



DEMOCRATIC AND ELECTORAL SERVICES

Dealt with by:	Democratic Services	Switchboard:	01895 837200
Your Ref:		Fax:	01895 837277
My Ref:		e-mail:	democraticservices@southbucks.gov.uk
Date:	11 March 2014	Direct Line:	01895 837225/837227

Dear Councillor

ENVIRONMENT POLICY ADVISORY GROUP - BACKGROUND PAPERS

The next meeting of the Environment Policy Advisory Group will be held as follows:

DATE: WEDNESDAY, 19TH MARCH, 2014
TIME: 6.00 PM
VENUE: ROOM 6, CAPSWOOD, OXFORD ROAD, DENHAM

Please note that this meeting is not open to the public.

Only apologies for absence received prior to the meeting will be recorded.

Yours faithfully

Jim Burness

Director of Resources

To: The Environment Policy Advisory Group

Mr Naylor
Mr Bradford
Mr Clark
Miss Hazell
Mrs Plant
Mrs Royston
Mrs Wallis
Mr Walters

Declarations of Interest

Any Member attending the meeting is reminded of the requirement to declare if he/she has a personal interest in any item of business, as defined in the Code of Conduct. If that interest is a prejudicial interest as defined in the Code the Member should also withdraw from the meeting.

BACKGROUND PAPERS

	(Pages)
4. Car Parking Survey Results	
<i>Background Paper - Car Park Survey Results Full Report Beaconsfield</i>	(1 - 178)
<i>Background Paper - Car Park Survey Results Full Report Gerrards Cross</i>	(179 - 266)
6. Energy Saving Across the Council Estate	
<i>Background Paper - Energy Audit Report</i>	(267 - 362)

The next meeting is due to take place on Wednesday, 18 June 2014

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Parking Study

Beaconsfield Car Parking Capacity Survey - 2014 to 2033

Prepared for South Bucks District Council

By YES Engineering



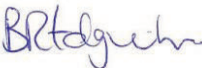
March 2014



Revision History

Revision N°	Prepared By	Description	Date

Document Acceptance

Action	Name	Signed	Date
Prepared by	K Backhouse		March 2014
Reviewed by	P Willis		March 2014
Approved by	B Edgecombe		March 2014
on behalf of	YES Engineering		

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1 Introduction

South Bucks District Council commissioned YES Engineering Ltd to produce a Car Parking Survey for Beaconsfield for the period 2014 to 2033.

The purpose of this study is to identify car parking requirements up to 2033, taking into account predicted growth, planning commitments for the district centre and existing information on car parking utilisation.

The review sets out the results of new surveys undertaken of the current usage of existing car parks and on street space, suggests capacity requirements to 2033 including the balance of long and short stay parking, compares car parking provision with other town centres, and evaluates alternative modes of transport.

The Parking Survey will inform and provide robust evidence for the Council's Delivery Development Plan Document (DDPD) on current and future parking needs to service Beaconsfield.

2 Parking Surveys 2014

2.1 Introduction

YES Engineering conducted parking surveys on Tuesday 21st January 2014 and Saturday 25th January 2014. The surveys consisted of on-street parking beat surveys around the town centre and wider area, and video parking surveys of the following car parks, as shown in **Appendix A**:

- Warwick Road car park
- Waitrose car park
- Beaconsfield Station car park
- Altons, Burkes Road car park
- Penncroft, Burkes Road car park
- Sainsburys car park

However, it should be noted that the weather was cold with intermittent rain and is likely to have a different profile to the summer months.

The Institute of Highways and Transportation published 'Parking Strategies & Management' guidelines in July 2005. Chapter 6 of this document provides advice on how much car parking should be provided. This section reads, *'Attempts to limit demand by allowing parking shortages to occur (i.e. when the car park is full) should be avoided, since the absence of spaces available for use causes frustration and "searching" traffic, which is inefficient and environmentally damaging.....Set charges and controls at a level that will keep demand at no more than about 85% of capacity.'*

This operational maximum allows vehicles to search for a space within a reasonable time, without impacting on the surrounding highway network. When this 85% threshold is passed drivers may find it hard to find a parking space, and this situation is commonly referred to as "parking stress". This criteria has been applied to the parking demand set out in this report.

2.2 2014 Off-Street Surveys

Table 2.1 shows the current off-street parking provision in the town centre and the related parking charges.

Table 2.1 Current off-road parking provision

Car Park	Spaces	Disabled	Charges	Operating Hours
Warwick Road Car Park	50	2	Up to 1 hour £1.10 Up to 2 hours £1.70 Up to 3 hours £2.30 Up to 4 hours £3.00 Up to 12 hours £4.40 All Day £1 3 months £210 6 months £390 6 months £353	Monday to Saturday 0800 – 1800 hours Sundays and Bank Holidays Season Tickets Residents Permits
Waitrose Car Park	220	4	Free	Up to 2 hours
Beaconsfield Rail Station Car Park	696	7	Daily rate £6.50 Off peak rate £4.00 Weekly rate £24 Monthly rate £92 Annual rate £960	Monday to Sunday 24 hours a day
Altons, Burkes Road Car Park	173	5	Up to 1 hour £1.10 Up to 2 hours £1.60 Up to 3 hours £2.10 Up to 4 hours £3.00 Up to 12 hours £4.40 All Day £1 3 months £210 6 months £390 6 months £344	Monday to Saturday 0800 – 1800 hours Sundays and Bank Holidays Season Tickets Residents Permits
Penncroft, Burkes Road Car Park	101	3	Up to 1 hour £1.10 Up to 2 hours £1.70 Up to 3 hours £2.30 Up to 4 hours £3.00 Up to 12 hours £5.40 All Day £1 3 months £260 6 months £470 6 months £371	Monday to Saturday 0800 – 1800 hours Sundays and Bank Holidays Season Tickets Residents Permits
Sainsburys Car Park	515	14	Free	Up to 2 hours
TOTAL	1,755	25		

Off-Street car parks– Tuesday21st January 2014

Table 2.2 sets out the maximum occupancy of the car parks and **Figure 2.1** shows the profile of use per car park throughout the day.

Table 2.2 Off-Street Car Park Occupancy – Tuesday21stJanuary 2014

Reference on Appendix A	Car Park	Capacity	Maximum Occupancy	Maximum as a %age of Capacity
A	Warwick Road	50	25	50%
B	Waitrose	220	218	99%
C	Beaconsfield Rail Station Car Park	696	607	87%
D	Altons, Burkes Road Car Park	173	164	95%
E	Penncroft, Burkes Road Car Park	101	99	98%
F	Sainsburys Car Park	515	289	56%

Although Warwick Road and Sainsburys car parks operated comfortably within capacity during this week, Waitrose, Altons and Penncroft are fully utilised. Beaconsfield Railway Station car park is also operating just over its theoretical capacity and has no room for growth.

Figure 2.1 Off-Street Car Park Occupancy, by Time – Tuesday 21st January 2014

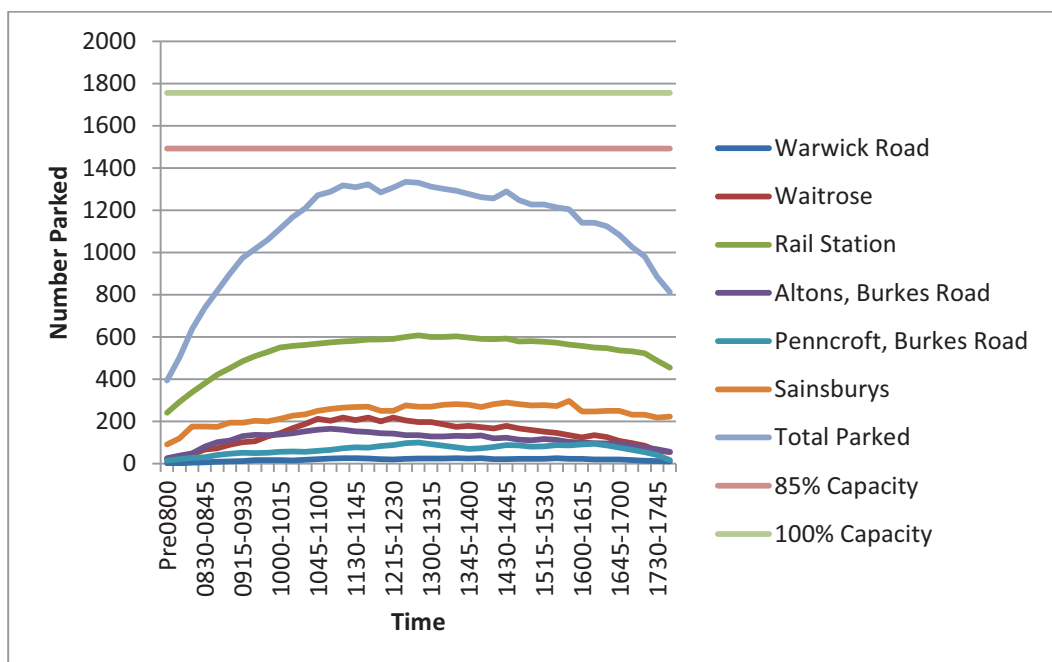


Figure 2.1 shows that the peak parking utilisation across the six surveyed car parks occurred at 12.30pm, with 1,334 of the 1,775 available spaces used (75% utilisation). The railway station car park provides the vast majority of long stay parking in the town, although there was also evidence of season ticket holders also using Altons, Burkes Road car park.

It should be noted that congestion occurred within the town centre Station Road corridor during peak hours.

Figure 2.1 also shows all but the rail station car park have similar usage patterns throughout the day. The rail station car parks fill very quickly until around 9am then reach a peak at 11.15 before maintaining a steady usage until around 17:00 when they empty fairly quickly.

Sainsburys Car Park

The information contained within **Table 2.2** above shows that the Sainsburys car park was only 56% utilised on the Tuesday. It should be noted that superstore uses tend to attract greater traffic flows on a Friday and Saturday than the remainder of the week. A planning application was recently submitted for the Sainsburys store in Burnham, which reveals that parking accumulation on a Friday is similar to the demand on a Saturday. This is also set out in the 2011 Transport Assessment prepared for the Redhill Town Centre Sainsburys Superstore in Surrey. This car park is therefore examined in more detail with respect to the Saturday.

Off-Street car parks–Saturday25th January 2014

As mentioned at 2.1 above, further surveys were conducted at the car parks on Saturday 25th January 2014. The results of maximum occupancy are presented in **Table 2.3** below and the daily profile in **Figure 2.2**.

