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BRISTOL CITY COUNCIL

Bristol Employment Sites & Premises Requirements Evidence

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1 Introduction

1.1 Following work being halted on the West of England Spatial Development Strategy (SDS) there is a need to consider a range of strategic matters that were expected to be established within the SDS.

1.2 The SDS was prepared using employment evidence set out within the Employment Land Spatial Needs Assessment (ELSNA). Following a recent review it has been decided that a partial update to that evidence document would be beneficial. This includes procuring new economic forecasts and agreeing a shared set of economic scenarios across sub-regional partners. This will ensure evidence that is relied upon at subsequent Local Plan Examinations is up to date.

1.3 HJA has been appointed by the five administrative authorities within the West of England area (Bath & North East Somerset Council, Bristol City Council, North Somerset Council, South Gloucestershire Council and the West of England Combined Authority) to prepare evidence for each respectively, drawing on a consistent methodological approach. The specific requirements of each authority vary and are reported individually.

1.4 Bristol City Council requires a set of updated economic scenarios and employment land demand forecasts. This will form part of the evidence base for its new Local Plan.

1.5 Employment and economic forecasts have been purchased from Cambridge Econometrics and Oxford Economics. Following analysis of these forecasts, a set of shared economic scenarios have been agreed and used to model the demand for employment sites and premises in the City of Bristol.

1.6 This report also includes details on the employment sites and premises requirements of key sectors in the City of Bristol, and across the West of England as a whole. The report concludes with high level analysis of retail floorspace requirements based on net forecast changes in employment in the agreed economic scenarios.

2 Economic Forecasts & Scenarios

2.1 This chapter sets out a summary of the economic and employment forecasts for the City of Bristol. These have been benchmarked against the West of England (WoE) and United Kingdom (UK) where appropriate.

Baseline Forecasts

2.2 Baseline – or 'business as usual' – forecasts were purchased from Cambridge Econometrics (CE) and Oxford Economics (OE). These are two of the leading economic forecasters in the UK for local and regional forecasts. Analysis of these forecasts has been set out for the period from 2001 to 2043.

2.3 There is a need to consider whether forecasts should be termed 'policy on', 'policy off', 'baseline', or 'business as usual'. Each of these terms has helpful and unhelpful connotations. Nevertheless, there is a need to clarify the terminology used within this report. We therefore clarify the following:

- The original forecasts provided by the forecasting houses (CE and OE respectively) are referred to in this report as 'baseline' forecasts. This enables them to be compared with any adjusted scenarios that are considered.
- The forecasters' 'baselines' draw on historic economic performance of the area as one of their forecasting metrics. They also draw on detailed analysis of national and sectoral performance potential. The forecasts are therefore not developed assuming a policy vacuum. Whilst they are not developed with explicit reference to future local policy or known investments, the historic period on which they draw will include efforts from national, regional, and local economic development stakeholders to deliver a prosperous economy. A level of economic development activity is therefore inherent in these forecasts.

2.4 We also include a comparison of the baseline forecasts for the Combined Authority area to the baseline forecasts for the UK.

Headline Economic Performance

2.5 The following analysis considers the historic performance over the period from 2001 to 2021[1], and the future forecast period of 2023 to 2043.

2.6 Set out in this section is an analysis of:

- Total employment – a measure of total jobs including employment and self-employment;
- Gross Value Added (GVA) – a measure of economic output.

2.7 As a result of small discrepancies in the way data is modelled by the two forecasters, the charts below use an index rather than absolute values. This ensures that the two datasets align at 2023 and makes it easier to see any divergence between different scenarios.

[1] Due to the time lag in the publication of official data 2021 is the most recent year forecasters would have access to official data to inform the forecast models. Therefore, a 20 year historic period has been selected from 2001 to 2021 to analyse historic performance.

Interpreting Index Charts

Index charts establish a common starting point and examine the percentage changes from this point. Charts in this report are indexed to 2023 (2023 = 100).

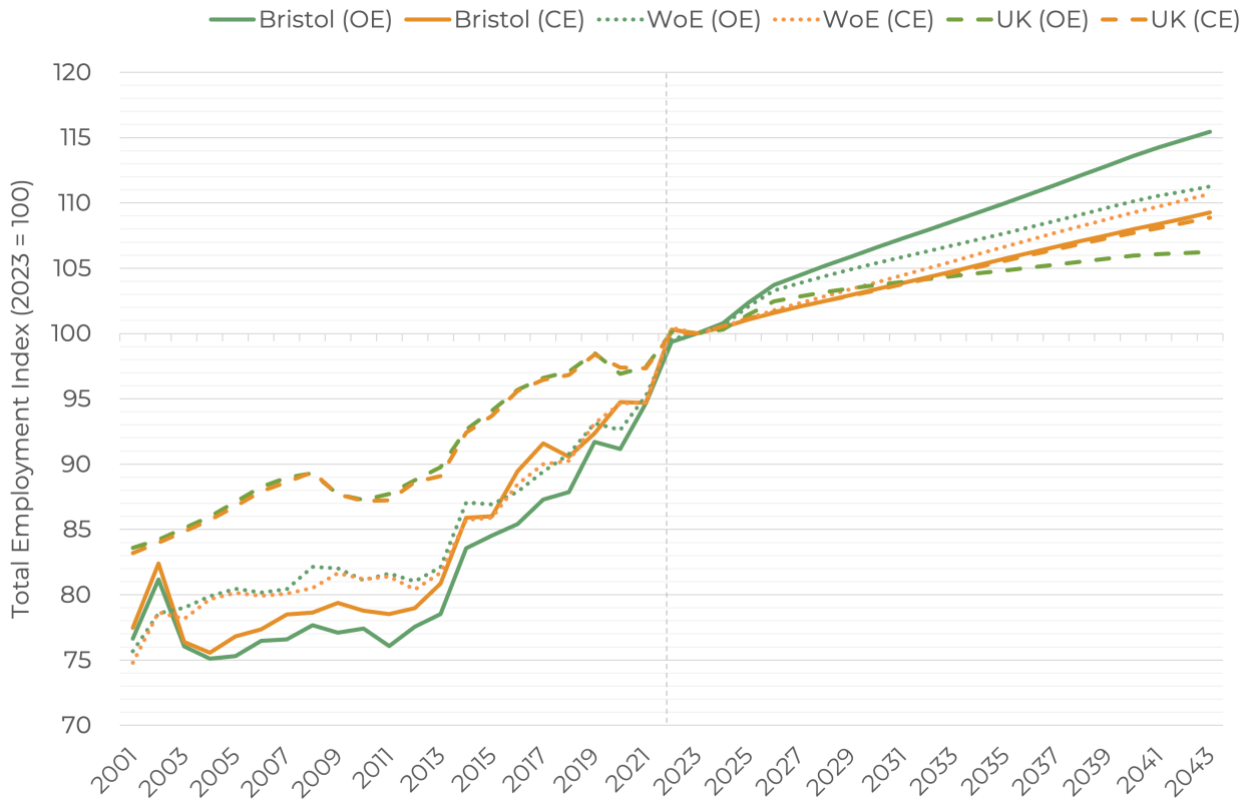
Therefore, over the period from 2023 to 2043 higher numbers on the y-axis indicate larger percentage changes. For the period from 2001 to 2023, the lower the number on the y-axis the larger the percentage change from that point up to 2023.

What this means visually is that areas that performed more strongly in the historic period are shown as the lower lines on the chart. This may appear counter intuitive to some readers.

Total Employment

2.8 The figure below shows the historic and forecast future total employment for the City of Bristol. The West of England (WoE) and UK are included on the chart for comparison.

Figure 2.1: Historic and Forecast Future Employment Change in the City of Bristol, West of England and UK (2001 – 2043)



Source: HJA analysis of Cambridge Econometrics and Oxford Economics data

2.9 Over the historic period 2001 to 2021 CE shows that employment in the City of Bristol has grown by +58,100 (+2,900 per annum) whilst OE reports that employment has grown by +62,200 (+3,100 per annum). Over the same period, Jobs Density data[2] shows that the City of Bristol added +56,000 jobs (+2,800 per annum).

[2] The most comprehensive assessment of total jobs within an area

2.10 Between 2001 and 2021, the City of Bristol has seen an historic compound annual growth rate (CAGR)[3] of 1.1% which is slightly below the WoE rate of 1.2%, and above that of the UK as a whole (0.8%). Growth in the City of Bristol area is notably stronger in the latter half of the historic period from 2013 to 2021.

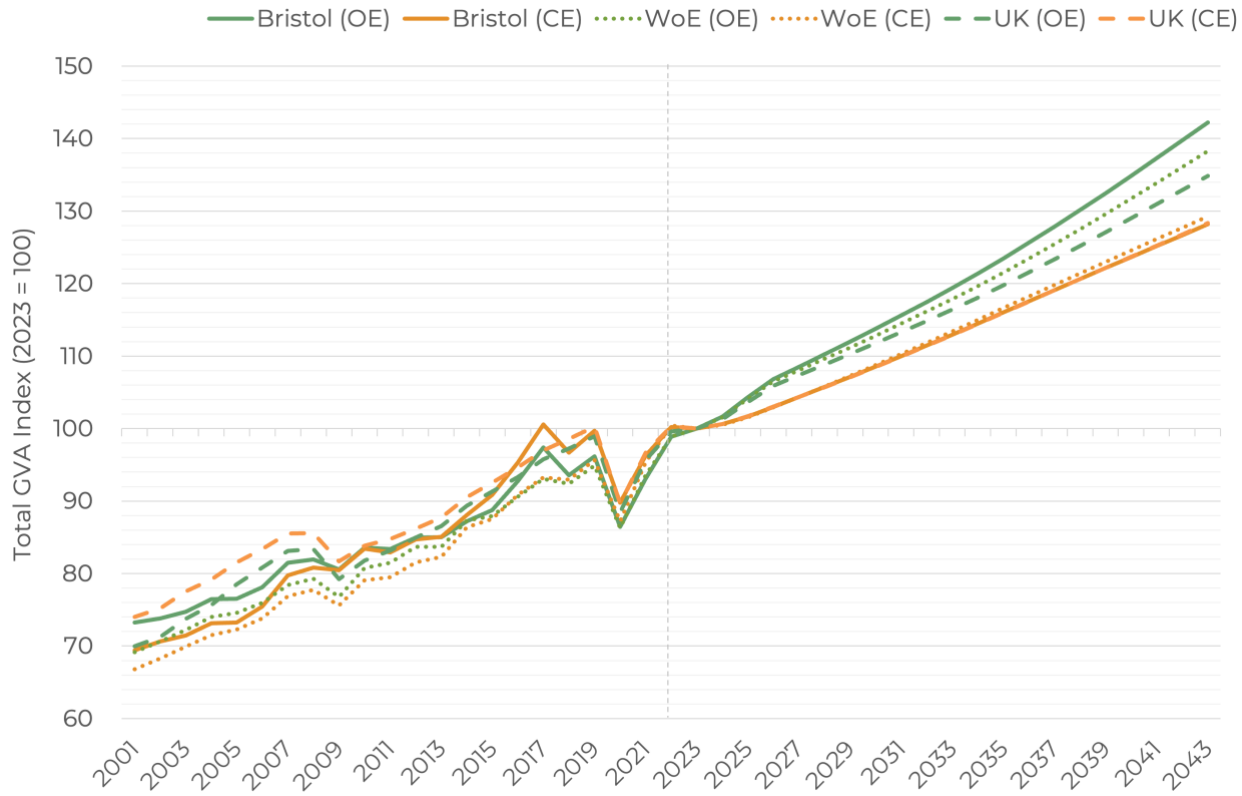
2.11 The CE and OE forecasts for the future period (from 2023 to 2043) show a notable divergence for the City of Bristol. CE forecasts a future CAGR of 0.4%, whereas OE forecasts a CAGR of 0.7% over the same period. The OE forecast growth is significantly above both comparator areas, with the WoE forecast to experience a 0.5% CAGR, and the UK between a 0.3% and 0.4% CAGR.

2.12 Both forecasters agree that there will be lower employment growth in the future period from 2023 to 2043 than in the preceding period from 2001 to 2021, albeit there is divergence on the level of growth.

Gross Value Added

2.13 The figure below shows historic and forecast future total GVA for the City of Bristol compared to the WoE and the UK.

Figure 2.2: Historic and Forecast Future GVA Change in the City of Bristol, West of England and UK (2001 – 2043)



Source: HJA analysis of Cambridge Econometrics and Oxford Economics data

2.14 The figure above shows that the City of Bristol has seen historic growth rates similar to those in both the WoE and UK respectively. Over the historic period 2001 to 2021 CE shows that GVA in the City of Bristol area has grown by +£4.3 billion (+£214 million per annum) whilst OE reports

[3] This is the average percentage rate of growth over the analysis period

that GVA has grown by +£3.3 billion (+£164 million per annum). Over the same period, ONS data[4] shows that GVA has grown by +£9.2 billion (+£459 million per annum).

2.15 Over the historic period from 2001 to 2021, CE has reported a compound annual growth rate (CAGR) of 1.6%, and OE reports a CAGR of 1.2%.

