike the right balance between working and living; between motors and pedestrians; between high rise and low rise; between parks and concrete?

One reason why this debate is so pertinent here is because, as we have seen in the foregoing sections, the economy, jobs and workplaces are undergoing fundamental change. One symptom of this change is a growth in small businesses and home-based working, the latter having grown by 40%, to 2.8m, since 2000. Is there a demand for providing for living and working?

Until the industrial revolution, homes and commerce were spatially mixed in a random matrix of activities. However, industrial specialisation, economic integration and new industrial production processes (often space hungry, noisy, dirty and polluting) all encouraged a greater separation of activities. In the twentieth century such separation was institutionalised in the form of land use zoning which drew hard lines around different activities.

Ebenezer Howard's garden city movement advocated self-contained new towns with planned areas for each kind of use, linked by transportation systems that facilitated mobility; with safe and comfortable residential areas zoned away from industry. By the mid-1950s, live-work essentially became illegal or highly discouraged in most places. As recently as the 1980s, the UK land use planning system enshrined such segregation in the Use Classes Order (UCO) which sought to distinguish land uses according to their potential to conflict with one another. Arguably, many problems with today's high streets are connected to their monoculture of retail activities rather than a more diverse mix of retail, employment and residential activities.

More recently, the concept of 'smart growth' emerged in the US during the 1990s and sought to reconcile 'growth' and 'sustainability' in planning terms. Smart growth employed many of the strategies promoted in the sustainable development and healthy communities movements, although it focussed less on reducing consumption than on finding physical and policy solutions to improve the outcomes of growth. Mixed use development survived as a principle of smart growth.

While smart growth has encouraged more sustainable development, other factors have also encouraged closer integration of homes and work. Thus, the confluence of rapid innovation in information technology allowing greater work flexibility and autonomy, leading to a rapid growth in HBBs, and a societal push to reduce carbon footprint with less reliance on fossil fuels, have combined to encourage working from home. The rising cost of commuting, not to mention the impact of long commutes on quality of life, has further fuelled the growth of home working.

As we have seen elsewhere in this paper, the economy is being transformed, and the shift from a predominantly manufacturing to a predominantly knowledge-based economy is fundamentally changing economic activity and patterns of work. Much work today is entirely compatible with a residential context, and sustainability and lifestyle choices are beginning to affect people's choices about where they live and work. As technology is changing the way we work, it is making it easier to work from smaller spaces, quieter, less environmentally damaging. It is also driving a change in the way people work. Enabling them to be more flexible and to blur the lines between work life and home life.

So how do you provide suitable housing and places to work? How do you balance the need to develop homes with the need to provide commercial workspace? It is a difficult problem to solve but there is a solution in the form of mixed-use development: places that combine living and working in integrated, balanced communities.

## 4.2. Innovation districts

In recent years there has been a significant growth in the number of 'innovation districts', not just in the UK but around the world. Such districts, or clusters, tend to develop around a specific knowledge anchor, such as a hospital or university, or an industry sector, all of which create opportunities for collaborative innovation. In the UK, Oxford and Cambridge both have their well-established clusters. A more recent example would be the nascent 'Knowledge Quarter' in the King's Cross-Euston district of London, including: The Alan Turing Institute, The Francis Crick Institute, University College Hospital, University College London and The Wellcome Trust.

Growing numbers of innovative firms and talented workers are choosing to congregate and co-locate, sometimes in tight, amenity-rich areas of city centres (like Shoreditch), other times in more extensive but specialist facilities on dense developments where knowledge-intensive companies locate key facilities close to other firms, research labs, and universities so that they can share ideas and practice open innovation. According to Katz and Wagner, innovation districts constitute the "*ultimate mash up of entrepreneurs and educational institutions, start-ups and schools, mixed-use development and medical innovations, bike-sharing and bankable investments – all connected by transit, powered by clean energy, wired for digital technology, and fuelled by caffeine*". They go on:

> *Instead of inventing on their own in real or metaphorical garages, an array of entrepreneurs are starting their companies in collaborative spaces, where they can mingle with other entrepreneurs and have efficient access to everything from legal advice to sophisticated lab equipment. Rather than submitting to long commutes and daily congestion, a growing share of metropolitan residents are choosing to work and live in places that are walkable, bike-able, and connected by transit and technology.*[34]

This point was emphasised in a recent paper by Wagner & Watch.

> *From cities to small towns to suburban corridors, innovation spaces are transforming the landscape. Over the past 10 years, these spaces—such as research institutes, incubators, accelerators, innovation centres, co-working spaces, start-up spaces and more—have grown at a considerable pace across the United States and globally. Yet what easily gets missed is that these innovation spaces are physical manifestations of broader economic, cultural and demographic forces, elevating what matters in today's economy.*[35]

The authors note that a desire to remain cutting edge has driven firms towards "*creative experimentation*" in workplace design, which has "*embodied a shift away from 'style' … toward embracing core values aimed to help people flourish under new economic and demographic conditions"*. Put another way, people (or 'inward innovators') are increasingly seen as more important than the companies and institutions that have traditionally be seen as the constituent parts of innovative clusters.

At the same time, observed Alexandra Lange for the *New York Times*, universities are shifting their development priorities. "*Where once the campus amenities arms race was waged over luxury dorms and recreation facilities, now colleges and universities are building deluxe structures for the generation of wonderful ideas… pouring millions into new buildings for business, engineering and applied learning that closely resemble the high-tech workplace.*"[36] Research institutions, where advanced multi-disciplinary research is conducted, also continue to expand globally, such as the Crick Institute in London and CREATE in Singapore.

An international 'collaboratory', the Campus for Research Excellence and Technological Enterprise (CREATE) houses research centres set up by top universities. At CREATE, researchers from diverse disciplines and backgrounds work closely together to perform cutting-edge research in strategic areas of interest, for translation into practical applications that can lead to positive economic and societal outcomes for Singapore.