Table 2.3 Off-Street Car Park Occupancy –Saturday25th January 2014

Reference on Appendix A	Car Park	Capacity	Maximum Occupancy	Maximum as a %age of Capacity
A	Warwick Road	50	39	78%
B	Waitrose	220	217	99%
C	Beaconsfield Rail Station Car Park	696	93	13%
D	Altons, Burkes Road Car Park	173	84	49%
E	Penncroft, Burkes Road Car Park	101	105	104%
F	Sainsburys Car Park	515	483	94%
TOTAL		1,775	1,021	58%

Figure 2.2 Off-Street Car Park Occupancy, by Time – Saturday 18th January 2014

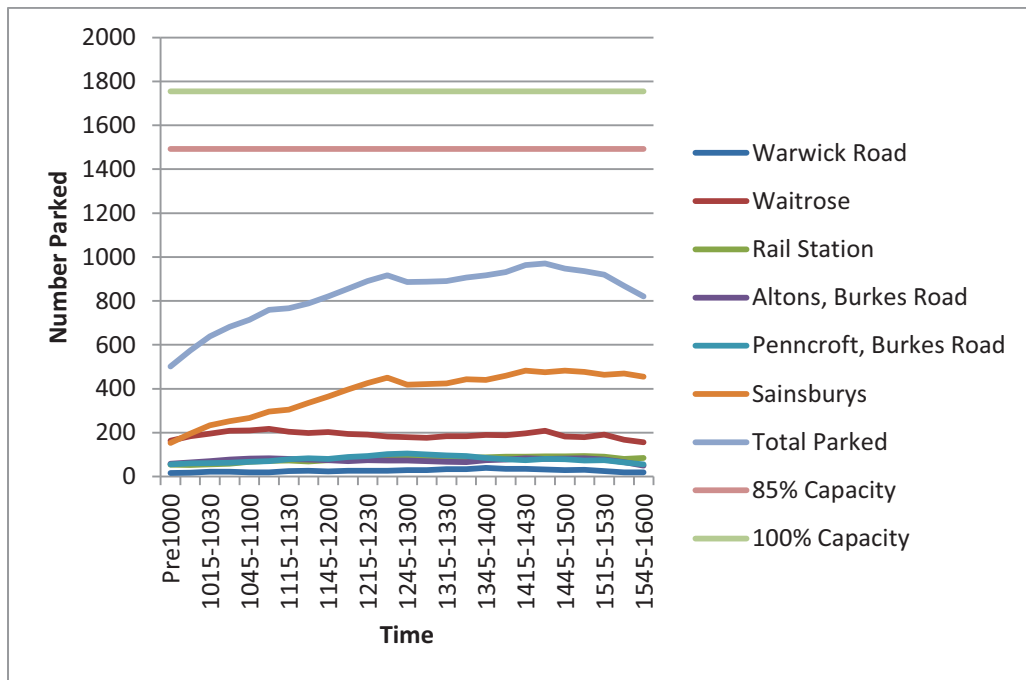
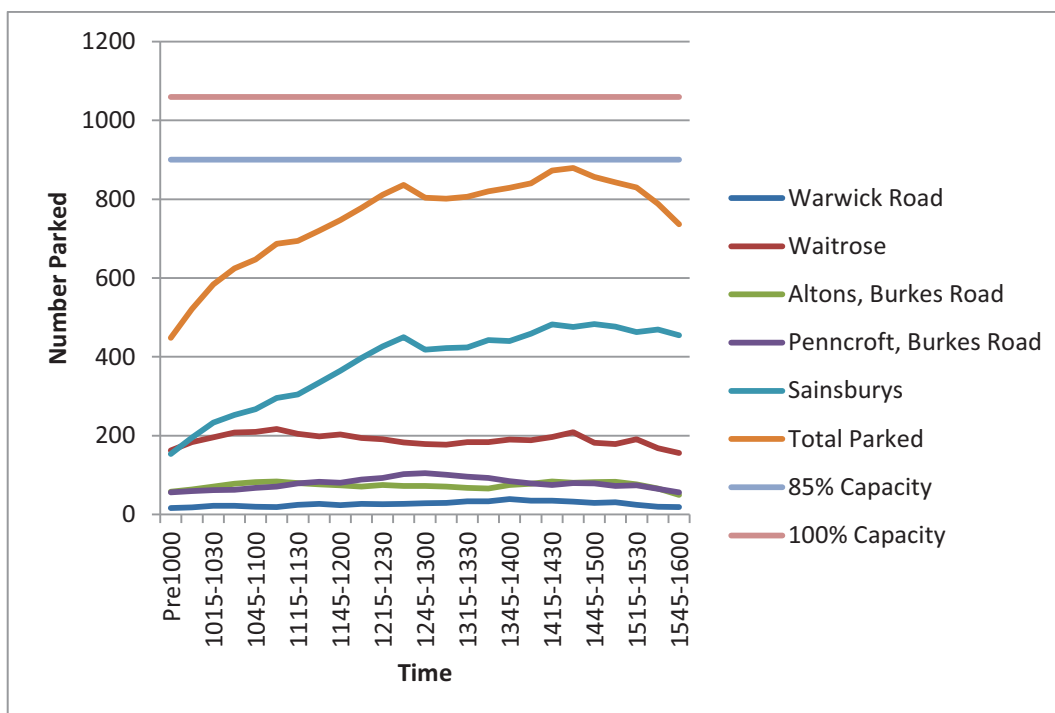


Figure 2.2 appears to show that there is ample spare capacity on a Saturday. However, when you remove the railway station provision from the analysis and consider the short stay car parks only (Figure 2.3) it is evident that parking stress is high. The peak parking utilisation across the five surveyed car parks occurred at 2.30pm, with 879 of the 1,059 available spaces used. This is at the 83% of the number of spaces utilised. There is maximum demand between 12.00pm and 3.00pm across each of the five car parks.

It is clear that Beaconsfield is suffering from severe parking stress on a Saturday with no scope for growth. Waitrose, Penncroft and Sainsburys car parks were all at or over capacity.

Figure 2.3 Off-Street Short Stay Car Park Occupancy, by Time – Saturday 25th January 2014



2.3 Parking Ticket Data and 2010 to 2013 Parking Survey Data

South Bucks District Council supplied ticket data for each of their car parks (Warwick Road, Altons, and Penncroft) for the dates where parking surveys were conducted (21st and 25th January 2014). The Council also supplied information relating to ticket receipts and revenue for 5 consecutive years commencing 2008/2009 to 2012/2013. A copy of this data can be supplied on request.

In addition to the above, South Bucks District Council supplied data for parking surveys carried out at each of the council car parks for dates between 2010 and 2013.

The ticket and survey data has been used to consider each of the council car parks in turn.

Warwick Road Car Park

Table 2.4 sets out the number of tickets sold per ticket value on Tuesday 21st January 2014 and Saturday 25th January 2014.

Table 2.4 Warwick Road Car Park Ticket Receipts and Revenue (January 2014 Parking Survey)

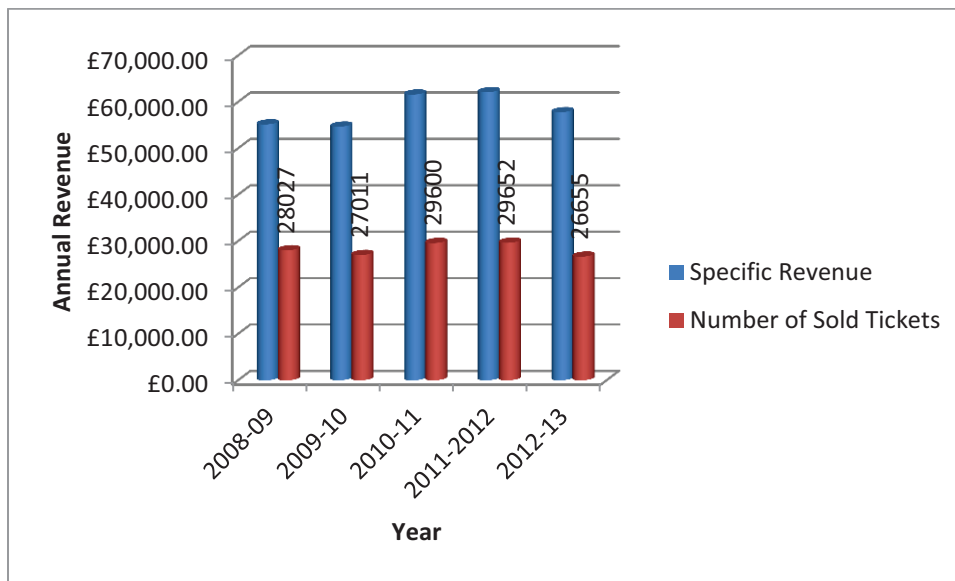
Ticket Value	£1.10	£1.70	£2.30	£3.00	£4.40	Total
Tuesday 21st January						
Specific Revenue	£13.20	£25.50	£20.70	£12.00	£57.20	£128.60
Sold Tickets	12	15	9	4	13	53
Saturday 25th January						
Specific Revenue	£37.40	£56.10	£25.30	£24.00	£48.40	£191.20
Sold Tickets	34	33	11	8	11	97

The yearly data for Warwick Road Car Park has also been examined and presented in **Table 2.5** and the yearly trend illustrated in the graph set out at **Figure 2.4**.

Table 2.5 Warwick Road Car Park Ticket Receipts and Revenue (2008 to 2013)

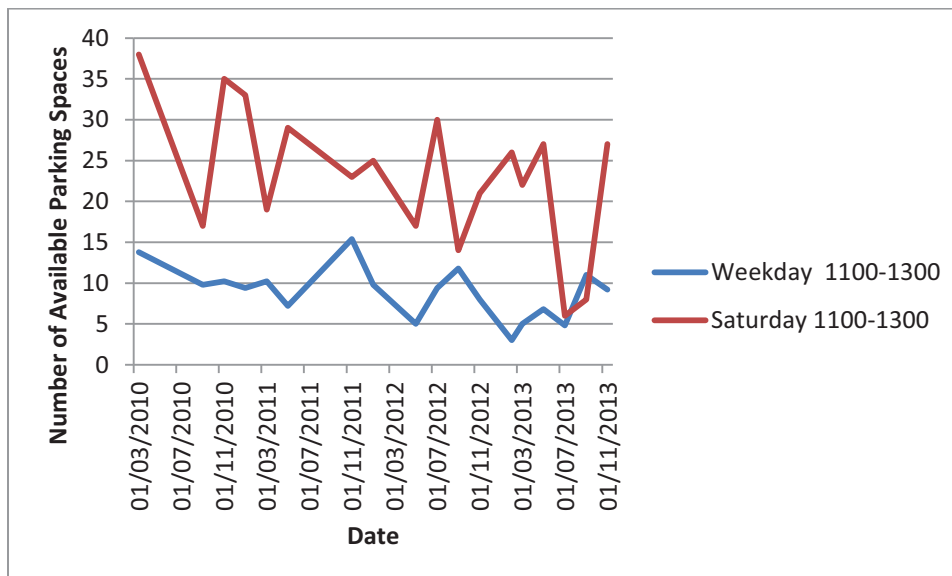
Year	2008/09	2009/10	2010/11	2011/12	2012/13
Specific Revenue	£55,165.90	£54,686.70	£61,603.90	£62,104.50	£57,786.60
Sold Tickets	28027	27011	29600	29652	26655

Figure 2.4 Warwick Road Car Park Ticket Receipts and Revenue (2008 to 2013)



The parking survey data (2010 to 2013) has also been examined and the number of available spaces between 1100 and 1300 hours, the period of heaviest use, has been set out in **Figure 2.5** below for both the weekday and Saturday.

