



Employment Land Review Stage 2

Borough of Redditch
Core Strategy
Background Document

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**Redditch Borough
Employment Land Review –
Stage 2 Methodology Paper
Final Report**

Redditch Borough Council
November 2008

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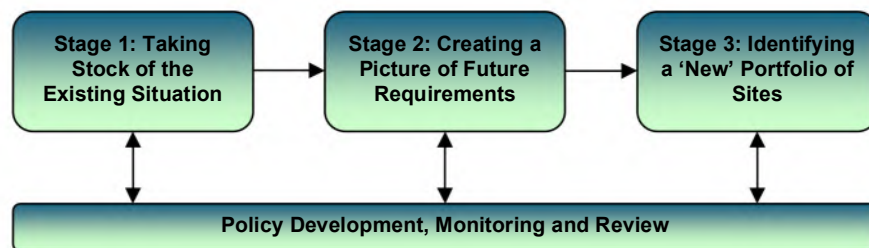
1. INTRODUCTION

- 1.1 GVA Grimley, in association with GHK Consulting, were appointed in August 2008 by Redditch Borough Council to assist them in the preparation of their employment land review, as part of their ongoing Local Development Framework (LDF) process. This paper reviews the methodology used in the preparation of employment land forecasts for Redditch Borough Council.
- 1.2 This paper focuses on two main areas of work that have been undertaken, these being the development of locally specific scenarios for Redditch and the evidence base that has been gathered in order to guide the assumptions within the econometric model. The results of the econometric modelling process are also provided.

Context

- 1.3 This work has focussed on Stage 2 of the Employment Land Review process (see Figure 1.1 below). Stage 1 has already been undertaken by the local authority, which has assessed the supply of employment land within the Borough. Stage 3, which will also be undertaken by the local authority, will commence upon the completion of this piece of work.

Figure 1.1 – Three Stage Process for Employment Land Reviews



Source: DCLG Guidance Note on ELRs, December 2004

- 1.4 The rest of this paper is structured as follows:
- Section 2 outlines the demand forecast scenarios;
 - Section 3 details our assumptions;
 - Section 4 summarises the results of the analysis; and
 - Section 5 provides our conclusions.

2. DEMAND SCENARIOS

Economic Projections and Scenarios

- 2.1 This section sets out the methodology underpinning the preparation of the employment demand forecasting component of the study providing a clear audit trail of the methods, assumptions and stages of work. This includes the use of employment forecasts and the development of alternative forecasting scenarios.
- 2.2 One of the principal tasks of the Stage 2 work has been to provide forecasts of employment demand by linking the property and economic analysis. As part of this work there has been a considerable amount of work undertaken in identifying the priority sectors of the economy within Redditch, both now and in the future. Furthermore, an analysis was carried out to determine the most appropriate sectoral groupings for the local economy, which is sufficiently robust as a basis for the economic forecasting of future floorspace needs and their use in the spatial modelling of employment land scenarios.
- 2.3 This employment land study addresses the area within Redditch Borough Council's jurisdiction. The employment land projections produced in this study were based on economic projections produced by the Cambridge Econometrics (CE) Local Economy Forecasting Model (LEFM), which provides projections at district level.
- 2.4 With regard to translating employment forecasts into floorspace and land use classes/property types, we have noted that the DCLG Guidance acknowledges that this is also "*difficult and to some extent a matter of professional judgement*". This is best achieved by grouping SIC data into say 20-25 sectoral groupings appropriate for the study area and the employment property product types available. This is dealt with in more detail below.

Approach

- 2.5 Based on the principles above the methodology for the employment land forecasts is set out in five steps:
- Source economic/employment projections;
 - Formulate appropriate alternative scenarios;
 - Create appropriate sector groupings and match to land use class categories;

- Create worker density assumptions for converting employment to floorspace and prepare floorspace requirement forecasts; and
 - Convert floorspace to land estimates and forecast land requirements.
- 2.6 We deal with the first three stages in this section, whilst the fourth and fifth stages are dealt with in Section 3. A series of Appendices are attached setting out the detailed results of the key steps.

Source Employment Projections

- 2.7 The baseline employment projections used in this study utilised the CE LEFM model which aggregates 2-digit SIC activity groupings into 41 industrial sectors, as shown in Table 2.1 overleaf. The projections are sufficiently disaggregated to use as a basis for employment land forecasting and include historical data from 1981 to 2006 with projections from 2007 to 2026 for Redditch Borough. They represent the results of model-based analysis, focusing on the future performance of the existing industrial structure in Redditch, and have not been refined in light of any qualitative information, legislative changes or other 'soft' information. CE was also the provider of the Worcestershire county employment projections used in this study.

Table 2.1 - Cambridge Econometrics' Industries in terms of the 2003 Standard Industrial Classification

Industry	SIC2003 definition
1 Agriculture etc	01, 02, 05
2 Coal	10
3 Oil & Gas etc	11, 12
4 Other Mining	13, 14
5 Food, Drink & Tobacco	15, 16
6 Textiles, Clothing & Leather	17, 18, 19
7 Wood & Paper	20, 21
8 Printing & Publishing	22
9 Manufactured Fuels	23
10 Pharmaceuticals	24.4
11 Chemicals nes	24 (ex24.4)
12 Rubber & Plastics	25
13 Non-Metallic Mineral Products	26
14 Basic Metals	27
15 Metal Goods	28
16 Mechanical Engineering	29
17 Electronics	30, 32
18 Electrical Engineering & Instruments	31, 33
19 Motor Vehicles	34
20 Other Transport Equipment	35
21 Manufacturing nes	36, 37
22 Electricity	40.1
23 Gas Supply	40.2, 40.3
24 Water Supply	41
25 Construction	45
26 Distribution	50, 51
27 Retailing	52
28 Hotels & Catering	55
29 Land Transport etc	60, 63
30 Water Transport	61
31 Air Transport	62
32 Communications	64
33 Banking & Finance	65, 67
34 Insurance	66
35 Computing Services	72
36 Professional Services	70, 71, 73, 74.1-74.4
37 Other Business Services	74.5-74.8
38 Public Administration & Defence	75
39 Education	80
40 Health & Social Work	85
41 Miscellaneous Services	90 - 99
42 Unallocated	

Source: Cambridge Econometrics, 2008

Formulate Appropriate Alternative Scenarios

- 2.8 This sub-section outlines the methodology used to formulate the alternative scenarios for economic growth within Redditch. They are based on baseline data for Redditch Borough and the county of Worcestershire, regional and local planning policy and past trends.

Baseline

- 2.9 It was decided, in consultation with the client group, that the CE reference-case employment projections discussed above would form the baseline employment projections for this study, whilst alternative economic scenarios would also be formulated to take account of recent

economic trends, local economic development aspirations and policies and the impact of proposed housing growth in the district – issues which are not reflected in the LEFM forecasts. The baseline scenario uses the employment projections produced for Redditch Borough by the CE LEFM model and applies these to historic employment data sourced from the Annual Business Inquiry (ABI) for each sector in the Borough. In each scenario the base year is 2006 as this is the most recent year for which historic ABI employment data is available. Each scenario is therefore based on the same historic ABI data, disaggregated between 54 sectors (based on 2 digit SIC data), and includes projections from 2007 to 2026.

RSS Based Scenarios

- 2.10 The Regional Spatial Strategy (RSS) for the West Midlands underpins and guides the level of new housing and the development of the economy within the Region. Determining the relationship between the predicted growth of the local population (through housing growth) and the demand for employment is essential in predicting the quantity, type and location of new employment land.
- 2.11 The Phase 2 Revision identifies an average growth of around 330 new homes per year for the period 2006 – 2026, thereby outlining a total growth of 6,600 new homes. The RSS highlights the constraints within Redditch on land supply and therefore states that half of the new homes for Redditch should be located in the adjacent districts of Bromsgrove and Stratford-on-Avon. The Phase 2 Revision also identified a rolling five year total for employment land of 17ha and an indicative longer term target (to 2026) of 51ha. Based on the policy stance outlined above, we modelled housing growth using the target of 6,600 new homes for Redditch by 2026 as part of our RSS Based Scenario.
- 2.12 Since the release of the Phase 2 Revision, the consultation period has been extended to 8th December 2008 by the West Midlands Regional Assembly, following a study, commissioned by Government Office for the West Midlands (GOWM), into options for delivering higher housing numbers. The study was carried out by planning consultants, Nathaniel Lichfield and Partners (NLP), and the final report was published on 7th October 2008.
- 2.13 The NLP Report considers a range of options and presents three potential growth scenarios proposing between 417,100 and 445,600 housing units up to 2026. These represent housing allocations which build on and are between 51,500 and 80,000 higher than the Phase 2 Revision to the RSS. One of the key findings of the NLP Report is that additional housing can support economic growth within the Region.

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- 2.14 The NLP Report appraises a number of options, based on different growth scenarios taking into account both the quantum and spatial distribution of growth within the Region. For Redditch, the conclusion is that additional growth within the District may be difficult to achieve in isolation given its cross boundary relationships with Bromsgrove, issues of utilities infrastructure and the relatively poor housing market (in comparison with other areas south of the metropolitan conurbation). However, the NLP Report concludes Redditch may need to accommodate some additional growth from Bromsgrove (around 2,500 units), therefore we have used the revised RSS target of 9,100 (6,600+2,500) new homes as an alternative RSS based scenario.
- 2.15 These two alternative options for new dwellings in Redditch form the basis of two alternative ‘policy-on’ scenarios for this study, where Scenario A-1 is based on an additional 6,600 new dwellings in Redditch between 2006 and 2026, and Scenario A-2 is based on an additional 9,100 new dwellings. The process of converting the projected number of additional dwellings into employment projections is discussed below and then presented in Table 2.2.
- 2.16 The increase in dwellings from 2006 to 2026 implies an increase in in-migrant population – assumed at an average Worcestershire rate of 2.4 persons per dwelling based on the “Study into the Identification and Use of Local Housing Market Areas for the Development of the RSS” – giving additional populations of 15,840 (Scenario A-1) and 21,840 (Scenario A-2).
- 2.17 The Research and Intelligence Unit of Worcestershire County Council has provided latest estimates of working age population as a percentage of total population in 2026 (53.7%), and of the economically active as a percentage of working age population in 2026 (83.8%) for this study. These estimates have been applied to the population estimates to provide estimates of the working age and economically active populations in 2026 of 8,506 and 7,128 respectively for Scenario A-1, and 11,728 and 9,828 respectively for Scenario A-2.
- 2.18 The forecasts of additional economically active people in 2026 have been used to develop the two alternative scenarios for the additional number of jobs to be generated in Redditch between 2006 and 2026. These scenarios set targets for total additional jobs in Redditch in 2026 by maintaining the existing level of “Job Balance” (86.9% – based on 2001 Census data). Job Balance is defined as jobs in Redditch divided by the number of economically active residents. Applying this Job Balance ratio provides jobs targets for 2026 of 6,191 (Scenario A-1) and 8,536 (Scenario A-2), as presented in Table 2.2.
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Table 2.2 - Conversion of RSS Housing Targets to Employment Growth

	Scenario A-1	Scenario A-2
Potential New Dwellings (2006-2026)	6,600	9,100
Implied Population Increase (2006-2026)	15,840	21,840
Implied Increase in Working Age Population (2006-2026)	8,506	11,728
Implied Increase in Economically Active (2006-2026)	7,128	9,828
Total Additional Jobs (2006-2026)	6,191	8,536

- 2.19 Whilst these scenarios provide an overall reference point for job growth to 2026, they do not provide any estimate of how the sectoral structure of the economy could be expected to change during this period. For the baseline scenario the projected LEFM sectoral structure is adopted but, as the analysis of past sectoral trends indicates, Redditch has had a relatively dynamic and changing economic structure which has performed somewhat better than the LEFM forecasts project.
- 2.20 The future structure of the economy can also be expected to reflect the significant increase in dwellings and resident population expected by 2026. It was therefore recommended that the projected distribution of the target jobs for Redditch between sectors should be based on the impact of additional dwellings, policy aspirations for sectoral development and on the changing sectoral trends from the period 1998 to 2006 set out in Appendix F – the longest period over which consistent employment data by sector is available – as well as on the LEFM projections.
- 2.21 The distribution of growth has been carried out in five steps as follows:
- 1 – An Economic Base Projection of Non Basic Service Employment*
- 2.22 The first step in the distribution of jobs directly examines the relationship between housing growth and the demand for so called “non-basic” local service jobs – expected to result in the growth of local service employment in, for example, education, health services, retailing, personal services, etc - with or without any aspirations or policy targets for jobs growth in these sectors. Economic Base Analysis has been used to define and measure the size of these sectors and examine the relationship between these sectors and the growth of housing using the RSS housing targets to 2026 set out in Table 2.2 above.
- 2.23 In order to test the relationship between the growth of new dwellings and local service employment a cross sectional regression analysis was carried out using 2001 census and ABI data from every local authority in England. The analysis tested the relationship between number of dwellings and individual local service sectors defined using 2-digit SIC data. The

analysis examined the relationship between the number of dwellings and the level of employment in 18 potentially non-basic sectors and found a statistically significant relationship in 11 local service sectors where nearly all employment can normally be classified as non-basic. The analysis shows that the relationship is significant and remarkably consistent across the sample of towns and cities such that an increase of one dwelling is associated with an increase of 0.59 jobs in these 11 sectors in total.

2.24 In fact the analysis measures the number of jobs generated by the addition of one dwelling in each individual sector. These sectors are:

- Construction
- Sale, maintenance and repair of motor vehicles and motorcycles; retail sale of fuel
- Retail trade and repair of personal and household goods
- Hotels and restaurants
- Real estate activities
- Public administration, defence and social security
- Education
- Health and social work
- Activities of membership organisations
- Recreational, cultural and sporting activities
- Other service activities

2.25 These ratios were therefore used to estimate the growth in employment in these sectors of the projected increase in dwellings in Redditch to 2026 for each scenario. The Economic Base projection, as noted above, focuses only on the non-basic local service sectors identified (no change is predicted by this method in the other 'basic' service and manufacturing sectors) but shows that, if the effect of simply increasing the number of dwellings is as analysed, then total employment in these 11 local service sectors can be expected to rise "automatically" by 0.59 times the number of new dwellings.

2 – Projection of Employment in Primary / Manufacturing Sectors

2.26 Historically, manufacturing employment has been significant in Redditch and, although in decline, still accounts for around 25% of total employment in the Borough. Support for manufacturing is an economic priority for Redditch Borough Council, given the high importance of the sector to the local economy. Regional and local strategies aim to support

technology-led growth and cluster development in the more significant manufacturing sub-sectors and particularly in the automotive, medical technologies and other knowledge intensive sectors. The analysis of the local economy has identified five key manufacturing sectors where the LEFM projections do not appear consistent with past employment trends and/or the sectors are expected to benefit from positive development policy in the future. These five sectors (Manufacture of chemicals and chemical products, Manufacture of other machinery and equipment, Manufacture of other electrical machinery and apparatus, Manufacture of medical, precision and optical instruments, and Manufacturing of motor vehicles) have therefore been selected as priority sectors and the forecasting approach for these sectors is discussed in greater detail in Step 4 below.

- 2.27 For the projections of the other, mainly declining, primary and manufacturing sectors the LEFM projections provide the best indicator of employment change since most of these, basic, sectors can be expected to follow the national trend which the LEFM reflects in individual sectors.