The interdisciplinary research centres at CREATE focus on four areas of interdisciplinary thematic areas of research, namely human systems, energy

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[34] Katz B & Wagner J (2014) *The Rise of Innovation Districts: A New Geography of Innovation in America* The Brookings Institution

[35] Wagner J & Watch D (2017) *Innovation Spaces: The New Design of Work* The Brookings Institution and Project for Public Spaces

[36] Lange A (2016) The Innovation Campus: Building Better Ideas *New York Times* 4th August 4, 2016 https://www.nytimes.com/2016/08/07/education/edlife/innovation-campus-entrepreneurship-engineering-arts.html

systems, environmental systems and urban systems. The universities and institutions with research centres in CREATE that collaborate with Singapore investigators are:

- Swiss Federal Institute of Technology, Zurich
- Massachusetts Institute of Technology
- Technical University of Munich
- Hebrew University of Jerusalem
- University of California, Berkeley
- Shanghai Jiao Tong University
- University of Illinois at Urbana-Champaign
- Cambridge University

Katz and Wager identified three different models of innovation districts.

> **Anchor Plus Model Anchors** are defined as research universities and research-oriented medical hospitals with extensive R&D; and "anchor plus" districts include at least one hub institution that inspires a rise of nearby related firms and start-ups. The key features include:
>
> - presence of anchor institution(s);
> - found in city downtowns and mid-towns, and
> - location in mixed-use developments.
>
> **Re-imagined Urban Areas Model** This kind of district is the result of a makeover to a once industrial or warehouse area. The change is enabled by the area's close proximity to downtown as well as access to transportation. Key features include:
>
> - availability of renovated buildings along city waterfronts;
> - location in high rent cities, and
> - proximity to research institutions and anchor companies.
>
> **Urbanized Science Park Model** This model involves the reversing of an old trend where corporations moved out to the suburbs, isolated from other firms as well as retail shops and restaurants. The urbanized science park is seeing formerly sprawling areas become increasingly dense with businesses, housing and restaurants. The market leaders in the UK would describe this model as the ‘third generation’ business park or ‘business community’.

All three of these models, and the preceding paragraphs, emphasise the central urban nature of innovation districts. However, it is quite possible to frame them in a variety of forms.

Katz & Wagner draw on US experience to describe the “urbanized science park.” They cite North Carolina’s Research Triangle Park, “*perhaps the 20th century’s most iconic research and development campus*”, as the strongest validation of this model. In November 2012, after several years of review and outreach, the park announced a new master plan to urbanize the quintessential exurban science park, recognizing that its isolated car-dependent environment is no longer optimal for spurring innovation and attracting younger talent. The masterplan

> *calls for a greater concentration of buildings and amenities, including the creation of a vibrant central district, the addition of up to 1,400 multi-family housing units, retail, and the possible construction of a light rail transit line to connect the park with the larger Raleigh-Durham region, including the universities.*

Other science parks actively engaged in urbanization efforts include the University Research Park at the University of Wisconsin-Madison, the University of Virginia Research Park in Charlottesville and the University of Arizona Tech Park in Tucson.

In a similar way, Arup describe three types of innovation district in the UK, one of which is out-of-town.[37]

> **City centre expansion** – the development of new urban quarters, or strengthened connections with edge of city centre campuses, to expand the size and economic contribution of city centre economies and central business districts. Examples include: Oxford Road Corridor, Manchester; Leeds Innovation District; Knowledge Quarter London; the emerging Bristol Temple Quarter district next to Bristol Temple Meads Station, and Newcastle Science Central. Oxford's Northern Gateway falls into this category as does CB1, Cambridge.
>
> **New urban quarters** – generally in inner urban areas based around major transport nodes, expanding campuses, and improved connections to city centres and surrounding developments and neighbourhoods. Examples include: Queen Elizabeth Olympic Park, London; Glasgow West End and Waterfront Innovation District; Knowledge Quarter Gateway and the Paddington Village development within Knowledge Quarter Liverpool.
>
> **Out-of-town technology parks** – whilst not the subject of this report, some out of town technology parks are being repurposed and reinvented as innovation districts, with a wider mix of uses, and stronger links to nearby city-based innovation assets. Examples include: Advanced Manufacturing Park, Sheffield; Alderley Park, Cheshire; proposed University of Leeds Technology Park in Aire Valley Leeds, and the National Manufacturing Institute for Scotland at Inchinnan, Renfrewshire. We would also add Hatfield Business Park, founded on Hertfordshire's 'Bright Green Industrial Strategy';[38] while, in Oxfordshire, it is clear that the Harwell Science & Innovation Campus will follow this model supported by hundreds of new homes targeted at people working on site, together with improved on-site amenities.

Also, Moonen & Clark identified innovation buildings, quarters, sites, campuses, districts, triangles and suburban parks, as well as out-of-town innovation zones and innovation corridors.[39] Taking the last of these, for its similarity to the situation in Oxford, the authors argue that innovation corridors

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[37] Arup (2018) *UK Innovation Districts and Knowledge Quarters: Driving More Productive Growth*
[38] Hart D; Breheny M; Doak J; Strike J & Montgomery J (1994) *Bright Green: Developing a Knowledge-based and Environmentally Aware Industrial Strategy for Hertfordshire into the 21st Century*
[39] Moonen T & Clark G (2017) *The Logic of Innovation Clusters*

> *are often established or configured so as to acknowledge an economic area that is demonstrably interconnected, with strong commuter patterns, and complementary industry clusters and supply chains. The corridor approach optimises key assets, transforming an older development paradigm into a more innovation-friendly model using specialisation, concentration and skills development.*

The authors provide the following checklist of "ingredients and success factors" for innovation corridors.

| |
|---|
| Governance co-ordination mechanism to develop shared vision and leadership |
| Collaborative economic development institutions to support corridor |
| Clear case for investment, and pipeline of projects |
| Key sector strategies |
| Co-ordination networks in higher education and employer training |
| Placemaking and liveability |
| Focus on the social value created |

The authors cite the London-Stansted-Cambridge Corridor as an example. SQW's Oxfordshire Knowledge Spine is another example.

Increasingly, architects and designers are tasked to redesign spaces to do more than simply house innovation-oriented activities. Their goals are also to "create communities," "facilitate collaboration" and "create serendipitous encounters." Through design, developers, architects and business leaders are essentially being asked to re-wire the social, if not organizational culture, as much as to adhere to strict building codes.