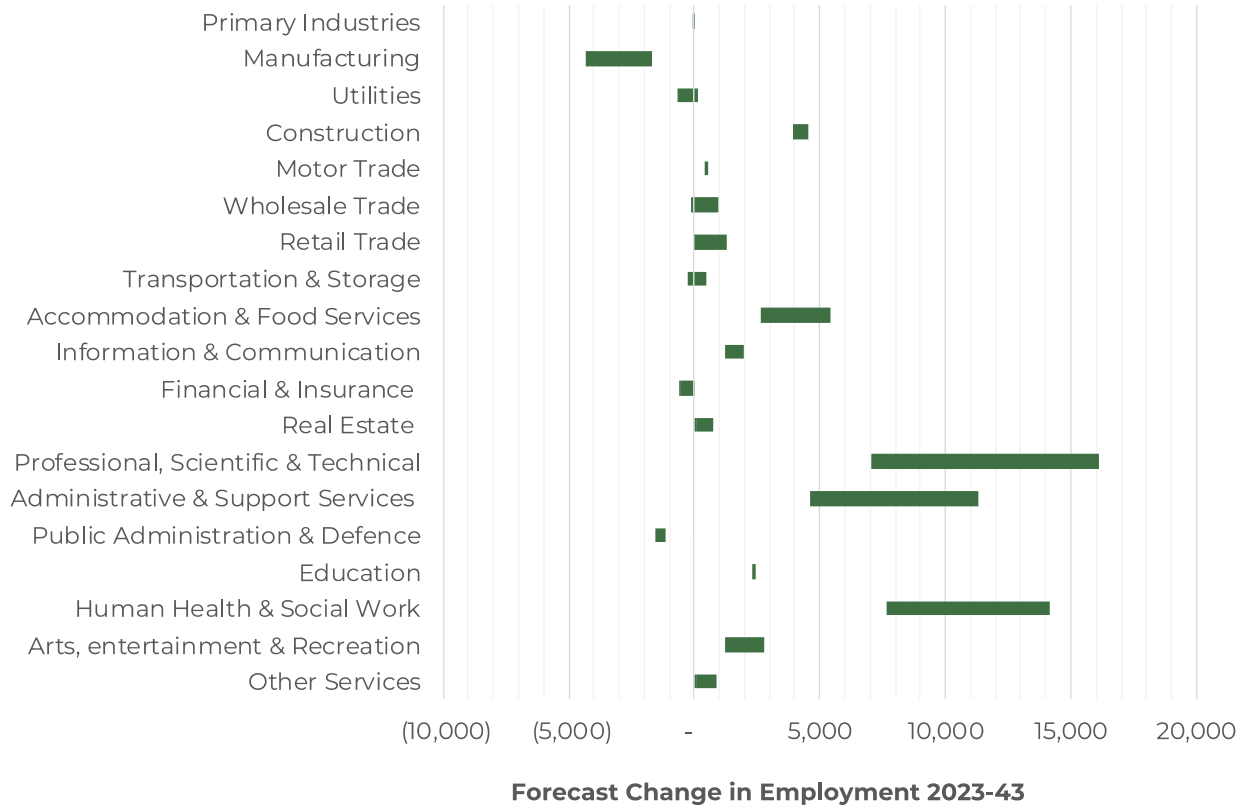
2.16 Figure 2.2 shows that over the future period, CE forecasts that the City of Bristol will experience the same growth rate as the UK (the lines overlap on the chart) which is broadly in-line with the WoE growth rate. OE forecasts that the City of Bristol will see growth rates above both comparator areas.

2.17 Over the future period of 2023 to 2043, CE reports a CAGR of 1.3% whilst OE reports a CAGR of 1.8%.

Sectoral Analysis

2.18 The sectoral breakdown of forecast employment change includes variation between the OE and CE datasets. This is illustrated in Figure 2.3. This shows the manufacturing; accommodation & food services; professional, scientific and technical activities; administrative & support services; and human health & social work activities sectors have particularly wide range estimates across the two forecasters.

Figure 2.3 Forecast Employment Change by Sector for the Bristol Unitary Authority Area (2023-2043)



[4] Source: Regional gross value added (balanced) by industry: local authorities by International Territorial Level (ITL) 1 region: TLK South West [Accessed 21 September 2023]

2.19 Table 2:1Table 2:1 provides data and discussion on each of the sectors that contribute to the overall forecasts presented above. The table is colour coded for ease of reference. Sectors that are forecast to grow in employment terms are coloured green, sectors that are forecast to decline are coloured red. Those sectors where the forecasters disagree, with one indicating decline and the other growth are shown as amber.

Table 2:1: Sectoral Analysis of CE and OE Employment Forecasts

Sector	Description
Primary Industries	In 2021, CE reports 1,100 jobs in this sector. CE reports a growth in employment of +30 in this sector over the historic period from 2001 to 2021. CE forecasts a decline of -3 over the period from 2023 to 2043. In 2021, OE reports 150 jobs in this sector. OE reports a decline in employment of -130 over the period from 2001 to 2021, and a decline of -50 over the forecast period from 2023 to 2043. **CE reports employment growth over the historic period whilst OE report a decline in this sector. Both agree that the sector will see a small decline in the forecast future period.**
Manufacturing	CE reports 11,100 jobs in Manufacturing in 2021. CE reports a decline in employment of -16,600 in this sector over the historic period from 2001 to 2021. It forecasts a further decline of -1,700 over the period from 2023 to 2043. OE reports 10,800 jobs in Manufacturing in 2021. OE reports a decline in employment of -14,900 over the period from 2001 to 2021, and a further decline of -4,300 over the forecast period from 2023 to 2043. **Both forecasters report employment decline in the historic period and forecast future period, with OE forecasting a higher decline than CE over 2023-2043.**
Utilities	For 2021, CE reports 3,300 jobs in this sector. CE reports a growth in employment of +790 in this sector over the historic period from 2001 to 2021. It forecasts growth of +170 over the period from 2023 to 2043. For 2021, OE reports 3,800 jobs in this sector. OE reports a growth in employment of +640 over the period from 2001 to 2021, and a decline of -680 over the forecast period from 2023 to 2043. **Both forecasters report broadly similar employment growth in the historic period. They diverge in the forecast future period, with CE forecasting a small growth in this sector and OE forecasting a decline.**

Sector	Description
Construction	For 2021, CE reports 14,000 Construction sector jobs. CE reports a decline in employment of -2,200 in this sector over the historic period from 2001 to 2021. It forecasts growth of +4,500 over the period from 2023 to 2043. For 2021, OE reports 14,900 Construction sector jobs. OE reports a decline in employment of -3,800 over the period from 2001 to 2021, and a growth of +3,900 over the forecast period from 2023 to 2043. **CE and OE show a decline over the historic period, with OE reporting a loss of over 1,000 more jobs than CE. Both forecasters are similar in their future forecasts for the sector, showing growth of employment for 2023 to 2043.**
Motor Trade	CE reports 5,400 jobs in this sector for 2021. CE reports a decline in employment of -120 in this sector over the historic period from 2001 to 2021. It forecasts growth of +410 over the period from 2023 to 2043. OE reports 5,200 jobs in this sector for 2021. OE reports a decline in employment of -380 over the period from 2001 to 2021, and a growth of +580 over the forecast period from 2023 to 2043. **There is broad agreement between the two forecasters on the historic and future performance of this sector in terms of employment change.**
Wholesale Trade	CE reports 9,900 jobs in this sector in 2021. CE reports a growth in employment of +160 in this sector over the historic period from 2001 to 2021. It forecasts a decline of -110 over the period from 2023 to 2043. OE reports 9,700 jobs in this sector in 2021. OE reports a decline in employment of -1,300 over the period from 2001 to 2021, and a growth of +970 over the forecast period from 2023 to 2043. **OE report a decline in this sector in the past, whilst CE reports growth over the historic period. In their future forecasts, CE forecasts a decline and OE forecasts a growth in employment.**

Sector	Description
Retail Trade	For 2021, CE reports 18,900 jobs in Retail Trade. CE reports a decline in employment of -5,000 in this sector over the historic period from 2001 to 2021. It forecasts growth of +8 over the period from 2023 to 2043. For 2021, OE reports 20,400 jobs in Retail Trade. OE reports a decline in employment of -2,900 over the period from 2001 to 2021, and a growth of +1,300 over the forecast period from 2023 to 2043. **There is broad agreement between the forecasters on the historic performance of this sector. Over the forecast future period, CE forecasts marginal growth and OE forecasts growth of over 1,000 more jobs than CE.**
Transportation & Storage	For 2021, CE reports 13,300 jobs in this sector. CE reports a growth in employment of +4,400 in this sector over the historic period from 2001 to 2021. It forecasts decline of -240 over the period from 2023 to 2043. For 2021, OE reports 13,500 jobs in this sector. OE reports a growth in employment of +3,100 over the period from 2001 to 2021, and a growth of +450 over the forecast period from 2023 to 2043. **Both forecasters report broadly similar employment growth in the historic period. They diverge in the forecast future period, with CE forecasting a decline in this sector and OE forecasting a growth.**
Accommodation & Food Services	For 2021, CE reports 19,900 jobs in this sector. CE reports a growth in employment of +7,700 in this sector over the historic period from 2001 to 2021. It forecasts growth of +5,430 over the period from 2023 to 2043. For 2021, OE reports 18,800 jobs in this sector. OE reports a growth in employment of +7,200 over the period from 2001 to 2021, and a growth of +2,700 over the forecast period from 2023 to 2043. **CE and OE report both that this sector has and will continue to see jobs growth. CE forecasts greater future growth than OE.**
Information & Communication	For 2021, CE reports 18,000 jobs in this sector. CE reports a growth in employment of +5,500 in this sector over the historic period from 2001 to 2021. It forecasts growth of +1,300 over the period from 2023 to 2043. For 2021, OE reports 18,400 jobs in this sector. OE reports a growth in employment of +6,500 over the period from 2001 to 2021, and a growth of +2,000 over the forecast period from 2023 to 2043. **Both forecasters report that this sector has and will continue to see jobs growth. OE reported and forecasts greater growth than CE for both periods.**

Sector	Description
Financial & Insurance Activities	CE reports 16,400 jobs in this sector in 2021. CE reports a decline in employment of -5,600 in this sector over the historic period from 2001 to 2021. It forecasts decline of -560 over the period from 2023 to 2043. OE reports 18,600 jobs in this sector in 2021. OE reports a decline in employment of -3,500 over the period from 2001 to 2021, and a decline of -510 over the forecast period from 2023 to 2043. **CE and OE report both that this sector has and will continue to see jobs decline, albeit there is a difference in the historic level of decline.**
Real Estate Activities	CE reports 4,700 jobs in this sector in 2021. CE reports a growth in employment of +2,300 in this sector over the historic period from 2001 to 2021. It forecasts growth of +50 over the period from 2023 to 2043. OE reports 5,000 jobs in this sector in 2021. OE reports a growth in employment of +2,200 over the period from 2001 to 2021, and a growth of +750 over the forecast period from 2023 to 2043. **Both forecasters report similar levels of jobs growth over the historic period. OE forecasts greater employment growth than CE for the 2023 to 2043 period.**
Professional, Scientific & Technical Activities	For 2021, CE reports 40,800 jobs in this sector. CE reports a growth in employment of +23,600 in this sector over the historic period from 2001 to 2021. It forecasts growth of +7,100 over the period from 2023 to 2043. For 2021, OE reports 47,400 jobs in this sector. OE reports a growth in employment of +29,000 over the period from 2001 to 2021, and a growth of +16,100 over the forecast period from 2023 to 2043. **CE and OE agree there has been significant employment growth over the historic period. Both forecasters report further growth in the future, with OE forecasting over double the amount forecasted by CE.**

Sector	Description
Administrative & Support Service Activities	For 2021, CE reports 30,000 jobs in this sector. CE reports a growth in employment of +4,300 in this sector over the historic period from 2001 to 2021. It forecasts growth of +4,600 over the period from 2023 to 2043. For 2021, OE reports 31,400 jobs in this sector. OE reports a growth in employment of +2,800 over the period from 2001 to 2021, and a growth of +11,300 over the forecast period from 2023 to 2043. **CE and OE agree there has been employment growth over the historic period. Both forecasters report further growth in the future, with OE forecasting over double the amount forecasted by CE.**
Public Administration & Defence	For 2021, CE reports 26,900 jobs in this sector. CE reports growth in employment of +9,800 in this sector over the historic period from 2001 to 2021. It forecasts a decline of -1,100 over the period from 2023 to 2043. For 2021, OE reports 15,600 jobs in this sector. OE reports growth in employment of +2,600 over the period from 2001 to 2021, and a decline of -1,600 over the forecast period from 2023 to 2043. **CE reports 7,200 more jobs growth over the historic period than OE. Both forecasters predict the sector will see a decline in employment over the forecast future period.**
Education	For 2021, CE reports 26,600 jobs in the Education sector. CE reports a growth in employment of +3,700 in this sector over the historic period from 2001 to 2021. It forecasts growth of +2,300 over the period from 2023 to 2043. For 2021, OE reports 28,200 jobs in the Education sector. OE reports a growth in employment of +5,000 over the period from 2001 to 2021, and a growth of +2,400 over the forecast period from 2023 to 2043. **There is broad agreement between the forecasters on the historic and future performance of this sector in terms of employment growth.**

Sector	Description
Human Health & Social Work Activities	CE reports 47,100 jobs in this sector in 2021. CE reports a growth in employment of +25,300 in this sector over the historic period from 2001 to 2021. It forecasts growth of +7,700 over the period from 2023 to 2043. OE reports 51,000 jobs in this sector in 2021. OE reports a growth in employment of +28,600 over the period from 2001 to 2021, and a growth of +14,200 over the forecast period from 2023 to 2043. **CE and OE agree there has been employment growth over the historic period. Both forecasters report further growth in the future, with OE forecasting just under double the forecast by CE.**
Arts, Entertainment & Recreation	For 2021, CE reports 6,200 jobs in this sector. CE reports growth in employment of +830 in this sector over the historic period from 2001 to 2021. It forecasts growth of +1,200 over the period from 2023 to 2043. For 2021, OE reports 7,400 jobs in this sector. OE reports a growth in employment of +990 over the period from 2001 to 2021, and a growth of +2,800 over the forecast period from 2023 to 2043. **CE and OE report both that this sector has and will continue to see jobs growth. OE forecasts a higher number of jobs in the future period.**
Other Service Activities	CE reports 5,200 jobs in Other Service Activities in 2021. CE reports a decline in employment of -1,800 in this sector over the historic period from 2001 to 2021. It forecasts growth of +90 over the period from 2023 to 2043. OE reports 6,300 jobs in Other Service Activities in 2021. OE reports a growth in employment of +3,500 over the period from 2001 to 2021, and a growth of +900 over the forecast period from 2023 to 2043. **The forecasters diverge on the historic performance of this sector, with CE reporting employment decline and OE reporting employment growth between 2001 and 2021. They diverge in the quantum of future growth, with OE forecasting 810 more jobs than CE between 2023 and 2043.**

Summary

2.20 Overall, there is some divergence in the total employment forecasts of CE and OE. CE forecasts employment growth of +31,200 and OE forecast employment growth +53,300 over the period from 2023 to 2043.