3 – Projection of Employment in Basic Service Sectors

- 2.28 Two different approaches have been used to projecting the remaining basic service sectors. For those minor sectors in which there are limited employment numbers, as well as non-priority basic service sectors, the LEFM forecasts for 2026 have been adopted.
- 2.29 In addition, Redditch Borough Council has also identified some basic service sectors as potential policy priorities, each of which are expected to be the beneficiaries of positive economic development policy in the future. More positive projections have therefore been adopted for these basic service sectors, which are detailed in Step 4 below.

4 – Projection of Priority Sectors

- 2.30 Redditch Borough Council has identified key priority sectors, which are expected to be targeted economic development policy sectors in the future. Some of these sectors are expected to perform better than the LEFM projections would suggest, while others are expected to reverse declining trends by 2026. In forecasting these key sectors, three different treatments were considered: (1) applying an Average Annual Percentage Growth Rate from 1998-2006, (2) applying the appropriate Worcestershire County Growth Rates as described under the County Growth Scenario below, or (3) keeping the LEFM forecast.
- 2.31 In total, 11 sectors were identified as priority sectors, including five manufacturing and six basic service sectors. Table 2.3 outlines the average annual percentage growth rates from

2006 to 2026 from the Redditch LEFM projections, the Worcestershire LEFM projections and the past trend from ABI data (1998-2006), and shows the chosen methodology for each priority sector.

Table 2.3 - Selection of Appropriate Projections for Priority Sectors

Sector	Industry	Average Annual % Growth (2006-2026)			Chosen Methodology
		Redditch LEFM	County LEFM	Past Trend	
Manufacturing	24 : Manufacture of chemicals and chemical products	-2.4%	-0.2%	2.0%	County LEFM Projections
Manufacturing	29 : Manufacture of other machinery and equipment	-1.8%	-0.4%	-2.5%	County LEFM Projections
Manufacturing	31 : Manufacture of other electrical machinery and apparatus	-2.0%	-1.1%	-2.2%	County LEFM Projections
Manufacturing	33 : Manufacture of medical, precision and optical instruments	-2.0%	-1.1%	-3.0%	County LEFM Projections
Manufacturing	34 : Manufacture of motor vehicles	-1.3%	-0.7%	-9.9%	County LEFM Projections
Basic Service	64 : Post and telecommunications	-1.3%	-0.5%	-1.9%	County LEFM Projections
Basic Service	65 : Financial intermediation	0.3%	-0.4%	-6.1%	Redditch LEFM Projections
Basic Service	67 : Activities auxiliary to finance	0.3%	-0.4%	2.1%	Past Trend
Basic Service	72 : Computer and related activities	0.9%	1.5%	-2.4%	County LEFM Projections
Basic Service	73 : Research and development	1.6%	1.3%	2.2%	Past Trend
Basic Service	74 : Other business activities	1.4%	2.4%	9.8%	County LEFM Projections

2.32 After examining the alternative growth projections from the Redditch and Worcestershire LEFM forecasts and the past trends, the most appropriate growth rate was selected. In the manufacturing sectors and post and telecommunications sector growth rates were selected to minimise the projected employment decline in these sectors, while the highest logical growth projection was adopted for the other service sectors.

5 – Adjustment to Scenario A1 – A3 Total Employment Control Totals

2.33 Lastly, each sector total was adjusted either up or down in proportion to the distribution of total employment in 2006 in order to control these sectoral changes proportionately back to the respective jobs target for 2026 under Scenarios A-1 and A-2. A straight line trend is then assumed in all sectors from 2006 to 2026.

County Growth Scenario

- 2.34 The 'County Growth' Scenario assumes that employment in all sectors in Redditch will change at the rate projected in the LEFM baseline forecasts for the county of Worcestershire between 2006 and 2026. These sectoral projections were taken from the 2007 Worcestershire Employment Land Review. The Worcestershire LEFM baseline projections for each individual sector have been applied to 2006 ABI employment data for each corresponding sector in Redditch, to generate projections from 2006 to 2026.

Past Trends Scenario

- 2.35 The 'Past Trends' Scenario is based on an analysis of recent past economic trends to set overall employment growth targets for 2026. The Scenario projects employment growth, using trends in ABI employment data for Redditch from 1998 to 2006, without reference to either RSS or local economic development policies. The analysis indicates that Redditch has had a relatively dynamic and changing economic structure which has performed better than the LEFM forecasts project. Total employment in Redditch increased from 38,145 jobs in 1998 to 43,244 jobs in 2006 according to ABI data. This represents total employment growth of 1.6% per annum over the eight year period compared with the LEFM projected growth of 0.5% per annum between 2006 and 2026.
- 2.36 Whilst it is unlikely that this recent level of growth will be sustained in the period to 2026, (and noting that eight years is not a sufficiently long period for projecting over 20 years) for scenario building and testing purposes it was decided to examine the impact of assuming that during the period from 2006 to 2026, overall employment growth would continue at three quarters of the 1998 to 2006 rate (at 1.2% per annum).
- 2.37 The analysis determined that it was unreliable to use this approach to project employment in each individual sector in Redditch because large fluctuations in smaller sectors at district level predict irrationally high growth rates and the projection is based on a relatively short period with volatile changes in employment in some sectors. Therefore, the past trend forecasts are based on an analysis of average annual trends, using a combination of percentage and absolute changes, over the period 1998 to 2006 – see below.

Primary and Manufacturing Sectors

- 2.38 Both national and regional trends show that Primary and Manufacturing sectors are declining at a similar rate across individual sectors. In order to reflect this trend, the growth rate of the

entire primary / manufacturing sector was applied in order to reach the 2026 forecast for total employment in these sectors.

- 2.39 In addition, Redditch has a manufacturing profile unique to that of the region and County. In order to reflect the current economic situation, the total employment needs to be distributed among individual 2-digit SIC sectors. The assumption was made that the composition of individual manufacturing sectors (ratio of individual sector to the total manufacturing sector) in Redditch will remain consistent until 2026. Therefore, the 2006 ratio of jobs by sector was used in order to predict employment in individual manufacturing sectors.

Basic and Non-Basic Service Sectors

- 2.40 Unlike manufacturing/primary sectors, individual basic and non-basic service sectors follow local trends which are not always parallel to the overall growth rates of the entire sector. Therefore, district-level trends produce the most reliable forecasts in these sectors, modified where individual sectors show exceptionally high growth rates which cannot be sustained in the long-term.
- 2.41 For each service sector, with an unrealistic or unsustainable rate of projected employment growth, the average annual percentage growth rate from 1998 to 2006 was replaced with a more appropriate projection for the sector concerned, based on either:
- Half or three-quarter trend of the average annual percentage growth rate
 - Half, three-quarter or full trend of the average annual absolute change
- 2.42 These rates were selected and applied such that total employment in Redditch is projected to grow at three-quarters of the historic average annual percentage growth rate. The chosen methodology for each relevant service sector is shown in Table 2.4 below.

Table 2.4 - Selection of Appropriate Past Trends Projections for Service Sectors

Industry	Chosen 'Past Trends' Methodology (based on 1998--2006 ABI data)	Applied growth or change per annum
40 : Electricity, gas, & water supply	Half average annual absolute change	+0.8 jobs p.a.
50 : Sale and repair of motor vehicles & fuel	Half average annual percentage growth	-4.4% p.a.
51 : Wholesale trade	Half average annual absolute change	-6.1 jobs p.a.
52 : Retail trade	Half average annual percentage growth	+1.6% p.a.
55 : Hotels & restaurants	Half average annual percentage growth	+2.5% p.a.
60 : Land transport	Half average annual percentage growth	+3.9% p.a.
63 : Supporting transport activities	Three-quarter average annual absolute change	+22.2 jobs p.a.
65 : Financial intermediation	Half average annual percentage growth	-3.0% p.a.
70 : Real estate activities	Half average annual percentage growth	-3.8% p.a.
71 : Renting of machinery & equipment	Half average annual percentage growth	+8.6% p.a.
72 : Computer & related activities	Half average annual absolute change	-6.9 jobs p.a.
74 : Other business activities	Half average annual absolute change	+312.3 jobs p.a.
75 : Public administration & defence	Half average annual absolute change	-17.1 jobs p.a.
80 : Education	Half average annual percentage growth	+1.7% p.a.
85 : Health & social work	Half average annual percentage growth	+1.5% p.a.
92 : Recreational, cultural & sporting activities	Half average annual percentage growth	+7.0% p.a.

Results of the Employment Scenario Projections

2.43 Summaries of the resulting employment forecasts in 2026 under each scenario are presented in Table 2.5 below. Detailed tables for each individual scenario can be found at Appendix B.

Table 2.5 - Summary of Employment Projections based on Economic Scenarios

	2006 Actual	2026				
		Baseline	Policy-On (A-1)	Policy-On (A-2)	County Growth	Past Trends
01 : Agriculture/Hunting, etc.	14	3	2	2	8	8
02 : Forestry, logging etc.	1	0	0	0	1	1
05 : Fishing, fish farms etc.	14	3	2	2	8	8
11 : Petroleum, Oil/Gas Services	0	0	0	0	0	0
14 : Other mining and quarry	7	7	7	7	6	4
15 : Manf.- food and beverages	462	385	359	368	394	279
17 : Manf. - textiles	45	18	15	16	23	27
18 : Manf. - wearing apparel	2	1	1	1	1	1
19 : Tanning and dressing of leather	44	18	15	16	22	27
20 : Manf. - wood products	88	41	36	38	75	53
21 : Manf. - pulp and paper products	190	89	78	82	162	115
22 : Publishing and Printing	291	203	186	192	288	176
23 : Manf. - coke, petroleum products	1	1	1	1	1	1
24 : Manf. - chemicals and chemical products	510	312	464	475	493	308
25 : Manf. - rubber and plastic products	1,040	962	902	923	683	628
26 : Manf. - other non-metallic mineral products	116	80	74	76	67	70
27 : Manf. basic metals	590	436	402	414	451	356
28 : Manf. - fabricated metal products	3,304	3,066	2,878	2,944	2,788	1,996
29 : Manf. - other machinery	1,005	702	871	892	929	607
30 : Manf. - office machinery and computers	7	5	4	4	6	4
31 : Manf. - other electrical machinery	1,057	701	782	803	842	639
32 : Manf. - communication equipment	26	17	16	16	22	16
33 : Manf. - medical instruments	558	370	413	424	445	337
34 : Manf. - motor vehicles, trailers	505	388	410	420	439	305
35 : Manf. - transport equipment	97	68	62	64	83	59
36 : Manf. - furniture; manufacturing n.e.c.	771	797	753	769	902	466
37 : Recycling	0	0	0	0	0	0
40 : Electricity, gas, steam and hot water supply	15	15	14	14	14	31
41 : Collection, purification and distribution of water	0	0	0	0	0	0
45 : Construction	1,131	1,686	1,383	1,526	1,254	1,126
50 : Sale and repair of motor vehicles and fuel	743	750	833	898	820	299
51 : Wholesale trade	2,027	2,046	1,931	1,972	2,237	1,905
52 : Retail trade	5,068	6,001	5,512	5,891	5,858	6,917
55 : Hotels and restaurants	1,191	1,296	1,493	1,657	1,401	1,937
60 : Land transport	720	777	736	751	578	1,541
61 : Water transport	0	0	0	0	0	0
62 : Air transport	0	0	0	0	0	0
63 : Supporting transport activities/travel agencies	299	323	306	312	240	743
64 : Post and telecommunications	795	606	675	691	720	540
65 : Financial intermediation	267	286	271	276	248	144
66 : Insurance and pension funding	2	2	2	2	2	0
67 : Auxiliary financial activities	124	133	181	183	115	188
70 : Real estate activities	193	265	281	322	251	89
71 : Renting of machinery and equipment	542	745	715	726	706	2,804
72 : Computer and related activities	518	623	664	675	694	381
73 : Research and development	25	34	37	38	33	39
74 : Other business activities	9,491	12,621	14,601	14,792	15,141	15,736
75 : Public administration and defence	1,118	1,128	1,457	1,632	1,092	777
80 : Education	2,694	2,842	3,227	3,541	3,090	3,785
85 : Health and social work	4,195	5,479	4,748	5,133	5,093	5,634
90 : Sewage and refuse disposal	35	42	40	41	34	35
91 : Activities of membership organisations	413	501	469	507	404	512
92 : Recreational, cultural and sporting activities	571	693	743	832	559	2,227
93 : Other service activities	322	391	383	419	315	864
Total	43,244	47,957	49,435	51,780	50,036	54,745

Create Appropriate Sector Groupings and Match to Land Use Class Categories

Create Appropriate Sector Groupings

- 2.44 The next step was to identify appropriate sector groupings for Redditch, which reflect the local structure and spatial distribution of employment and different land use types. This requires the selection and aggregation of the 41 CE sectors and 54 ABI sectors (based on 2 digit SIC data) to develop a shortlist of between 20 and 25 sector groupings, based on an analysis of sector size, growth and local concentrations / competitive advantages. It is important that there are a sufficient number of sector groups to provide an accurate representation of the local economy but should not be too disaggregated as to make the analysis unmanageable.
- 2.45 In general there are some clear groupings of manufacturing activities, such as Motor Vehicles and Other Transport Equipment, whilst the growing service sectors should remain sufficiently disaggregated to reflect the different land use types associated with them.
- 2.46 Some 25 groups - 11 manufacturing groups and 14 service groups - were adopted for forecasting purposes. The groupings are set out below in Table 2.6, together with the corresponding CE industrial sectors and the 2-digit SIC categories for each. It should be noted that **not all** CE sectors and 2-digit categories are included – primary agricultural and extractive industries are for example excluded since they do not directly give rise to demand for employment land. Furthermore, employment in some sectors in Redditch is very low or non-existent and the electricity, gas and water supply, manufactured fuels, and water and air transport sectors have therefore been excluded. In addition, employment in the following SIC categories was moderated to the following percentages of employment, in line with the Worcestershire Employment Land Study, which were assumed to give rise to demand for employment land:
- Construction: 33.3% of employment assumed to be located in fixed employment premises.
 - Education: 10% of employment assumed to be in non-educational – mainly office premises.
 - Health and social work: 15% assumed to be in headquarters, back-office and other office premises.