Clusters are geographic concentrations of interconnected businesses, suppliers, and associated institutions, that might contain anchor institutions, small firms, start-ups, business incubators, and accelerators. The key driver in their formation, according to Baily and Montalbano is that

> *firms and researchers benefit from locating near each other, which is an extensively studied phenomenon in the economic development literature. The value placed on geographic proximity is of high importance given that innovation is a deeply human and creative endeavour that requires personal networks and trust that can be built more easily with diverse and talented people close together.*[40]

Innovation districts increase the innovation levels, efficiency, and productivity with which participating companies can compete, nationally and globally. Katz & Wagner summarise the main benefits of innovation clusters.

- They further the ability of cities and metropolitan areas to grow jobs in ways that both align with disruptive forces in the economy and leverage their distinct economic position.

[40] Baily MN & Montalbano N (2018) *Clusters and Innovation Districts: Lessons from the United States Experience* The Brookings Institution

- They can specifically empower entrepreneurs as a key vehicle for economic growth and job creation.
- They can nurture better and more accessible jobs at a time of rising poverty and social inequality.
- They can reduce carbon emissions and drive denser residential and employment patterns at a time of growing concern with environmentally unsustainable development.
- They can help cities raise revenues and repair balance sheets at a time when federal resources are diminishing, and many state governments are adrift.

Clusters and innovation districts are key sources of productivity growth in an economy. Productivity, the most important determinant of the growth in living standards in the long run, has experienced a significant slowdown globally in recent years. Clusters and districts have the potential to combat this slowdown. They are loci of innovation and rapid economic growth and can lead to increased collaboration between firms and universities.

Increased collaboration between firms, particularly small firms, and universities is important for the diffusion of knowledge in an economy, and knowledge diffusion is a key part of the solution to slow productivity growth. Clusters and innovation districts, which promote collaboration between firms and universities by providing firms with access to research labs and human talent, are then a potential part of the productivity solution.

Innovation districts encourage 'open innovation' and are changing both where firms locate and how buildings and larger districts are designed, from research labs to collaborative spaces to mixed-use developments. Chesbrough describes open innovation as a process whereby companies and firms more openly generate new ideas and bring them to market by nimbly drawing on both internal and external sources. Under this new modus operandi, external sources can generate the ideas that are then commercialized internally by a firm, while internal ideas can be commercialized by external start-up companies and entrepreneurs. In other words, as Chesbrough observes, "*The boundary between a firm and its surrounding environment is more porous, enabling innovation to move easily between the two*".[41] In this context, we would define an 'innovation community' as a sub-set of an innovation district, with a particular focus on SMEs.

### 4.3. Live/work

Patterns of living and working are changing. And research suggests that the notion of residential areas solely as dormitories is on the decline. Instead, we are likely to see "*people spending more time where they live, leading to the need for different types of local services and attitudes to places of residence*". Moreover, there is a strong and growing market for live/work districts, combinations of mixed-use units and work hubs. "*Live/work development will be an important consideration for new*

[41] Chesbrough H (2003) The Era of Open Innovation *MIT Sloan Management Review* Vol 44 No 3 pp35-41

*settlements, and workspace and residential facilities can bring new functions to regenerate high streets as shopping moves online*".[42]

As we have seen, growing numbers of people are working from home, either doing traditional homeworking, or more modern forms involving new technologies. But in these cases, the work use of the home is small-scale, and very much secondary to the domestic use of the premises. Live/work describes accommodation that is specifically designed to enable dual residential and business use. It differs from ordinary home working in so far as live/work premises are specifically designed to have a higher intensity of business use. This may be in terms of the amount of space devoted to the work use. It may also be that the work element is designed to accommodate more workers than just the residents, and may be set up to encourage company growth.

As suggested above, a generally-accepted definition of live-work accommodation is: "a*ccommodation that combines both living and working spaces, with the workspace forming a permanent component of the accommodation".* Academic, Dr Frances Holliss, coined the term 'workhome', "*to describe all the buildings that combine dwelling and workplace*". Her intention was to overcome the connotations of 'loft-style apartments' generally associated with 'live/work'.[43]

Setting aside extant regulatory issues relating to land use (eg the Use Classes Order) and building use (Building Regulations), it is possible to identify four types of live/work unit, as proposed by Khoury.[44]

- *Live-Within* has a workplace and living area completely overlapping, such that the demarcation line can be adjusted continuously and on a daily cycle. This is the perfect business incubator type, with double functioning spaces that can be built roughly and cheaply.
- *Live-Above* has the workplace below the residential quarters. The separation between the two functions is complete, allowing the commercial section to be independently leased out for limited use.
- *Live-Behind* has the workplace in front of the residential quarters, thereby liberating the rear part of the lot for a conventional house. The demarcation between the two uses is complete, allowing the workspace to be leased to a separate entity for limited use.
- *Live-in-Front* is a single-family house where the workplace is typically behind the living quarters. The house is intended to be fully compatible with a conventional house, with freestanding work quarters suitable for restricted uses. The demarcation between the two uses is adjustable to changes in the family life.

Frances Hollis provided a similar typology. First, in 'live-with' premises, both functions are carried out in a single built envelope with a single entrance onto the street. Within this type there are a number of possible models, including the 'office in the spare bedroom' and 'double-height space with mezzanine' models. Secondly, in

[42] Bernheimer L (2014) *Tomorrow's Home: Emerging Social Trends and their Impact on the Built Environment* Adam Publishing, Winchester
[43] http://www.theworkhome.com/what-is-a-workhome/
[44] Khoury M (2014) *Leaning Toward Live-Work Units* Center for Applied Transect Studies

'live-adjacent' premises, a greater degree of spatial separation between the two functions is created; home and workplace are adjacent to each other, but in separate built envelopes and with separate entrances. Thirdly, 'live-nearby' premises offer an even greater degree of separation between workplace and dwelling elements by locating the two functions in separate buildings a short distance away from each other. Common examples include the 'shed at the bottom of the garden' and the 'mews workplace at the bottom of the garden with a separate access road'.[45]

**Live/work benefits** There are a number of benefits that live/work can offer both those directly involved and the communities of which they are a part.