2.21 Over the historic period 2001 to 2021 the ONS reports there has been an increase of +56,000 jobs in the City of Bristol. The forecasts suggest that over the future forecast period there will

be lower jobs growth than over the period 2001 to 2021, albeit OE's forecast is only slightly lower.

2.22 There are some notable differences in the sectoral forecasts for the City of Bristol. In terms of sectors with a significant influence on employment land these are:

- Manufacturing (CE forecasts a decline of -1,650 whilst OE forecasts a decline -4,300)
- Wholesale Trade (CE forecasts a decline of -110 whilst OE forecasts growth of +970)
- Transportation & Storage (CE forecasts a decline of -240 whilst OE forecasts growth of +450)
- Professional, Scientific & Technical (CE forecasts growth of +7,080 whilst OE forecasts growth of +16,130)
- Administrative & Support Services Activities (CE forecasts growth of +4,630 whilst OE forecasts growth of +11,330)

Alternative Growth Scenarios

2.23 It is appropriate to consider the need for alternative scenarios to help address uncertainty and to deal with other evidence.

The Baseline Scenario – Sectoral Differences

2.24 As noted above, there are some large sectoral differences between the CE and OE baseline forecasts. As such, it is deemed appropriate to model both baseline forecasts within the analysis of future sites and premises requirements (in the following chapter) to understand the implications of differing levels of employment growth in different sectors on the demand for employment land and premises.

Higher Growth Scenarios – Aligning to Demographic Change

2.25 Demographic forecast analysis for the City of Bristol over the period 2023 to 2043 have been obtained from ORS[5]. These figures have been derived from the preferred housing assessment methodology adopted by the City of Bristol. These figures have been translated into an estimate of the number of jobs required across the City of Bristol area to maintain a balanced labour market[6].

2.26 The population projections emerging from the ORS analysis are substantially higher than the population estimates inherent within the OE and CE baseline models. The labour market balancing analysis indicates that the level of jobs growth required across the City of Bristol to maintain a balanced labour market is around 53,000 over the 20-year forecast period. This figure is broadly in-line with the OE figure, but is some 22,000 jobs higher than the CE baseline.

2.27 Sectoral employment growth estimates have been developed, uplifting the baseline CE scenario to align to the higher growth labour market balance scenario. This approach ensures the variation in sectoral growth expectations inherent within the baseline forecast is also

[5] ORS is preparing housing and demographic evidence across the four West of England Unitary Authority areas that will sit alongside this economic evidence. Data was provided for the total population and economically active population.
[6] Three different methodologies to estimate the number of jobs required to balance the labour market have been employed with the average of the three estimates adopted. The first method adjusts the projected economically active population for unemployment, double jobbing and net commuting; the second method draws on the relationship between jobs and population within the CE model; the third approach draws on ONS data for the relationship between jobs and population.

captured across the higher growth scenarios. Given the OE baseline scenario forecasts sufficient employment growth to maintain a balanced labour market no uplift has been applied to this forecast.

Scenarios Summary

2.28 Table 2:2 provides a summary of the total jobs estimates across the baseline and higher growth scenarios, as well as comparison to the 20-year historic employment growth data.

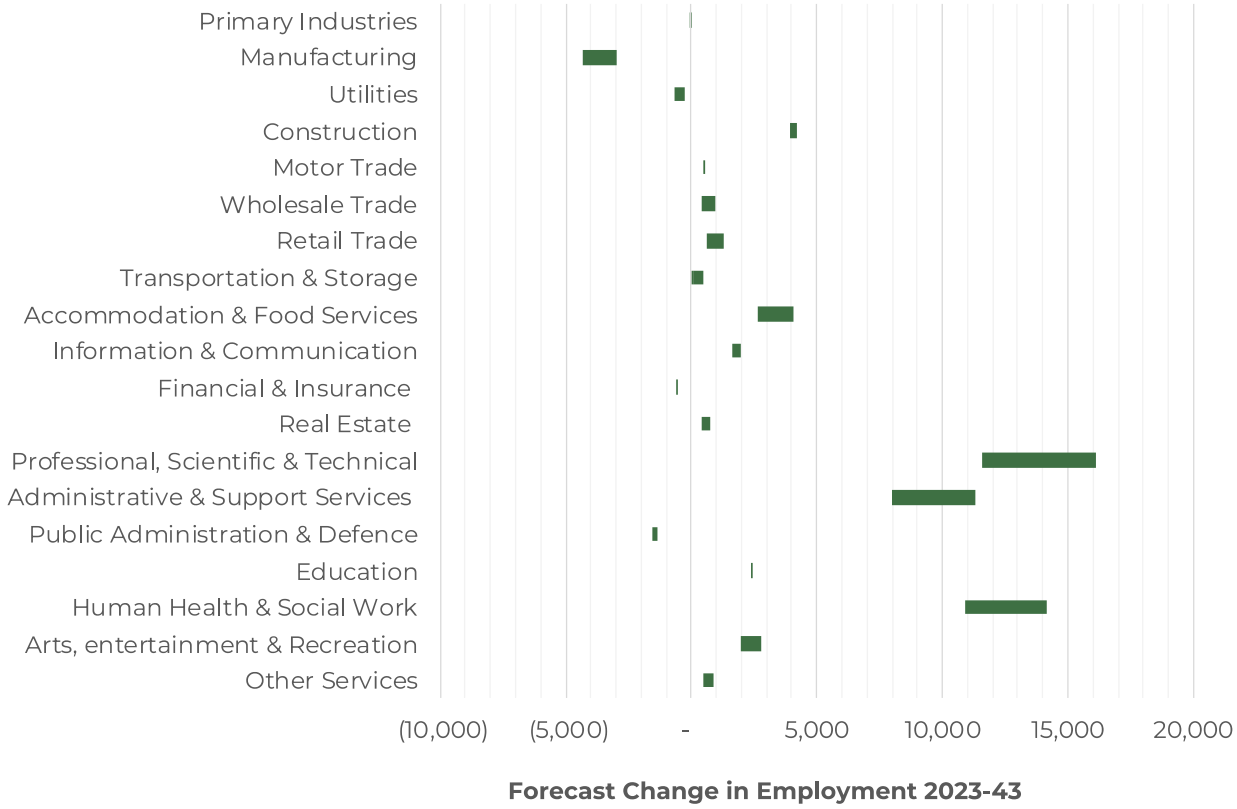
Table 2:2: Employment Growth Scenario Summary

Area	Historic Change	Baseline Scenarios (2023-2043)		Higher Growth Scenario
	2001-21	Cambridge Econ.	Oxford Economics	Labour Market Balance
Bristol	56,000	31,000	53,000	53,000

Source: HJA based on ONS, OE, CE and own analysis. Figures may not sum due to rounding.

2.29 Figure 2.4 illustrates the adjusted sectoral breakdown for the labour market balance scenario which includes a narrowing of the ranges for many sectors due to uprating of potential growth levels to the CE baseline position.

Figure 2.4 Labour Market Balance Sector Change 2023-2043



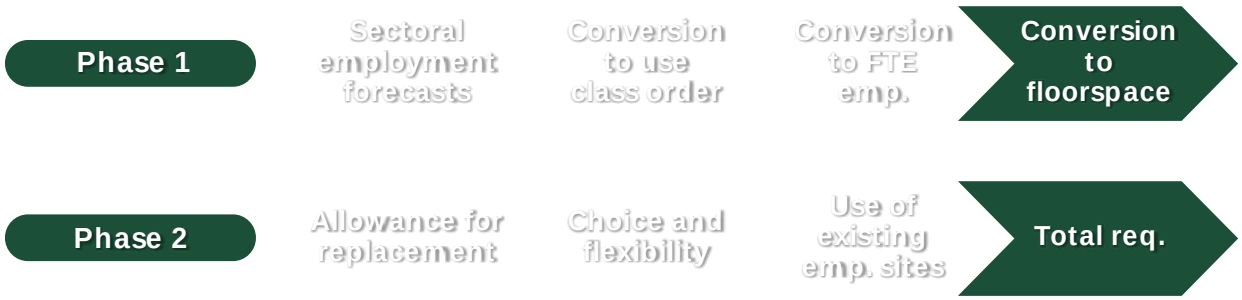
3 Future Employment Sites & Premises Requirements

3.1 The following chapter sets out the employment land and premises requirements resulting from the scenarios selected for analysis at the end of the preceding chapter.

Approach

3.2 Figure 3.1 provides a summary of the approach adopted in this report to assess the need for future sites and premises.

Figure 3.1: Approach to Assessing Sites and Premises Requirements



3.3 **Phase 1** takes account of the net changes in the economy i.e. the growth and decline of particular sectors, as discussed in the previous chapter. The sectoral employment projections are converted to planning Use Classes. This provides an indication of the spread of future employment change across the full range of planning Use Classes and none. From that point onward the focus is upon Use Classes E(g), B2, and B8, with other elements of the evidence base more suited to informing the detailed requirements for C, other E uses except for E(g), and Sui Generis. The net employment changes in the E(g), B2, and B8 Use Classes are then converted to property and land requirements using employment and development density assumptions.

3.4 **Phase 2** then considers wider market factors, particularly the need to allow for churn in the economy and the associated need to replace and upgrade property stocks. For example, whilst the manufacturing sector as a whole has experienced well-documented decline in its employment base nationally, there has been GVA growth and continued demand for new premises within which to operate. This suggests an increase in productivity in this sector. Productivity gains are primarily achieved through greater use of capital (i.e., machinery). This can lead to demand by existing companies needing more/less space, a different location, or a different type of premises to accommodate these changes. It can also be driven by new companies in the market, which may not find the right type of property available in the right location within the market. As a result, whilst overall a sector may be in employment decline (although this still applies to growing sectors too), there are changes beneath the surface that continue to drive demand. This can be a particular issue where existing stocks are ageing or where vacant sites are no longer in the locations suitable for modern occupiers. This also ensures provision is made for replacing sites that might be lost from employment use to other uses. Also, within Phase 2 the assessment builds in an allowance for choice and flexibility in the market. This element needs to take account of offering location choice as well as choice in terms of the type of property and setting.

3.5 Within the detailed assumptions employed as part of this model, local evidence has been used to ensure the approach is appropriate to the City of Bristol. Further details of the method are set out within the remainder of the chapter and supporting appendices. For ease of reading, all figures are rounded throughout this chapter. As a result, some tables may not sum exactly.

Employment Forecasts

3.6 The employment scenarios that have been adopted for analysis and the overall employment change associated with each over the forecast period 2023 – 2043 is set out in the table below.

Table 3:1: Total Employment Growth Across Employment Scenarios 2023 - 2043

	CE Scenario	OE Scenario	CE Scenario – LM Balance
Employment Change 2023 - 2043	31,000	53,000	53,000

Conversion to Use Class Order

3.7 Employment change by sector in each scenario is converted to Use Classes using the conversion matrix set out at Appendix 1. This matrix has been tailored to the City of Bristol economy using fine-grained employment data from the ONS Business Register and Employment Survey (BRES) dataset.

3.8 Table 3:2 sets out the employment change by Use Class across the plan period. This is helpful to understand a number of key points. Firstly, employment is not confined to the E(g), B2, and B8 use classes (traditionally referred to as the 'employment' use classes), which is the focus of this report. Employment is spread across many use classes, and in the none and homeworking category.

3.9 The 'none and homeworking' category includes home-based workers who are considered as '100% homeworking' with no planning Use Class order implications. It also includes workers who work in the workplace of others (e.g. cleaners), or peripatetic workers that have 'no fixed place' of work (e.g. those who work in the construction industry who are active at multiple sites).

3.10 Table 3:2 shows that growth in employment in the traditional 'employment' sectors accounts for no more than 30% of overall forecast employment growth. Whilst this figure is suppressed by the decline in Manufacturing employment, it is also notable that employment growth in sectors with impacts on other Use Classes accounts for a much larger share of overall employment growth. In particular, the significant increase in employment that has no sites and premises implications.