Figure 2.5 Warwick Road Car Park 2-010 to 2013 – Weekday and Saturday Parking Availability (1100 to 1300 hours)



There is a gradual increase in use of the Warwick Road car park since the beginning of 2010.

It can be seen from **Figure 2.5** that the car park usage demonstrates that there is little spare capacity in the Warwick Road Car Park with just 3 spaces at maximum usage on 1st March 2013.

Altons, Burkes Road Car Park

Table 2.6 sets out the number of tickets sold per ticket value on Tuesday 21st January 2014 and Saturday 25th January 2014.

Table 2.6 Alton, Burkes Road Car Park Ticket Receipts and Revenue (January 2014 Parking Survey)

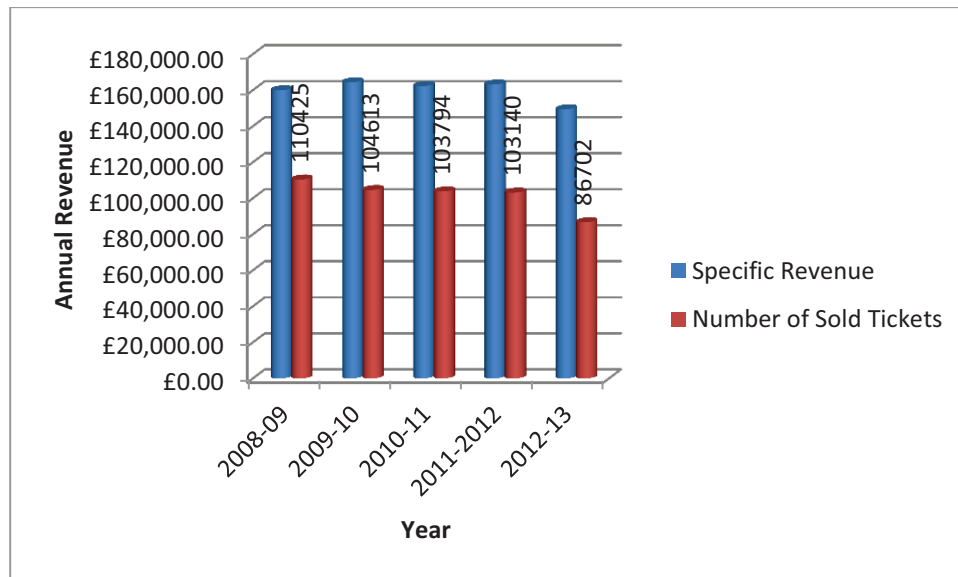
Ticket Value	£1.10	£1.60	£2.10	£3.00	£4.40	Total
Tuesday 21st January						
Specific Revenue	£117.70	£62.40	£37.80	£27.00	£149.60	£395.50
Sold Tickets	107	39	18	9	34	207
Saturday 25th January						
Specific Revenue	£174.90	£168.00	£71.40	£45.00	£57.20	£516.50
Sold Tickets	159	105	34	15	13	326

The yearly data for Altons, Burkes Road Car Park has also been examined and presented in **Table 2.7** and the yearly trend illustrated in the graph set out at **Figure 2.6**.

Table 2.7 Altons, Burkes Road Car Park Ticket Receipts and Revenue (2008 to 2013)

Year	2008/09	2009/10	2010/11	2011/12	2012/13
Specific Revenue	£159,956.90	£164,373.00	£162,307.40	£163,198.10	£149,416.80
Sold Tickets	110425	104613	103794	103140	86702

Figure 2.6 Altons, Burkes Road Car Park Ticket Receipts and Revenue (2008 to 2013)



The usage of the Altons, Burkes Road car park is fairly constant between 2008/09 and 2011/12. There is then a drop of 16,438 tickets sold in 2012/13 when comparing with the previous year with a corresponding reduction of revenue of £13,781.30. This coincides with the removal of the 30 minute parking tickets that could be purchased for 60p.

The parking survey data (2010 to 2013) has also been examined for the Altons, Burkes Road car park and the number of available spaces between 1100 and 1300 hours, the period of heaviest use, has been set out in **Figure 2.7** below for both the weekday and Saturday.

Figure 2.7 Altons, Burkes Road Car Park 2010 to 2013 – Weekday and Saturday Parking Availability (1100 to 1300 hours)

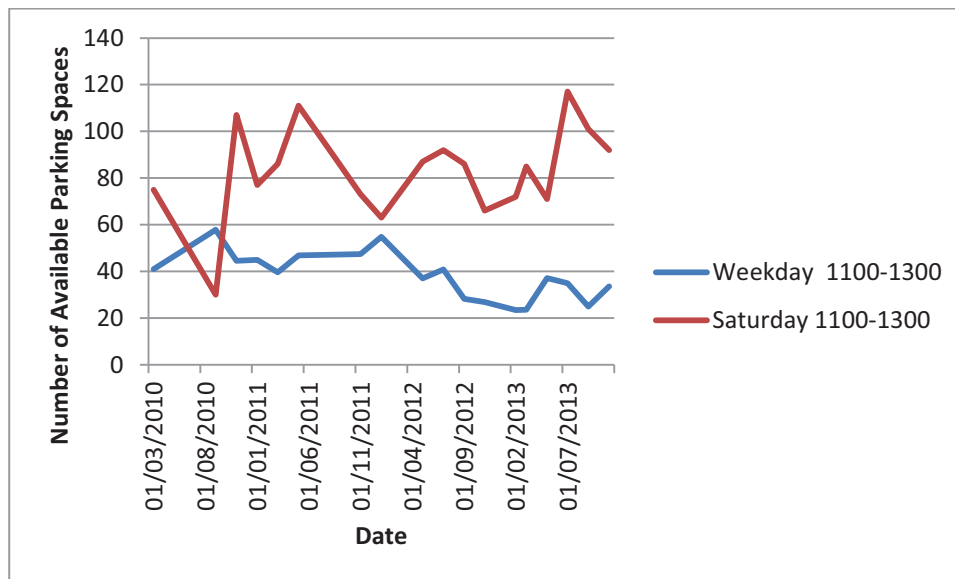


Figure 2.7 reveals that the car park usage has increased over time with only 23 spaces being available on the weekday at the beginning of 2013 in Altons, Burkes Road Car Park. Conversely, there has been a reduction in use of the Altons Car Park on a Saturday over time. This coincides with the 2014 parking survey for Saturday which revealed that there were 19 spaces available. However, the weekday survey in 2014 showed there were just 4 available spaces at the peak time on the Thursday. Fluctuation of demand varies on a day to day basis.

Penncroft, Burkes Road Car Park

Table 2.8 sets out the number of tickets sold per ticket value on Tuesday 21st January 2014 and Saturday 25th January 2014 for the Penncroft, Burkes Road Car Park.

Table 2.8 Penncroft, Burkes Road Car Park Ticket Receipts and Revenue (January 2014 Parking Survey)

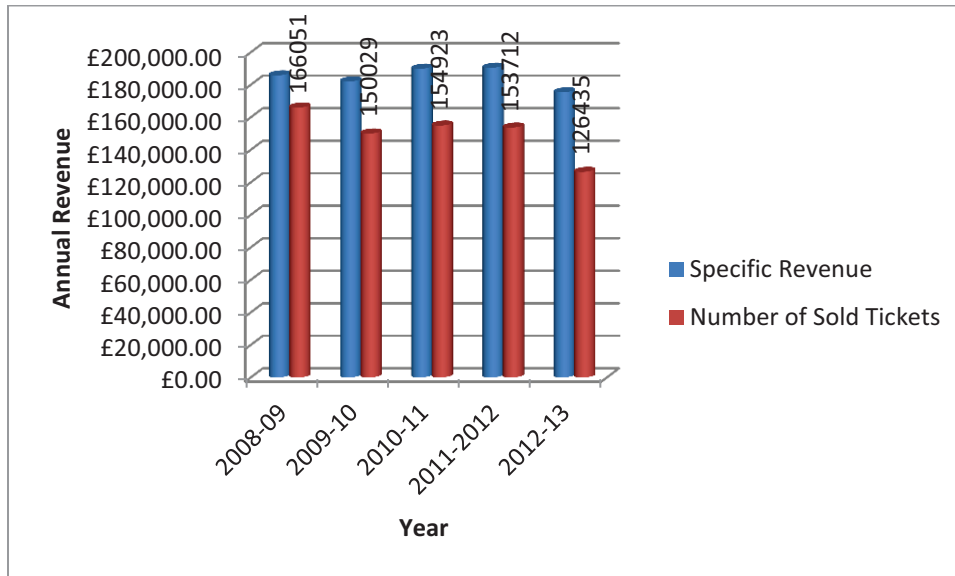
Ticket Value	£1.10	£1.70	£2.30	£3.00	£5.40	Total
Tuesday 21st January						
Specific Revenue	£221.10	£129.20	£48.30	£18.00	£43.20	£459.80
Sold Tickets	201	76	21	6	8	312
Saturday 25th January						
Specific Revenue	£303.60	£217.60	£78.20	£48.00	£21.60	£669.00
Sold Tickets	276	128	34	16	4	458

The yearly data for Penncroft, Burkes Road Car Park has also been examined and presented in **Table 2.9** and the yearly trend illustrated in the graph set out at **Figure 2.8**.

Table 2.9 Penncroft, Burkes Road Car Park Ticket Receipts and Revenue (2008 to 2013)

Year	2008/09	2009/10	2010/11	2011/12	2012/13
Specific Revenue	£185,729.10	£182,072.10	£189,876.50	£190,483.20	£175,394.80
Sold Tickets	166,051	150,029	154,923	153,712	126,435

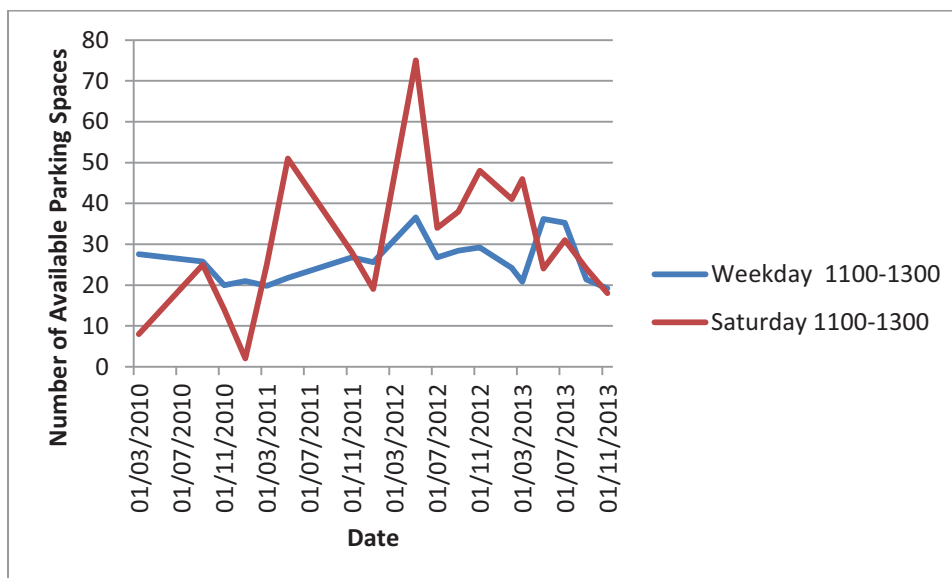
Figure 2.8 Penncroft, Burkes Road Car Park Ticket Receipts and Revenue (2008 to 2013)



As for the Altons car park, the Penncroft car park is fairly constant between 2008/09 and 2011/12. There is then a drop of 27,277 tickets sold in 2012/13 when comparing with the previous year with a corresponding reduction of revenue of £15,091.40. This coincides with the removal of the 30 minute parking tickets that could be purchased for 60p.