Table 2.6 - Selected Sector Groups and Corresponding CE and SIC Sectors

	Sector Groupings	CE Definition	SIC 2003
M1	Food, Drink, Tobacco & Textiles	5 Food, Drink & Tobacco 6 Textiles, Clothing & Leather	15, 16 17, 18, 19
M2	Printing & Publishing	8 Printing & Publishing	22
M3	Chemicals & Chemical Products	10 Pharmaceuticals 11 Chemicals nes	24.4 24 (excl 24.4)
M4	Rubber & Plastic Products	12 Rubber & Plastics	25
M5	Wood, Paper & Non-Metallic Mineral Products	7 Wood & Paper 13 Non-Metallic Mineral Products	20, 21 26
M6	Basic Metals	14 Basic Metals	27
M7	Metal Goods	15 Metal Goods	28
M8	Mechanical Engineering	16 Mechanical Engineering	29
M9	Electronics, Electrical Engineering & Instruments	17 Electronics 18 Electrical Engineering & Instruments	30, 32 31, 33
M10	Motor Vehicles & Other Transport Equipment	19 Motor Vehicles 20 Other Transport Equipment	34 35
M11	Manufacturing nes	21 Manufacturing nes	36, 37
S1	Construction	25 Construction	45
S2	Distribution	26 Distribution	50, 51
S3	Retailing	27 Retailing	52
S4	Hotels & Catering	28 Hotels & Catering	55
S5	Land Transport	29 Land Transport etc	60, 63
S6	Communications	32 Communications	64
S7	Insurance, Banking & Finance	33 Banking & Finance 34 Insurance	65, 67 66
S8	Computing Services	35 Computing Services	72
S9	Professional Services	36 Professional Services	70, 71, 73
S10	Other Business Services	37 Other Business Services	74
S11	Public Administration & Defence	38 Public Administration & Defence	75
S12	Education	39 Education	80
S13	Health & Social Work	40 Health & Social Work	85
S14	Miscellaneous Services	41 Other Services	90 – 99

2.47 Table 2.7 provides the total and sector breakdown of employment for these 25 sector groups under each scenario. It should be noted that the employment figures presented in Table 2.7 have not been moderated. For each of these 25 individual sectors (M1-M11 and S1-S14) retained in the analysis, either 100% or the moderated percentage of employment set out in paragraph 2.46 above is then used to calculate the employment land demand projections in our conversion model.

Table 2.7 - Employment in Selected Sector Groups

	Actual 2006	2026				
		Baseline	Policy-On (A-1)	Policy-On (A-2)	County Growth	Past Trends
M1 Food, Beverages & Textiles	553	421	390	401	440	334
M2 Printing & Publishing	291	203	186	192	288	176
M3 Chemicals & Chemical Products	510	312	464	475	493	308
M4 Rubber & Plastic Products	1,040	962	902	923	683	628
M5 Wood, Paper & Non-Metallic Mineral Products	394	210	188	196	304	238
M6 Basic Metals	590	436	402	414	451	356
M7 Metal Goods	3,304	3,066	2,878	2,944	2,788	1,996
M8 Mechanical Engineering	1,005	702	871	892	929	607
M9 Electronics, Electrical Engineering & Instruments	1,648	1,093	1,215	1,248	1,314	996
M10 Motor Vehicles & Other Transport Equipment	602	456	472	484	522	364
M11 Manufacturing nes	771	797	753	769	902	466
S1 Construction	1,131	1,686	1,383	1,526	1,254	1,126
S2 Distribution	2,770	2,797	2,764	2,869	3,056	2,204
S3 Retailing	5,068	6,001	5,512	5,891	5,858	6,917
S4 Hotels & Catering	1,191	1,296	1,493	1,657	1,401	1,937
S5 Land Transport	1,019	1,100	1,042	1,062	818	2,285
S6 Communications	795	606	675	691	720	540
S7 Insurance, Banking & Finance	393	421	454	462	365	332
S8 Computing Services	518	623	664	675	694	381
S9 Professional Services	760	1,045	1,033	1,086	990	2,931
S10 Other Business Services	9,491	12,621	14,601	14,792	15,141	15,736
S11 Public Administration & Defence	1,118	1,128	1,457	1,632	1,092	777
S12 Education	2,694	2,842	3,227	3,541	3,090	3,785
S13 Health & Social Work	4,195	5,479	4,748	5,133	5,093	5,634
S14 Other Services	1,341	1,628	1,635	1,800	1,312	3,638
Total	43,192	47,929	49,409	51,753	50,000	54,692

Match to Land Use Class Categories

- 2.48 This step goes on to allocate all or divide parts of these employment sector groups between the standard land use categories. These were allocated on the basis of professional judgement and experience of the consultants' team, but have remained disaggregated as far as possible in order to narrow the range of the judgement to be made for any individual employment group or land use category. Thus the full breakdown of land use classes (e.g. A1, A2a,b,c etc., A3, B1a,b,c etc., B2, B8, C1) is used together with the 25 sector groups. Where an employment group is allocated to more than one land use class the percentage of employment assumed to be in each land use class has been identified. Wherever possible this has been determined using 2, 3 or even 4-digit SIC data (2005 ABI data) to determine the proportions of employees in each relevant sub-sector, for example to reflect the split between employment in hotels and employment in restaurants for the study area.
- 2.49 Appendix E shows how the 25 sectors and the proportion of employment in each sector are allocated to the land use categories. All further aggregations of employment, floorspace and employment land use categories are based on this disaggregation.

3. NON EMPLOYMENT LED PROPERTY DEMAND

- 3.1 In the previous section we have outlined the development of the scenarios within the econometric model. These scenarios produce estimates of employment (jobs) within a number of economic sectors up to 2026. This section deals with their translation into employment floorspace forecasts and subsequently into estimates of future land requirements. This is done in order to be able to provide advice to the local planning authority about how much employment land will need to be provided over the course of their LDF.
- 3.2 In this section we outline our assumptions for converting the estimates of employment into floorspace and land requirements. These assumptions can be broadly summarised as follows:
- Employment densities;
 - Churn / Leakage; and
 - Floorspace (sq.m) to land (ha) conversion (incorporating plot ratios and net to gross multipliers).

Employment Densities

- 3.3 Employment densities are a key link between employment change and land use, and need to be applied in the model to convert the employment forecasts to floorspace requirements. The ODPM Guidance cites a number of comparative density analyses of which the most detailed are those prepared by Arup Economics and Planning based on original survey data. We have re-examined these and compared them with those also cited in the Guidance. The variation in the key sectors such as office, warehousing and industrial are limited and the Arup densities cited are the most disaggregated and therefore adaptable for use in the disaggregated model form adopted for this study. We therefore recommend the use of the Arup estimates as the most authoritative and fit for purpose, and for consistency with the Worcestershire Employment Land Review. These are summarised in Table 3.1 below.
- 3.4 It should be noted that most of the Arup densities are quoted as gross internal floorspace per worker and that these have been converted to gross external rates by increasing all business and industrial classes (B1 and B2) by +3.5% and increasing all shops, financial and

professional services, hotels and catering premises (A1, A2, A3 and C1) by +10%, whilst the densities for storage and distribution (B8) have remained unchanged.

Table 3.1 - Worker Densities Adopted for Redditch Sectors

Activity	Sector Group	Land Use Category	Density (sq. m / worker)
Manufacturing	General & Specialist Manufacturing (M1, M2, M3, M4, M5, M6, M7, M8, M11)	B2	34
	Electronics, Electronic Engineering & Instruments (M9)	B1c	34 / 29
	Transport Equipment (M10)	B2	34
Logistics & Distribution	Land Transport (S5)	B8	80
	Wholesale Distribution / Transport & Communications (S2, S5, S6)	B8	50
Automotive	Motor Distribution and Fuel (S2)	B2	34
Offices	Various (S1, S3, S7, S8, S9, S10, S11, S12, S13)	B1a	19
	Professional Services (S9)	B1b	29
Retail	Retail Shops / Computer Services (S3, S8)	A1	19
	Insurance, Banking & Finance (S7)	A2a	20
	Retailing, Computing / Professional Services (S3, S8, S9)	A2a/b	19
	Miscellaneous Services (S14)	A2c	20
	Hotels & Catering (S4)	A3 / C1	13

Source: Arup Economics and Planning employment densities produced for English Partnerships and RDAs, 2001, and GHK analysis, 2008

- 3.5 The density assumptions used are based on current worker/floorspace densities. There are factors impacting on future employment densities which may move towards lower overall densities or less reliance upon traditional forms of employment floorspace to meet economic needs. This study has not made adjustments for such changes because we believe it is better to use consistent and well understood national estimates for long term forecasting, whilst recognising that these should be monitored.

- 3.6 These employment densities have been applied in each sector and land use category using the consultant’s transformation model and the resulting estimates of floorspace requirements for 2026 are summarised in Table 3.2 below.

Table 3.2 - Redditch Floorspace Requirements by Land Use Class (sq. m): Total Requirement 2026 and Change in Requirement 2006 – 2026, by Scenario

	2006	Redditch – Total Floorspace Requirement 2026				
		Baseline	RSS-Based (A-1)	RSS-Based (A-2)	County Growth	Past Trends
A1	36,386	43,105	39,785	42,450	42,256	48,981
A2	79,560	95,753	93,161	99,994	87,460	156,884
A3	14,477	15,751	18,145	20,138	17,033	23,539
B1a	284,344	364,493	403,847	417,011	408,358	442,723
B1b	1,141	1,569	1,550	1,629	1,486	4,399
B1c	55,145	36,557	40,653	41,763	43,981	33,320
B2	343,190	290,770	288,503	295,848	301,377	212,026
B8	215,974	213,271	211,335	217,555	208,715	271,866
C1	2,555	2,780	3,202	3,554	3,006	4,154
Total	1,032,771	1,064,047	1,100,179	1,139,941	1,113,673	1,197,893
Redditch – Absolute Change in Floorspace Requirement 2001- 2026						
		Baseline	RSS-Based (A-1)	RSS-Based (A-2)	County Growth	Past Trends
A1		6,719	3,398	6,064	5,870	12,595
A2		16,193	13,601	20,434	7,900	77,325
A3		1,274	3,668	5,661	2,557	9,062
B1a		80,149	119,503	132,667	124,015	158,380
B1b		428	409	489	345	3,259
B1c		-18,587	-14,492	-13,382	-11,164	-21,825
B2		-52,420	-54,688	-47,343	-41,813	-131,164
B8		-2,703	-4,639	1,581	-7,259	55,892
C1		225	647	999	451	1,599
Total		31,277	67,409	107,171	80,902	165,122

Churn / Leakage

Churn

- 3.7 Employment driven floorspace demand is likely to be a significant driver of the demand for additional floorspace in a local economy. However, it is also true that an element of demand will arise from companies moving, either due to obsolescence of their existing property, the desire for a lower or higher cost location, or simply for strategic reasons. The other significant factor and one which is relevant to this Study is the regeneration of existing employment areas. The regeneration process will give rise to business relocations which create further demand for employment land. This form of demand is called 'churn' and it represents a general level of turnover in property requirements. Churn can have a significant effect on the amount of employment land and floorspace that is required in order to meet the predicted

demand. The basis of calculating Churn is to look at the existing amount of stock in the borough. This data is shown in Table 3.3 below.

Table 3.3 – Baseline Amount of Floorspace in Redditch Borough

Redditch	Bulk Class	Land Use Designation	Floorspace (m ²)
	Offices	B1	112,000
	Factories	B2	583,000
	Warehouses	B8	340,000
Total			1,035,000

Source: DCLG, 2005

3.8 Estimating churn and its relationship to employment driven demand is not straightforward. Both employment churn and property churn factors are drivers of demand for business floorspace. For example, premises that are vacated by declining sectors can, subject to planning and suitability, be occupied by expanding sectors. GVA Grimley has used knowledge from previous studies (Worcestershire, South Worcestershire and the Black Country) to devise a set of assumptions regarding the level of churn for different land use classes. These assumptions are in line with other studies and are set out in Table 3.4 below. Churn figures are then applied to the stock figures in Table 3.3 above.

Table 3.4 - Churn Factors

Land Use Class	Churn Factor
B1a/B1b	0.5% per year
B1c/B2	0.5% per year
B8	0.5% per year

GVA Grimley analysis, 2008

3.9 In arriving at the churn figures detailed in Table 3.4 above we have taken into account a number of significant factors. Firstly we have used the Council’s Business Survey to look at the extent to which businesses in the Borough move, without expanding in employment terms, within Redditch. Secondly, we have reviewed take up data to gain an understanding of the types of employment land that are being completed recently.

3.10 As can be seen in Table 3.5 below the effect of churn in creating additional demand to be added to that coming from the model is approximately 30.44ha.

Table 3.5 - Overall Effects of Churn

Redditch	Bulk Class	Land Use Designation	Floorspace (m ²)	Churn (floorspace (m ² / year))	Churn (land (ha / year))	Churn (land (ha)) 1 Year Summary (to 2016)	Churn (land (ha)) 21 Year Summary (to 2026)
	Offices	B1	112,000	560	0.10	1.02	2.04
	Factories	B2	583,000	2,915	0.90	8.97	17.94
	Warehouses	B8	340,000	1,700	0.52	5.23	10.46
	Total		1,035,000	5,175	1.52	15.22	30.44

Source: DCLG, 2005 and GVA Grimley analysis, 2008

Leakage

- 3.11 We have also considered the effect of leakage from employment areas to other employment locations such as town centres and other locations. Leakage has a more noticeable effect on the demand for office space, simply because offices can be located in a wider range of locations, not just recognised employment areas. This includes in local centres, above shops, people's spare rooms and garages.
- 3.12 The anticipated growth in Redditch is likely to be in office based sectors, however our work undertaken as part of the Worcestershire Employment Land Review (ELR) identified that there was a limited amount of capacity within the town centre for the expansion of the office market. Table 3.6 below is taken from our Worcestershire ELR Report (Table 5.4 in that report), and details the amount of office floorspace within each of the centres in Worcestershire.

Table 3.6 - Town Centre Floorspace in the Worcestershire Districts

Town Centre	Retail Floorspace (sqm)	Office Floorspace (sqm)	A1 Floorspace (sqm)	A2 Floorspace (sqm)	A3 Floorspace (sqm)
Bewdley	5,330	1,680	3,720	Disclosive	Disclosive
Bromsgrove	42,640	8,860	33,940	6,060	2,460
Droitwich	21,280	4,980	17,210	2,670	1,390
Evesham	43,260	10,190	33,390	6,500	3,080
Great Malvern	24,280	8,390	17,990	5,030	1,190
Kidderminster	103,190	31,850	91,730	7,850	3,460
Pershore	13,970	2,880	11,820	1,100	980
Redditch	71,090	30,610	58,840	9,180	2,870
Stourport	18,260	3,180	13,330	2,020	1,430
Worcester	158,040	82,330	128,160	18,700	10,550
Total	501,340	184,950	410,130	59,110	27,410

Source – Worcestershire Employment Land Review, 2006

- 3.13 GVA Grimley used the assumption that the centres above would grow by 15% by 2026 and that Worcester will grow by 20%. We considered these estimates to be conservative, yet reasonable given physical constraints of centres such as Redditch (ring road), as well as the current market trends which show that there is a preference for out of centre development. This preference is highlighted in the Centres study analysis which shows all extant planning permissions in Redditch are out of town, as well as being reinforced from GVA Grimley's local agents who have stated that the preference is for new build out of town offices rather than in centre which has a lack of quality space as well as having car parking constraints.
- 3.14 Having highlighted a restriction on office capacity in the town centre, in order to be realistic, a relatively low leakage factor will need to be applied. We have assumed that 65% of office jobs are likely to locate on employment sites and that the remaining 35% are likely to locate elsewhere within Redditch. This is based on 25% being located in the town centre and a further 10% locating in other areas, as detailed above. In coming to this view we have been guided by past take up trends and our conclusion on development within Redditch town Centre.
- 3.15 For industrial and distribution type premises, the amount of leakage is much lower and the situation slightly less complex. Industrial and distribution developments have a much stronger reliance on allocated employment land, and therefore, in line with assumptions we have used in previous studies, we have assumed that for industrial demand, a general leakage figure of 10% will apply.
- 3.16 This is reflective of the fact that it is unlikely that any new development in the B2 / B8 use classes would be on non-employment land and is more likely to be on designated employment sites and takes account of the fact that some B8 storage uses can be accommodated in existing redundant buildings that were formerly used as Factories.
- 3.17 Furthermore, taking into account the large amount of greenbelt land around Redditch we would expect very few new B2 / B8 developments to be on land that is not designated employment land. Notwithstanding this we have made an allowance for instances of leakage to non-employment designations, an example of which would be the re-use / intensification of existing employment areas. The leakage figure of 10% therefore implies that 90% of all demand for industrial type premises will be located in employment areas, and the rest will be absorbed by other locations.