Table 3:2: Change in Employment Across Use Classes (2023 to 2043)

Use Class	Description	CE Scenario	OE Scenario	LM Balance (CE)
B2	**General industrial**	**(1,200)**	**(3,100)**	**(1,000)**
B8	**Storage or distribution**	**390**	**2,300**	**770**
C1	Hotels	500	300	820
C2	Residential institutions	4,900	9,200	7,900
C2a	Secure Residential Institution	-	10	10
E(a)	Display or retail sale of goods	820	2,700	1,410
E(b)	Sale of food and drink	2,900	1,700	4,800
E(c)(i)	Financial services	(210)	(190)	(180)
E(c)(ii)	Professional services	300	830	530
E(c)(iii)	Other services	-	-	-
E(d)	Indoor sport and recreation	280	660	460
E(e)	Medical or health services	1,800	3,300	2,800
E(f)	Creche, day nursery/centre	370	900	610
E(g)(i)	**Offices**	**6,400**	**15,000**	**11,000**
E(g)(ii)	**Research and development**	**500**	**1,000**	**810**
E(g)(iii)	**Light industrial**	**50**	**10**	**100**
F1(a)	Education	2,100	2,200	3,400
F1(b)	Display of works of art	-	-	-
F1(c)	Museums	80	200	140
F1(d)	Public libraries	10	30	20
F1(e)	Public halls or exhibition halls	-	10	10
F1(f)	Public worship or religious	20	70	30
F1(g)	Law courts	(170)	(220)	(160)
F2(a)	Small shops (isolated location)	-	-	-
F2(b)	Local community hall	-	10	10
F2(c)	Outdoor sports or recreation	110	270	190
F2(d)	Swimming pool or skating rink	100	220	160
Sui Generis	Excluded from classification	2,100	2,200	3,400
	None and homeworking	9,100	13,000	15,000
	Total	**31,000**	**53,000**	**53,000**
	'Employment' Uses Only	**6,100**	**16,000**	**12,000**

*Negative numbers in parenthesis.

Conversion to FTE Employment

3.11 Employment forecasts are converted to Full-Time Equivalent (FTE) jobs using data from the ONS Annual Survey of Hours & Earnings (2022). This ensures the employment figures align with the floorspace per FTE figures provided in the Employment Density Guide (2015)[7].

Conversion to Floorspace

3.12 Floorspace per FTE figures set out in the Employment Density Guide (2015) are used to convert FTE employment by Use Class to floorspace demand figures.

3.13 The analysis assumes a direct link between employment and floorspace required. It is appropriate to caveat this approach with a number of important points:

- Firstly, if there is capacity within the existing stock of premises there will be opportunity to accommodate some employment increases without the need for new space, and vice versa[8].
- Secondly, if there are changing working practices, the ratio between workers and floorspace could change over time. This issue has been highlighted by the Covid-19 pandemic and the resultant increase in hybrid working.
- Thirdly, increases in productivity driven by the increased use of capital (I.e. machinery) could lead to a break in the link between employment and floorspace.

3.14 A discussion of the potential impact of hybrid working practices on employment densities, and the densities used in this report are set out in Appendix 1.

3.15 The summary below provides high-level analysis of floorspace by Use Class. All totals are reported as gross external area (GEA).

Phase 1 Results

3.16 The table below sets out the net additional demand for employment floorspace by Use Class. This shows an anticipated increase in the requirement for office and R&D space across all three scenarios. There is a forecast negative requirement for industrial floorspace, as a result of forecast falls in employment in the manufacturing sector. There is expected to be a growth in the requirement for storage and warehousing floorspace.

[7] Homes & Communities Agency (2015) Employment Density Guide 3rd Ed.
[8] Lease structures mean it is not always easy to adjust the footprint of a commercial property as staffing levels change, and corrections may happen at some point but not in real time (or freehold ownership even more so). This applies equally for premises that are at over or under capacity. For the purposes of this analysis it is assumed these factors are broadly balanced.

Table 3:3: Net Additional Employment Floorspace Demand by Use Class (2023 - 2043) sq m

Use Class	Description	CE Scenario	OE Scenario	CE Scenario – LM Balance
E(g)(i)	Offices	75,000	180,000	131,000
E(g)(ii)	Research & development	28,000	56,000	44,000
	Office and Laboratory	**102,000**	**237,000**	**175,000**
E(g)(iii)	Light industrial	1,900	(130)	4,200
B2	General industrial	(44,000)	(115,000)	(39,600)
	Industrial	**(42,000)**	**(115,000)**	**(35,000)**
B8	**Storage or distribution**	**26,000**	**163,000**	**52,000**

*Negative numbers in parenthesis.

Phase 2: Replacement, Churn, and Flexibility

3.17 **Phase 1** considered the net changes in employment in E(g), B2, and B8 Use Class activity that need to be accommodated within the City. **Phase 2** deals with the need to ensure the existing economy, and the on-going changes within it, are supported through the provision of sufficient employment sites and premises.

3.18 The methodology employed for estimating the level of replacement demand assumes that a proportion of the total existing stock of employment property needs to be replaced each year to ensure the overall stock of premises is sufficient and appropriate for modern needs, in terms of both building quality and site characteristics. This is particularly important for the manufacturing sector where on-going development of industrial premises has been observed, despite a decline in employment in the sector over many years.

3.19 With Permitted Development Rights (PDR) now in place and their reach broadened, there is increasing pressure for redevelopment of office and light industrial stocks to other uses. The introduction of the E Use Class also carries the possibility of wider erosion of some former B1 stocks to other uses. There are also losses of employment property for other reasons, whether occupation by non-employment users (e.g. the growth in leisure occupiers) or redevelopment for non-employment uses. It is important that any potential losses of commercial employment stocks do not hamper the growth and ongoing performance of the economy.

3.20 The phased introduction of Minimum Energy Efficiency Standards (MEES) requirements means that since April 2023 it is an offence to continue to let non-domestic properties with an Energy Performance Certificate (EPC) rating below *E*. It is uncertain at this point whether this will reduce replacement rates as buildings are refurbished and thus their useful life extended or will drive an increase in replacement rates as buildings cannot be improved sufficiently to meet increasing standards.

3.21 Based on the age of commercial stocks in England and information on their functional life, a 2% default assumption is adopted for this analysis. This assumes that on average buildings are replaced every 50 years. Implicit in this assumption is that some buildings will last longer than 50 years (potentially with significant investment to ensure ongoing use), whilst some will last less than this either through redevelopment or change of use.

3.22 This default assumption is adjusted to the local area based on:

- Age – older stocks are less likely to be able to accommodate modern infrastructure such as HVAC, electricity supply etc.
- Regulatory – changes to regulations can force buildings into functional obsolescence by making it illegal to lease or continue to lease them.
- Market demands and local circumstances– the demands of the market can shift meaning that stocks are no longer of a desirable quality or location.

3.23 For the City of Bristol, our analysis concludes no adjustments need to be made to the default assumption.

3.24 Full details of this analysis can be found in Appendix 1.

3.25 The table below sets out the findings of analysis and the resultant replacement requirements based on a replacement rate of 2% as set out above. It is possible these levels of replacement need could reduce with restrictive policies on change of use or high levels of refurbishment.

Table 3:4: Forecast Replacement and Churn Requirements (2023 - 2043) sq m

Use	Total Stock (2023)	Annual Replacement	Total Replacement (20 Years)
Office	1,203,000	24,100	481,200
Industrial	806,600	16,100	322,700
Warehousing & Logistics	2,008,000	40,200	803,100

Reuse of Employment Sites

3.26 The analysis of both net additional and replacement requirements set out above does not consider whether the development activity takes place on existing employment sites (replacing or substantially refurbishing one building with another on the same plot of land) or whether currently unoccupied land needs to be made available. It is likely that there will be elements of both. Data on employment land developments (above 500 sq m) completed between 2006/7 and 2021/22 has been provided by Bristol City Council to facilitate analysis of this phenomenon in the City of Bristol.

3.27 Analysis of this data shows that 24% of gross office development, 47% of gross industrial development, and 11% of gross warehousing & logistics development has taken place on land previously occupied by E(g), B2, or B8 uses. Applying these proportions to our employment land forecasts means there is a need for to provide new development land (this can include existing allocations not yet developed) for the remaining:

- 76% of office requirement
- 53% of industrial requirement
- 89% of warehouse & logistics requirement

3.28 It is possible that higher rates of site reuse could be achieved through policy focus and enabling to regenerate existing employment sites.

Choice and Flexibility

3.29 A percentage uplift of the combined requirement for net additional and churn/replacement is applied to ensure an allowance for range and choice is incorporated. This uplift also builds in some additional flexibility to allow the normal frictional movement in the market. As such, in line with industry standards, an uplift of 10% has been applied.

Total Requirement

3.30 The following section brings together the results of the Phase 1 and Phase 2 analysis discussed above. Tables present the range of results across two scenarios. The *baseline forecasts* results are based on the CE and OE forecasts respectively. The *LM Balance Scenario* results are based on the CE forecasts adjusted to maintain a balanced labour market in the City of Bristol area (discussed in paragraph 2.27) and the unadjusted OE forecasts.

Office Requirements

3.31 The total net office (Use Class E(g)(i) and E(g)(ii)) floorspace requirements under each of the scenarios are set out in the table below.

Table 3:5: Net Office Floorspace Requirements 2023 - 2043 (sq m)

		Baseline Forecasts	LM Balance Scenario
A	Net Additional Requirement	102,000 – 237,000	175,000 – 237,000
B	Replacement Provision	481,000	481,000
C = A+B	Gross Requirement	584,000 – 718,000	656,000 – 718,000
D	Flexibility allowance	58,000 – 72,000	66,000 – 72,000
E = C+D	Total Requirement	642,000 – 789,000	722,000 – 789,000
F	Delivered on Existing Employment Sites	154,000 – 189,000	173,000 – 189,000
G = E-F	**Net Requirement**	**488,000 – 600,000**	**549,000 – 600,000**

3.32 The table above shows that the net requirement for office floorspace in Bristol is between 488,000 and 600,000 sq m. The figure highlights the relative importance of replacement provision to the overall requirement as it accounts for over double the net additional requirement.

3.33 The net floorspace requirements under each scenario are provided in five-year intervals in the table below. Net additional requirements across these periods vary based on the employment forecast trajectories. All other variables are assumed to follow a linear trajectory (i.e., requirements across the 20-year period are evenly distributed across the five-year intervals).

Table 3:6: Net Office Floorspace Requirements Five-Year Intervals (sq m)

	Baseline Forecasts	LM Balance Scenario
2023–2028	126,000 – 170,000	140,000 – 170,000
2028–2033	121,000 – 150,000	140,000 – 150,000
2033–2038	121,000 – 140,000	140,000 – 140,000
2038–2043	119,000 – 140,000	130,000 – 140,000
2023 - 2043	**488,000 – 600,000**	**549,000 – 600,000**

3.34 For offices, requirements are best reported in terms of floorspace for planning purposes, as varying development densities generated by different types of office developments can create large ranges e.g. the differing nature of multi-storey development 'in-town' (typically with a development density of 100%+) and fewer storeys 'out-of-town' (typically with development densities of ~40%). However, land requirements have been set out in this section to aid plan-making.

3.35 This report uses a density figure of 100% to convert floorspace figures to land requirements for office development. This assumption is taken from the West of England Employment Land Spatial Needs Assessment (ELSNA) (2021) which this report is partially updating.

Table 3:7: Office Employment Land Requirements Five-Year Intervals (ha)

	Baseline Forecasts	LM Balance Scenario
2023–2028	13 – 17	14 – 17
2028–2033	12 – 15	14 – 15
2033–2038	12 – 14	14 – 14
2038–2043	12 – 14	13 – 14
2023 - 2043	**49 – 60**	**55 – 60**

Industrial Requirements

3.36 The total industrial (Use Class E(g)(iii) and B2) floorspace requirements under each of the scenarios is set out in the table below.

Table 3:8: Net Industrial Floorspace Requirements 2023 - 2043 (sq m)

		Baseline Forecasts	LM Balance Scenario
A	Net Additional Requirement	(115,000)– (42,000)	(115,000)– (35,000)
B	Replacement Provision	323,000	323,000
C = A+B	Gross Requirement	207,000 – 281,000	207,000 – 287,000
D	Flexibility allowance	21,000 – 28,000	21,000 – 29,000
E = C+D	Total Requirement	228,000 – 309,000	228,000 – 316,000
F	Delivered on Existing Employment Sites	107,000 – 145,000	107,000 – 149,000
G = E-F	**Net Requirement**	**121,000 – 164,000**	**121,000 – 167,000**

3.37 The table above shows that the net requirement for industrial floorspace in the City of Bristol is between 121,000 and 167,000 sq m. Once again, replacement provision is particularly important in the supply calculations as if this allowance was not included there would be a negative land requirement. However, this would be in conflict with observed development patterns showing an ongoing demand for modern industrial stock despite falling manufacturing employment.

3.38 The net floorspace requirements under each scenario have been translated to land requirements based on a development density of 40% (in line with the ELSNA). Land requirements are provided in five-year intervals. Net additional requirements across these periods vary based on the employment forecast trajectories. All other variables are assumed to follow a linear trajectory (i.e., requirements across the 20-year period are evenly distributed across the five-year intervals).

Table 3:9: Industrial Employment Land Requirements Five-Year Intervals (ha)

	Baseline Forecasts	LM Balance Scenario
2023–2028	8 – 10	8 – 10
2028–2033	7 – 10	7 – 10
2033–2038	7 – 11	7 – 11
2038–2043	8 – 11	8 – 11
2023 - 2043	**30 – 41**	**30 – 42**

Warehousing & Logistics Requirements

3.39 The total warehousing & logistics (Use Class B8) floorspace requirements under each of the scenarios is set out in the table below.

Table 3:10: Net Warehousing & Logistics Floorspace Requirements 2023 - 2043 (sq m)

		Baseline Forecasts	LM Balance Scenario
A	Net Additional Requirement	26,000 – 163,000	52,000 – 163,000
B	Replacement Provision	803,000	803,000
C = A+B	Gross Requirement	829,000 – 966,000	856,000 – 966,000
D	Flexibility allowance	83,000 – 97,000	86,000 – 97,000
E = C+D	Total Requirement	912,000 – 1,063,000	941,000 – 1,063,000
F	Delivered on Existing Employment Sites	100,000 – 117,000	104,000 – 117,000
G = E-F	**Net Requirement**	**810,000 – 950,000**	**840,000 – 950,000**

3.40 The table above shows that the net requirement for warehousing & logistics floorspace in the City of Bristol is between 810,000 and 950,000 sq m. This total is primarily driven by replacement provision with requirements driven by employment change comprising a relatively small proportion of this total.