The parking survey data (2010 to 2013) has been examined for the Penncroft, Burkes Road car park and the number of available spaces between 1100 and 1300 hours, the period of heaviest use, has been set out in **Figure 2.9** below for both the weekday and Saturday.

Figure 2.9 Penncroft, Burkes Road Car Park 2010 to 2013 – Weekday and Saturday Parking Availability (1100 to 1300 hours)



General Observations

When considering all car parks, except Warwick Road and Sainsburys car parks, there is significant parking stress occurring during the week. In addition, it is clear that Beaconsfield is suffering from severe parking stress on a Saturday with no scope for growth. Waitrose, Penncroft and Sainsburys car parks were all at or over capacity.

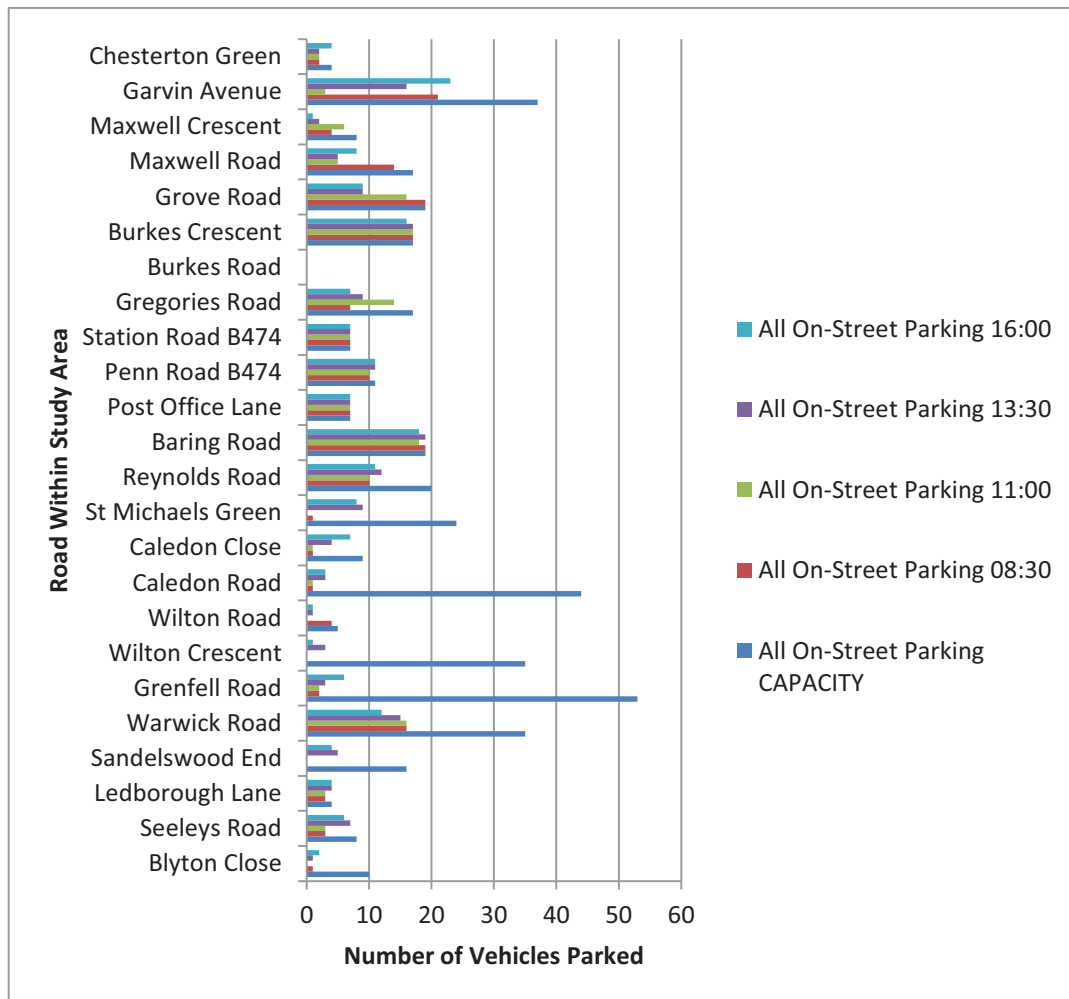
The annual data for Altons and Penncroft Car Parks show that there was a drop in the number using the car parks in 2012/13 following the removal of the 30 minute tariff. This led to a combined drop in ticket sales of 43,715 and associated loss of income of some £28,873. If this 30 minute tariff was reintroduced the associated increase in parking provision would need to be considered.

2.4 On-Street Surveys – Thursday 16th January 2014

In order to obtain an overall picture of parking availability across the town on-street car parking surveys were also conducted on Tuesday 21st and Saturday 25th January 2014. These surveys took place at 0830, 1100, 1330 and 1600 hours on the Thursday and at 1100 and 1330 hours on the Saturday. The study area is a 500m radius of the town and is shown in **Appendix A**.

The weekday survey is considered in **Section 2.4**. There are 426 spaces on-street available for visitors to the town centre, of which 176 spaces were used at the peak time of 4.00pm. This equates to 41.3% of the on-street parking provision. However, if you consider the number of unrestricted parking spaces, 40 in total, they were 100% utilised throughout the day. **Figure 2.10** shows the level of parking on each of the roads within the study area for each time period.

Figure 2.10 On-Street Car Park Occupancy – Tuesday 21st January 2014



It can be seen from the graph set out as **Figure 2.10** above that Grove Road, Burkes Crescent, Station Road, Penn Road, and Baring Road are used close to their maximum capacity. This is due to their central location within the town centre and that no parking charges are imposed.

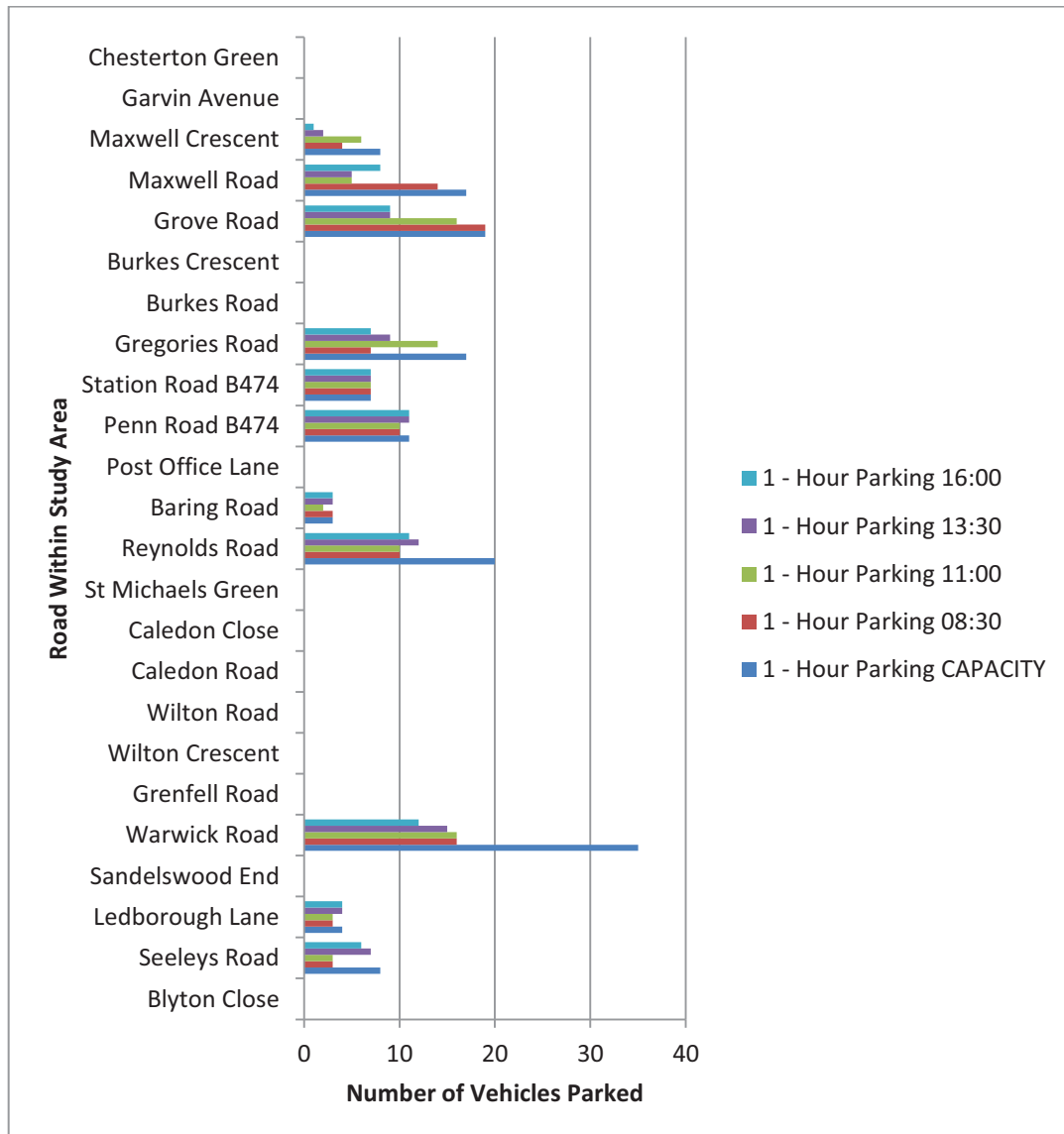
Taking this into consideration the on-street provision has been examined further to establish the current demand for space for short stay, restricted for 1 hour during the day, and unrestricted parking purposes.

Short Stay On-Street Parking

Parking restrictions are imposed at various locations within the study area, which allow free parking for up to 1 hour with no return for 1 hour for short stay parking purposes. There are 149 spaces on-street with this restriction and a maximum of 96 spaces (64%) were used during the peak time of 8.30am. **Figure 2.11** shows on-street car parking occupancy of the short stay spaces for each time period on Tuesday 21st January 2014.