Plot Ratios

- 3.18 The amount of floorspace that is built per net hectare is an important factor to consider when predicting employment land requirements. We have used experience from other Employment Land Review projects that we have undertaken, as well as looking at recent, local, examples of employment developments to ascertain the average amount of floorspace being built per hectare. This enables floorspace requirements (sq.m) to be converted into estimates of employment land (ha).
- 3.19 Table 3.7 below summarises the results of our analysis on recent developments of B use classes within Redditch. Full details of the developments analysed can be found at Appendix A.

Table 3.7 - Average Plot Ratios in Redditch

Land Use Class	Average Plot Ratio (sq.m per ha)
B1a/B1b	5,569
B1c/B2/B8	3,126

Source: GVA Grimley analysis, 2008

- 3.20 Based on the analysis above, Redditch has an average plot ratio of around 5,500sq.m per ha for offices. We feel that this figure is rather high and that in order to be robust, the plot ratios used in our analysis should be in line with the ELR guidance. Box D.7 of Appendix D within the ELR Guidance document identifies that typically, business park type developments yield around 2,500 – 3,000 sq.m per ha, based on the work undertaken by Roger Tym. Taking this into account, we have used a plot ratio of 3,000 sq.m per ha for offices (B1a / B1b) and 3,250 sq.m per ha for factories / warehouses (B1c / B2 / B8).

Net to Gross Ratios

- 3.21 We have applied a net to gross ratio of 10% to account for miscellaneous land uses (such as landscaping, car parking and major infrastructure) that cannot be used for development of employment premises, but are essential within any site. This factor is based on past experience in the locality and a review of recent planning applications.

4. DEMAND FORECASTS

4.1 This section details the demand forecasts based on the scenarios developed in Section 2 and the assumptions outlined in Section 2. We have presented demand forecasts for each scenario, in terms of floorspace (sq.m) and land (ha) requirements. More detailed tables can be found at Appendix C.

Baseline Scenario

4.2 The total floorspace and land requirements under the Baseline Scenario are shown in Table 4.1 below. They show a requirement of around 21.87ha B1a, 17.76ha B2 and 10.36ha B8, giving an overall requirement of around 50ha to 2026. This takes into account the impact of churn and leakage. More detailed tables can be found at Appendix C. (Table A 2).

Table 4.1 - Baseline Scenario - Floorspace and Land Requirements to 2026

Use Class	2006	2011	2016	2021	2026
B1a	0	20,572	35,131	47,551	59,655
B1c / B2	0	13,118	26,235	39,353	52,470
B8	0	7,650	15,300	22,950	30,600
Total	0	41,340	76,666	109,853	142,725

Use Class	2006	2011	2016	2021	2026
B1a	0.00	7.54	12.88	17.44	21.87
B1c / B2	0.00	4.44	8.88	13.32	17.76
B8	0.00	2.59	5.18	7.77	10.36
Total	0.00	14.57	26.94	38.52	49.99

Source: GVA Grimley analysis, 2008

RSS Based Scenario

4.3 The total floorspace and land requirements under the RSS Based Scenario are shown in Table 4.2 below. They show a requirement of around 31.25ha B1a, 17.76ha B2 and 10.36ha B8, giving an overall requirement of around 59.36ha to 2026. This takes into account the impact of churn and leakage. More detailed tables can be found at Appendix C. (Table A 3).

Table 4.2 – RSS Based Scenario - Floorspace and Land Requirements to 2026

Use Class	2006	2011	2016	2021	2026
B1a	0	18,508	38,751	60,919	85,223
B1c / B2	0	13,118	26,235	39,353	52,470
B8	0	7,650	15,300	22,950	30,600
Total	0	39,275	80,286	123,222	168,293

Use Class	2006	2011	2016	2021	2026
B1a	0.00	6.79	14.21	22.34	31.25
B1c / B2	0.00	4.44	8.88	13.32	17.76
B8	0.00	2.59	5.18	7.77	10.36
Total	0.00	13.82	28.27	43.42	59.36

Source: GVA Grimley analysis, 2008

County Growth Scenario

4.4 The total floorspace and land requirements under the Country Growth Scenario are shown in Table 4.3 below. They show a requirement of around 32.31ha B1a, 17.76ha B2 and 10.36ha B8, giving an overall requirement of around 60.42ha to 2026. This takes into account the impact of churn and leakage. More detailed tables can be found at Appendix C. (Table A 4).

Table 4.3 – County Growth Scenario - Floorspace and Land Requirements to 2026

Use Class	2006	2011	2016	2021	2026
B1a	0	19,825	39,782	62,672	88,114
B1c / B2	0	13,118	26,235	39,353	52,470
B8	0	7,650	15,300	22,950	30,600
Total	0	40,593	81,317	124,974	171,184

Use Class	2006	2011	2016	2021	2026
B1a	0.00	7.27	14.59	22.98	32.31
B1c / B2	0.00	4.44	8.88	13.32	17.76
B8	0.00	2.59	5.18	7.77	10.36
Total	0.00	14.30	28.64	44.07	60.42

Source: GVA Grimley analysis, 2008

Past Trends Scenario

4.5 The total floorspace and land requirements under the Past Trends Scenario are shown in Table 4.4 below. They show a requirement of around 41.19ha B1a, 17.76ha B2 and 27.38ha B8, giving an overall requirement of around 86.33ha to 2026. This takes into account the impact of churn and leakage. More detailed tables can be found at Appendix C. (Table A 5).

Table 4.4 – Past Trends Scenario - Floorspace and Land Requirements to 2026

Use Class	2006	2011	2016	2021	2026
B1a	0	25,093	51,721	80,493	112,345
B1c / B2	0	13,118	26,235	39,353	52,470
B8	0	14,963	33,289	55,163	80,903
Total	0	53,173	111,245	175,008	245,718

Use Class	2006	2011	2016	2021	2026
B1a	0.00	9.20	18.96	29.51	41.19
B1c / B2	0.00	4.44	8.88	13.32	17.76
B8	0.00	5.06	11.27	18.67	27.38
Total	0.00	18.70	39.11	61.50	86.33

Source: GVA Grimley analysis, 2008

- 4.6 This section has shown that there is predicted to be a requirement of between 50-86ha of employment land within Redditch to 2026. If the RSS based scenario were chosen as the preferred scenario, there would be a requirement of 59.36ha of employment land, with around 31ha (52%) being for offices, 18ha (31%) for manufacturing and 10ha (17%) for distribution. This analysis takes into account the effects of churn and leakage.
- 4.7 The figures for manufacturing and distribution are consistent across all of the scenarios because these sectors have been predicted to have negative growth in terms of employment. Therefore, the only demand for these types of premises will come from churn, which is the same across all scenarios.
- 4.8 The next section of this paper provides a summary of the findings and conclusions, which focus on the impact on planning and economic policies within Redditch.

5. CONCLUSIONS

- 5.1 As part of this employment land study we have undertaken detailed demand forecasting for Redditch's economy and converted these forecasts of jobs into requirements for employment land. We have created a number of scenarios which have taken into account national (Baseline), regional and local factors, as well as looking at past trends, to predict employment demand within Redditch to 2026.

Summary of Demand Forecasts

- 5.2 We have used data from Cambridge Economics LEFM to undertake the analysis. In order to make the analysis easier to understand we have grouped the LEFM data into 25 sectors. Our analysis has shown that, across all the scenarios, demand for employment in the manufacturing sectors is likely to fall up to 2026. Specifically, the “*Metal Goods*”, “*Electronics, Electrical Engineering & Instruments*” and “*Mechanical Engineering*” sectors are likely to see significant decreases in the demand for employment, and thus a fall in the demand for employment floorspace and land. Conversely, the service sectors are likely to experience growth up to 2026. According to our analysis, a large proportion of this growth is expected to be in the “*Retailing*”, “*Land Transport*”, “*Other Business Services*” and “*Health & Social Work*” sectors. This will have positive impacts on the demand for employment floorspace and land suitable for these uses.
- 5.3 These changes in the economy represent, at the local level, the trends that are being experienced nationally with a shift away from manufacturing employment with a growing focus on the service sector. This shift has had, and will have into the future, significant implications on the demand for different types of employment land.

Employment Land Requirements

- 5.4 The analysis presented in the previous section has shown that employment land requirements within Redditch are predicted to be in the range 50ha to 83ha. The table below compares these figures with the requirements set out within the West Midlands RSS (Policy PA6A).

Table 5.1 - Summary of Employment Land Requirements within Redditch to 2026

Scenario	Employment Land Requirement
Baseline	50 ha
RSS Based (6,600)	59 ha
County Growth	60 ha
Past Trends	86 ha
<i>compare to...</i>	
West Midlands RSS	51 ha

Source: GVA Grimley analysis

- 5.5 As can be seen above the employment land requirements set out in the RSS, county growth and past trends scenarios are all above the West Midlands RSS requirement. The baseline, which is based on national trends, is slightly below the West Midlands RSS requirement. The baseline provides a conservative forecast as it does not take into account local aspirations within the economy and therefore the fact that it is below the RSS requirement (though only very slightly) is not surprising. The other RSS Based and County Growth scenarios are more ambitious in predicting demand for employment land and reflect regional and local aspirations for particular sectors of the economy. The Past Trends scenario provides a benchmark for future growth based on the rate of growth in the past. It can be seen that the predicted growth rate to 2026 is lower than has been experienced in the past (noting that it is unlikely that the recent level of growth will from 1998 – 2006 will be sustained in the period to 2026 and that eight years is not a sufficiently long period for projecting over 20 years).
- 5.6 If the RSS Based scenario were chosen as the preferred option this would have implications in that a further 8ha of employment land would be required up to 2026, an additional 0.45ha per year on top of what is required by the West Midlands RSS. The type of employment land required will be more suited to use for offices, with this accounting for around half of all new employment land and is due to growth of the service sector and general decline within manufacturing and distribution. However, non-employment led property demand still gives rise to demand for manufacturing and distribution, which is predicted to be in the region of 28ha to 2026.

Policy Implications

- 5.7 In terms of implications for planning policy within Redditch our analysis shows a clear shift in the employment land requirements for the Borough. In terms of offices, our model shows that there will be a requirement of around 31ha. Planning policies should ensure that a sufficient supply of employment land is available to meet this demand through the protection of existing

employment sites and identification of additional allocations if these are required. Work undertaken by the local planning authority in Stage 3 of the Employment Land Review process should identify whether there is a shortfall or oversupply of office employment land. At the same time it should be noted that the demand model assumes that 35% of office demand will be accommodated in the town centre, above shops in local centres and in other locations that are not classed as employment land. The local planning authority will need to ensure that policies are in place to promote the expansion of offices in the town centre to accommodate the level of growth required.

- 5.8 With regard to manufacturing and distribution the model predicts an overall decline in employment in these sectors. Due to the influence of churn and leakage, however, there is still a demand for some employment land suited to these uses in the order of 28ha. Planning policies should ensure that a sufficient supply of employment land is available to meet this demand through the protection of existing employment sites and identification of additional allocations if these are required. Work undertaken by the local planning authority in Stage 3 of the Employment Land Review process should identify whether there is a shortfall or oversupply of manufacturing / distribution employment land.

APPENDIX A - DETAILS OF RECENT DEVELOPMENTS IN B USE CLASSES

Table A 1 – Details of Recent Developments in B Use Classes

Application Number	Address	Brief Description	Floorspace sqm (sqft)	Hectares	Sqm per Ha
2008/103/FUL	5A Merse Road, Moons Moat North Industrial Estate, B98 9HL	Development of site to provide eight small start-up business units (B1 office use) with access of Colemeadow Road.	1,346 (14,490)	0.32	4,206.25
2006/397/FUL	Land at Studley Road/Opposite Tanhouse Farm,	Revised application - Erection of Class B1 Units, car parking and access.	2,315 (24,922)	0.36	6,430.56
2005/012	Land near Green Lane/Redditch Road, North East of Studley Road	Erection of class B1 units, associated car parking and access road.	2,428 (26,137)	0.40	6,070
Average Floorspace per hectares for B1 use: 5,568.94 sqm					
2005/149/FUL	Land at IO Centre, Nash Road, Park Farm North	Industrial Units with offices (Class B2/B8) (Phase 2)	6,353 (68,383)	1.71	3,715.20
2005/146/FUL	Land at Shawbank Road, Lakeside	Erection of 19 no. Class B1, B2 and B8 commercial units, associated car parking and access road.	10,351 (111,418)	4.01	2,581.30
2006/385/FUL	Radway Door and Windows Ltd, Merse Road, B98 9HL	Demolish existing B2 unit and erection of 18 no. B1 units in 3 blocks.	1,068 (11,498)	0.86	1,241.86
2006/291/FUL	54 Claybrook Drive, Washford	Erection of warehouse/production unit for B1, B2 and B8.	13,006 (139,997)	2.93	4,438.91
2005/413/FUL	54 Claybrook Drive, Washford	Erection of Warehouse/Production Unit for B1, B2 & B8 use with ancillary service yard.	8,826 (95,003)	1.94	4,549.48
2005/149/FUL	Land at IO Centre, Nash Road, Park Farm North	Industrial Units with offices (Class B2/B8) (Phase 2)	6,353 (68,383)	1.71	3,715.20
2005/566/FUL	Unit 8, Washford Trade Park, Washford Drive	Proposed unit for a motor vehicle centre for the sale, supply, storage and fitting of tyres and exhausts and other motor vehicle components and MOT testing and servicing, maintenance and repair of motor vehicles.	394 (4,241)	0.24	1,641.67
Average Floorspace per hectares for mixed uses: 3,126.23 sqm					
2007/197/FUL	94 Heming Road, B98, 0EA	Erection of a single industrial unit.	259 (2,783)	0.16	1,618.75