3.41 The net floorspace requirements under each scenario have been translated to land requirements based on a development density of 50% (in line with the ELSNA). Land requirements are provided in five-year intervals. Net additional requirements across these periods vary based on the employment forecast trajectories. All other variables are assumed to follow a linear trajectory (i.e., requirements across the 20-year period are evenly distributed across the five-year intervals).

Table 3:11: Warehousing & Logistics Employment Land Requirements Five-Year Intervals (ha)

	Baseline Forecasts	LM Balance Scenario
2023–2028	42 – 54	44 – 54
2028–2033	41 – 45	42 – 45
2033–2038	40 – 46	41 – 46
2038–2043	39 – 45	40 – 45
2023 - 2043	**162 – 189**	**168 – 189**

Validation of Results

3.42 Bristol City Council has provided data on employment land developments (above 500 sq m) completed between 2006/7 and 2021/22. Extending this to a 20-year period by assuming the average level of annual completions is maintained allows for comparison to the forecast employment land requirements.

3.43 To ensure we are comparing like-with-like we compare gross historic completions with gross floorspace requirements (i.e., before allowances are made for flexibility and re-use of sites). This equates to Row C in the relevant tables above. The results of this analysis can be seen in the table below.

Table 3:12: Comparison of Gross Historic Completions and Forecast Gross Employment Floorspace Requirements (sq m)

	Completions 2006/07 – 2021/22	Implied 20 Year Completion	Comparison to Baseline Forecasts Range from 2023 to 2043
Office	314,000	393,000	584,000 – 718,000
Industrial	77,000	97,000	207,000 – 281,000
Warehousing & Logistics	524,000	655,000	829,000 – 966,000

3.44 The analysis above shows that if historic completion rates are maintained they will be insufficient to meet the forecast gross employment land requirements. Whilst the historic based projection is below the overall gross requirement it is well above the net additional requirement for each Use category.

3.45 It is important to consider what this cross referencing with historic development activity might indicate:

- Levels of replacement activity historically may have been below those estimated for the future; or
- The levels of historic supply may have been constrained either through a lack of suitable sites or commercial market factors (e.g. weak viability).

3.46 Interpreting these results will require consideration of wider analysis of the commercial market.

4 Sector Profiles

4.1 Lambert Smith Hampton (LSH) has undertaken a review of the employment sites and premises requirements of a number of key sectors in the West of England economy. A summary of their findings is presented below. This has been undertaken to provide further detail on important demand drivers by sector and typology. Their full report is available at Appendix 2.

Aerospace and Advanced Engineering

4.2 Continued growth is expected in this sector (both in terms of start-ups and expansion of existing businesses) and the demand for property remains high.

4.3 Businesses operating in this sector have mixed property requirements. They are predominantly office-based but, there has been growth in laboratory and industrial requirements.

4.4 Historically, the sector has occupied its own offices in out-of-town locations. However, this is likely to change as demand for lab enabled space or hybrid/managed workspace increases. This will mean a shift away from out-of-town locations, as the main managed workspaces that attract start-ups are generally located in the City centre.

4.5 Trends indicate that firms engaged in research and development (R&D) within the sector favour large land parcels with low density, high spec, purpose-built facilities. This means demand will remain for out-of-town locations from these businesses.

Tech and Digital

4.6 The Tech and Digital sectors remain a growth area, with several other sectors becoming more involved, leading to the emergence of specialisms such as FinTech and LegalTech. So, whilst the core sector is set for growth, we will also see diversification within this sector as its reach extends into other sectors.

4.7 Businesses in this sector predominantly occupy offices of mainly grade A and B specification, although there is also growing demand for hybrid properties with lab space.

4.8 We will see a good level of requirements for offices, especially in smaller start-up companies. These companies tend to prefer to cluster together, and therefore serviced offices/managed workspace will be important for their growth. These facilities tend to offer the flexibility this sector requires for growth, and be located in City centre which allows them to attract the younger workforce they require, who prefer to be located close to amenities and active transport facilities.

4.9 Like the majority of office occupiers, we may see a decrease in space required by larger and medium sized occupiers as employees take advantage of hybrid working practices, but a shift towards higher specification premises.

Financial and Professional Services

4.10 This sector is one of the largest in the region and continues to show growth. Businesses in this sector primarily require office buildings of grade A specification.

4.11 Forecast growth in the sector may not translate into significant property demand. There has been a 25-40% reduction in requirements for space in this sector when compared to pre-pandemic conditions, and the sector is no longer the largest in the region in terms of office take-up. The decline in office take-up in recent years has been driven by both a decline in the number of deals and the amount of space taken up in each deal.

4.12 We could see a rise in demand for R&D space from sub-sectors such as Creative, Digital, and Net Zero consultancy.

Creative and Digital Media

4.13 This sector continues to grow in the region due to being centred around a globally significant base. Businesses in this sector primarily seek office buildings, although some have requirements for hybrid or industrial buildings for studios or storage. Businesses in this sector tend to cluster together.

4.14 Occupiers seeking office space have mixed quality and specification requirements. Large companies seek better quality accommodation, but some smaller occupiers require cheaper space. Changes to government legislation on EPC certification requirements for commercial buildings may lead to cheaper offices becoming unlettable. Whilst larger and well backed companies will take grade A space, and start-ups/micro business will be able to look at the serviced office sector, cost-conscious companies that need their own office may not have options. This may have a negative impact on these companies as they generally need to be in offices to facilitate collaboration.

Clean Tech and Energy

4.15 This sector is forecast to continue to grow as there is ongoing pressure to find solutions to global, national and regional energy challenges. The region has strong capabilities across disruptive and zero carbon energy generation and supply meaning it is potentially a high growth sector for the area.

4.16 The sector is broad and incorporates a range of commercial requirements from offices, R&D, lab space, and large-scale manufacturing activity.

4.17 Any lab enabled space or industrial requirements are likely to be out of town or edge of town, whereas any office requirements could be in the City centre as well as business parks. Large-scale manufacturing is centred around Avonmouth and Severnside.

Health and Life Sciences

4.18 Growth is forecast both regionally and nationally across all areas within this sector, from traditional healthcare to research and technology SMEs (Small and Medium-sized Enterprises). National trends suggest businesses in this sector tend to cluster together, and are often located near universities, science parks, or hospitals.

4.19 Demand for more commercial space will likely be driven by the emerging sub-sectors and innovations in the longer term. These companies are normally looking at lab enabled space that is flexible in terms of use and growth.

Food and Drink

4.20 Any growth in this sector will be organic growth or slower than some other sectors unless we see a national change that significantly impacts the sector. There are opportunities to expand the sector locally, with the Net Zero agenda alongside changing technology advancements in this sector.

4.21 Business in this sector have mixed property requirements but, predominantly industrial or low spec buildings in out-of-town/edge of cities locations with good access to transport. Occupiers are unlikely to move as their fit-out costs can be expensive and are generally unique to each occupier.

Transport and Storage

4.22 The region has a long-standing, established Transport & Storage sector and this remains a significant growth sector.

4.23 There is demand for low density buildings with good circulation and strong access to primary road and motorway networks from large occupiers. Smaller, last-mile logistics occupiers seek edge of city locations with good transport links and available labour.

4.24 This sector is heavily reliant on industrial units, with limited requirement for office space. The scale of premises occupied by larger businesses means that large sites are fully occupied quickly, so more land is required. Land used by smaller occupiers in edge of City locations is under pressure for Change of Use, and industrial uses are being driven out of some of these areas as industrial units do not mix well with residential development. That means these occupiers also require land to be protected, or alternatives provided.

5 High Level Retail Analysis

5.1 This chapter sets out an update to the Employment Land Spatial Needs Assessment[9] (ELSNA) forecasts for retail floorspace requirements, based on the net forecast changes in employment in the baseline and labour market balance scenarios.

5.2 Forecast employment change in Use Class E(a) under the scenarios is set out in Table 5:1. This shows the following forecast changes in employment in the E(a) Use Class based on the application of the SIC-Use Class matrix set out in Appendix 1.

Table 5:1: Change in Employment in Use Class E(a) 2023 - 2043

	Baseline Forecasts	LM Balance Scenario
Employment	820 – 2,700	1,100 – 2,700

5.3 These employment figures have been converted to FTE employment using data provided in the ONS Annual Survey of Hours & Earnings (2022). To convert these to floorspace requirements we have applied floorspace per FTE figures provided in the Employment Density Guide (2015).

5.4 The results of this analysis are provided in the table below.

Table 5:2: Net Additional E(a) Floorspace Demand (2023 - 2043) sq m

	Baseline Forecasts	LM Balance Scenario
City of Bristol	13,000 – 43,000	23,000 – 43,000
West of England	49,000 – 72,000	61,000 – 96,000

[9] Atkins (2021) West of England Employment Land Spatial Needs Assessment

Appendix 1. Sites and Premises Requirements

Converting Employment to Use Classes

A1.1 The matrix used to convert forecast employment change by sector to Use Class Order is shown below. The matrix is based on average employment by four-digit SIC07 sectors in the City of Bristol over the period 2017 to 2021 sourced from the BRES dataset. The matrix therefore reflects the current structure of the City of Bristol in detail.

Figure A1.1: Employment to Use Class Conversion Matrix

Sector	B2	B8	C1	C2	C2a	E(a)	E(b)	E(c)(i)	E(c)(ii)	E(c)(iii)	E(d)	E(e)	E(f)	E(g)(i)	E(g)(ii)	E(g)(iii)	FI(a)	FI(b)	FI(c)	FI(d)	FI(e)	FI(f)	FI(g)	F2(a)	F2(b)	F2(c)	F2(d)	SG	None and Homeworking
AB: Primary industries	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.00
C: Manufacturing	0.85	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.02	-	-	-	-	-	-	-	-	-	-	-	-	0.13
DE: Utilities	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.90	0.10
F: Construction	-	-	-	-	-	-	-	-	-	-	-	-	-	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.95
G (part): Motor Trades	-	0.14	-	-	-	0.07	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.69	0.09
G (part): Wholesale	-	0.89	-	-	-	-	-	-	-	-	-	-	-	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.10
G (part): Retail	-	0.04	-	-	-	0.86	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.01	0.09
H: Transportation and storage	-	0.30	-	-	-	-	-	-	-	-	-	-	-	0.14	-	-	-	-	-	-	-	-	-	-	-	-	-	0.01	0.55
I: Accommodation and food	-	-	0.09	-	-	0.06	0.51	-	-	-	-	-	-	-	-	0.01	-	-	-	-	-	-	-	-	-	-	-	0.15	0.18
J: Information and communication	-	0.06	-	-	-	-	-	-	-	-	-	-	-	0.51	0.15	-	-	-	-	-	-	-	-	-	-	-	-	-	0.29
K: Financial and insurance	-	-	-	-	-	-	-	0.38	-	-	-	-	-	0.55	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.07
L: Real estate	-	-	-	-	-	-	-	-	0.23	-	-	-	-	0.53	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.24
M: Professional, scientific and technical	-	-	-	-	-	0.00	-	-	0.04	-	-	-	-	0.73	0.05	-	-	-	-	-	-	-	-	-	-	-	-	0.01	0.17
N: Administrative and support services	0.05	0.09	0.01	0.04	0.00	0.09	0.03	-	0.00	-	0.01	0.03	0.01	0.20	-	0.01	0.00	-	0.00	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.06	0.36
O: Public administration and defence	-	-	-	-	-	-	-	-	-	-	-	-	-	0.77	-	-	-	-	-	-	-	-	0.15	-	-	-	-	-	0.08
P: Education	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.90	-	-	-	-	-	-	-	-	-	-	-	0.10
Q: Human health and social work	-	-	-	0.61	-	-	-	-	-	-	-	0.21	0.04	0.07	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.07
R: Arts, entertainment and recreation	-	-	-	-	-	-	-	-	-	-	0.20	-	-	-	-	-	-	-	0.06	0.01	-	-	-	-	-	0.08	0.07	0.37	0.20
S: Other service activities	-	-	-	-	-	0.40	-	-	-	-	-	-	0.23	-	-	-	-	-	-	-	-	0.05	-	-	-	-	-	0.05	0.27
Total	0.03	0.07	0.01	0.10	0.00	0.08	0.04	0.02	0.01	-	0.01	0.04	0.01	0.24	0.01	0.00	0.08	-	0.00	0.00	0.00	0.00	0.01	-	0.00	0.00	0.00	0.05	0.20

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Floorspace per worker

A1.2 The following section provides details on the impact of hybrid working on employment densities and the figures used to convert FTE employment to floorspace.

Impact of hybrid working on employment densities

A1.3 Since the Covid-19 pandemic there has been an ongoing question as to whether increased remote working is beginning to change office floorspace density. According to Deloitte's London Office Crane Survey (2021), most developers argue that the reduction in office occupation due to remote working is likely to be offset by growing requirements of tenants for lower density occupations, less hot desking and more collaborative space[10]. These findings are replicated in Deloitte's Regional Crane Surveys (2021), indicating that the trend of lower density office occupation and retainment of total floorspace demand will be reflected nationwide.

A1.4 While some sectors may see a decline in the number of workers in the office at any given time, the amount of office space required is expected to remain the same, in order to facilitate group meetings and collaboration when workers are in the office. Workers need a reason to come to the office if they are to commute, and heightened collaboration is one justification. While offices may become less occupied on a day-to-day basis, total floorspace requirements may remain the same.

A1.5 One important caveat, however, is that if offices are becoming less dense, this is will not change uniformly across the office market. The amount of floorspace required by each worker will vary according to occupation, sector, business culture and business size.