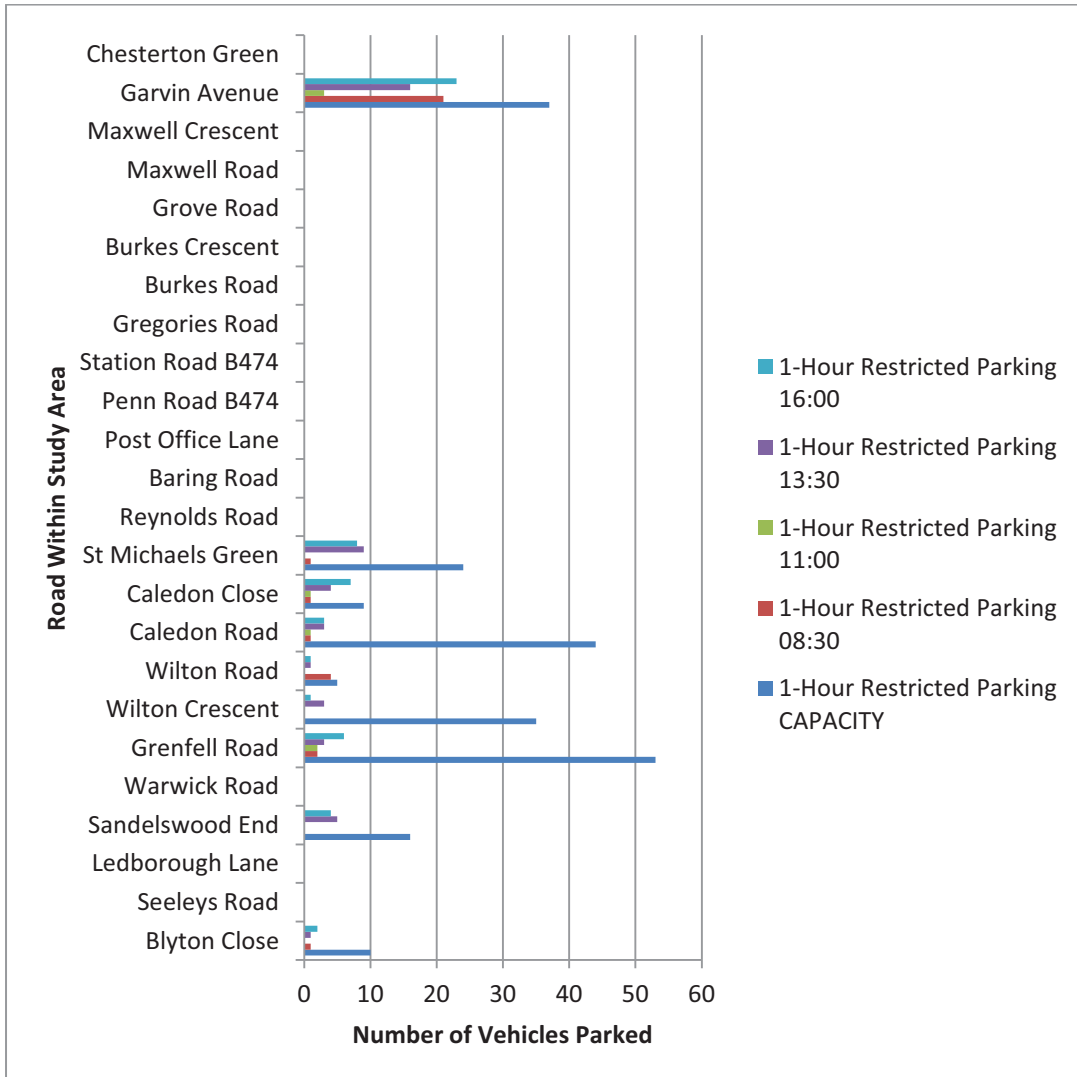
It can be seen that the spaces on Station Road, Penn Road, Baring Road and Ledborough Lane were used to full capacity.

Figure 2.11 Short Stay On-Street Car Park Occupancy – Tuesday 21st January 2014



Furthermore, there are 9 roads within the study area where parking is prohibited for 1 hour from 11am. **Figure 2.12** sets out the number of vehicles parked on these roads for each time period. There are 233 spaces on-street restricted for the hour between 11am and midday and at the peak period of 4pm 55 spaces were used giving a utilisation of just 23.6%. This 1 hour restriction clearly discourages commuters and are considered to be too far from the town centre for the vast proportion of short stay trips.

Figure 2.11 On-Street Car Park Restricted For 1-Hour Occupancy – Tuesday 21st January 2014 (no parking permitted 11am to 12pm)

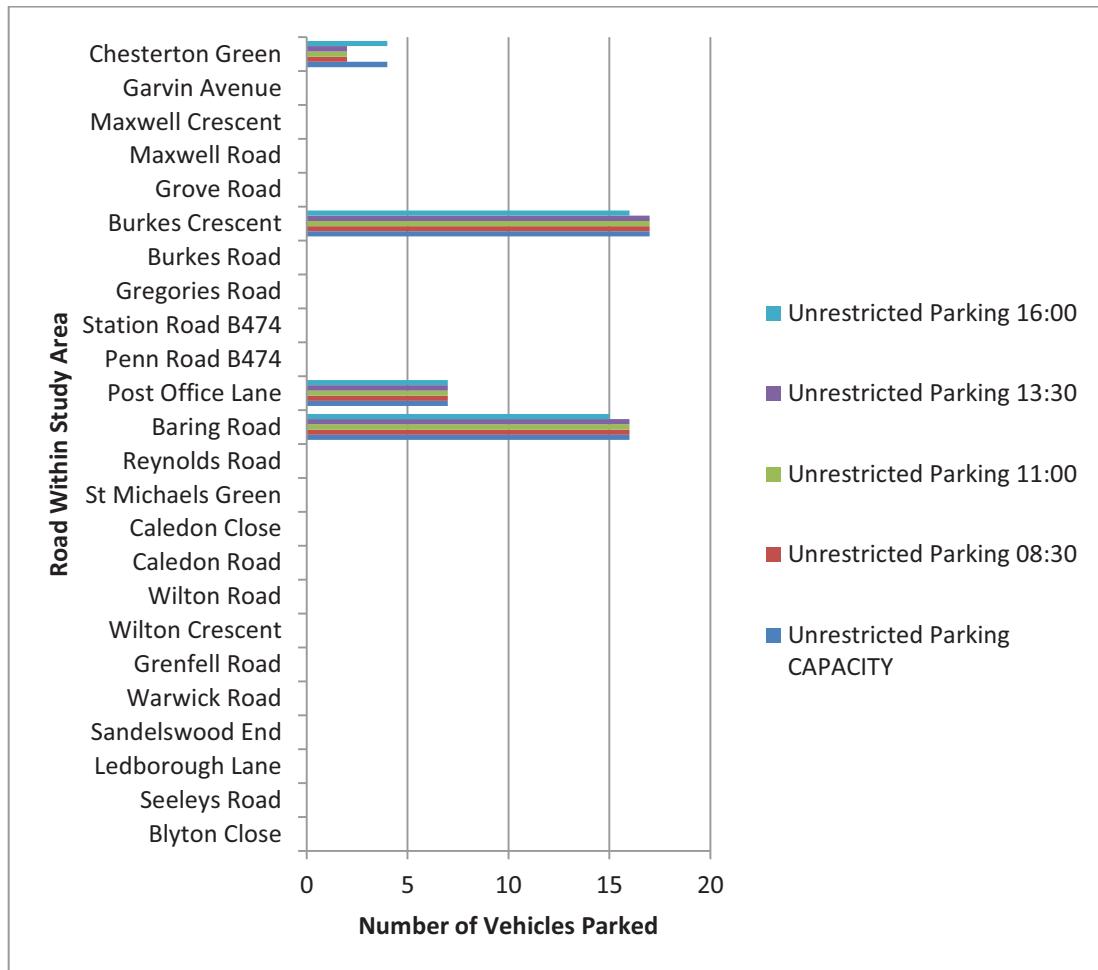


Unrestricted On-Street Parking

There are also 44 on-street parking spaces within the study area that are not subject to parking controls. These spaces can therefore be used for both long stay and short stay purposes. It was found that 42 spaces were used throughout the day, some 95% of available space.

Figure 2.13 shows car parking usage on each of the roads within the study area for each time period considered.

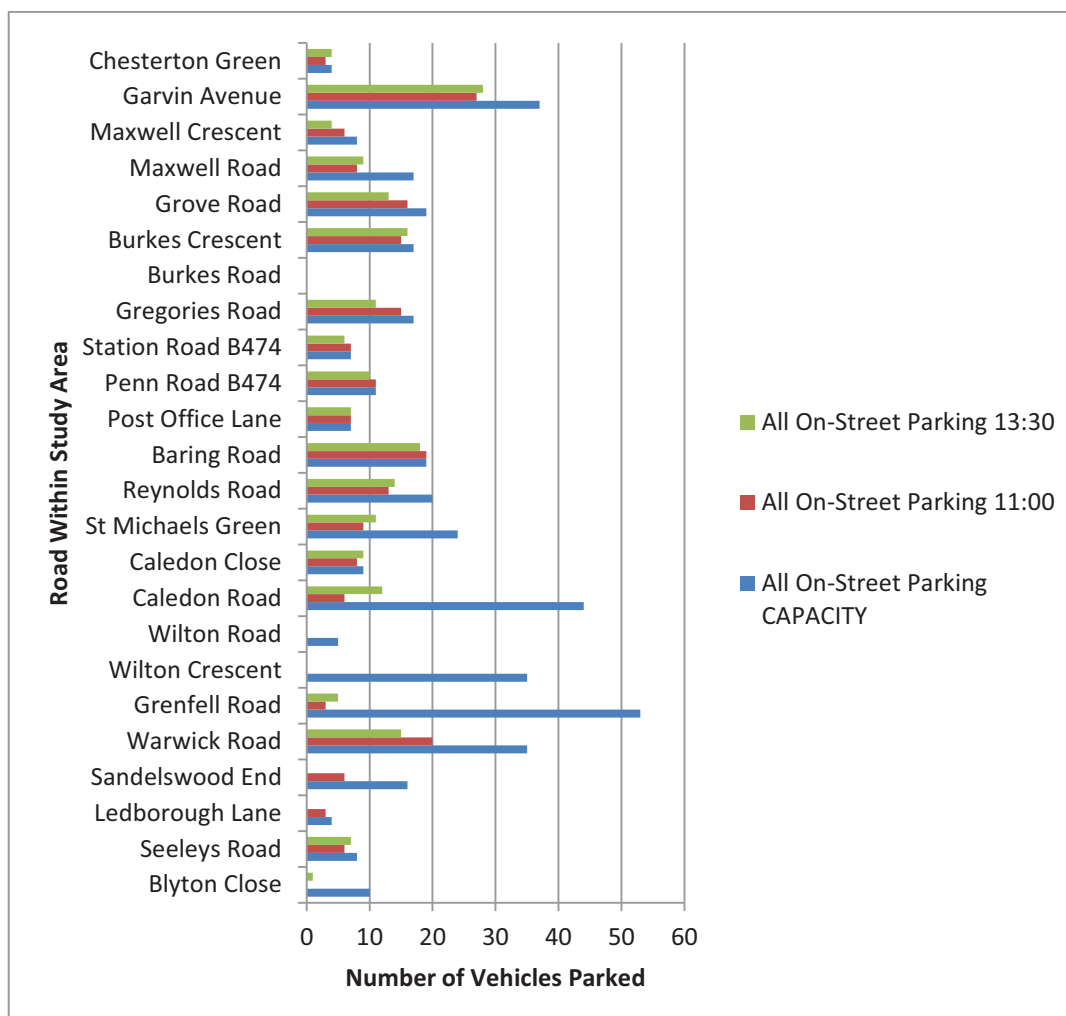
Figure 2.13 Unrestricted On-Street Car Park Occupancy – Tuesday 21st January 2014



2.5 On-Street Surveys – Saturday 25th January 2014

As previously mentioned car parking surveys were also conducted on Saturday 25th January 2014 at 1100 and 1330 hours.