- **Cost effective** Reduced expenditure on travel, rent and utilities by living and working in the same place. Such use of space significantly reduces business start-up costs and provides an important low-threshold to enterprise.
- **Convenient** Removing the need to travel to work can save time as well as money. Longer commuting times are consistently associated with lower subjective quality of life.
- **Efficient use of land** In areas of high land values, dual-use properties can potentially intensify land use.
- **Sustainable** Dual use accommodation offers a reduction in carbon footprint by cutting fuel consumption, energy on heating and travelling, as well as embodied energy.
- **Regeneration** Live/work accommodation has consistently been used to play a positive role in economic regeneration by encouraging investment in run-down areas.
- **Business incubator** Many developments use live/work accommodation to play a role in nurturing young businesses by offering affordable space, networking opportunities and even dedicated business support. Such support can also be offered through other types of workspace provision, although these are likely to cater for different audiences.
- **Workspace diversity** Live/work accommodation can contribute to a diverse workspace offer in an area. In a complex employment space market, work-live may offer opportunities for those who wish to ‘step up’ from home-based working, for example.
- **Social role** Dual use developments can help to create a local sense of community with increased interaction between tenants, daytime economies in what might otherwise be residential areas and ‘social oversight’ or ‘passive supervision’ of workspaces during non-working hours.
- **Flexible** The opportunity to combine living and working in the same place has the potential to allow lifestyle flexibility for inhabitants. This may be particularly relevant to some demographics, such as those with disabilities or those with young families.
- **Place-making** Live/work provision has been successfully used to establish vibrant communities of tenants, both workers and residents. Examples of this are further explored in the case studies later in this report.

[45] Hollis F (2012) *Space, Buildings and the Life Worlds of Home-based Workers: Towards Better Design* Sociological Research Online http://www.socresonline.org.uk

Thus, live/work premises are flexible in their application: they can be purpose-designed, they can help reinvigorate high streets, and they can be retro-fitted into industrial buildings and older stock generally. Moreover, they can enhance community vibrancy and sense of place. They create potential for a more balanced social life, allow for co-working spaces where unstructured social interaction can take place, and provide flexible workspace in a real business environment. They also offer many options to incubate businesses. Live/work is an integral part of innovation districts. It is a highly sustainable concept, naturally aligned with the knowledge economy and the needs and demands of Generation Z.

**Live/work design** There is no single solution to the design of live/work, although it is possible to identify a number of detailed themes. Generally, workspace should be sufficient to employ at least one other person. Development should consider that storage space need for businesses is generally greater than for residential accommodation. Inclusive design should be implemented as work-live offers particular opportunities for people with disabilities. Liveability requirements to be considered specifically in relation to dual-use, which may require higher levels of performance than solely commercial use properties, for example:

- Sound proofing: insulation above the Building Regulations standard
- Adequate ventilation
- Adequate light – encourage double aspect
- Maintaining privacy
- Servicing arrangements
- Refuse storage

The potential for light industrial work should also be considered. This may require: higher levels of floor loading, double height ceilings, three-phase electricity supply and extract ventilation.

**Spatial arrangements** There is a general trend of local authorities preferring arrangements that separate the working and living space by floor levels or mezzanines. 'Shell' type fit-out of the space may have advantages in giving occupants flexibility to achieve the required balance internally.

**Access** Independent access to the workspace for visitors is desirable, with the work and living spaces connected internally. Walk-in trade should be permitted and encouraged. Consideration should nonetheless be given to security, with appropriate access control to individual units. For some uses, such as those requiring large deliveries, ground floor access is preferred.

Direct access to an external yard for making and deliveries may be a benefit to some tenants. Proposals should consider access arrangements, which should allow for clients and commercial visitors to enter directly into working spaces, and servicing which may require access by heavy goods vehicles. Businesses should be clearly signed at street level to allow visitor way-finding with appropriate security.

**Features, servicing and support** The provision of communal hub spaces to maximise interaction is seen as a major benefit. These can include: shared

meeting rooms, courtyards, atriums, cafés, open spaces, gardens. Parking provisions for residential and work use should be appropriate to the site.

Signage for businesses is very important, both in terms of reinforcing the employment uses of a scheme, and visitor wayfinding. IT and communications infrastructure needs to be catered for. Broadband access is essential. Access to business support can also bring significant added value to some developments.

**Place-making** In order to maximise the potential neighbourhood impact of work-live schemes, ground floor, street-facing business space is preferable, although this may not be suited to all uses. Workspace should generally face into public areas with private space behind and/or above. This encourages interaction with other businesses and social oversight during the daytime.

**Shared space and facilities** Spatial layout of work-live accommodation can assist in supporting opportunities for business-to-business networking and placemaking. Spaces of interaction should be considered in all dual use accommodation and may include: cafés, business support areas, galleries and deck access particularly where tenants are able to utilise external areas and dedicated yard spaces.

These spaces of interaction can provide an opportunity for active frontages, where the public can see internal activity from the street, but are also successful when they are more inward-facing. The daily activity generated by multiple tenants occupying a property throughout the day should be considered as a placemaking opportunity that can contribute to a vibrant street scene.

**Live/work case studies** Three case studies, one in Bristol and two in London, illustrate some of the planning and design principles summarised above.

**Paintworks, Bristol** Paintworks began as a genuine attempt to regenerate a mixed-use district, centred primarily on a sense of community and in so doing provide a model for others to build on elsewhere. Drawing heavily on the intimate street patterns of historic town centres, and aimed at creative-minded people and companies, Paintworks seeks to build an interactive community, to provide a focal point and catalyst for the regeneration of the surrounding area.

# Bicester Gateway: Knowledge Economy Catalyst


In Phase 1 and 2, 140,000 sq ft (13,000 sq m) of the existing buildings were converted to provide a variety of studio/offices, live/work and residential spaces centred around cobbled streets, courtyards & café bar and an event/exhibition venue.


Phase 3 comprises largely residential and live/work units by Crest Nicholson, while Verve added 45,000 sq ft (4,200 sq m). of offices, from small units to iconic larger buildings. As part of Phase 3, The Ethical Property Company are planning to establish a centre for sustainable business at Paintworks.