A1.6 According to NESTA (2021), one likely post-pandemic scenario for hybrid working may be high-paid knowledge workers continuing to work in cities, while a greater proportion lower paid work is undertaken remotely. The report continues, "firms saw the cost saving possibilities that remote working offered them and as a result decided to eschew office working for much of their staff. The key exception were elite workers like CEOs, executive teams, and high skilled workers for whom face-to-face interaction was deemed essential."[11]

A1.7 The trend of lowering densities is also unbalanced with regard to high and low-value office space. While high-value businesses will continue to demand office space to support their corporate brand and images, it is uncertain whether the same level of investment will be placed in to lower-grade office spaces with lower rents and where smaller grid sizes make it difficult to renovate. According to the FT, it is likely many of these will 'empty out and have to be refitted or repurposed'[12].

A1.8 Finally, for remote working to lead to a lowering of density and a concurrent maintenance of space it will need to make financial sense for occupiers. The last 25 years has seen offices becoming more dense in order to make them more economically viable[13]. For hybrid working to reverse this trend, and for offices to maintain high levels of space despite fewer workers in

[10] https://www2.deloitte.com/content/dam/Deloitte/uk/Documents/real-estate/deloitte-uk-london-office-crane-survey-summer-2021.pdf ; https://research.bco.org.uk/resources/clients/3/user/resource_1023.pdf
[11] https://www.nesta.org.uk/blog/four-scenarios-future-remote-working/
[12] https://www.ft.com/content/d6b8d468-e339-497d-b165-0de10bcddcae
[13] https://www.bco.org.uk/Research/Publications/Theme/working-practices.aspx

the office on a day-to-day basis, it will need to be financially viable for businesses. If it is not, lower density occupation may become a luxury not available to all and businesses may prefer to downsize by some proportion, while maintaining some form of collaboration space.

A1.9 Based on the above findings we conclude that the Employment Density Guide (2015) still provides the best evidence in relation to employment densities. The figures used in this report are shown in the table below.

A1.10 The table below references figures in terms of net internal area (NIA), gross internal area (GIA) and gross external area (GEA). All figures are converted to GEA for modelling purposed. To convert NIA to GIA a 15% uplift is provided, to convert GIA to GEA a +5% uplift is made.

Table A1.1: Floorspace per Worker Assumptions

Use Class	Assumption
E(g)(i) Offices	The Employment Density Guide (2015) provides estimates for a range of office functions ranging from 8–13 sq m per FTE (NIA). The higher end of this range relates to Corporate HQ and the lower end relates to call centres. Financial Services, Public Sector and Professional Services fall within the 10–12 sq m range. The Occupier Density Study (2013) indicates an average density of 10.9 sq m for the UK. After applying uplifts to estimate Gross External Area (GEA), the utilised assumption is 13.2 sq m per FTE.
E(g)(ii) Research & Development	The most recent Employment Density Guide (2015) sets out a range of 40–60 sq m (NIA) for R&D B1(b) premises. The midpoint of this range has been adopted and converted to GEA. Therefore, a figure of 60.0 sq m per FTE has been used within the analysis.
E(g)(iii) Light Industrial	The Employment Density Guide (2015) indicates a figure for B1(c) light industry at 47 sq m per FTE (NIA). Allowances are made to align to GEA with a final assumption of 56.4 sq m per FTE (GEA).
B2 General Industrial	The Employment Density Guide (2015) provides a density figure of 36 sq m per FTE (GIA) for General Industrial premises. Following allowances to translate this figure to GEA we use an assumption of 37.8 sq m per FTE (GEA).

Use Class	Assumption
B8 Storage or Distribution	The Employment Density Guide (2015) provides a range of 70 – 95 sq m per FTE. 70 sq m per employee (GEA) for 'final mile' distribution centres and 95 sq m per employee (GEA) for national distribution centres. There is the potential for a mix of both, so 80 sq m per FTE (GEA) has been adopted for this analysis.

Replacement

A1.11 An allowance for replacement has been included within the methodology to encapsulate the wider changes in the economy not picked up in the employment forecasts. The approach is based on the fact that a proportion of the total existing stock of employment property needs to be replaced on an ongoing basis to ensure the overall stock of premises is sufficient and appropriate for modern needs, in terms of both building quality and site characteristics.

Current Stocks

A1.12 To obtain an estimate of the active floorspace by employment Use Classes, we have undertaken analysis of the VOA Ratings List for 2023[14]. This involves assigning Use Classes to the Special Category (SCat) codes associated with each premise. This is an imperfect science and is based on our interpretation of the codes. However, it allows us to provide an indicative breakdown of the stock of floorspace across the Office (E(g)(i) and E(g)(ii)), Industrial (E(g)(iii) and B2) and Warehousing & Logistics (B8) sectors which is important for modelling, and ultimately, planning purposes.

Default Allowances

A1.13 The replacement allowance seek to account for buildings which have become functionally obsolete (i.e., beyond their usable life as commercial premises) rather than just those that have become physically obsolete (i.e., derelict to the point it is no longer possible to utilise them for commercial operations).

A1.14 British Standard EN 1990:2002, Eurocode – Basis of structural design (Eurocode 0) states that buildings structures should be designed to last 50 years. It states that over this duration any deterioration in the structure should not impair the use of the building for its intended purpose.

A1.15 BREEAM (Building Research Establishment Environmental Assessment Method) life cycle assessments indicate the service life of a building is considered to be 60 years. This is in-line with British Standards (BS 7543: 1992 and BS ISO 15686-1: 2000 respectively) for the design life of components and assemblies of the main structural elements of a building.

A1.16 Life cycle costings in the commercial real estate sector are designed to consider the entire cost of owning and operating a commercial building over its economic lifespan. In the RICS

[14] Source: https://voaratinglists.blob.core.windows.net/html/rlidata.htm [Accessed 19 June 2023]

guide to life cycle costing15 they consider appraisals of greater than 30 years should involve "consideration for possible technological, commercial and legal changes" (pg. 7). This suggests that buildings over 30 years old have a high probability of becoming functionally obsolete without significant investment to upgrade or refit the building.

A1.17 In order to try to understand the age of active commercial floorspace in England we have obtained data on the age of commercial stocks from 2004 (no more recent data has been published). The data set out in Table A1.2 indicates that a notable proportion of the existing UK stock of commercial floorspace is over 65 years old, and just over 50% is over 30 years old.

Table A1.2: Age of Commercial Stocks, England (2004)

	Pre 1940	1940-70	1971-80	1981-90	1991-2000
Age (in 2004)	**65+**	**34 – 64**	**24 – 33**	**14 – 23**	**4 - 13**
Retail	40%	17%	9%	14%	15%
Office	28%	18%	11%	17%	15%
Factory	24%	32%	14%	13%	8%
Warehouse	16%	25%	18%	17%	14%
Total*	**26%**	**25%**	**13%**	**15%**	**12%**

Source: Department for Communities & Local Government Archive – Total Floorspace by LAD and age (2005)

*Note the total will not sum to 100% as the data presented excludes those stocks of unknown age and data on stock from 2001 – 2003 is not available at local authority level.

A1.18 This age of stock data confirms that clearly many buildings are physically present well beyond 50 years, although it is not possible to determine the proportion of buildings that survive beyond this point.

A1.19 Based on the range of available evidence, a 2% default replacement rate assumption is adopted. This assumes that on average buildings enter into functional obsolescence and need to be replaced every 50 years. Implicit in this assumption is that some buildings will last longer than 50 years (potentially with significant investment to ensure ongoing use), whilst some will last less than this either through redevelopment or change of use.

Local Adjustments to Default Allowance

A1.20 This section considers whether there is a need to adjust this default based on local conditions. This is based on the consideration of three drivers of functional obsolescence:

- Age – older stocks are less likely to be able to accommodate modern infrastructure such as HVAC, electricity supply etc.
- Regulatory – changes to regulations can force buildings into functional obsolescence by making it illegal to lease or continue to lease them.
- Market demands and local circumstances– the demands of the market can shift meaning that stocks are no longer of a desirable quality or location.

[15] Royal Institution of Chartered Surveyors (RICS). 2016. RCIS Guidance Note. RICS Professional Guidance, UK: Life Cycle Costings. 1st ed.

A1.21 These three issues are interrelated. The age of a building will generally determine both its location and compliance with modern building standards, and vice versa. Consideration is therefore made of the age of the stocks in the local area, and then supplemented with regulatory and market signals information.

Age of Stock

A1.22 Some data is available to help understand the proportion of building floorspace that will be over 50 years old across our forecast period of 2023 to 2043. It is acknowledged that this data is substantially out of date. However, no more recent releases have been made.

A1.23 The proportion of floorspace built prior to 1990 is of interest as these buildings will be over 50 years at the end of our analysis period. The following table shows a comparison of commercial stocks built before and after 1990 in England and the City of Bristol.

Table A1.3: Proportion of Commercial Stock Floorspace Built Pre and Post 1990 in the City of Bristol and England

	Pre 1940 – 1990		1991 - 2000	
	City of Bristol	England	City of Bristol	England
Office	82%	74%	8%	15%
Factory	90%	82%	4%	8%
Warehouse	83%	76%	10%	14%

Source: Department for Communities & Local Government Archive – Total Floorspace by LAD and age (2005)

*Note the total will not sum to 100% as the data presented excludes those stocks of unknown age and stocks built between 2001 – 2003 which is not available at local authority level.

A1.24 The table above shows that in the City of Bristol the proportion of older stocks (i.e. built prior to 1990) across all commercial types is marginally higher than the England average.

EPC

A1.25 Data on Energy Performance Certification by building count has been gathered in order to assess any potential impact of Minimum Energy Efficiency Standards on replacement rates. This data is more recent than age of stock data and due to the correlation between age of stock and EPC rating helps to corroborate the findings on the age of stocks.

A1.26 Since 1 April 2018, these standards have meant it has not been possible to grant a new tenancy to new or existing tenants where a non-domestic property has an Energy Performance Certificate (EPC) rating lower than E (with limited exceptions). Since 1 April 2023 it has been an offence to *continue* to let or rent out a property if it does not have a rating of at least E, with penalties of between £10,000–£150,000 for a breach (based on the property's rateable value).

A1.27 The UK Government's Energy White Paper (2020) sets a target for all rented non-domestic buildings in the UK to be rated EPC band B or above by 2030, with the caveat that this will be done "where cost-effective". The delivery of this target is yet to be road-mapped.

A1.28 The table below shows the proportion of the commercial building stock (where an EPC has been obtained) that falls below this both the current, and potential future requirements.

Table A1.4: Proportion of Non-Domestic Properties with Extant EPC Certificate Falling Below Current and Proposed Energy Rating Thresholds

	Below Current Standard (Rated Below EPC E)	Below 2030 Standard (Rated Below EPC B)
City of Bristol	12%	88%
England	11%	86%

Source: Department for Levelling Up, Housing & Communities (2023) Energy Performance of Buildings Certificates (EPC) in England and Wales 2008 to 31 March 2023

A1.29 The data above shows that a marginally higher proportion of properties in the City of Bristol fall below the current and potential EPC ratings standard requirements.

Market Signals and Local Circumstances

A1.30 Nationally, there are concerns that there will be significant losses of office stocks due to increasing EPC requirements as rental levels are not sufficient to cover the relatively high costs associated with improving office properties. However, as a desirable city centre location the City of Bristol is more likely to command sufficiently high rents for office stocks compared to other locations.

A1.31 There are ongoing issues with maintaining industrial (B2) and warehousing (B8) uses in city centre locations (particularly older, small unit schemes). As residential uses grow around these buildings they become a non-conforming Use for environmental reasons.

Conclusion

A1.32 The previous section considers local factors in the City of Bristol that will influence the 2% default replacement rate assumption.

A1.33 Across office, industrial and warehousing stocks the data suggests that the age and EPC rating profile is similar to that seen across England as a whole. As such, we do not believe there is reason to adjust our default assumption for the City of Bristol.

Appendix 2. LSH Sectoral Requirements

Aerospace and Advanced Engineering

A2.1 There are currently over 250 businesses in the Aerospace, Defence, and Advanced Engineering sector in the West of England. These businesses have circa 51,000 employees which makes it one of the largest clusters in Europe. The sector is worth over £2.7 billon to the region.

A2.2 The success of the sector in the region is predicated not only the Ministry of Defence (MOD) presence but, the fact that Bristol University, Bath University, and the University of the West of England are all ranked in the top ten universities in the UK for Aerospace Engineering[16]. Combined, these universities are home to over 39,000 Science, Technology, Engineering, and Maths (STEM) students.

A2.3 The region is also home to the National Composites Centre (one of seven world-class centres comprising the UK's High Value Manufacturing Catapult) and over 10 world-leading aerospace companies. These firms have expertise in areas like composites, robotics, and additive-layer manufacturing. Some of the major businesses operating in the region are named in the table below.

Table A2.1: Major Aerospace & Advanced Engineering Businesses in the West of England

Major Companies		
Airbus	Rolls Royce	Safran
Thales	Atkins	Leonardo
BAE Systems	Babcock	QuinteQ
Renishaw	Boeing	Nova Systems
GKN	BMT	MBDA UK

Recent and Future Changes

A2.4 The Aerospace & Advanced Engineering sector suffered as a result of both Covid-19 and Brexit. However, the last 12-18 months has seen a renewed focus on the Defence industry as a result of heightened tensions around the world. This has been demonstrated with Babcock and Boeing taking up new office accommodation in North Bristol.

A2.5 Growth in the number of defence engineering companies will offset any short terms shrinkage in the sector because of trade impacts. There are also new areas of growth in the sector through the Net Zero agenda.