APPENDIX B - DETAILED EMPLOYMENT FORECASTS

Employment Projections - Redditch

Baseline Employment Projections

	2006 Actual	2011	2016	2021	2026
01 : Agriculture/Hunting, etc.	14	8	6	3	3
02 : Forestry, logging etc.	1	1	0	0	0
05 : Fishing, fish farms etc.	14	8	6	3	3
11 : Petroleum, Oil/Gas Services	0	0	0	0	0
14 : Other mining and quarry	7	7	7	7	7
15 : Manf. - food and beverages	462	452	424	404	385
17 : Manf. - textiles	45	36	32	23	18
18 : Manf. - wearing apparel	2	2	1	1	1
19 : Tanning and dressing of leather	44	35	31	22	18
20 : Manf. - wood products	88	73	62	50	41
21 : Manf. - pulp and paper products	190	158	133	108	89
22 : Publishing and Printing	291	238	229	220	203
23 : Manf. - coke, petroleum products	1	1	1	1	1
24 : Manf. - chemicals and chemical products	510	468	411	326	312
25 : Manf. - rubber and plastic products	1,040	1,050	1,030	1,001	962
26 : Manf. - other non-metallic mineral products	116	107	98	89	80
27 : Manf. - basic metals	590	526	490	463	436
28 : Manf. - fabricated metal products	3,304	3,158	3,121	3,093	3,066
29 : Manf. - other machinery	1,005	939	863	787	702
30 : Manf. - office machinery and computers	7	7	5	5	5
31 : Manf. - other electrical machinery	1,057	972	894	803	701
32 : Manf. - communication equipment	26	26	17	17	17
33 : Manf. - medical instruments	558	513	472	424	370
34 : Manf. - motor vehicles, trailers	505	460	433	406	388
35 : Manf. - transport equipment	97	87	78	78	68
36 : Manf. - furniture; manufacturing n.e.c.	771	762	797	797	797
37 : Recycling	0	0	0	0	0
40 : Electricity, gas, steam and hot water supply	15	15	15	15	15
41 : Collection, purification and distribution of water	0	0	0	0	0
45 : Construction	1,131	1,309	1,433	1,577	1,686
50 : Sale and repair of motor vehicles and fuel	743	729	738	748	750
51 : Wholesale trade	2,027	1,988	2,014	2,040	2,046
52 : Retail trade	5,068	5,131	5,400	5,714	6,001
55 : Hotels and restaurants	1,191	1,239	1,277	1,296	1,296
60 : Land transport	720	674	709	737	777
61 : Water transport	0	0	0	0	0
62 : Air transport	0	0	0	0	0
63 : Supporting transport activities/travel agencies	299	280	294	306	323
64 : Post and telecommunications	795	716	676	646	606
65 : Financial intermediation	267	267	273	280	286
66 : Insurance and pension funding	2	2	2	2	2
67 : Auxiliary financial activities	124	124	127	130	133
70 : Real estate activities	193	219	219	229	265
71 : Renting of machinery and equipment	542	614	614	642	745
72 : Computer and related activities	518	544	571	597	623
73 : Research and development	25	28	28	30	34
74 : Other business activities	9,491	10,736	11,533	12,116	12,621
75 : Public administration and defence	1,118	1,128	1,128	1,128	1,128
80 : Education	2,694	2,733	2,773	2,803	2,842
85 : Health and social work	4,195	4,511	4,837	5,153	5,479
90 : Sewage and refuse disposal	35	38	40	41	42
91 : Activities of membership organisations	413	449	468	485	501
92 : Recreational, cultural and sporting activities	571	621	647	670	693
93 : Other service activities	322	350	365	378	391
Total	43,244	44,541	45,818	46,891	47,957

Projected Growth Rates (% pa)

	2006- 2011	2011- 2016	2016- 2021	2021- 2026
01 : Agriculture/Hunting, etc.	-9.7%	-7.8%	-12.9%	0.0%
02 : Forestry, logging etc.	-9.7%	-7.8%	-12.9%	0.0%
05 : Fishing, fish farms etc.	-9.7%	-7.8%	-12.9%	0.0%
11 : Petroleum, Oil/Gas Services	NA	NA	NA	NA
14 : Other mining and quarry	0.0%	0.0%	0.0%	0.0%
15 : Manf. - food and beverages	-0.4%	-1.3%	-0.9%	-1.0%
17 : Manf. - textiles	-4.4%	-2.6%	-6.5%	-4.4%
18 : Manf. - wearing apparel	-4.4%	-2.6%	-6.5%	-4.4%
19 : Tanning and dressing of leather	-4.4%	-2.6%	-6.5%	-4.4%
20 : Manf. - wood products	-3.6%	-3.4%	-4.1%	-3.8%
21 : Manf. - pulp and paper products	-3.6%	-3.4%	-4.1%	-3.8%
22 : Publishing and Printing	-3.9%	-0.8%	-0.8%	-1.7%
23 : Manf. - coke, petroleum products	0.0%	0.0%	0.0%	0.0%
24 : Manf. - chemicals and chemical products	-1.7%	-2.6%	-4.5%	-0.9%
25 : Manf. - rubber and plastic products	0.2%	-0.4%	-0.6%	-0.8%
26 : Manf. - other non-metallic mineral products	-1.6%	-1.7%	-1.9%	-2.1%
27 : Manf. - basic metals	-2.3%	-1.4%	-1.1%	-1.2%
28 : Manf. - fabricated metal products	-0.9%	-0.2%	-0.2%	-0.2%
29 : Manf. - other machinery	-1.4%	-1.7%	-1.8%	-2.3%
30 : Manf. - office machinery and computers	0.0%	-7.8%	0.0%	0.0%
31 : Manf. - other electrical machinery	-1.7%	-1.7%	-2.1%	-2.7%
32 : Manf. - communication equipment	0.0%	-7.8%	0.0%	0.0%
33 : Manf. - medical instruments	-1.7%	-1.7%	-2.1%	-2.7%
34 : Manf. - motor vehicles, trailers	-1.9%	-1.2%	-1.3%	-0.9%
35 : Manf. - transport equipment	-2.1%	-2.3%	0.0%	-2.6%
36 : Manf. - furniture; manufacturing n.e.c.	-0.2%	0.9%	0.0%	0.0%
37 : Recycling	NA	NA	NA	NA
40 : Electricity, gas, steam and hot water supply	0.0%	0.0%	0.0%	0.0%
41 : Collection, purification and distribution of water	NA	NA	NA	NA
45 : Construction	3.0%	1.8%	1.9%	1.4%
50 : Sale and repair of motor vehicles and fuel	-0.4%	0.3%	0.3%	0.1%
51 : Wholesale trade	-0.4%	0.3%	0.3%	0.1%
52 : Retail trade	0.2%	1.0%	1.1%	1.0%
55 : Hotels and restaurants	0.8%	0.6%	0.3%	0.0%
60 : Land transport	-1.3%	1.0%	0.8%	1.1%
61 : Water transport	NA	NA	NA	NA
62 : Air transport	NA	NA	NA	NA
63 : Supporting transport activities/travel agencies	-1.3%	1.0%	0.8%	1.1%
64 : Post and telecommunications	-2.1%	-1.1%	-0.9%	-1.3%
65 : Financial intermediation	0.0%	0.5%	0.5%	0.5%
66 : Insurance and pension funding	0.0%	0.0%	0.0%	0.0%
67 : Auxiliary financial activities	0.0%	0.5%	0.5%	0.5%
70 : Real estate activities	2.5%	0.0%	0.9%	3.0%
71 : Renting of machinery and equipment	2.5%	0.0%	0.9%	3.0%
72 : Computer and related activities	1.0%	0.9%	0.9%	0.9%
73 : Research and development	2.5%	0.0%	0.9%	3.0%
74 : Other business activities	2.5%	1.4%	1.0%	0.8%
75 : Public administration and defence	0.2%	0.0%	0.0%	0.0%
80 : Education	0.3%	0.3%	0.2%	0.3%
85 : Health and social work	1.5%	1.4%	1.3%	1.2%
90 : Sewage and refuse disposal	1.7%	0.8%	0.7%	0.7%
91 : Activities of membership organisations	1.7%	0.8%	0.7%	0.7%
92 : Recreational, cultural and sporting activities	1.7%	0.8%	0.7%	0.7%
93 : Other service activities	1.7%	0.8%	0.7%	0.7%
Total	0.6%	0.6%	0.5%	0.5%

**Employment Projections - Redditch
RSS-Based Scenario (A-1)**

	2006 Actual	2011	2016	2021	2026
01 : Agriculture/Hunting, etc.	14	9	5	3	2
02 : Forestry, logging etc.	1	1	0	0	0
05 : Fishing, fish farms etc.	14	9	5	3	2
11 : Petroleum, Oil/Gas Services	0	0	0	0	0
14 : Other mining and quarry	7	7	7	7	7
15 : Manf. - food and beverages	462	434	407	382	359
17 : Manf. - textiles	45	34	26	20	15
18 : Manf. - wearing apparel	2	2	1	1	1
19 : Tanning and dressing of leather	44	34	26	20	15
20 : Manf. - wood products	88	70	56	45	36
21 : Manf. - pulp and paper products	190	152	122	97	78
22 : Publishing and Printing	291	260	233	208	186
23 : Manf. - coke, petroleum products	1	1	1	1	1
24 : Manf. - chemicals and chemical products	510	498	487	475	464
25 : Manf. - rubber and plastic products	1,040	1,004	969	935	902
26 : Manf. - other non-metallic mineral products	116	104	92	83	74
27 : Manf. - basic metals	590	536	487	443	402
28 : Manf. - fabricated metal products	3,304	3,192	3,084	2,979	2,878
29 : Manf. - other machinery	1,005	970	936	903	871
30 : Manf. - office machinery and computers	7	6	5	5	4
31 : Manf. - other electrical machinery	1,057	980	909	843	782
32 : Manf. - communication equipment	26	23	20	18	16
33 : Manf. - medical instruments	558	518	480	445	413
34 : Manf. - motor vehicles, trailers	505	479	455	432	410
35 : Manf. - transport equipment	97	87	78	70	62
36 : Manf. - furniture; manufacturing n.e.c.	771	767	762	758	753
37 : Recycling	0	0	0	0	0
40 : Electricity, gas, steam and hot water supply	15	15	15	14	14
41 : Collection, purification and distribution of water	0	0	0	0	0
45 : Construction	1,131	1,189	1,251	1,315	1,383
50 : Sale and repair of motor vehicles and fuel	743	764	787	809	833
51 : Wholesale trade	2,027	2,003	1,978	1,955	1,931
52 : Retail trade	5,068	5,176	5,285	5,397	5,512
55 : Hotels and restaurants	1,191	1,260	1,333	1,411	1,493
60 : Land transport	720	724	728	732	736
61 : Water transport	0	0	0	0	0
62 : Air transport	0	0	0	0	0
63 : Supporting transport activities/travel agencies	299	301	302	304	306
64 : Post and telecommunications	795	763	732	703	675
65 : Financial intermediation	267	268	269	270	271
66 : Insurance and pension funding	2	2	2	2	2
67 : Auxiliary financial activities	124	136	150	165	181
70 : Real estate activities	193	212	233	256	281
71 : Renting of machinery and equipment	542	581	622	667	715
72 : Computer and related activities	518	551	587	624	664
73 : Research and development	25	28	31	34	37
74 : Other business activities	9,491	10,570	11,772	13,110	14,601
75 : Public administration and defence	1,118	1,195	1,276	1,364	1,457
80 : Education	2,694	2,818	2,948	3,085	3,227
85 : Health and social work	4,195	4,327	4,463	4,603	4,748
90 : Sewage and refuse disposal	35	36	38	39	40
91 : Activities of membership organisations	413	426	440	454	469
92 : Recreational, cultural and sporting activities	571	610	651	696	743
93 : Other service activities	322	336	351	367	383
Total	43,244	44,466	45,898	47,551	49,435

Projected Growth Rates (% pa)

	2006- 2011	2011- 2016	2016- 2021	2021- 2026
01 : Agriculture/Hunting, etc.	-9.3%	-9.3%	-9.3%	-9.3%
02 : Forestry, logging etc.	-9.3%	-9.3%	-9.3%	-9.3%
05 : Fishing, fish farms etc.	-9.3%	-9.3%	-9.3%	-9.3%
11 : Petroleum, Oil/Gas Services	NA	NA	NA	NA
14 : Other mining and quarry	-0.3%	-0.3%	-0.3%	-0.3%
15 : Manf. - food and beverages	-1.3%	-1.3%	-1.3%	-1.3%
17 : Manf. - textiles	-5.2%	-5.2%	-5.2%	-5.2%
18 : Manf. - wearing apparel	-5.2%	-5.2%	-5.2%	-5.2%
19 : Tanning and dressing of leather	-5.2%	-5.2%	-5.2%	-5.2%
20 : Manf. - wood products	-4.4%	-4.4%	-4.4%	-4.4%
21 : Manf. - pulp and paper products	-4.4%	-4.4%	-4.4%	-4.4%
22 : Publishing and Printing	-2.2%	-2.2%	-2.2%	-2.2%
23 : Manf. - coke, petroleum products	-0.3%	-0.3%	-0.3%	-0.3%
24 : Manf. - chemicals and chemical products	-0.5%	-0.5%	-0.5%	-0.5%
25 : Manf. - rubber and plastic products	-0.7%	-0.7%	-0.7%	-0.7%
26 : Manf. - other non-metallic mineral products	-2.2%	-2.2%	-2.2%	-2.2%
27 : Manf. - basic metals	-1.9%	-1.9%	-1.9%	-1.9%
28 : Manf. - fabricated metal products	-0.7%	-0.7%	-0.7%	-0.7%
29 : Manf. - other machinery	-0.7%	-0.7%	-0.7%	-0.7%
30 : Manf. - office machinery and computers	-2.4%	-2.4%	-2.4%	-2.4%
31 : Manf. - other electrical machinery	-1.5%	-1.5%	-1.5%	-1.5%
32 : Manf. - communication equipment	-2.4%	-2.4%	-2.4%	-2.4%
33 : Manf. - medical instruments	-1.5%	-1.5%	-1.5%	-1.5%
34 : Manf. - motor vehicles, trailers	-1.0%	-1.0%	-1.0%	-1.0%
35 : Manf. - transport equipment	-2.2%	-2.2%	-2.2%	-2.2%
36 : Manf. - furniture; manufacturing n.e.c.	-0.1%	-0.1%	-0.1%	-0.1%
37 : Recycling	NA	NA	NA	NA
40 : Electricity, gas, steam and hot water supply	-0.3%	-0.3%	-0.3%	-0.3%
41 : Collection, purification and distribution of water	NA	NA	NA	NA
45 : Construction	1.0%	1.0%	1.0%	1.0%
50 : Sale and repair of motor vehicles and fuel	0.6%	0.6%	0.6%	0.6%
51 : Wholesale trade	-0.2%	-0.2%	-0.2%	-0.2%
52 : Retail trade	0.4%	0.4%	0.4%	0.4%
55 : Hotels and restaurants	1.1%	1.1%	1.1%	1.1%
60 : Land transport	0.1%	0.1%	0.1%	0.1%
61 : Water transport	NA	NA	NA	NA
62 : Air transport	NA	NA	NA	NA
63 : Supporting transport activities/travel agencies	0.1%	0.1%	0.1%	0.1%
64 : Post and telecommunications	-0.8%	-0.8%	-0.8%	-0.8%
65 : Financial intermediation	0.1%	0.1%	0.1%	0.1%
66 : Insurance and pension funding	-0.3%	-0.3%	-0.3%	-0.3%
67 : Auxiliary financial activities	1.9%	1.9%	1.9%	1.9%
70 : Real estate activities	1.9%	1.9%	1.9%	1.9%
71 : Renting of machinery and equipment	1.4%	1.4%	1.4%	1.4%
72 : Computer and related activities	1.3%	1.3%	1.3%	1.3%
73 : Research and development	2.0%	2.0%	2.0%	2.0%
74 : Other business activities	2.2%	2.2%	2.2%	2.2%
75 : Public administration and defence	1.3%	1.3%	1.3%	1.3%
80 : Education	0.9%	0.9%	0.9%	0.9%
85 : Health and social work	0.6%	0.6%	0.6%	0.6%
90 : Sewage and refuse disposal	0.7%	0.7%	0.7%	0.7%
91 : Activities of membership organisations	0.6%	0.6%	0.6%	0.6%
92 : Recreational, cultural and sporting activities	1.3%	1.3%	1.3%	1.3%
93 : Other service activities	0.9%	0.9%	0.9%	0.9%
Total	0.6%	0.6%	0.7%	0.8%