In Phase 4, Verve has submitted a planning application which includes a further 30,000 sq ft of commercial space and additional visitor parking. This phase will complete the regeneration of the site.

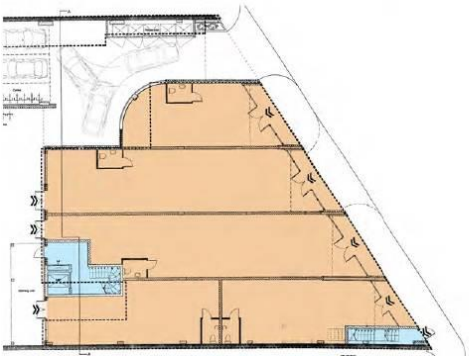
**Westferry Studios** Westferry Studios is a purpose-built development owned and managed by the Peabody Trust in Limehouse, London E14. It has been in operation as live/work accommodation since 1999. Peabody work with the East London Small Business Centre to select tenants who will benefit from the stepped affordable rents and business support that are on offer.

The scheme comprises 29 units, including 20 open plan and nine with separate live and work areas. The proportion of space used for working and living is generally flexible, including some units used solely for commercial (solely residential use is not permitted). The proportion of live to work is flexible within each unit and changes over time depending on needs and occupier changes. It is estimated that 50% of the units on site are used purely for work.

The average floor area for is 700 sq ft (65 sq m) per unit. The flats are open plan with a light industrial 'look' and were provided as open shells. Peabody feel that much of its success and ability to continue in employment use is down to its design. The studios have been personalised in different ways by adding internal partitions. Some occupiers have added mezzanines to separate the live and work uses. These changes to the internal layout are subject to general commercial lease clauses.

Westferry Studios have a commercial 'feel' upon entry due to the ground floor units being fully commercial, and the access courtyard displays all occupiers' business signage so there is no feeling of it being a residential space. Other facilities include commercial refuse storage, limited parking for visitors/clients and a security gate to the courtyard and car park.

**Northside Studios, Andrews Road, London E8** Built in 2005, this scheme accommodates five double storey B1 units totalling 800 sq m, with on street lay-by access, and a tight rear vehicular access.



The ten residential units above are set back from the road, minimising the visual impact of activity associated with the units below and creating a generous terrace. The residential units are accessed via a side staircase leading to the podium level on the rear, with a lift lobby to the rear. The units are adequate for many businesses, although they will be of limited use for businesses with noisy or noxious operations.

### 4.4. Next generation business parks

Business parks began to appear in the USA in the early-1950s and were a part of the rapid suburbanisation of real estate development across the country. The rapid expansion of car ownership and deteriorating inner city conditions led to very rapid urban sprawl. Arterial routeways became magnets for business parks that could offer an easy commute from home to work, without the hassle of public transport and inner-city congestion.

In the early years, business parks had a strong R&D focus, but this soon yielded to general office space, including back offices seeking lower costs and headquarters looking for greater amenity for their staff. The parks also attracted small businesses in the form of spinouts from both universities and larger corporates.

Business parks in the USA have evolved over the years, and they continue to do so. For example, since the Financial Crisis, many have begun to create environments in which innovation and successful technology transfer, based on the success of university research parks, is facilitated. However, it is also clear that there is a trend towards moving back to urban areas, particularly in medium-sized and larger US

cities. To compete, larger, older business parks have begun to increase density and add a more diverse range of uses, including housing and lifestyle amenities. Business parks maintain the advantage of being able to offer new, purpose-built space more quickly than city centres, usually with the added advantage of easy grow-on space.

In the UK, and Europe more generally, business park development has tended to mirror change in the USA. During the 1980s, the US business park model emerged as the preferred model for out-of-town development in the UK, promoted by market-leader, Arlington Securities plc. The major revision of the Uses Classes Order in 1987, including the creation of the B1 use class which allowed for transition between office, light industrial and R&D without planning consent, spurred a huge increase in out-of-town employment. By 1990, there were nearly 500 business parks in the UK, and as office technology rapidly grew and evolved, there was continued expansion of the office economy, with demand for business park space following suit.

Since the turn of the century, there has been a growing focus on sustainable development, which has cast a light on private car usage and the dependency of many business parks on generous parking standards and extensive travel-to-work areas. More recently still, there has been a growing focus on amenity in the workplace, work-life balance and agile working. And not all business parks have fared well in these terms.

A recent report from the British Council for Offices identified further trends which are helping to re-position business parks.[46]

- **Management** Lease returns are likely to increase, as are service charges, as there is a shift towards greater connection and support between businesses and the management of the park.
- **Increasing density** Better use will be made of land, allowing growth space, increasing the critical mass of employees to support better amenities, and encouraging on-site interaction and networking.
- **Lease changes** There will be a move towards a higher number of smaller tenants, while ‘reserve’ space will be maintained within the park to allow small companies to grow rapidly without moving out.
- **Lease length** Shorter leases with a lower risk for start-up companies will become increasingly prevalent.
- **Strategic clustering** Occupier portfolios will become specialised to promote clustering of industry types that create a recognisable brand around the park and region.
- **Lifestyle and work** More amenity facilities will be provided, specifically amenities that align with the identity and lifestyle of the park, whether that is wellness, sports, creative activities or cultural activities. With this comes the important addition of residential components, to allow people to live close to their work.
- **Flexibility and adaptability** Flexible building typologies that balance the requirements of different office-space types with the potential need to adapt conventional office space to laboratory uses, pilot manufacturing uses or simulation suites will become more prevalent.

[46] Perkins + Will (2019) *The Future of Business Parks* British Council for Offices

- **Accessibility** Alternative transport means will be provided, from shuttle bus services to bike sharing and programmes supporting active commuting.

Business parks are thus, to some extent, in uncertain times – with the drive by occupiers for lease flexibility creating development finance difficulties. Changing demographics, staff preferences and working practices are reinforcing the appeal of the city centre. A component of this shift is the increased understanding that the office is a place for creative collisions, a place to meet and exchange ideas, rather than simply a production-based workspace. Working hours are no longer nine to five, and there is much more fluidity in terms of the conventional workday. The benefits of proximity in the city centre are seen to be serendipity, interaction and collaboration, leading to knowledge transfer and innovation *across* rather than simply *within* companies and sectors.