There are 426 spaces on-street available for visitors to the town centre, of which 341 spaces were used at the peak time of 11am. This equates to 80% of the on-street parking provision. **Figure 2.14** shows the level of parking on each of the roads within the study area for each time period.

Figure 2.14 On-Street Car Park Occupancy – Saturday 18th January 2014

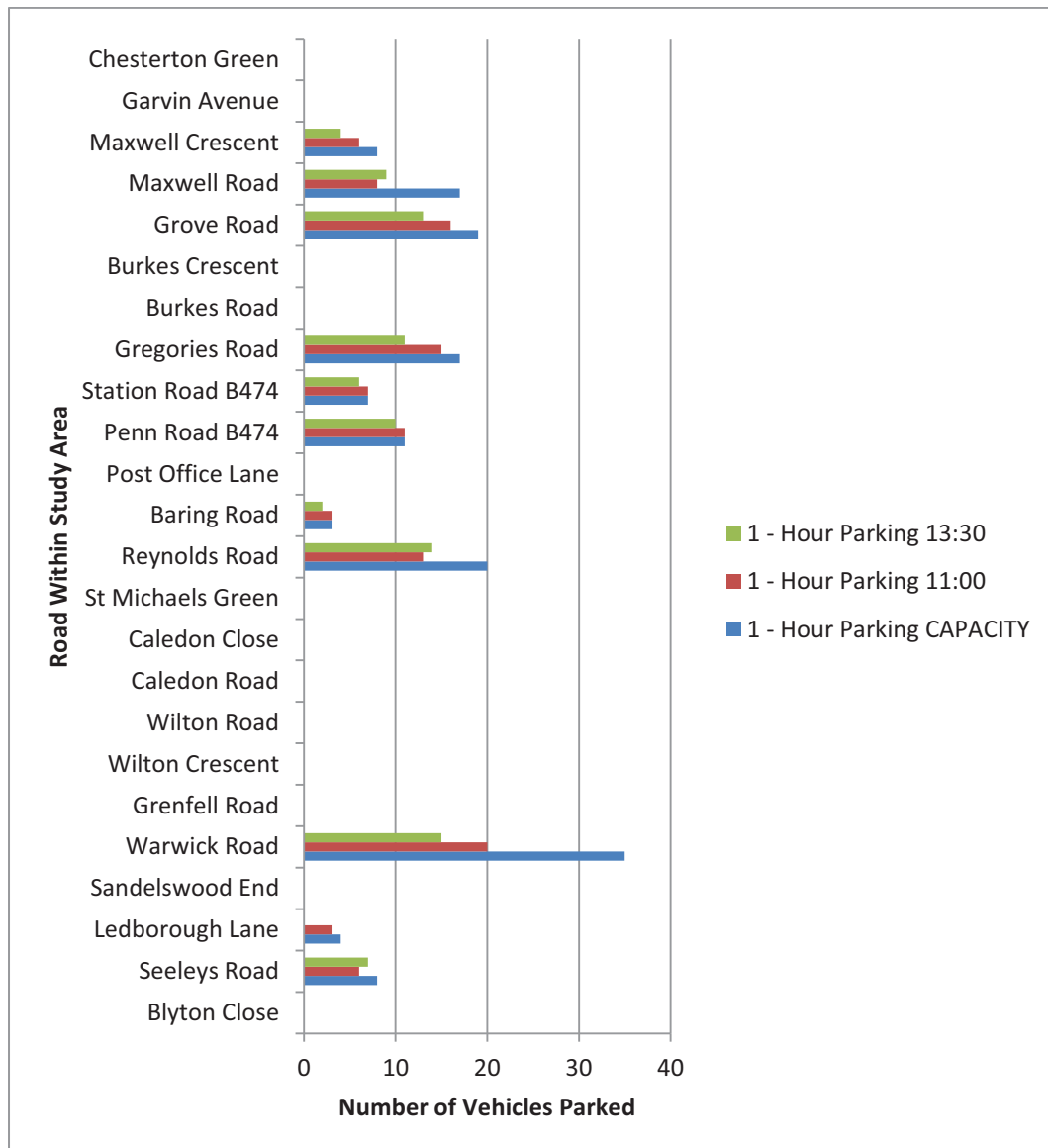
It can be seen from the graph set out as **Figure 2.14** above that Burkes Crescent, Penn Road, Post Office Lane, Baring Road, Caledon Close, and Seeleys Road are used close to their maximum capacity.

Taking this into consideration the on-street provision has been examined further to establish the current demand for space for short stay and unrestricted parking purposes.

Short Stay On-Street Parking

Parking restrictions are imposed at various locations within the study area, which allow parking for up to 1 hour with no return for 1 hour for short stay parking purposes. There are 149 spaces on-street with this restriction on a Saturday and a maximum of 108 spaces (72%) were used during the peak time of 11am. **Figure 2.15** shows on-street car parking occupancy of the short stay spaces for each time period on Saturday 25th January 2014.

Figure 2.15 Short Stay On-Street Car Park Occupancy – Saturday 25th January 2014



It can be seen that Station Road, Penn Road, Baring Road and Seeleys Lane are used close to or at their maximum capacity.

Unrestricted On-Street Parking

There are also 277 on-street parking spaces within the study area that are not subject to parking controls. These spaces can therefore be used for both long stay and short stay purposes. It was found that a maximum of just 109 spaces were used during the 1.30pm peak time, which is just 39% of available space.

General Observations

It is understood that the Model Village situated on Warwick Road generates a substantial volume of traffic in the summer months. This leads to parking stress both in the public car parks and on-street in the vicinity. It is recommended that a further study is undertaken during the school summer holiday to establish the full extent of impact that this use has on-

street and within the car parks. This will enable the full impact to be examined and the additional number of spaces required to be quantified.

3 Land use assumptions

3.1 New Development

Existing residential figures in Beaconsfield for 2014 have been derived from the 2011 Census (Super Output Area Middle Layer – South Bucks 001) and list of built development since that date provided by the South Bucks Sustainable Development – Planning Policy Team. Future figures for 2026 are based on the additional residential properties to be built in accordance with the aim of the South Bucks District Council Core Strategy adopted February 2011.

The Core Strategy 2006 to 2026 sets out a need for 124 new dwellings in Beaconsfield over the plan period and it is understood that 94 of these dwellings are yet to be constructed. A further 300 residential units to be provided at Wilton Park. This is a growth of 21 dwellings per year. As this parking study needs to consider growth to 2033 the same assumption of growth rate per annum as the Core Strategy is used to provide a robust assessment.

Beaconsfield has a Sainsburys superstore and a Waitrose supermarket but a further 100m² of convenience retail space has been identified in the Core Strategy to be provided by 2026. To complement this provision South Bucks District Council has also identified a need for a further 2,250m² of comparison retail floor space to 2026 in the Core Strategy¹. Again as this parking study needs to consider growth to 2033 the same assumption of growth rate per annum for the Core Strategy of 5m² for convenience retail and 112.5m² for comparison retail is used respectively.

Although the Core Strategy states that employment use would be supported in the District Centres (Beaconsfield and Gerrards Cross) no growth has been identified in the plan period for this type of use.

Taking into consideration the above, the following land use assumptions set out in **Table 3.1** will be used to calculate future parking demand.

Table 3.1 Land Use Assumptions

Gerrards Cross	Existing	Additional to 2026	Additional 2026 to 2033	Growth by 2033
Residential (households)	4,919	394	147	11.0%
Retail - Convenience (m ²)†	6,988	100	35	1.9%
Retail – Comparison (m ²)†	7,910	2,250	787.5	38.4%

†Retail figures are derived from the 'Joint Retail/Town Centre Study' by Nathaniel Lichfield & Partners

¹Comparison floorspace has been defined in the Core Strategy as 'floorspace used for the sale of durable goods such as clothing, household goods, furniture, diy and electrical goods'

4 Parking forecast 2033

4.1 Forecasting methodology

With any forecast methodology there are a range of factors that may affect the results and add to the uncertainty, including:

- Growth in the economy
- Level of internet shopping (assume retail study is up to date in this regard)
- Provision of public transport and walking and cycling facilities
- Price of petrol
- Numerous other factors, including local factors

We have used two methodologies to produce parking forecasts for 2033:

1. We have provided a growth forecast using TEMPRO (Trip End Model presentation Programme) based on planning growth (which sets out the combined effect of increase in households and employment), and car ownership growth.
2. As a sense check, we have also provided a forecast based on the additional comparison retail floor area using TRICS data, which focuses on parking need at the destination.

4.2 TEMPRO Growth

The growth figures for planning and car ownership for the Beaconsfield area was obtained from the TEMPRO (Nationally produced planning and traffic forecasts) database for the period 2014 to 2033. However, a lower growth factor was given than Gerrards Cross. It is anticipated that the Wilton Park development (c.300 dwellings) has been excluded from the TEMPRO calculation. As Amersham is anticipated to have a similar level of growth to Beaconsfield the TEMPRO for this town has been used. This information has been set out in **Table 4.1**. A growth of 10.3% to 2033 is predicted using this methodology.

Table 4.1 Growth factors

	TEMPRO
Planning Growth	1.046
Car Ownership Growth	1.057
Combined Factor	1.103

This growth rate was then applied to the parking survey data to estimate the impact on each car park for the weekday and Saturday as shown in **Table 4.2** and **Table 4.3** respectively.

Table 4.2 Off-street parking forecast 2033 (Weekday)

Car Park	Capacity	Maximum Occupancy		Maximum as a %age of Capacity	
		2014	2033	2014	2033
Warwick Road	50	25	28	50%	56%
Waitrose	220	218	240	99%	109%
Beaconsfield Rail Station Car Park	696	607	669	87%	96%
Altons, Burkes Road Car Park	173	164	181	95%	105%
Penncroft, Burkes Road Car Park	101	99	109	98%	108%
Sainsburys Car Park	515	289	319	56%	62%
TOTAL	1,755	1,402	1,546	80%	88%

Table 4.2 shows that by 2033 there is likely to be significant parking stress at all the car parks, except for Warwick Road Car Park on a weekday. Across all Beaconsfield car parks there is likely to be little spare capacity.

Table 4.3 Off-street parking forecast 2033 (Saturday)

Car Park	Capacity	Maximum Occupancy		Maximum as a %age of Capacity	
		2014	2033	2014	2033
Warwick Road	50	39	43	78%	86%
Waitrose	220	217	239	99%	109%
Beaconsfield Rail Station Car Park	696	93	103	13%	15%
Altons, Burkes Road Car Park	173	84	93	49%	54%
Penncroft, Burkes Road Car Park	101	105	116	104%	115%
Sainsburys Car Park	515	483	533	94%	103%
TOTAL	1,755	1,021	1,127	58%	64%

Table 4.3 shows that the car parking provision in Beaconsfield is operating at only 58% of its theoretical capacity on a Saturday. However, it should be noted that Beaconsfield Railway Station Car Park has only 93 of its 696 spaces used, which is just 13% of capacity. If you exclude the Railway Station from the calculations, as this is a long stay car park in any event, there were 928 of the remaining 1,021 spaces used, which amounts to 88% utilisation of spaces. This is over the 85% theoretical capacity.