**Employment Projections - Redditch
Applied County Projections Scenario**

	2006 Actual	2011	2016	2021	2026
01 : Agriculture/Hunting, etc.	14	12	10	9	8
02 : Forestry, logging etc.	1	1	1	1	1
05 : Fishing, fish farms etc.	14	12	10	9	8
11 : Petroleum, Oil/Gas Services	0	0	0	0	0
14 : Other mining and quarry	7	7	7	6	6
15 : Manf. - food and beverages	462	445	428	410	394
17 : Manf. - textiles	45	37	32	27	23
18 : Manf. - wearing apparel	2	2	1	1	1
19 : Tanning and dressing of leather	44	36	31	26	22
20 : Manf. - wood products	88	88	83	79	75
21 : Manf. - pulp and paper products	190	190	178	170	162
22 : Publishing and Printing	291	293	291	289	288
23 : Manf. - coke, petroleum products	1	1	1	1	1
24 : Manf. - chemicals and chemical products	510	522	511	502	493
25 : Manf. - rubber and plastic products	1,040	990	892	781	683
26 : Manf. - other non-metallic mineral products	116	106	93	79	67
27 : Manf. - basic metals	590	541	505	477	451
28 : Manf. - fabricated metal products	3,304	3,054	2,940	2,863	2,788
29 : Manf. - other machinery	1,005	993	971	950	929
30 : Manf. - office machinery and computers	7	6	6	6	6
31 : Manf. - other electrical machinery	1,057	1,029	979	908	842
32 : Manf. - communication equipment	26	23	22	22	22
33 : Manf. - medical instruments	558	543	517	479	445
34 : Manf. - motor vehicles, trailers	505	485	468	453	439
35 : Manf. - transport equipment	97	94	91	87	83
36 : Manf. - furniture; manufacturing n.e.c.	771	845	866	884	902
37 : Recycling	0	0	0	0	0
40 : Electricity, gas, steam and hot water supply	15	15	15	15	14
41 : Collection, purification and distribution of water	0	0	0	0	0
45 : Construction	1,131	1,151	1,170	1,211	1,254
50 : Sale and repair of motor vehicles and fuel	743	762	786	809	820
51 : Wholesale trade	2,027	2,080	2,145	2,206	2,237
52 : Retail trade	5,068	5,284	5,461	5,656	5,858
55 : Hotels and restaurants	1,191	1,268	1,319	1,360	1,401
60 : Land transport	720	682	646	611	578
61 : Water transport	0	0	0	0	0
62 : Air transport	0	0	0	0	0
63 : Supporting transport activities/travel agencies	299	283	268	254	240
64 : Post and telecommunications	795	761	734	727	720
65 : Financial intermediation	267	265	261	255	248
66 : Insurance and pension funding	2	2	2	2	2
67 : Auxiliary financial activities	124	123	121	118	115
70 : Real estate activities	193	207	220	234	251
71 : Renting of machinery and equipment	542	582	617	657	706
72 : Computer and related activities	518	558	593	642	694
73 : Research and development	25	27	28	30	33
74 : Other business activities	9,491	10,696	11,972	13,464	15,141
75 : Public administration and defence	1,118	1,129	1,122	1,107	1,092
80 : Education	2,694	2,798	2,889	2,988	3,090
85 : Health and social work	4,195	4,515	4,712	4,899	5,093
90 : Sewage and refuse disposal	35	35	35	35	34
91 : Activities of membership organisations	413	415	413	408	404
92 : Recreational, cultural and sporting activities	571	574	571	565	559
93 : Other service activities	322	324	322	318	315
Total	43,244	44,894	46,359	48,090	50,036

Projected Growth Rates (% pa)

	2006- 2011	2011- 2016	2016- 2021	2021- 2026
01 : Agriculture/Hunting, etc.	-2.8%	-3.1%	-3.0%	-3.0%
02 : Forestry, logging etc.	-2.8%	-3.1%	-3.0%	-3.0%
05 : Fishing, fish farms etc.	-2.8%	-3.1%	-3.0%	-3.0%
11 : Petroleum, Oil/Gas Services	NA	NA	NA	NA
14 : Other mining and quarry	-0.7%	-0.6%	-0.9%	-0.9%
15 : Manf. - food and beverages	-0.8%	-0.8%	-0.8%	-0.8%
17 : Manf. - textiles	-3.8%	-2.9%	-3.4%	-3.4%
18 : Manf. - wearing apparel	-3.8%	-2.9%	-3.4%	-3.4%
19 : Tanning and dressing of leather	-3.8%	-2.9%	-3.4%	-3.4%
20 : Manf. - wood products	0.0%	-1.3%	-1.0%	-1.0%
21 : Manf. - pulp and paper products	0.0%	-1.3%	-1.0%	-1.0%
22 : Publishing and Printing	0.2%	-0.2%	-0.1%	-0.1%
23 : Manf. - coke, petroleum products	0.0%	0.0%	0.0%	0.0%
24 : Manf. - chemicals and chemical products	0.5%	-0.4%	-0.3%	-0.3%
25 : Manf. - rubber and plastic products	-1.0%	-2.1%	-2.6%	-2.6%
26 : Manf. - other non-metallic mineral products	-1.7%	-2.7%	-3.1%	-3.1%
27 : Manf. - basic metals	-1.7%	-1.4%	-1.1%	-1.1%
28 : Manf. - fabricated metal products	-1.6%	-0.8%	-0.5%	-0.5%
29 : Manf. - other machinery	-0.2%	-0.4%	-0.4%	-0.4%
30 : Manf. - office machinery and computers	-2.2%	-1.3%	0.0%	0.0%
31 : Manf. - other electrical machinery	-0.5%	-1.0%	-1.5%	-1.5%
32 : Manf. - communication equipment	-2.2%	-1.3%	0.0%	0.0%
33 : Manf. - medical instruments	-0.5%	-1.0%	-1.5%	-1.5%
34 : Manf. - motor vehicles, trailers	-0.8%	-0.7%	-0.7%	-0.7%
35 : Manf. - transport equipment	-0.6%	-0.8%	-0.9%	-0.9%
36 : Manf. - furniture; manufacturing n.e.c.	1.8%	0.5%	0.4%	0.4%
37 : Recycling	NA	NA	NA	NA
40 : Electricity, gas, steam and hot water supply	0.0%	0.0%	0.0%	-1.8%
41 : Collection, purification and distribution of water	NA	NA	NA	NA
45 : Construction	0.4%	0.3%	0.7%	0.7%
50 : Sale and repair of motor vehicles and fuel	0.5%	0.6%	0.6%	0.3%
51 : Wholesale trade	0.5%	0.6%	0.6%	0.3%
52 : Retail trade	0.8%	0.7%	0.7%	0.7%
55 : Hotels and restaurants	1.3%	0.8%	0.6%	0.6%
60 : Land transport	-1.1%	-1.1%	-1.1%	-1.1%
61 : Water transport	NA	NA	NA	NA
62 : Air transport	NA	NA	NA	NA
63 : Supporting transport activities/travel agencies	-1.1%	-1.1%	-1.1%	-1.1%
64 : Post and telecommunications	-0.9%	-0.7%	-0.2%	-0.2%
65 : Financial intermediation	-0.1%	-0.3%	-0.5%	-0.5%
66 : Insurance and pension funding	0.8%	0.8%	0.6%	0.6%
67 : Auxiliary financial activities	-0.1%	-0.3%	-0.5%	-0.5%
70 : Real estate activities	1.4%	1.2%	1.3%	1.4%
71 : Renting of machinery and equipment	1.4%	1.2%	1.3%	1.4%
72 : Computer and related activities	1.5%	1.2%	1.6%	1.6%
73 : Research and development	1.4%	1.2%	1.3%	1.4%
74 : Other business activities	2.4%	2.3%	2.4%	2.4%
75 : Public administration and defence	0.2%	-0.1%	-0.3%	-0.3%
80 : Education	0.8%	0.6%	0.7%	0.7%
85 : Health and social work	1.5%	0.9%	0.8%	0.8%
90 : Sewage and refuse disposal	0.1%	-0.1%	-0.2%	-0.2%
91 : Activities of membership organisations	0.1%	-0.1%	-0.2%	-0.2%
92 : Recreational, cultural and sporting activities	0.1%	-0.1%	-0.2%	-0.2%
93 : Other service activities	0.1%	-0.1%	-0.2%	-0.2%
Total	0.8%	0.6%	0.7%	0.8%

**Employment Projections - Redditch
Past Trends Scenario**

	2006 Actual	2011	2016	2021	2026
01 : Agriculture/Hunting, etc.	14	12	11	10	8
02 : Forestry, logging etc.	1	1	1	1	1
05 : Fishing, fish farms etc.	14	12	11	10	8
11 : Petroleum, Oil/Gas Services	0	0	0	0	0
14 : Other mining and quarry	7	6	5	5	4
15 : Manf. - food and beverages	462	407	359	317	279
17 : Manf. - textiles	45	40	35	31	27
18 : Manf. - wearing apparel	2	2	2	1	1
19 : Tanning and dressing of leather	44	39	34	30	27
20 : Manf. - wood products	88	78	68	60	53
21 : Manf. - pulp and paper products	190	168	148	130	115
22 : Publishing and Printing	291	257	226	199	176
23 : Manf. - coke, petroleum products	1	1	1	1	1
24 : Manf. - chemicals and chemical products	510	450	396	350	308
25 : Manf. - rubber and plastic products	1,040	917	808	713	628
26 : Manf. - other non-metallic mineral products	116	102	90	79	70
27 : Manf. - basic metals	590	520	459	404	356
28 : Manf. - fabricated metal products	3,304	2,913	2,568	2,264	1,996
29 : Manf. - other machinery	1,005	886	781	689	607
30 : Manf. - office machinery and computers	7	6	5	5	4
31 : Manf. - other electrical machinery	1,057	932	822	724	639
32 : Manf. - communication equipment	26	23	20	18	16
33 : Manf. - medical instruments	558	492	434	382	337
34 : Manf. - motor vehicles, trailers	505	445	393	346	305
35 : Manf. - transport equipment	97	86	75	66	59
36 : Manf. - furniture; manufacturing n.e.c.	771	680	599	528	466
37 : Recycling	0	0	0	0	0
40 : Electricity, gas, steam and hot water supply	15	19	23	27	31
41 : Collection, purification and distribution of water	0	0	0	0	0
45 : Construction	1,131	1,130	1,129	1,127	1,126
50 : Sale and repair of motor vehicles and fuel	743	592	472	376	299
51 : Wholesale trade	2,027	1,996	1,966	1,935	1,905
52 : Retail trade	5,068	5,478	5,921	6,400	6,917
55 : Hotels and restaurants	1,191	1,345	1,519	1,715	1,937
60 : Land transport	720	871	1,054	1,274	1,541
61 : Water transport	0	0	0	0	0
62 : Air transport	0	0	0	0	0
63 : Supporting transport activities/travel agencies	299	410	521	632	743
64 : Post and telecommunications	795	722	655	595	540
65 : Financial intermediation	267	229	196	168	144
66 : Insurance and pension funding	2	0	0	0	0
67 : Auxiliary financial activities	124	138	153	169	188
70 : Real estate activities	193	159	131	108	89
71 : Renting of machinery and equipment	542	817	1,233	1,859	2,804
72 : Computer and related activities	518	484	449	415	381
73 : Research and development	25	28	31	35	39
74 : Other business activities	9,491	11,052	12,614	14,175	15,736
75 : Public administration and defence	1,118	1,033	947	862	777
80 : Education	2,694	2,933	3,193	3,477	3,785
85 : Health and social work	4,195	4,516	4,862	5,234	5,634
90 : Sewage and refuse disposal	35	35	35	35	35
91 : Activities of membership organisations	413	436	460	485	512
92 : Recreational, cultural and sporting activities	571	802	1,128	1,585	2,227
93 : Other service activities	322	412	527	675	864
Total	43,244	45,110	47,569	50,726	54,745

Projected Growth Rates (% pa)

	2006- 2011	2011- 2016	2016- 2021	2021- 2026
01 : Agriculture/Hunting, etc.	-2.5%	-2.5%	-2.5%	-2.5%
02 : Forestry, logging etc.	-2.5%	-2.5%	-2.5%	-2.5%
05 : Fishing, fish farms etc.	-2.5%	-2.5%	-2.5%	-2.5%
11 : Petroleum, Oil/Gas Services	NA	NA	NA	NA
14 : Other mining and quarry	-2.5%	-2.5%	-2.5%	-2.5%
15 : Manf. - food and beverages	-2.5%	-2.5%	-2.5%	-2.5%
17 : Manf. - textiles	-2.5%	-2.5%	-2.5%	-2.5%
18 : Manf. - wearing apparel	-2.5%	-2.5%	-2.5%	-2.5%
19 : Tanning and dressing of leather	-2.5%	-2.5%	-2.5%	-2.5%
20 : Manf. - wood products	-2.5%	-2.5%	-2.5%	-2.5%
21 : Manf. - pulp and paper products	-2.5%	-2.5%	-2.5%	-2.5%
22 : Publishing and Printing	-2.5%	-2.5%	-2.5%	-2.5%
23 : Manf. - coke, petroleum products	-2.5%	-2.5%	-2.5%	-2.5%
24 : Manf. - chemicals and chemical products	-2.5%	-2.5%	-2.5%	-2.5%
25 : Manf. - rubber and plastic products	-2.5%	-2.5%	-2.5%	-2.5%
26 : Manf. - other non-metallic mineral products	-2.5%	-2.5%	-2.5%	-2.5%
27 : Manf. - basic metals	-2.5%	-2.5%	-2.5%	-2.5%
28 : Manf. - fabricated metal products	-2.5%	-2.5%	-2.5%	-2.5%
29 : Manf. - other machinery	-2.5%	-2.5%	-2.5%	-2.5%
30 : Manf. - office machinery and computers	-2.5%	-2.5%	-2.5%	-2.5%
31 : Manf. - other electrical machinery	-2.5%	-2.5%	-2.5%	-2.5%
32 : Manf. - communication equipment	-2.5%	-2.5%	-2.5%	-2.5%
33 : Manf. - medical instruments	-2.5%	-2.5%	-2.5%	-2.5%
34 : Manf. - motor vehicles, trailers	-2.5%	-2.5%	-2.5%	-2.5%
35 : Manf. - transport equipment	-2.5%	-2.5%	-2.5%	-2.5%
36 : Manf. - furniture; manufacturing n.e.c.	-2.5%	-2.5%	-2.5%	-2.5%
37 : Recycling	NA	NA	NA	NA
40 : Electricity, gas, steam and hot water supply	4.9%	3.9%	3.3%	2.8%
41 : Collection, purification and distribution of water	NA	NA	NA	NA
45 : Construction	0.0%	0.0%	0.0%	0.0%
50 : Sale and repair of motor vehicles and fuel	-4.4%	-4.4%	-4.4%	-4.4%
51 : Wholesale trade	-0.3%	-0.3%	-0.3%	-0.3%
52 : Retail trade	1.6%	1.6%	1.6%	1.6%
55 : Hotels and restaurants	2.5%	2.5%	2.5%	2.5%
60 : Land transport	3.9%	3.9%	3.9%	3.9%
61 : Water transport	NA	NA	NA	NA
62 : Air transport	NA	NA	NA	NA
63 : Supporting transport activities/travel agencies	6.5%	4.9%	3.9%	3.3%
64 : Post and telecommunications	-1.9%	-1.9%	-1.9%	-1.9%
65 : Financial intermediation	-3.0%	-3.0%	-3.0%	-3.0%
66 : Insurance and pension funding	-45.4%	NA	NA	NA
67 : Auxiliary financial activities	2.1%	2.1%	2.1%	2.1%
70 : Real estate activities	-3.8%	-3.8%	-3.8%	-3.8%
71 : Renting of machinery and equipment	8.6%	8.6%	8.6%	8.6%
72 : Computer and related activities	-1.4%	-1.5%	-1.6%	-1.7%
73 : Research and development	2.2%	2.2%	2.2%	2.2%
74 : Other business activities	3.1%	2.7%	2.4%	2.1%
75 : Public administration and defence	-1.6%	-1.7%	-1.9%	-2.1%
80 : Education	1.7%	1.7%	1.7%	1.7%
85 : Health and social work	1.5%	1.5%	1.5%	1.5%
90 : Sewage and refuse disposal	0.0%	0.0%	0.0%	0.0%
91 : Activities of membership organisations	1.1%	1.1%	1.1%	1.1%
92 : Recreational, cultural and sporting activities	7.0%	7.0%	7.0%	7.0%
93 : Other service activities	5.1%	5.1%	5.1%	5.1%
Total	0.8%	1.1%	1.3%	1.5%