Many parks have increased and deepened their amenity offer (for example, by retrofitting district centres and adding housing), improved public transport links and developed sector specialisms. Others have sought to exploit their proximity to academic and research institutes through access to their research activities have done well. This is seen particularly strongly in Oxford and Cambridge, but also in other cities including Bristol, Edinburgh, Manchester and Sheffield.

Yet others have begun to introduce more flexible and collaborative space offerings. Cheadle Royal Business Park in Cheshire is recognising this trend, and supporting it with its new tenant Pure Offices, which is assisting in developing a large flexible working space to facilitate creative collisions.

### 4.5. Summary

This section has described the recent evolution of innovation districts, which are a critical response to future national economic success. Oxford is an extensive innovation district, or cluster, and Bicester fits within this geography. We also examined live/work as a modern response to changing social preferences and workstyles. We reviewed the growing number of flexible space offerings now available as innovation developments, and which are supporting rapid growth in the knowledge economy. Finally, we reviewed recent trends in business parks, many of which are undergoing transformation. They are becoming denser, more diverse and more self-sustaining.

There has been considerable evolution in innovation development in recent years, whether in single building format or district-park-wide. What is certainly clear are the tangible links between economic, business, technology and social drivers of change, which have fed through to new workplace needs and responsive work environments. The theme running through is innovation, as owners, designers and managers respond to a rapidly changing and unpredictable environment. There has also been rapid growth in small, knowledge-based businesses in recent years, directly related to a rapidly evolving and restructuring economy, and the opportunities that now exist for small firms to compete in the mainstream economy – and crucially now, with property development models that are accepted as fundable by financial institutions and property investors.

Bicester generally, and Bicester Gateway in particular, have a great opportunity to meet some of the growing demand for innovation development and, in the process,

help change the market perception of Bicester so that it is fully integrated into the wider Oxon innovation narrative. But a single use business park is not in step with best practice or the demands of inward innovators.

A key trend is the integration of 'work, life and play' in innovation-focused development. Many of the models described above in the flexible space market are limited by their emphasis on work, as opposed to the broader direction of travel, which seems to be towards mixed use and co-working/co-living environments. The Collective in Old Oak (North London) is a leading example of co-living which is now looking to add co-living, further exemplifying the process of live/work integration.

In the general work context, we would describe these development schemes as 'business communities'; and in the Oxfordshire context there is the potential to plan for a sub-set, which we refer to as 'innovation communities'. Apart from the economic development advantages which accrue, such development assists the County in bringing the benefits of Oxford's 'innovative milieu' to a wider selection of settlements, thereby helping to ease commuting into central Oxford and benefiting parts of the county that need an economic stimulus.

# 5. Conclusions

This paper has examined the changing nature of work and workplaces as they respond to rapid and pervasive social, economic and technological change. The scale and pace of change is such that the commercial property market is facing a more uncertain future than at any time in its modern history. Many old assumptions are being torn up and new thinking is being called for. While this paper cannot provide a blueprint for the precise requirement for employment space, it does seek to guide thinking and, in particular, to encourage a masterplan response that addresses the emerging economy rather than one that is rapidly becoming historic.

Timing is also important because, compared to even the recent past, financial institutions and the property investment community are now beginning to accept the case for such mixed-use proposals, even outside London, so there is a link between social and economic trends, innovative property solutions and the all-important finance to fund construction and delivery.

## 5.1. Oxfordshire: engine of innovation

Oxfordshire's status as a locus for innovation of national and international import is well-understood. Its overall contribution to the national economy; the technology cluster located there, the role of its world-class University and the quality of the workforce are all well-understood. Equally, there is an absolute need to support innovation and nurture the evolution and development of the county.

This requires a planning system that is flexible and open to innovation. This means a planning system that recognises change when it is happening and responds with appropriate, timely policies (and decisions). One of the emerging issues is that innovative development in Oxfordshire is concentrated spatially, which is becoming increasingly apparent in the context of local transport, housing, the Green Belt and social infrastructure; very significant pressure points are emerging.

Bicester generally (and Bicester Gateway in particular) provides an opportunity to address this supply-side constraint by providing additional capacity for growth. At the moment however, the market for B1 business space in Bicester is very slow and lacks a raison d'être. New supply is severely constrained by viability issues, which reinforces the town's market position as an 'industrial' location. There is a need for innovation in development to begin to reverse current trends.

The Bicester Master Plan 2012 was a major achievement and step towards changing the perception of the town as a 'tired' industrial market; but seven years on, the knowledge economy remains notable in its absence.

Our suggestion is that a start towards updating the image of Bicester can be made by making a major statement at Bicester Gateway through a scheme that is founded in the knowledge economy, and which embraces the very latest social and economic trends. In particular, by providing an 'innovation community' that targets 'inward innovators'.

**Bicester Gateway's role in supporting the Local Industrial Strategy**

The county's leading role as an engine of growth in the knowledge economy is recognised in OxLEP's *Local Industrial Strategy*.[47] The document's vision comprises five key elements, to all of which Bicester Gateway makes a contribution.

> **Ideas** The LIS seeks to build on the strengths and assets of two world-renowned universities and hive of knowledge intensive economic activity and to drive innovation across the region. Bicester Gateway seeks to provide an innovation community that will be attractive to knowledge workers seeking a community environment where ideas might thrive.
>
> **People** The LIS seeks to build a skills system that better responds to local demand, which provides a range of opportunities for all across the county. Bicester Gateway seeks to provide an innovative development linking jobs and homes that will attract knowledge workers in a community setting that enables live-work opportunities.
>
> **Infrastructure** The LIS commits the county to working with government to develop resilient infrastructure that can respond to future demands and is sustainable for the environment. Bicester Gateway is an example of how Oxford can grow in a sustainable manner by absorbing some of the City's growth, using existing public transport links directly into the city centre.
>
> **Business environment** The LIS recognises that many firms struggle to grow to scale and do not translate ideas into business growth. It looks to address challenges (including access to premises and finance) to ensure the region can maximise its commercial and innovative potential. Bicester Gateway will provide the kind of premises most in need – innovative, flexible and modern – to meet business needs.
>
> **Places** The county is an attractive place to live and work, and the LIS vision seeks to help the county retain its distinctive character, while providing the opportunity to innovate in place-making, building healthy and sustainable communities that are technology-enabled, improve quality of life, and utilise innovative solutions to the challenges of modern living and respond to the increasing concerns around climate change. Bicester Gateway seeks to achieve exactly these outcomes.