A2.6 Growth in the region is underpinned by the development of the new Institute of Advanced Automotive Propulsion System at Bristol and Bath Science Park, and the new Airbus and GKN facilities in Filton.

[16] The Universities are ranked second, third and seventh respectively as of 2023.

Distribution across the West of England

A2.7 Major employers in the sector remain focused in the North Fringe of Bristol, particularly around the Filton Enterprise Area, which is home to the UK's largest aerospace cluster.

A2.8 Businesses are predominantly based in out-of-town locations with the main cluster in South Gloucestershire and North Bristol fringe. However, there are also some occupiers in South Bristol and Bath.

Property Requirements

A2.9 Continued growth is expected in this sector (both in terms of start-ups and expansion of existing businesses) and the demand for property remains high.

A2.10 Businesses operating in this sector have mixed property requirements. They are predominantly office-based but, there has been growth in laboratory and industrial requirements. Trends indicate that firms within the sector favour large land parcels with low density, high spec purpose-built facilities for research and development (R&D). This means they tend towards out-of-town locations.

A2.11 Growth in the sector will be focussed in the South Gloucestershire and North Bristol out of town markets. However, we are seeing companies look at Bristol City Centre locations as they struggle to attract staff in Bath and out-of-town locations. This can be seen with BMT taking a new office in Bristol, and other defence and engineering companies looking at taking up city centre office space despite the increased rental costs.

A2.12 As with other office-based sectors, this sector will see a decrease in the quantum of office space taken up but, an increase in the quality of this space as employers continue to try and attract the best staff. In-line with national trends for office occupiers, businesses in these sectors may be looking at circa 20-30% less space, and utilising flexible working practice.

A2.13 The reliance on occupying their own offices is likely to change as lab enabled space or hybrid/managed workspace will also be in demand. This will mean that the focus on out-of-town locations changes further as the main managed workspace that attract start-ups are generally located in city centres.

Tech and Digital

A2.14 The region is home to the most productive tech cluster in the UK, and Bristol was identified as a "globally significant, high-growth creative cluster" (pg. 23) in the Creative Industries Sector Deal[17].

A2.15 The region is home to several R&D centres including Oracle's Cloud Development, HP Labs, and the University of Bristol's Smart Lab team, which in 2018 staged the world's first public trial of 5G.

A2.16 The region's four universities play a central role in strengthening the region's digital and tech sector. The universities collaborate closely with businesses in; life sciences, cyber security, quantum technology, and robotics, including several autonomous vehicle projects. They established SETsquared (Global #1 University Incubator) and the new Temple Quarter Enterprise Campus, and produce a constant stream of highly skilled graduates. The area has one of the highest graduate retention rates in the country.

A2.17 Bristol is home to the Quantum Technologies Innovation Centre (QTIC). This a pre-incubation programme which has created over 31 companies, raising £60 million in funding. The programme is responsible for a third of active UK quantum engineering start-ups.

A2.18 The region features an internationally leading robotics sub-sector, including The Bristol Robotics Laboratory (Europe's largest multi-disciplinary lab) and Future Space, located at the University of the West of England (UWE) campus. They provide support and workspace for the region's robotics, tech, and science-based scale-ups.

A2.19 Major companies located in the region are named in the table below.

Table A2.2: Major Tech & Digital Businesses in the West of England

Major Companies		
CGI	JISC	Navos
Forgerock	Strava	Navitas
Pax8	Graphcore	Oracle
Huboo	Xenint	EPIC
Edit Salocin	Move	OVO

Recent and Future Changes

A2.20 The Tech and Digital sectors remain a growth sector with several other sectors becoming more involved such as FinTech and LegalTech. So, whilst the core sector is set for growth, we will also see diversification in this sector.

A2.21 The sector impacts several other sectors and therefore we could see good growth in the sector as the region benefits from an excellent knowledge base and a number of growing business and start-ups which are tech/digital based.

[17] HM Government (2018) Industrial Strategy: Creative Industries Sector Deal

Distribution across the West of England

A2.22 These occupiers are based in a mix of locations throughout the region, although they are strongly focused on Central Bristol and Central Bath where they can attract employees coming out of university, and can easily collaborate with the universities.

Property Requirements

A2.23 Businesses in this sector predominantly occupy offices of mainly grade A and B specification, although there is also growing demand for hybrid properties with lab space.

A2.24 The sector has a predominantly younger workforce, and therefore the majority of growth will be seen in city centres. This is a result of younger employees being less focused on car-based commuting. These employees will seek locations that easily accessible via walking or public transport with good local amenities.

A2.25 The sector also has a number of start-ups and growth companies. These companies tend to prefer to cluster together, and therefore serviced offices/managed workspace will be important for growth. These companies can use the support structures offered at the better-quality end of the serviced office sector.

A2.26 These companies will also benefit from the flexibility found in service offices/managed workspace, and this is key to the sectors growth. We could see (if appropriate managed workspace is available) some neighbourhood hubs emerging in this sector in suburban areas with more affordable housing and good amenities such as: Bedminster, Horfield/Stokes Croft, Keynsham, and Portishead.

A2.27 The majority of commercial requirements will remain for office accommodation, with a focus on better quality space which is well located for amenities and transport, and provides good sustainability credentials. Therefore, anticipated movement in this sector is to grade A offices in Bath and Bristol city centres.

A2.28 We will see good level of requirements for offices especially in smaller start-up companies. Like the majority of office occupiers, we may see a decrease in space from larger and medium sized occupiers as employees take advantage of hybrid working practices, but for better specification.

Financial and Professional Services

A2.29 The region has one of the most productive Financial Services clusters (outside of London) in the UK, and has one of the top 10 FinTech Clusters in the UK. It also has a strong legal centre with 478 legal companies in the region. Twenty-six of the top 100 law firms in the UK have a presence in the region, 13 of which have head offices in the region. There is also a growing cluster of LegalTech companies, with over 30 in the region currently.

A2.30 The Professional Service sectors employ over 33,500 in the region, with a further 61,000 people employed in the Financial/FinTech sectors.

A2.31 Bristol and Bath host the UK's largest Digital cluster and the highest density of FinTech start-ups and scaleups outside London, with 107 regional businesses which contribute £192 million to the UK economy.

A2.32 Some of the major companies in the region in this sector are set out in the table below.

Table A2.3: Major Professional & Financial Businesses in the West of England

Major Companies		
Burgess Salmon	Altus	EY
Hargreaves Lansdown	St James Wealth	KPMG
Foot Antsey	DAS	Deloittes
PWC	Osborne Clarke	Clarke Willmott
DWF	Bevan Brittan	Axa

Recent and Future Changes

A2.33 The sector is changing in both the way it uses its commercial buildings, and the types of buildings it occupies. Changes in occupation have been triggered by both the Covid-19 pandemic, and the growing strength of FinTech and LawTech in the region.

A2.34 The anticipated trend of companies looking at regional hubs and less city centre clusters in the Professional sector as we emerged from Covid-19 induced lockdowns was short lived. Now, although companies are looking at less space, they are concentrating on city centres and good quality offices with high ESG credentials.

Distribution across the West of England

A2.35 Businesses are predominantly based in city centre locations in both Bristol and Bath. However, some are located in established business park locations especially Aztec West, Bristol Business Park, and Almondsbury.

Property Requirements

A2.36 These occupiers seek office buildings, and generally require grade A space.

A2.37 The sector continues to show growth and remains an important sector in the region. It is highly reliant on office space and is showing a 25-40% reduction in requirements for space

when compared to pre-pandemic conditions as companies seek to 'right size' their accommodation against the flexible working demands of the workforce.

A2.38 The sector remains one of the largest in the region and was always traditionally the largest sector in terms of take up of offices, with an average of 34% for the 10 years up until 2020. Since 2020, the TMT (Technology, Media & Telecom) sector has become more dominant in terms of take up. Office take-up by the TMT sector was 26% in 2021 and 39% in 2022, compared with 19% and 23% respectively in the Professional Services sector. These figures reflect a reduction in both the number of deals and the amount of office space required by this sector.

A2.39 There is significant growth forecast in this sector but, this may not be reflected in an increase in commercial office space as companies take less, but higher quality, space. However, we could see a rise in demand for R&D space from sub-sectors such as Creative, Digital, and Net Zero consultancy.

Creative and Digital Media

A2.40 The region is well known for its Creative and Digital Media sectors, from Oscar-winning Aardman Productions, to producing over 35% of the worlds natural history television, to gaming companies such as NDemic who produced the award-winning Plague Inc.

A2.41 The region is home to 6,000 creative business and 190 production companies. It is one of only three location hubs for the BBC. In addition, both ITV and Channel 4 have a presence in the region, with Channel 4 opening its creative hub in Bristol City Centre. The region is also home to the MyWorld creative hub, which connects regional and national partners with global tech giants such as Netflix and Microsoft.

A2.42 Bristol is one of 18 UNESCO Cities of Film worldwide, and was designated UNESCO City of Film in 2017. This is a permanent status to celebrate the city's achievements as a global leader in film and the moving image. The city is also a member of the UNESCO Creative Cities Network, which connects 246 cities with the common goal of celebrating cultural diversity and sustainable development.

A2.43 The Bristol & Bath region has a particularly strong Print & Digital Publishing sector. According to NESTA, the activity of the publishing sector in Bath is twice the UK average. Major publishers such as Future, Anthem Publishing, Mediaclash, and ShiftActive Media are based in the cities.

A2.44 Bristol & Bath features a growing and diverse gaming sector, including developers specialising in animation, publishing, VR, and AR. The developers behind some of the most popular games work in the region.

A2.45 Some of the major companies in the region in this sector are set out in the table below.

Table A2.4: Major Creative & Digital Media Businesses in the West of England

Major Companies		
BBC	ITV	Netflix
Channel 4	Plimsol Productions	Films@ 59
Aardman	Drummer TV	Arcadia Spectacular
Cookpad	NDemic	IMBd
Network N	Anthem Publishing	Complete Control

Recent and Future Change

A2.46 The sector has changed over the last few years with several companies moving to grade A office space, such as BBC Worldwide and Channel 4. This trend of office occupiers moving to better quality office accommodation is set to continue, although the sector also has companies looking for hybrid or cheaper offices. This will lead to different clusters as seen in areas such as Paintworks and Bedminster, and potentially in the longer-term in areas around St Phillips.

A2.47 This sector in particular tends to cluster. Networks with access to knowledge are key to the function of the sector, so this trend will continue. The region can continue to grow locally as well as attract companies from outside the region, from areas such as London.

Distribution across the West of England

A2.48 Businesses are predominantly located in the city centre or edge of city locations, with strong clusters in both Bath and Bristol city centres and edge of city locations.

Property Requirements

A2.49 Occupiers mainly seek office buildings, although of mixed quality and specification. Some businesses in the sector also have a need for some hybrid or industrial buildings for studios or storage.

A2.50 The sector continues to grow in the region due to being centred around a globally significant base. There is some downsizing and relocating to better space from the larger companies in the sector, which is in line with national office occupation trends. Growth of smaller businesses is set to continue. However, due to the cost of office space in city centres (especially Bristol) we will see some of the sector look at fringe city locations and more suburban locations with amenities.

A2.51 This will be heightened once the government's changes to Energy Performance Certificates, and how buildings can be let, becomes legislation in 2025 and 2030. Cheaper offices will be unlettable, and landlords will only undertake the works if tenants are prepared to pay higher rents. This is an issue for all offices occupiers. However, whilst larger and well backed companies will take grade A space, and start-ups/micro business will be able to look at the serviced office sector, cost-conscious companies that need their own office may not have options. These companies will look at working from home as an alternative. However, the Creative Industry generally need employees to be in the office for collaboration, so this could have a negative effect on these businesses.

A2.52 The sector generally employs a younger workforce, and therefore staff retention is important. Being located close to amenities is a factor in this, therefore city centres or inner-city suburbs could be key for supply.

A2.53 The region benefits from a number of start-ups in the tech sector related to the universities, and they still have a potential to grow. These start-ups will require flexible, affordable city centre workspace. The serviced office sector will be key to this growth as these provide not only the space but, the flexibility and potential to support growth. Whilst the majority of these will be in Bristol and Bath city centres as well as some suburbs like Bedminster and St Phillips. There could be some smaller growth in North Bristol, especially around Filton, and in areas such as Keynsham.

Clean Tech and Energy

A2.54 The Clean Tech & Energy sector is made up of 25,000 enterprises, with the Zero-Carbon sector alone employing nearly 6,000 people. The region is home to companies like Ovo Energy and Ecotricity. In addition, over a quarter of the UK's major environmental research organisations have bases in the South West which contribute £750m to the UK's GVA.

A2.55 Bristol & Bath is a hub for both the UK's 'nuclear renaissance', and disruptive and zero carbon energy generation and supply. The region also hosts the government funded South West Net Zero Hub which gives strategic and technical support to the public sector and communities to deliver net zero energy projects.

A2.56 Strong capabilities in R&D across the Aerospace & Advanced Engineering, Digital, and Tech sectors, coupled with dynamic and collaborative ecosystems mean the region is ready to lead the global transition to clean energy. Bristol was named European Green Capital in 2015, and the UK's greenest city in 2019.

A2.57 The region contains exemplar waste-to-energy and biomass projects from GENeco, Viridor and Suez Environment's Severnside plant, alongside investment in biogas and electric buses and infrastructure.

A2.58 There is a move to lower carbon activities across a range of sectors. For example, First Group will have half its fleet as zero emission or carbon by 2030, the largest concentration of zero carbon buses Euro VI in the UK.

A2.59 The region is also home to Hinkley Point C (HPC) nuclear power station which is the first new nuclear power station in the UK for a generation. The station is capable of generating 7% of the UK's total energy requirements and will offer 25,000 job opportunities as well as 1,000 apprenticeships and brings £100m a year into the regional economy.