It is also evident that Waitrose, Penncroft, and Sainsburyscar parks have insufficient spaces on a Saturday in 2033 to cope with demand. Warwick Road Car Park is approaching its theoretical capacity but there is some spare capacity in the Altons Car Park.

TEMPRO growth has also been applied to the on-street car parking availability in the town. The weekday and Saturday parking forecasts are set out in **Tables 4.4** and **4.5**.

Table 4.4 On-street parking forecast 2033 (weekday)

Street	Capacity	Maximum Occupancy		Maximum as a %age of Capacity	
		2014	2033	2014	2033
Blyton Close	10	2	2	20%	20%
Seeleys Road	8	7	8	88%	100%
Ledborough Lane	4	4	4	100%	100%
Sandelswood End	16	5	6	31%	4%
Warwick Road	35	16	18	46%	51%
Grenfell Road	53	6	7	11%	13%
Wilton Crescent	35	3	3	9%	9%
Wilton Road	5	4	4	80%	80%
Caledon Road	44	3	3	7%	7%
Caledon Close	9	7	8	78%	89%
St Michaels Green	24	9	10	38%	42%
Reynolds Road	20	12	13	60%	65%
Baring Road	19	19	21	100%	111%
Post Office Lane	7	7	8	100%	114%
Penn Road B474	11	11	12	100%	109%
Station Road B474	7	7	8	100%	114%
Gregories Road	17	14	15	82%	88%
Burkes Crescent	17	17	19	100%	112%
Grove Road	19	19	21	100%	111%
Maxwell Road	17	14	15	82%	88%
Maxwell Crescent	8	4	4	50%	50%
Garvin Avenue	37	23	25	62%	68%
Chesterton Green	4	2	2	50%	50%
TOTAL	426	215	236	50%	55%

Although **Table 4.4** shows that there is likely to be increased parking stress at the on-street locations on a weekday in 2033 from 50% to 55% it is clear that severe parking stress already exists on some of the roads within the study area. It can be seen that vast majority of the roads that allow 1 hour free parking or are unrestricted (shaded yellow) will be at or over 100% capacity by 20133. The remainder of the road, which are subject to the 1 hour prohibition of parking late morning are less utilised. This parking restriction clearly removes any commuter parking.

Table 4.5 On-street parking forecast 2033 (Saturday)

Street	Capacity	Maximum Occupancy		Maximum as a %age of Capacity	
		2014	2033	2014	2033
Blyton Close	10	10	11	100%	110%
Seeleys Road	8	6	7	75%	88%
Ledborough Lane	4	3	4	75%	100%
Sandelswood End	16	16	18	100%	113%
Warwick Road	35	20	22	57%	63%
Grenfell Road	53	3	5	6%	9%
Wilton Crescent	35	35	39	100%	111%
Wilton Road	5	5	6	100%	120%
Caledon Road	44	44	49	100%	111%
Caledon Close	9	9	10	100%	111%
St Michaels Green	24	24	26	100%	108%
Reynolds Road	20	13	14	65%	70%
Baring Road	19	3	4	16%	21%
Post Office Lane	7	8	9	114%	129%
Penn Road B474	11	11	12	100%	109%
Station Road B474	7	7	8	100%	114%
Gregories Road	17	15	17	82%	100%
Burkes Crescent	17	14	15	82%	88%
Grove Road	19	19	21	100%	111%
Maxwell Road	17	4	4	24%	24%
Maxwell Crescent	8	6	7	75%	88%
Garvin Avenue	37	37	41	100%	111%
Chesterton Green	4	3	4	75%	100%
TOTAL	426	313	361	73%	85%

Table 4.5 indicates that the roads within the study area are already working within 73% of their capacity at some point during the day on a Saturday. By 2033 the area is expected to be operating at its operational capacity of 85%. The only roads with spare capacity by 2033 are Warwick Road, Reynolds Road, Baring Road, and Maxwell Road.

4.3 Retail Growth Using TRICS

This forecast is based on parking data obtained from comparable sites at other locations in the South East, obtained from the TRICS database. The TRICS database contains surveys of a wide range of developments across the UK, including parking surveys. Full details of the convenience and comparison goods sites used can be found in **Appendix B**.

Table 3.1 above shows an additional 100m² of convenience retail floor space and an extra 2,250m² of comparison retail floor space is to be provided in Beaconsfield. Applying the average TRICS rate of 3.75 per 100m² for convenience retail and 4.49 parking spaces per 100m² from the selected TRICS sites a further 105 parking spaces will be needed on a short stay basis (up to 3 hours).

Table 4.6 Parking Forecasts for 2033 Retail Development (TRICS)

Land Use	Floor Area (m ²)	Parking per 100m ² (TRICS)	Number of Parking Spaces
Convenience Retail	100	3.75	4
Comparison Retail	2,250	4.49	101
TOTAL			105

The TEMPRO growth method indicated that a further 144 spaces are required on a weekday and an extra 106 spaces are needed on a Saturday. This figure coincides with the prediction in retail parking demand of 105 spaces associated with the increase in retail floor space obtained using TRICS data.

Taking the above factors into account the forecast based on TEMPRO growth appears reasonable. It is recommended that of the additional 144 spaces, 106 short stay and 38 long stay spaces are provided.

4.4 Parking Restriction Changes

Buckinghamshire County Council was consulted with respect to the parking survey and they informed YES Engineering that alterations to the parking restrictions in Beaconsfield are due to occur this year. A schedule of the changes is attached at **Appendix C**.

The introduction of the 1 hour prohibition of parking on Caledon Road and Wilton Crescent has already been carried out so the impact of this is already reflected in the results. Drivers using the southern side of Warwick Road to park will be able to park for 2 hours in duration, with no return within 2 hours. There is at present 1 hour in duration permitted. As this road is parked to a maximum of 60% of its capacity it is considered that there will be little change as a consequence of the alteration to the parking restrictions.

However, the removal of the 1 hour prohibition on Grenfell Road is yet to take place to allow unrestricted parking. At present a maximum of 6 of the 53 spaces are used during the week, which means 47 spaces will be available for both long and short stay purposes. On a Saturday a maximum of 5 of the 53 spaces are occupied leaving 48 free spaces available for use.

5 Policy Context

5.1 National Policy

The **National Planning Policy Framework (CLG 2012)** set out Government's planning policies for England and how these are expected to be applied. The policy places emphasis on promoting sustainable forms of transport, recognising that different policies and measures will be required in different communities and opportunities to maximise sustainable transport solutions will vary from urban to rural area. The document goes on to state:

"Encouragement should be given to solutions which support reductions in greenhouse gas emissions and reduce congestion. In preparing Local Plans, local planning authorities should therefore support a pattern of development which, where reasonable to do so, facilitates the use of sustainable modes of transport (page 9)"

Specifically related to parking, the document states:

"Local authorities should seek to improve the quality of parking in town centres so that it is convenient, safe and secure, including appropriate provision for motorcycles. They should set appropriate parking charges that do not undermine the vitality of town centres. Parking enforcement should be proportionate (page 11)".

5.2 Local Policy

Buckinghamshire's Local Transport Plan 2011-2016 (Transport for Buckinghamshire 2011) sets out the counties transport policies and strategies. The policy continues the theme of promoting sustainable travel, along with effective car parking management. The objectives of the plan are:

- Maintain or improve the reliability of journey times on key routes
- Improve connectivity and access between key centres
- Deliver transport improvements to support and facilitate sustainable housing and employment growth
- Ensure local transport networks are resilient and adaptable to shocks and impacts
- Reduce the need to travel
- Increase the proportion of people travelling by low emission modes of transport
- Protect improve and maintain the local environment
- Reduce carbon emissions and waste associated with the Transport Authority
- Improve health by encouraging walking and cycling
- Reduce the negative impact of poor air quality
- Enable disadvantaged people to access employment sites and opportunities
- Enable disadvantaged people to access key services and facilities
- Encourage and support the delivery and planning of local transport services by local groups, communities and individuals

Specifically related to parking, the document states:

"Parking management can be used to help to manage the demand for road space within our towns and villages. This tool will not be used to penalise car drivers, as there are many areas of the county that do not have alternative means of travel. Consideration needs to be given to the provision of a balanced sustainable mix of short and longer term parking. The appropriate use of parking management, through pricing and capacity control, can reduce demand during the peak period and improve the economic vitality of an area by increasing

the turnover of vehicles. Parking controls will be supported by effective enforcement measures, in the interests of ensuring efficient use of the spaces available and in the interests of safety and traffic flow.

In our larger urban areas, parking and access studies are undertaken with the District Councils to inform the level (quantity) of on-street parking within the town centres; the pricing and use of off-street car parks; workplace parking supply and management; and the future growth in parking demand. By finding the right balance between these options, parking management can make a significant contribution to town centre economic vitality and peak period congestion reduction.

In our smaller towns and villages, parking is managed with similar tools, capacity and charging, however with a different economic and congestion management context. The aim is to ensure that the local economy is supported by suitable parking facilities, but sustainable travel alternatives for local journeys are encouraged (page 74)”.

The document goes on to state:

“The approach to managing congestion on the road network will include ...:

- *Encouraging travel by greener modes rather than the car. Such as through encouraging the use of travel plans and through supporting improved facilities for the promotion of walking, cycling and passenger transport.*
- *Strategies to better manage parking and actively discourage people with attractive alternatives from driving to town centres (page 76)”.*

Specifically relating to cycle links and access to stations, the document states:

“The county strategy will support the delivery of this Plan’s objectives through a range of key initiatives and projects [including] Develop better walking and cycling access to stations including expansion of cycle parking in partnership with Train Operators (page 91)”.

The **South Bucks Core Strategy (2011)** sets out a vision and policies for the District. Core Policy 7: Accessibility and Transport, states:

“The Council will seek to improve accessibility to services and ensure a safe and sustainable transport network by supporting the rebalancing of the transport system in favour of more sustainable modes of transport, whilst recognising that in rural parts of the District, the car will remain the primary mode of travel.

This rebalancing will be achieved by:

- *Focusing new development that generates substantial transport movements in locations that are accessible by public transport, walking and cycling.*
- *Working with the highway authority, Rights of Way and Access Group, and others to improve transport choices for local residents, especially in rural parts of the District.*
- *Encouraging safe and attractive improvements to pedestrian and cyclist routes and facilities.*
- *Supporting the greater use of rail services, including improvements to parking at train*

stations and connecting bus services where viable.

- Ensuring that the impact of new development on the road network is minimised and mitigated through the use of 'mobility management' measures such as Travel Plans, parking charges and car parking levels.*
- Supporting public transport schemes, including Crossrail, as long as there are strong environmental safeguards in place.*

Existing traffic congestion to the east of Beaconsfield will be addressed through a range of measures, which could include provision of an A355 / A40 Relief Road later in the Plan period. The adverse impacts associated with HGV movements in and around Iver Village and Richings Park will be addressed through land use changes. Should these prove unsuccessful, or other opportunities arise, further consideration will be given to the scope for provision of a relief road or other alternative means of access to the employment sites in the South of Iver Opportunity Area. Impacts on Junction 1 of the M40 will be kept under review, with mitigation measures, including infrastructure improvements, potentially being needed later in the Plan period.