Bicester Gateway thus makes a significant, tangible contribution to achieving the key aims of the Local Industrial Strategy.

## 5.2. Knowledge economy work

There is now a weight of evidence about how fundamental changes in the economy are changing work and how it is undertaken. Whether in retailing, logistics, corporate offices, industrial processes or life science labs, the nature of business is changing at a faster rate than ever before. The changes have profound implications for the demand for property. Whether for working, living or leisure, society's demands on the built environment are evolving rapidly; the nature of business is changing

[47] OxLEP (2019) *Oxfordshire Local Industrial Strategy* July 2019

rapidly, and as business processes and structures evolve, so workplaces must also evolve.

Occupiers today operate within short-term planning horizons, responding to an ever-changing economic landscape and seeking to maximize their flexibility to adapt. The power of networks, involving collaborative production and multi-disciplinary skills, is coming to be highly valued. More commoditised and non-core activities are being undertaken by specialists; more work is being undertaken collaboratively, and more work is being undertaken by small companies. At the same time this is driving small-firm formation, encouraging people to work from home while making use of co-working space in urban centres and market-leading business parks.

Today's workforce is more demanding and discerning than in the past: the knowledge worker has transferable skills and no longer feels tied to a single or limited number of employers as was the case historically. There is a 'war for talent' and talent offers a significant locational advantage. Talented workers demand choice and quality in the workplace. Similarly, as work, home and leisure become increasingly blurred in terms of when, where and how they are undertaken, so the workplace is having to provide workers with greater choice and freedom and, commensurate with this, mixed use and live/work environments are taking on a significant role, notably in innovation districts.

In short, it is becoming less and less appropriate to provide a 'vanilla office-scape' in which the same basic design and layout caters for a generic demand. The office workplace is rapidly moving away from being a static backdrop for process-based, largely routine and solitary work, to an increasingly actively curated environment, managed more like a hotel than a traditional office, with a high level of service and experience for 'guests'.

We present a model showing the direct relationship between things that are happening in the wider economy and their more specific workplace outcomes and property products. The model shows a range of different drivers and property implications. The range of products available today provides businesses with a degree of choice in the form of their commitment to real estate with a spread, that is widening, between the needs of 'big business' and the needs of entrepreneurs and small businesses. This also includes a blurring of working and living through live/work premises.

### 5.3. Small businesses and flexible space

The profound changes taking place in the corporate and business landscape, which feed through to changing workplace needs, are part of a complex set of relationships that are also leading to a rapid growth of people working in independent businesses and the rapid expansion of people working at least part of the time from home. The critical point here is that large numbers of people are *doing things differently*. Such trends have profound implications for new developments like Bicester, where there is the opportunity to bring 'work' and 'live' close together in the form of an 'innovation community'.

One of the most visible symptoms of the evolving economy in recent years has been the explosion of small, independent businesses, particularly self-employed, one-

person businesses. The 'solo self-employed' now make up 3.9m of the 4.7m self-employed. The technological revolution has acted as a spur to the growth of small businesses by stripping away many of the 'barriers to entry' that setting up a new business once implied. Instead, it allows individuals to trade their intellectual capital using cheap and ubiquitous ICT infrastructure.

Within the overall rise of SMEs, there has been a rapid growth in the number of home-based businesses (HBBs). There are currently around 2.8m HBBs, a figure that has grown by 40% since 2000. Consequently, there is a growing demand for combining 'dwelling and workplace'. As technology is changing the way we work, it is making it easier to work from smaller spaces, quieter, less environmentally damaging. It is also driving a change in the way people work. Enabling them to be more flexible and to blur the lines between work life and home life.

Largely in response to the dynamics of the small firm market, and the pervasive impact of cheap, ubiquitous technology, the flexible space market has grown very rapidly, and looks set to continue growing. Across the UK, there is now around 5.5m sq m of flexible space in around 3,000 centres. The popularity of the flexible space market is evidenced in the scale of take-up in Central London. Between 2007 and 2019, the amount of flexible space tripled, from around 400,000 sq m to 1.2m sq m (over 4% of stock).[48] We provide a typology of the flexible space market, showing a spectrum of types, while recognising there are overlaps and grey areas.

Research on existing and planned innovation spaces in Oxfordshire suggests that there are currently 48 innovation spaces in Oxfordshire, including 35 existing and 13 planned. The spaces ranged from small co-working spaces to large science parks. They are spread across the county, but with a notable concentration on Oxford and around Abingdon and Dicot.

However, we have yet to see a major shift in the direction of mixed-use developments, where homes and jobs are provided for within balanced communities. There are a number of reasons for this, but the number of reasons is reducing as technology changes the nature of work, and as social preferences begin to have greater impact. There is an opportunity for Bicester to be at the forefront of change here and, in doing so, vastly improve its economic profile and 'brand'.

## 5.4. Innovation development

A central theme of the material presented in this paper is that social, technological and economic changes are bringing about widespread changes to working and living styles. This, ultimately, is leading to new approaches to the provision of workspace, particularly B1 space. It is widely known that the Bicester 'B' market is over-supplied but, at the same time, that oversupply is unlikely to be absorbed simply through time because its design and specification do not reflect the emerging workplace agenda. The proposals for Bicester Gateway – the innovation community – seek to address emerging demand by adding to the emerging critical mass of locational advantages; i.e. economic assets that attracts the high value-add knowledge economy. The provision of such advanced facilities will act as a catalyst for the wider town and help enhance its overall asset base and, therefore, its attractiveness to new investment.

[48] Cushman & Wakefield (2018) *Co-working 2018*

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In recent years there has been a significant growth in the number of 'innovation districts', not just in the UK but around the world. Such districts, or clusters, tend to develop around a specific knowledge anchor, such as a hospital or university, or an industry sector, all of which create opportunities for collaborative innovation.