APPENDIX C - DETAILED DEMAND FORECASTS

Table A 2 – Baseline Scenario

Redditch (Baseline) - Total Floorspace Requirement 2026

	2006	2011	2016	2021	2026
A1	36,386	36,879	38,808	41,050	43,105
A2	79,560	83,543	87,132	91,147	95,753
A3	14,477	15,056	15,519	15,751	15,751
B1a	284,344	313,042	332,640	348,888	364,493
B1b	1,141	1,292	1,292	1,351	1,569
B1c	55,145	50,822	46,439	41,807	36,557
B2	343,190	324,827	313,893	301,386	290,770
B8	215,974	205,414	208,199	210,907	213,271
C1	2,555	2,657	2,739	2,780	2,780
Total	1,032,771	1,033,530	1,046,662	1,055,066	1,064,047

Redditch (Baseline) - Absolute Change in Floorspace Requirement 2006-2026

	2006	2011	2016	2021	2026
A1	0	492	2,422	4,664	6,719
A2	0	3,983	7,572	11,587	16,193
A3	0	579	1,042	1,274	1,274
B1a	0	28,698	48,297	64,545	80,149
B1b	0	152	152	210	428
B1c	0	-4,323	-8,706	-13,338	-18,587
B2	0	-18,364	-29,297	-41,805	-52,420
B8	0	-10,560	-7,775	-5,067	-2,703
C1	0	102	184	225	225
Total	0	760	13,891	22,295	31,277

Adjusted to Fit Churn Model

Bulk Class	2006	2011	2016	2021	2026
Offices	0	28,850	48,448	64,755	80,577
Factories	0	0	0	0	0
Warehouses	0	0	0	0	0
Total	0	28,850	48,448	64,755	80,577

Addition of Churn (0.5% per annum)

Bulk Class	2006	2011	2016	2021	2026
Offices	0	31,650	54,048	73,155	91,777
Factories	0	14,575	29,150	43,725	58,300
Warehouses	0	8,500	17,000	25,500	34,000
Total	0	54,725	100,198	142,380	184,077

Removal of Leakage (to Non Employment Areas)

Bulk Class	2006	2011	2016	2021	2026
Offices	0	20,572	35,131	47,551	59,655
Factories	0	13,118	26,235	39,353	52,470
Warehouses	0	7,650	15,300	22,950	30,600
Total	0	41,340	76,666	109,853	142,725

Conversion to Land Requirement (ha)

Bulk Class	2006	2011	2016	2021	2026
Offices	0.00	7.54	12.88	17.44	21.87
Factories	0.00	4.44	8.88	13.32	17.76
Warehouses	0.00	2.59	5.18	7.77	10.36
Total	0.00	14.57	26.94	38.52	49.99

Table A 3 – RSS Based Scenario (based on 6,600 New Homes)

Redditch (RSS Based on 6,600 New Homes) - Total Floorspace Requirement 2026

	2006	2011	2016	2021	2026
A1	36,386	37,205	38,043	38,903	39,785
A2	79,560	82,697	86,003	89,487	93,161
A3	14,477	15,317	16,207	17,149	18,145
B1a	284,344	309,926	338,172	369,371	403,847
B1b	1,141	1,231	1,329	1,435	1,550
B1c	55,145	51,095	47,344	43,870	40,653
B2	343,190	327,751	313,599	300,563	288,503
B8	215,974	214,665	213,456	212,347	211,335
C1	2,555	2,703	2,860	3,026	3,202
Total	1,032,771	1,042,591	1,057,013	1,076,151	1,100,179

Redditch (RSS Based on 6,600 New Homes) - Absolute Change in Floorspace Requirement 2006-2026

	2006	2011	2016	2021	2026
A1	0	818	1,657	2,517	3,398
A2	0	3,137	6,443	9,927	13,601
A3	0	841	1,731	2,672	3,668
B1a	0	25,583	53,828	85,027	119,503
B1b	0	91	189	295	409
B1c	0	-4,050	-7,801	-11,274	-14,492
B2	0	-15,439	-29,592	-42,628	-54,688
B8	0	-1,309	-2,518	-3,627	-4,639
C1	0	148	305	472	647
Total	0	9,820	24,243	43,380	67,409

Adjusted to Fit Churn Model

Bulk Class	2006	2011	2016	2021	2026
Offices	0	25,673	54,017	85,322	119,912
Factories	0	0	0	0	0
Warehouses	0	0	0	0	0
Total	0	25,673	54,017	85,322	119,912

Addition of Churn (0.5% per annum)

Bulk Class	2006	2011	2016	2021	2026
Offices	0	28,473	59,617	93,722	131,112
Factories	0	14,575	29,150	43,725	58,300
Warehouses	0	8,500	17,000	25,500	34,000
Total	0	51,548	105,767	162,947	223,412

Removal of Leakage (to Non Employment Areas)

Bulk Class	2006	2011	2016	2021	2026
Offices	0	18,508	38,751	60,919	85,223
Factories	0	13,118	26,235	39,353	52,470
Warehouses	0	7,650	15,300	22,950	30,600
Total	0	39,275	80,286	123,222	168,293

Conversion to Land Requirement (ha)

Bulk Class	2006	2011	2016	2021	2026
Offices	0.00	6.79	14.21	22.34	31.25
Factories	0.00	4.44	8.88	13.32	17.76
Warehouses	0.00	2.59	5.18	7.77	10.36
Total	0.00	13.82	28.27	43.42	59.36

Table A 4 – County Growth Scenario

Redditch (County Growth Rate Scenario) - Total Floorspace Requirement 2026

	2006	2011	2016	2021	2026
A1	36,386	37,977	39,282	40,741	42,256
A2	79,560	82,007	83,681	85,480	87,460
A3	14,477	15,412	16,038	16,528	17,033
B1a	284,344	311,960	339,790	372,119	408,358
B1b	1,141	1,225	1,298	1,384	1,486
B1c	55,145	53,577	50,987	47,352	43,981
B2	343,190	331,904	320,707	310,797	301,377
B8	215,974	213,154	211,565	210,820	208,715
C1	2,555	2,720	2,830	2,917	3,006
Total	1,032,771	1,049,936	1,066,178	1,088,136	1,113,673

Redditch (County Growth Rate Scenario) - Absolute Change in Floorspace Requirement 2006-2026

	2006	2011	2016	2021	2026
A1	0	1,591	2,896	4,355	5,870
A2	0	2,447	4,121	5,920	7,900
A3	0	935	1,561	2,052	2,557
B1a	0	27,616	55,446	87,775	124,015
B1b	0	84	157	243	345
B1c	0	-1,568	-4,158	-7,793	-11,164
B2	0	-11,286	-22,484	-32,394	-41,813
B8	0	-2,820	-4,409	-5,154	-7,259
C1	0	165	276	362	451
Total	0	17,166	33,408	55,365	80,902

Adjusted to Fit Churn Model

Bulk Class	2006	2011	2016	2021	2026
Offices	0	27,701	55,604	88,018	124,360
Factories	0	0	0	0	0
Warehouses	0	0	0	0	0
Total	0	27,701	55,604	88,018	124,360

Addition of Churn (0.5% per annum)

Bulk Class	2006	2011	2016	2021	2026
Offices	0	30,501	61,204	96,418	135,560
Factories	0	14,575	29,150	43,725	58,300
Warehouses	0	8,500	17,000	25,500	34,000
Total	0	53,576	107,354	165,643	227,860

Removal of Leakage (to Non Employment Areas)

Bulk Class	2006	2011	2016	2021	2026
Offices	0	19,825	39,782	62,672	88,114
Factories	0	13,118	26,235	39,353	52,470
Warehouses	0	7,650	15,300	22,950	30,600
Total	0	40,593	81,317	124,974	171,184

Conversion to Land Requirement (ha)

Bulk Class	2006	2011	2016	2021	2026
Offices	0.00	7.27	14.59	22.98	32.31
Factories	0.00	4.44	8.88	13.32	17.76
Warehouses	0.00	2.59	5.18	7.77	10.36
Total	0.00	14.30	28.64	44.07	60.42

Table A 5 – Past Trends Scenario**Redditch (Past Trends) - Total Floorspace Requirement 2026**

	2006	2011	2016	2021	2026
A1	36,386	39,169	42,184	45,447	48,981
A2	79,560	91,161	106,805	127,991	156,884
A3	14,477	16,347	18,460	20,845	23,539
B1a	284,344	319,781	357,362	397,916	442,723
B1b	1,141	1,507	2,093	3,004	4,399
B1c	55,145	48,619	42,865	37,792	33,320
B2	343,190	303,861	269,267	238,826	212,026
B8	215,974	224,100	235,962	251,766	271,866
C1	2,555	2,885	3,258	3,679	4,154
Total	1,032,771	1,047,431	1,078,255	1,127,265	1,197,893

Redditch (Past Trends) - Absolute Change in Floorspace Requirement 2006-2026

	2006	2011	2016	2021	2026
A1	0	2,783	5,797	9,061	12,595
A2	0	11,602	27,246	48,431	77,325
A3	0	1,871	3,983	6,369	9,062
B1a	0	35,437	73,018	113,572	158,380
B1b	0	367	953	1,864	3,259
B1c	0	-6,526	-12,280	-17,353	-21,825
B2	0	-39,329	-73,923	-104,365	-131,164
B8	0	8,126	19,988	35,792	55,892
C1	0	330	703	1,124	1,599
Total	0	14,660	45,485	94,495	165,122

Adjusted to Fit Churn Model

Bulk Class	2006	2011	2016	2021	2026
Offices	0	35,804	73,971	115,436	161,638
Factories	0	0	0	0	0
Warehouses	0	8,126	19,988	35,792	55,892
Total	0	43,930	93,958	151,228	217,531

Addition of Churn (0.5% per annum)

Bulk Class	2006	2011	2016	2021	2026
Offices	0	38,604	79,571	123,836	172,838
Factories	0	14,575	29,150	43,725	58,300
Warehouses	0	16,626	36,988	61,292	89,892
Total	0	69,805	145,708	228,853	321,031

Removal of Leakage (to Non Employment Areas)

Bulk Class	2006	2011	2016	2021	2026
Offices	0	25,093	51,721	80,493	112,345
Factories	0	13,118	26,235	39,353	52,470
Warehouses	0	14,963	33,289	55,163	80,903
Total	0	53,173	111,245	175,008	245,718

Conversion to Land Requirement (ha)

Bulk Class	2006	2011	2016	2021	2026
Offices	0.00	9.20	18.96	29.51	41.19
Factories	0.00	4.44	8.88	13.32	17.76
Warehouses	0.00	5.06	11.27	18.67	27.38
Total	0.00	18.70	39.11	61.50	86.33

APPENDIX D- ADDITIONAL HOUSING GROWTH SCENARIO

**Employment Projections - Redditch
RSS-Based Scenario (A-2)**

	2006 Actual	2011	2016	2021	2026
01 : Agriculture/Hunting, etc.	14	9	6	4	2
02 : Forestry, logging etc.	1	1	0	0	0
05 : Fishing, fish farms etc.	14	9	6	4	2
11 : Petroleum, Oil/Gas Services	0	0	0	0	0
14 : Other mining and quarry	7	7	7	7	7
15 : Manf. - food and beverages	462	436	412	390	368
17 : Manf. - textiles	45	35	27	21	16
18 : Manf. - wearing apparel	2	2	1	1	1
19 : Tanning and dressing of leather	44	34	27	21	16
20 : Manf. - wood products	88	71	58	47	38
21 : Manf. - pulp and paper products	190	154	125	101	82
22 : Publishing and Printing	291	262	236	213	192
23 : Manf. - coke, petroleum products	1	1	1	1	1
24 : Manf. - chemicals and chemical products	510	501	492	483	475
25 : Manf. - rubber and plastic products	1,040	1,009	980	951	923
26 : Manf. - other non-metallic mineral products	116	104	94	85	76
27 : Manf. - basic metals	590	540	494	452	414
28 : Manf. - fabricated metal products	3,304	3,210	3,119	3,030	2,944
29 : Manf. - other machinery	1,005	975	947	919	892
30 : Manf. - office machinery and computers	7	6	6	5	4
31 : Manf. - other electrical machinery	1,057	987	921	860	803
32 : Manf. - communication equipment	26	23	21	18	16
33 : Manf. - medical instruments	558	521	486	454	424
34 : Manf. - motor vehicles, trailers	505	482	461	440	420
35 : Manf. - transport equipment	97	88	79	71	64
36 : Manf. - furniture; manufacturing n.e.c.	771	770	770	769	769
37 : Recycling	0	0	0	0	0
40 : Electricity, gas, steam and hot water supply	15	15	15	15	14
41 : Collection, purification and distribution of water	0	0	0	0	0
45 : Construction	1,131	1,219	1,314	1,416	1,526
50 : Sale and repair of motor vehicles and fuel	743	779	817	856	898
51 : Wholesale trade	2,027	2,013	1,999	1,985	1,972
52 : Retail trade	5,068	5,262	5,464	5,674	5,891
55 : Hotels and restaurants	1,191	1,293	1,405	1,526	1,657
60 : Land transport	720	728	735	743	751
61 : Water transport	0	0	0	0	0
62 : Air transport	0	0	0	0	0
63 : Supporting transport activities/travel agencies	299	302	305	308	312
64 : Post and telecommunications	795	767	741	715	691
65 : Financial intermediation	267	269	272	274	276
66 : Insurance and pension funding	2	2	2	2	2
67 : Auxiliary financial activities	124	137	151	166	183
70 : Real estate activities	193	219	249	284	322
71 : Renting of machinery and equipment	542	583	627	675	726
72 : Computer and related activities	518	553	591	631	675
73 : Research and development	25	28	31	34	38
74 : Other business activities	9,491	10,604	11,849	13,239	14,792
75 : Public administration and defence	1,118	1,229	1,351	1,485	1,632
80 : Education	2,694	2,885	3,089	3,307	3,541
85 : Health and social work	4,195	4,412	4,640	4,880	5,133
90 : Sewage and refuse disposal	35	36	38	40	41
91 : Activities of membership organisations	413	435	458	482	507
92 : Recreational, cultural and sporting activities	571	627	689	757	832
93 : Other service activities	322	344	367	393	419
Total	43,244	44,981	46,972	49,232	51,780