A2.60 Some of the major companies in the region in this sector are set out in the table below.

Table A2.5: Major Clean Tech & Energy Businesses in the West of England

Major Companies		
EDF	Boccard	Windes
Wardell Armstrong	Norsea	A-Gas
SITA	Hydrock	Frazer Nash
Assystem	Doosan Energy	SPriax-Sarco
Jacobs	Edvance	Efinor

Recent and Future Change

A2.61 This sector is set to continue to grow due to continued pressure on the Clean Tech and Energy sector to find solutions to global, national and regional challenges. The sector links in with several other sectors especially Engineering, Technology and Manufacturing.

A2.62 This sector is potentially a high growth sector as energy requirements going forward could look very different to what is required today. The net zero agenda, the changes to energy, and

the emerging sub-sectors from this, coupled with the regions expertise means that this sector could become a significant growth sector.

A2.63 The sector will also see continued investment in start-ups and clusters around universities.

Distribution across the West of England

A2.64 The main cluster for this sector is in South Gloucestershire and Avonmouth, although occupiers are spread over the whole region.

Property Requirements

A2.65 This sector has mixed property requirements, predominantly offices but potential growth in lab requirements and some industrial space.

A2.66 The sector is broad and incorporates a range of commercial requirements from offices, R&D, lab space and large-scale manufacturing activity. Growth will be across the region and the locations will depend on the type of property required. Any lab enabled space or industrial requirements are likely to be out of town or edge of town, whereas any office requirements could be in city centres as well as business parks.

A2.67 In terms of office locations, this demand is spread between out of town established business parks and city centres. This is set to continue as occupiers tend to service a wider region from the hubs and often require car access.

A2.68 Other commercial space is more fragmented across the region, although the large-scale manufacturing activity is centred around Avonmouth and Severnside.

Health and Life Sciences

A2.69 The Bristol & Bath region is ranked seventh in the UK for innovation, and the region has nearly 100 Life Sciences companies. This sector is one of the fastest growing in the region with a 25% increase in the number of companies in the last 3 years.

A2.70 The sector has seen £258m invested by companies in the last year, and the regions Life Science tech related ecosystem is worth £9.9bn. The sector growth in the UK is centred around universities and research. Universities in the region have a number of research institutes and specialist facilities including:

- BrisSynBio a £13.6m BBSRC/EPSRC-funded synthetic biology centre
- The £10mn MRC-funded Integrative Epidemiology Unit
- Centre for Therapeutic Innovation
- Centre for Biosensors, Bioelectronics and Biodevices
- The Wolfson Bioimaging Facility
- The Max Planck Centre for Minimal Biology
- Bristol Robotics Laboratory, the largest facility of its kind in the UK
- NHS Genomic Medicine Centre is located at UWE Bristol for the West of England
- NIHR Bristol Bio-Medical Centre: one of just 20 in the UK

A2.71 The region is also heavily involved in R&D for Life Sciences. The key sectors and description of the activity undertaken is set out in the table below.

Table A2.6: Key Life Sciences Sub-sectors

Sub-sector	Description
Assisted Living	Robotics is playing an ever-increasing role in life sciences applications. Not only are robots taking on monotonous tasks and streamlining processes in laboratory settings, but they are also leveraging advances in delivering living assistance to those who need it most.
BioProcessing & BioPharma	Bioprocessing is the process of increasing the number of living cells or other biologic systems/components (such as bacteria, viruses, enzymes, proteins, or nucleic acids) in a commercial bioreactor for biopharmaceutical manufacturing.
Diagnostics	Technological advances in diagnosis techniques can more rapidly diagnose and monitor disease and provide clinically useful prognoses for patient triage and treatments. The integration of rapid screening platforms with patient healthcare records and the use of patient-centred diagnostics, have the potential to shorten the time taken to direct patients to the most appropriate treatments and avoid the cost and health risks of using ineffective medicines.
Digital Health	Digital health technologies use computing platforms, connectivity, software, and sensors for health care and related uses. They include technologies intended for use as a medical product, in a medical product, as companion diagnostics, or as an adjunct to other medical products (devices, drugs, and biologics).

Sub-sector	Description
Nutrition	Nutritional science has had a major impact on public health by identifying optimal nutrient intakes on a population-wide basis. Such advances have provided the rationale for healthy eating campaigns, which can produce significant health benefits.
Medical Technology	MedTech can save lives, improve health and contribute to sustainable healthcare. Through innovative devices and diagnostics, the industry delivers value to patients, healthcare professionals, and healthcare systems and society.

A2.72 The University of Bristol is ranked in the top ten universities in the UK for producing companies, and a total of 130 companies have spun out of the university. Bristol features in the top ten cities for Life Science start-ups in the country based on the fact that 20% of the regions Life Science companies are start-ups

A2.73 In terms of Health, the University Hospital, Bristol NHS Trust, is one of the largest NHS Trusts in the UK. Made up of eight hospitals, it's also the major teaching and research centre for the South-West of England and has over 7,000 patients engaged in research each year. The Bristol Health Partners, The West of England Academic Health Science Network and the NIRH Bristol Biomedical Research Centre (one of only 20 in the UK) are among a number of networks that bring the NHS together with industry and academia.

A2.74 These networks collaborate on research, clinical trials, and the commercialisation of ideas and Bristol contributes to the world's most detailed biomedical database. UK Biobank has agreed a £50 million contract with the NHS in Bristol, North Somerset and South Gloucestershire.

A2.75 Some of the major companies in the region in this sector are set out in the table below.

Table A2.7: Major Health & Life Science Businesses in the West of England

Major Companies		
Cytoseek	eXmoor	Vectura
Rosa Biotech	Imophoron	Pfizer
Bath ASU	KWS Bio Test	Iksuda
Binx Health	Folium Science	Institute of Physics

Recent and Future Change

A2.76 Both nationally and regionally this is a growing sector where growth is forecasted in all aspects from the traditional health sector to more research and tech-based SME's.

A2.77 Nationally business in this sector tend to locate near universities, science parks or hospitals. They tend to locate in clusters and this benefits R&D.

Distribution across the West of England

A2.78 These occupiers are located throughout region but mainly in the out-of-town locations.

Property Requirements

A2.79 The sector has a wide mix of property requirements, and there is potential growth in lab requirements.

A2.80 Historically in the region these companies are located in North Bristol / Emersons Green (Bristol and Bath Science Park) although potential growth in city centres is anticipated, especially in Bristol City Centre around the St Philips area.

A2.81 Demand for more commercial space will likely be driven by the emerging sub-sectors and innovations in the longer term. These companies are normally looking at lab enabled space that is flexible in terms of use and growth. They also tend to cluster and collaborate to help growth, and through looking at growth trends nationally, this is normally near to universities or research institutions.

A2.82 In the region there are some growth opportunities existing in Bath and Bristol city centres and near to the science park. Demand for access to local amenities is becoming increasingly important, and with the University new campus near Temple Meads this could be a strong growth area for the sector. Although companies in this sector are unlikely to require standard offices, so areas such as St Phillips or Lower Bristol Road could provide areas for growth. The demand for lab space or lab enabled space will also be important.

Food and Drink

A2.83 Bristol & Bath have a growing network of innovative food and drink companies, and a strong collaborative environment between businesses, academics, and R&D institutions.

A2.84 The food and drink sector contributed £1.9bn to the national GVA, with agriculture contributing a further £845m. The region is home to one of just 17 DEFRA (Department for Food, Environment & Rural Affairs) designated Food Enterprise Zones in the UK.

A2.85 The Food Security and Land Research Alliance, which is based in the region, complements these growing networks. This organisation works across disciplines and collaborates with institutions with a strong background in relevant areas of research. It also maintains funding relationships with research councils, government departments, and the private sector.

A2.86 There are over 4,800 higher education students and more than 600 sector-specific academics working on agricultural studies in the region.

A2.87 The wider region is home to two internationally renowned agricultural institutions: the Royal Agricultural University and Hartpury University. It is also home to the Rural Enterprise Centre, which is integral to the region's educational and business growth.

A2.88 The West of England's agricultural business landscape also comprises a vast network of small to medium-sized enterprises (SMEs) and some of the world's most iconic names in the agri-food sector, such as LettUs Grow.

A2.89 Some of the major companies in the region in this sector are set out in the table below.

Table A2.8: Major Food & Drink Businesses in the West of England

Major Companies		
Pukka	Warbuttons	Thatchers
Zenith International	Yeo Valley	Gouter
6 O'Clock	Pieminster	Tulip Fresh Meat
Nutisue Limited	Barts Ingredients	LettUs Grow

Recent and Future Change

A2.90 Any growth in this sector will be organic growth or slower than some other sectors unless we see a national change that significantly impacts the sector. There are opportunities to expand the sector locally with the Net Zero agenda alongside changing technology advancements in this sector.

Distribution across the West of England

A2.91 These occupiers are located throughout region, although are generally in out-of-town locations with key clusters in South Gloucestershire and Avonmouth as well as North Somerset.

Property Requirements

A2.92 There is a mix of property requirements, predominantly industrial or lab enabled office buildings in out-of-town/edge of cities locations with good access to transport. Any increase in demand will be across the board in terms of property type but, will be focused on fringe city/town locations or out-of-town locations.

A2.93 The type of space required varies across the sector as it is quite diverse. The office-based requirements are likely to be subject to the same pressures as other office-based business; namely, downsizing requirements but for better quality space that focus on sustainability and amenities for staff. The more industrial focused or low spec requirements will remain relatively active but, occupiers are unlikely to move as their fit-out costs can be expensive and are generally unique to each occupier.

A2.94 We don't expect much change in sector requirements for commercial space, as apart from the larger companies looking to move to better quality space the sector doesn't cluster as much as some others. Therefore, businesses can work from more remote areas, or from home.

Transport and Logistics

A2.95 The region has a long standing and established Logistics/Distribution sector. This is centred around the Avonmouth-Severnside Enterprise Area. The Enterprise Area is the ideal site for businesses in the warehousing, distribution, waste and energy-processing sectors.

A2.96 The sector relies heavily on access to main arterial routes / good access. The Port of Bristol and Avonmouth / Severnside provide the main support for regional distribution, and is the major centre for the larger and medium size occupiers. Adjacent to Bristol Port (the UK's most central deep-sea port, with 67% of the UK population living within 250 kilometres) and a half-hour drive from Bristol Airport, the site provides all the global connections required. The area is close to the M4/M5 motorways, and 85% of the UK's population live within a 4.5-hour drive.

A2.97 There are over 22,500 jobs in the Transportation & Storage sectors in our region. Some of the major companies in the region in this sector are set out in the table below.

Table A2.9: Major Transport & Logistics Businesses in the West of England

Major Companies		
Akzo Nobel	Amazon	First Bus
DHL Express	CLH	Bristol and Avon Group
Yusen	John Lewis	EDEMO
Imperial Tobacco	Ceva Logistics	Whistl

Recent and Future Changes

A2.98 This remains a significant growth sector as changes to the way people work and leisure practices mean the sector has an increasingly important role in retail and last mile logistics.

A2.99 There remains demand for low density sheds with good circulation and strong access to primary road and motorway networks. We are seeing increased demand for warehousing, distribution, and logistics space in prime locations, as well as last mile logistics which require good transport links and available labour.

A2.100 In terms of smaller, last mile logistics there has been a lot of growth in the sector in recent years, and these occupiers require accommodation in edge of city locations where the pressure on land uses is higher.

Distribution across the West of England

A2.101 The occupiers are located throughout the region but with a strong focus on South Gloucestershire and Avonmouth. Other clusters are located in Almondsbury, North Bristol, St Philips, parts of Bath and South Bristol.

Property Requirements

A2.102 This sector is heavily reliant on industrial units with a limited requirement for office space. The demand for larger Distribution, Logistics, and Manufacturing will remain steady and this demand will be centred around Avonmouth and Severnside as well as other locations with access to available land and motorway access.

A2.103 The majority of larger occupiers are looking for access to the motorway network, and therefore are concentrating on South Gloucester, Avonmouth or the M5 Corridor, although the availability of land is limited in these locations. Land is required in these areas to satisfy the larger Distribution, Manufacturing, and Logistics requirements, as currently Avonmouth and Severnside have limited supply. There is future supply in developments such as Westgate, Panattoni Park, Matrix49, and other available sites, but given the size of future requirements, and the industrial premises planned for the sites, it will be limited to a few large industrial buildings. If these get taken up their will be pressure for further land.

A2.104 In terms of the last mile logistics there is a lot of pressure on land as generally the demand is for edge of city centre sites. Areas such as St Philips, Newbridge/Brassmills, and Lower Bristol Road, Bath have historically provided space for these requirements. However, the existing buildings are either not fit for purpose, or the land is being taken up for other, higher density uses. These areas have been subject to a lot of change over the last few years. There have been a number of large-scale Change of Use applications, and plans to change the character of these areas. This means the sector needs to find new land supply.

A2.105 Industrial buildings don't mix well with residential, and therefore some of these areas are no longer fit for purpose and won't suit the sector unless on a low scale. However, parts of these areas need to be protected to provide industrial space, otherwise the sector will be driven out of these locations all together. Areas such as Newbridge and parts of St Phillips need to provide some of the last mile logistics and smaller industrial requirements. Whilst areas such as Lower Bristol Road and areas nearer Temple Meads in St Phillips are already changing/have changed so they no longer suit this use.

A2.106 Areas such as Newbridge and Peasedown near Bath, Keynsham, and North Bristol can offer solutions for some of the demand that has been driven out of the traditional city centre locations. However, it will not suit all occupiers, and therefore protection of land in/near city centres is required otherwise higher land uses will continue to change the landscape.

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