Growing numbers of innovative firms and talented workers are choosing to congregate and co-locate, sometimes in tight, amenity-rich areas of city centres, other times in more extensive but specialist facilities on dense developments where knowledge-intensive companies locate key facilities close to other firms, research labs, and universities.

While discussion of innovation districts emphasises their typically central urban nature, this is by no means the only form of expression. We describe here American examples of "urbanized science parks," and UK examples of out-of-town technology parks which are being repurposed and reinvented as innovation districts, with a wider mix of uses, and stronger links to nearby city-based innovation assets. Another study identifies innovation buildings, quarters, sites, campuses, districts, triangles and suburban parks, as well as out-of-town innovation zones and innovation corridors. Innovation districts encourage 'open innovation' and are changing both where firms locate and how buildings and larger districts are designed, from research labs to collaborative spaces to mixed-use developments.

There are growing numbers of people working from home, as established patterns of living and working evolve. Live/work describes accommodation that is specifically designed to enable dual residential and business use. It differs from ordinary home working in so far as live/work premises are specifically designed to have a higher intensity of business use. This might be simply in terms of the amount of space devoted to the work use, and it might also be the case that the work element is designed to accommodate more workers than just the resident and might be capable of accommodating company growth.

Research suggests that the notion of residential areas solely as dormitories is on the decline, and that more people spending more time where they live, leading to the need for different types of local services and attitudes to places of residence. We have cited research here suggesting that there is a strong and growing market for live/work districts, combinations of mixed-use units and work hubs, and that Live/work development will be an important consideration for new settlements.

As suggested above, a generally-accepted definition of live-work accommodation is: accommodation that combines both living and working spaces, with the workspace forming a permanent component of the accommodation. There is no single solution to the design of live/work, although it is possible to identify a number of detailed themes. Such a cluster can have the effect of creating a business or research cluster with the possibility for shared support services.

Business parks have evolved over the years, and they continue to do so. During the 1980s, the business park model emerged as the preferred model for out-of-town development. The major revision of the Uses Classes Order in 1987, including the creation of the B1 use class which allowed for transition between office, light industrial and R&D without planning consent, spurred a huge increase in out-of-town employment. By 1990, there were nearly 500 business parks in the UK.

Since the turn of the century, there has been a growing focus on sustainable development, which has cast a light on private car usage and the dependency of many business parks on generous parking standards and extensive travel-to-work areas. More recently still, there has been a growing focus on amenity in the workplace, work-life balance and agile working. And not all business parks have fared well in these terms. To remain competitive, larger, older business parks are having to increase density and add a more diverse range of uses, including housing and lifestyle amenities.

Innovation development involves a blending of 'work, life and play' in mixed use and co-working/co-living environments. We describe such development as 'business communities'; and in the Oxfordshire context there is the potential to plan for a sub-set, which we refer to as 'innovation communities'.

Also, such development will help the county spread the benefits of economic success across a wider selection of settlements, thereby helping to ease commuting into central Oxford and benefiting parts of the county that need an economic stimulus. It is also likely that an 'innovation community' in Bicester (the first in Oxfordshire) will build on the changing perception and 'brand' of Bicester, which will be self-reinforcing and highly beneficial for the town so that it is fully-integrated into the wider Oxon innovation narrative.

The evidence suggests that such proposals will successfully attract 'inward innovators' (i.e. people) from knowledge hotspots such as central Oxford, especially young professionals who cannot afford Oxford's exceptionally high house prices and rents. With the 'war for talent' it is reasonable to conclude that knowledge-based inward investment (i.e. corporates/employers) will follow. There is therefore scope here for innovative planning – with wide-ranging benefits.

## 5.5. Overview

The latter part of 2019 has seen significant political change, with the election of a new Conservative Government, with a large majority. This will end a long and chaotic period in UK politics, that has been detrimental to long-term investment decisions. The scale of the new Government's majority also means that the UK's departure from the EU at the end of January 2020 is now assured. While a long period of negotiations is expected to follow, that will shape the nature of our future relationship, the basis of the uncertainty has been removed. Again, from an investment perspective, this will bring an element of certainty, and is widely expected to lead to a significant growth in real estate investment.

There has been considerable evolution in innovation development in recent years, whether in single building format or district-wide. What is certainly clear are the tangible links between economic, business, technology and social drivers of change, which have fed through to new workplace needs and responsive work environments. The theme running through is innovation, as owners, designers and managers respond to a rapidly changing and unpredictable environment. There has also been rapid growth in small, knowledge-based businesses in recent years, directly related to a rapidly evolving and restructuring economy, and the opportunities that now exist for small firms to compete in the mainstream economy.

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Bicester generally, and Bicester Gateway in particular, have a great opportunity to meet some of the growing demand for innovation development and, in the process, help change the market perception of Bicester so that it is fully-integrated into the wider Oxon innovation narrative. It is likely that this will lead to development that is sustainable and highly accessible by public transport.

Bicester is a rapidly expanding historic market town, with a long-standing military presence, that has grown substantially over the past 50 years. The population of c30,000 has grown by 50% since 1981. Further growth of up to 30% is forecast over the coming two decades. Bicester has social and economic infrastructure; it has capacity for growth, and it is well connected. We saw above a list of its strengths and weaknesses; we also saw its potential role in supporting existing and new businesses, and its opportunity to become a significant location in the Oxford-Cambridge Arc.

Bicester Gateway could also be one of a number of loci for innovative development. The Phase 1 proposals could, for example, deliver an 'innovation community' akin to what the University has proposed at Begbroke Science Park; following best practice in business park development.

The innovation and employment space could be accompanied by residential accommodation for young people and young professionals, a currently under-supplied segment of the housing market in Bicester as elsewhere, making the most of the accessibility to Oxford offered by the 25-minute bus journey from the Park & Ride adjoining Bicester Gateway

This 'innovation community' proposal for Phase 1B of Bicester Gateway would aim to support a wider Oxfordshire effort to rise to the challenges and opportunities of 21st Century Oxfordshire with innovation development. Bicester Gateway is an ideal opportunity for innovative planning, not least because, as a gateway site, there is so much potential to broadcast the innovative potential of Bicester.