Projected Growth Rates (% pa)

	2006- 2011	2011- 2016	2016- 2021	2021- 2026
01 : Agriculture/Hunting, etc.	-8.7%	-8.7%	-8.7%	-8.7%
02 : Forestry, logging etc.	-8.7%	-8.7%	-8.7%	-8.7%
05 : Fishing, fish farms etc.	-8.7%	-8.7%	-8.7%	-8.7%
11 : Petroleum, Oil/Gas Services	NA	NA	NA	NA
14 : Other mining and quarry	-0.2%	-0.2%	-0.2%	-0.2%
15 : Manf. - food and beverages	-1.1%	-1.1%	-1.1%	-1.1%
17 : Manf. - textiles	-4.9%	-4.9%	-4.9%	-4.9%
18 : Manf. - wearing apparel	-4.9%	-4.9%	-4.9%	-4.9%
19 : Tanning and dressing of leather	-4.9%	-4.9%	-4.9%	-4.9%
20 : Manf. - wood products	-4.1%	-4.1%	-4.1%	-4.1%
21 : Manf. - pulp and paper products	-4.1%	-4.1%	-4.1%	-4.1%
22 : Publishing and Printing	-2.1%	-2.1%	-2.1%	-2.1%
23 : Manf. - coke, petroleum products	-0.2%	-0.2%	-0.2%	-0.2%
24 : Manf. - chemicals and chemical products	-0.4%	-0.4%	-0.4%	-0.4%
25 : Manf. - rubber and plastic products	-0.6%	-0.6%	-0.6%	-0.6%
26 : Manf. - other non-metallic mineral products	-2.1%	-2.1%	-2.1%	-2.1%
27 : Manf. - basic metals	-1.8%	-1.8%	-1.8%	-1.8%
28 : Manf. - fabricated metal products	-0.6%	-0.6%	-0.6%	-0.6%
29 : Manf. - other machinery	-0.6%	-0.6%	-0.6%	-0.6%
30 : Manf. - office machinery and computers	-2.3%	-2.3%	-2.3%	-2.3%
31 : Manf. - other electrical machinery	-1.4%	-1.4%	-1.4%	-1.4%
32 : Manf. - communication equipment	-2.3%	-2.3%	-2.3%	-2.3%
33 : Manf. - medical instruments	-1.4%	-1.4%	-1.4%	-1.4%
34 : Manf. - motor vehicles, trailers	-0.9%	-0.9%	-0.9%	-0.9%
35 : Manf. - transport equipment	-2.0%	-2.0%	-2.0%	-2.0%
36 : Manf. - furniture; manufacturing n.e.c.	0.0%	0.0%	0.0%	0.0%
37 : Recycling	NA	NA	NA	NA
40 : Electricity, gas, steam and hot water supply	-0.2%	-0.2%	-0.2%	-0.2%
41 : Collection, purification and distribution of water	NA	NA	NA	NA
45 : Construction	1.5%	1.5%	1.5%	1.5%
50 : Sale and repair of motor vehicles and fuel	0.9%	0.9%	0.9%	0.9%
51 : Wholesale trade	-0.1%	-0.1%	-0.1%	-0.1%
52 : Retail trade	0.8%	0.8%	0.8%	0.8%
55 : Hotels and restaurants	1.7%	1.7%	1.7%	1.7%
60 : Land transport	0.2%	0.2%	0.2%	0.2%
61 : Water transport	NA	NA	NA	NA
62 : Air transport	NA	NA	NA	NA
63 : Supporting transport activities/travel agencies	0.2%	0.2%	0.2%	0.2%
64 : Post and telecommunications	-0.7%	-0.7%	-0.7%	-0.7%
65 : Financial intermediation	0.2%	0.2%	0.2%	0.2%
66 : Insurance and pension funding	-0.2%	-0.2%	-0.2%	-0.2%
67 : Auxiliary financial activities	2.0%	2.0%	2.0%	2.0%
70 : Real estate activities	2.6%	2.6%	2.6%	2.6%
71 : Renting of machinery and equipment	1.5%	1.5%	1.5%	1.5%
72 : Computer and related activities	1.3%	1.3%	1.3%	1.3%
73 : Research and development	2.1%	2.1%	2.1%	2.1%
74 : Other business activities	2.2%	2.2%	2.2%	2.2%
75 : Public administration and defence	1.9%	1.9%	1.9%	1.9%
80 : Education	1.4%	1.4%	1.4%	1.4%
85 : Health and social work	1.0%	1.0%	1.0%	1.0%
90 : Sewage and refuse disposal	0.8%	0.8%	0.8%	0.8%
91 : Activities of membership organisations	1.0%	1.0%	1.0%	1.0%
92 : Recreational, cultural and sporting activities	1.9%	1.9%	1.9%	1.9%
93 : Other service activities	1.3%	1.3%	1.3%	1.3%
Total	0.8%	0.9%	0.9%	1.0%

Redditch (RSS Based on 9,100 New Homes) - Total Floorspace Requirement 2026

	2006	2011	2016	2021	2026
A1	36,386	37,814	39,299	40,844	42,450
A2	79,560	84,158	89,078	94,347	99,994
A3	14,477	15,722	17,074	18,543	20,138
B1a	284,344	312,574	343,859	378,544	417,011
B1b	1,141	1,246	1,362	1,489	1,629
B1c	55,145	51,440	47,986	44,766	41,763
B2	343,190	329,840	317,589	306,297	295,848
B8	215,974	216,181	216,513	216,970	217,555
C1	2,555	2,774	3,013	3,272	3,554
Total	1,032,771	1,051,748	1,075,773	1,105,072	1,139,941

Redditch (RSS Based on 9,100 New Homes) - Absolute Change in Floorspace Requirement 2006-2026

	2006	2011	2016	2021	2026
A1	0	1,428	2,913	4,457	6,064
A2	0	4,598	9,519	14,788	20,434
A3	0	1,245	2,598	4,066	5,661
B1a	0	28,230	59,516	94,200	132,667
B1b	0	105	221	348	489
B1c	0	-3,705	-7,159	-10,379	-13,382
B2	0	-13,351	-25,601	-36,893	-47,343
B8	0	207	539	996	1,581
C1	0	220	458	718	999
Total	0	18,978	43,002	72,301	107,171

Adjusted to Fit Churn Model

Bulk Class	2006	2011	2016	2021	2026
Offices	0	28,335	59,737	94,549	133,156
Factories	0	0	0	0	0
Warehouses	0	207	539	996	1,581
Total	0	28,542	60,275	95,545	134,737

Addition of Churn (0.5% per annum)

Bulk Class	2006	2011	2016	2021	2026
Offices	0	31,135	65,337	102,949	144,356
Factories	0	14,575	29,150	43,725	58,300
Warehouses	0	8,707	17,539	26,496	35,581
Total	0	54,417	112,025	173,170	238,237

Removal of Leakage (to Non Employment Areas)

Bulk Class	2006	2011	2016	2021	2026
Offices	0	20,238	42,469	66,917	93,831
Factories	0	13,118	26,235	39,353	52,470
Warehouses	0	7,836	15,785	23,846	32,023
Total	0	41,192	84,489	130,116	178,324

Conversion to Land Requirement (ha)

Bulk Class	2006	2011	2016	2021	2026
Offices	0.00	7.42	15.57	24.54	34.40
Factories	0.00	4.44	8.88	13.32	17.76
Warehouses	0.00	2.65	5.34	8.07	10.84
Total	0.00	14.51	29.79	45.93	63.00

APPENDIX E - EMPLOYMENT SECTOR AND LAND USE GROUPINGS

Sector Group		Land Use Class (% of land required for employment)	Gross Internal Density (m2 per employee)	Conversion Factor: Internal to External	Gross External Density (m2 per employee)
M1	Food, Beverages & Textiles	B2	34	1.035	35.19
M2	Printing & Publishing	B2	34	1.035	35.19
M3	Chemicals & Chemical Products	B2	34	1.035	35.19
M4	Rubber & Plastic Products	B2	34	1.035	35.19
M5	Wood, Paper & Non-Metallic Mineral Products	B2	34	1.035	35.19
M6	Basic Metals	B2	34	1.035	35.19
M7	Metal Goods	B2	34	1.035	35.19
M8	Mechanical Engineering	B2	34	1.035	35.19
M9	Electronics, Electrical Engineering & Instruments	B1c (33.3%)	29	1.035	30.02
M9	Electronics, Electrical Engineering & Instruments	B1c (66.6%)	34	1.035	35.19
M10	Motor Vehicles & Other Transport Equipment	B2	34	1.035	35.19
M11	Manufacturing nes	B2	34	1.035	35.19
S1	Construction	B1a (33.3%)	19	1.035	19.67
S2	Distribution	B2 (25%)	34	1.035	35.19
S2	Distribution	B8 (75%)	50	1	50.00
S3	Retailing	A1 (33.3%)	19	1.1	20.90
S3	Retailing	B1a (33.3%)	19	1.035	19.67
S3	Retailing	A2 (33.3%)	19	1.1	20.90
S4	Hotels & Catering	C1 (15%)	13	1.1	14.30
S4	Hotels & Catering	A3 (85%)	13	1.1	14.30
S5	Land Transport	B8 (70%)	80	1	80.00
S5	Land Transport	B8 (30%)	50	1	50.00
S6	Communications	B8	50	1	50.00
S7	Insurance, Banking & Finance	A2a (50%)	20	1.1	22.00
S7	Insurance, Banking & Finance	B1a (50%)	19	1.035	19.67
S8	Computing Services	B1a (45%)	19	1.035	19.67
S8	Computing Services	A2b (45%)	19	1.1	20.90
S8	Computing Services	A1 (10%)	19	1.1	20.90
S9	Professional Services	B1a (60%)	19	1.035	19.67
S9	Professional Services	B1b (5%)	29	1.035	30.02
S9	Professional Services	A2a/b (35%)	19	1.1	20.90
S10	Other Business Services	B1a	19	1.035	19.67
S11	Public Administration & Defence	B1a	19	1.035	19.67
S12	Education	B1a (10%)	19	1.035	19.67
S13	Health & Social Work	B1a (20%)	19	1.035	19.67
S14	Other Services	A2c	20	1.1	22.00

APPENDIX F– SECTORAL TRENDS, ABI DATA, 1998-2006

INDUSTRY	1998	1999	2000	2001	2002	2003	2004	2005	2006
01 : Agriculture/Hunting, etc.	2	2	2	46	49	42	51	48	14
02 : Forestry, logging etc.	1	0	1	0	2	0	1	1	1
05 : Fishing, fish farms etc.	0	0	0	0	0	0	0	0	14
11 : Petroleum, Oil/Gas Services	0	0	0	0	0	0	0	0	0
14 : Other mining and quarry	2	3	6	8	9	6	7	9	7
15 : Manf. - food and beverages	583	809	1,122	542	533	516	399	450	462
17 : Manf. - textiles	105	87	179	33	36	52	37	30	45
18 : Manf. - wearing apparel	4	4	12	3	4	10	6	5	2
19 : Tanning and dressing of leather	35	19	31	13	18	15	13	19	44
20 : Manf. - wood products	54	49	112	65	69	68	56	70	88
21 : Manf. - pulp and paper products	212	228	390	253	259	201	179	196	190
22 : Publishing and Printing	672	569	963	476	575	715	613	539	291
23 : Manf. - coke, petroleum products	0	0	0	0	0	0	0	0	1
24 : Manf. - chemicals and chemical products	436	288	452	362	274	457	441	488	510
25 : Manf. - rubber and plastic products	1,243	1,144	1,211	1,085	952	1,094	1,197	867	1,040
26 : Manf. - other non-metallic mineral products	134	154	144	165	137	164	167	94	116
27 : Manf. basic metals	730	741	729	581	494	581	553	508	590
28 : Manf. - fabricated metal products	4,036	3,836	3,870	3,420	3,073	3,363	3,458	2,859	3,304
29 : Manf. - other machinery	1,232	1,297	997	1,368	924	967	921	766	1,005
30 : Manf. - office machinery and computers	21	17	7	4	1	6	9	6	7
31 : Manf. - other electrical machinery	1,265	1,090	1,269	1,319	1,136	837	1,011	1,027	1,057
32 : Manf. - communication equipment	125	67	5	15	8	38	40	30	26
33 : Manf. - medical instruments	712	729	636	673	636	555	562	539	558
34 : Manf. - motor vehicles, trailers	1,160	844	681	1,016	582	575	639	536	505
35 : Manf. - transport equipment	54	40	18	122	34	17	25	79	97
36 : Manf. - furniture; manufacturing n.e.c.	317	304	459	847	837	1,075	924	901	771
37 : Recycling	9	9	15	7	5	6	5	0	0
40 : Electricity, gas, steam and hot water supply	2	33	72	57	192	8	6	5	15
41 : Collection, purification and distribution of water	0	0	0	0	0	0	0	0	0
45 : Construction	1,133	1,089	961	1,013	878	1,178	2,242	2,195	1,131
50 : Sale and repair of motor vehicles and fuel	1,565	2,010	1,537	1,489	803	699	1,213	828	743
51 : Wholesale trade	2,125	2,280	2,239	2,648	2,098	2,061	2,089	1,840	2,027
52 : Retail trade	3,959	3,516	4,052	4,283	4,917	4,907	4,668	4,958	5,068
55 : Hotels and restaurants	811	940	970	1,129	1,180	1,265	1,124	853	1,191
60 : Land transport	396	431	469	519	530	494	407	501	720
61 : Water transport	0	0	0	0	0	0	0	0	0
62 : Air transport	0	0	0	0	0	0	0	0	0
63 : Supporting transport activities/travel agencies	62	130	109	294	280	278	246	449	299
64 : Post and telecommunications	928	659	1,475	1,366	1,070	853	1,014	796	795
65 : Financial intermediation	441	400	480	344	324	288	296	304	267
66 : Insurance and pension funding	252	140	132	17	4	17	0	2	2
67 : Auxiliary financial activities	105	85	234	292	108	144	183	162	124
70 : Real estate activities	363	270	207	152	193	195	186	233	193
71 : Renting of machinery and equipment	153	181	148	161	268	285	267	452	542
72 : Computer and related activities	628	1,372	663	381	577	608	486	578	518
73 : Research and development	21	1	4	4	2	4	23	26	25
74 : Other business activities	4,495	4,825	4,551	5,337	5,677	8,231	7,905	9,057	9,491
75 : Public administration and defence	1,391	1,157	1,386	1,156	1,216	1,356	1,269	1,182	1,118
80 : Education	2,057	2,075	2,196	2,415	2,292	2,229	2,433	2,760	2,694
85 : Health and social work	3,319	3,394	3,514	4,763	3,498	3,265	4,365	4,397	4,195
90 : Sewage and refuse disposal	0	34	58	44	28	31	43	31	35
91 : Activities of membership organisations	379	427	393	427	444	503	498	634	413
92 : Recreational, cultural and sporting activities	199	251	301	441	420	398	417	441	571
93 : Other service activities	217	379	605	616	569	652	463	474	322
Total	38,145	38,409	40,067	41,771	38,215	41,309	43,157	43,225	43,244