Further details of the measures that will be taken to implement this policy, including when travel plans will be required and the application of new parking standards, will be addressed in the Development Management DPD."

"Developments which are car-dependent or promote unsustainable travel behaviour will not be supported. Major developments, employers and institutions should develop travel plans to promote sustainable travel behaviour. The Council will work with partners to promote walking and cycling as an integral and highly sustainable means of transport focused on centres, schools, work-places, and public transport interchanges".

6 Alternative modes

Figure 6.1 shows the mode of travel to work for Beaconsfield, as detailed in the 2011 Census. The results show higher than average percentage for working from home, and train use. Car use is slightly lower than average for the South East. However, Bus, Bicycle, and On Foot, were significantly below the average for the South East.

Table 6.1 2011 Census mode share

Mode of Travel	Beaconsfield	South East England
Work mainly from or at home	16%	7%
Train	13%	2%
Bus	1%	5%
Motorcycle	1%	1%
Car or Van	56%	62%
Passenger of Car or Van	3%	5%
Bicycle	1%	4%
On Foot	9%	14%
Other Method of Travel to Work	0%	1%

6.1 Public Transport

Figure 6.1 and **Table 6.2** show the bus routes currently serving Beaconsfield.

Figure 6.1 Bus network map

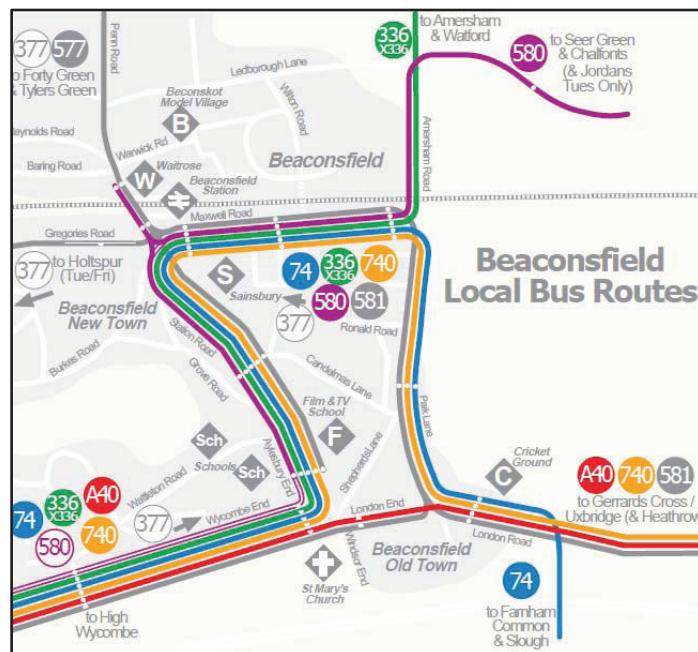


Table 6.2 Bus frequencies

Service	Operator	Route	Mon – Fri	Saturday
74	Carousel	Slough – Beaconsfield– High Wycombe	2 per hour	2 per hour
336	Carousel	High Wycombe – Beaconsfield – Amersham – Rickmansworth - Watford	Hourly	Hourly
377	Red Eagle	Hazelmere – Beaconsfield - Loudwater	2 buses per day Tuesday & Friday only	None
580	Carousel	Beaconsfield - Uxbridge	7 buses per day	5 buses per day
581	Carousel	Uxbridge – Denham - Beaconsfield	3 buses per day	2 buses per day
740/A40	Carousel	High Wycombe – Uxbridge - Heathrow	3 buses per hour	2 buses per hour

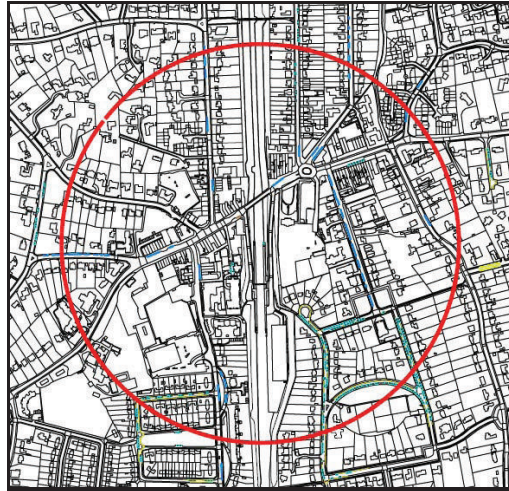
It can be seen that there are six bus services operating in the Beaconsfield area, however, they have low frequency services during weekday daytime. There are no Sunday services for all bus routes apart from the 74, which runs 5 buses per day, and the 740/A40, which provides an hourly service but finishes before 5pm. There is limited scope to encourage bus travel with the current bus services on offer.

For longer distance trips Beaconsfield Station operated by Chiltern Railways provides two trains an hour to London Marylebone, with a travel time of just 29 minutes. Destinations in the opposite direction include Aylesbury, Bicester North, Princes Risborough, and High Wycombe. The choice of Chiltern Railways services is a more desirable mode of travel for commuters using public transport.

6.2 Walking & Cycling

Figure 6.2 shows that the centre of Beaconsfield is contained within walking distance (400m, 5 minute walk). The car parks are within easy walking distance of each other and the centre.

Figure 6.2 Walk map



There are no cycle routes available for cyclists in the Beaconsfield study area. Although there are 82 covered cycle parking spaces available at Beaconsfield Station, there is limited cycle parking facilities elsewhere in the town. There are 'Sheffield' stands beside Waitrose and outside Subway on Maxwell Road.

Despite the lack of routes and cycle stands it appears that commuters are cycling to the station. Also, during site visits on very cold January mornings it was noted that cyclists had chained their bikes to the stands at both Waitrose and on Maxwell Road.

This indicates that there is a significant opportunity to further encourage more people to cycle through implementation of cycle routes and provision of additional cycle parking, particularly in the town centre.

7 Pricing

Table 7.1 shows that parking in Beaconsfield is comparable to Gerrards Cross but more expensive compared to the remaining neighbouring centres.

Table 7.1 Car Park Pricing at Comparable Towns

Centre	Distance (miles)	Approximate Cost		
		1 hour	2 hours	3 hours
Amersham-on-the-Hill	7	£0.60	£1.20	£1.80
Beaconsfield	5	£1.10	£1.70	£2.30
Berkhamsted	14	£0.50	£1.00	£1.40
Chesham	9	£0.60	£1.20	£1.80
Gerrards Cross	-	£1.10	£1.70	£2.30
High Wycombe	10	£1.00	£1.50	£2.00

Pricing is an effective tool for managing demand as motorists appear to be particularly sensitive to parking prices because they are a direct charge. Compared with other out-of-pocket expenses, parking charges have a greater effect on vehicle trips. For example, a £1 per trip parking charge is likely to cause the same reduction in vehicle travel as a fuel price increase that averages £1.50 to £2 per trip².

It has been demonstrated by the ticket sale revenue being changed to remove the 30 minute tariff that a significant change in usage and income can occur. As set out above, the annual data for Altons and Penncroft Car Parks show that there was a drop in the number using the car parks in 2012/13 following the removal of the 30 minute tariff. This led to a combined drop in ticket sales of 43,715 (16% less than the previous year) and associated loss of income of some £28,873. If this 30 minute tariff was reintroduced the associated increase in parking provision would need to be considered.

It should be noted that if the 30 minute tariff was reintroduced the increase in use of the 3 council run car parks in Beaconsfield is anticipated to be 46 spaces during the week and 36 on a Saturday. It is clear that change in tariff can have a significant effect on the number of parking spaces required.

²VTPI (2009) Transport Elasticities, TDM Encyclopaedia. http://www.vtpi.org/tdm/tdm11.htm#_Toc161022578

8 Summary and Recommendations

Off-Street Parking

Table 8.1 shows that by 2033 there is likely to be significant parking stress at all the car parks, except for Warwick Road Car Park on a weekday. Across all Beaconsfield car parks there is likely to be little spare capacity.

Table 8.1 Off-street parking forecast 2033 (Weekday)

Car Park	Capacity	Maximum Occupancy		Maximum as a %age of Capacity	
		2014	2033	2014	2033
Warwick Road	50	25	28	50%	56%
Waitrose	220	218	240	99%	109%
Beaconsfield Rail Station Car Park	696	607	669	87%	96%
Altons, Burkes Road Car Park	173	164	181	95%	105%
Penncroft, Burkes Road Car Park	101	99	109	98%	108%
Sainsburys Car Park	515	289	319	56%	62%
TOTAL	1,755	1,402	1,546	80%	88%

There needs to be at least 1,820 parking spaces to allow the theoretical capacity of 85% to be achieved. This is an additional 65 spaces during the weekday above the existing level.

Table 4.3 above demonstrated that both Warwick Road and Sainsburys have ample spare capacity on a Tuesday at maximum usage of 56% and 62% respectively. However, these car parks are more heavily used on a Saturday. **Table 8.2** therefore sets out the Saturday parking demand in all the off-street car parks in Beaconsfield apart from the Railway Station, which is only 13% utilised on a Saturday.

It can be seen in **Table 8.2** that there is severe parking stress in Beaconsfield on a Saturday within the car parks primarily used for short stay purposes. There needs to be at least 1,205 short stay parking spaces to allow the theoretical capacity of 85% to be achieved using current economic forecasts. This is an additional 146 spaces over and above the existing level of parking that needs to be available for use during Saturdays.

The South Bucks Parking Team has also requested that figures for 70% capacity are provided. The highest demand would be during on a weekday. If sufficient space was provided to allow 70% capacity, this would lead to an additional 454 spaces being required on a weekday, of which 262 should be long stay and 192 short stay.

Table 8.2 Off-street parking forecast 2033 (Saturday)

Car Park	Capacity	Maximum Occupancy		Maximum as a %age of Capacity	
		2014	2033	2014	2033
Warwick Road	50	39	43	78%	86%
Waitrose	220	217	239	99%	109%
Altons, Burkes Road Car Park	173	84	93	49%	54%
Penncroft, Burkes Road Car Park	101	105	116	104%	115%
Sainsburys Car Park	515	483	533	94%	103%
TOTAL	1,059	928	1,024	88%	97%

These forecasts are based on the assumption that the current tariff structures will remain in place, with the price of a ticket increasing with inflation and in-line with price changes at competing town centres.

On-Street Parking

It has been demonstrated in Section 4.2 above that there is little spare capacity on-street now and in 2033 the roads are expected to be used up to their 85% theoretical capacity on a Saturday. An additional 90 spaces are required if a 70% capacity is to be achieved.

It should also be borne in mind that Buckinghamshire County Council is carrying out changes to on-street parking restrictions in the Beaconsfield area. This includes the removal of the 1 hour prohibition on Grenfell Road is yet to take place to allow unrestricted parking. At present a maximum of 6 of the 53 spaces are used during the week, which means 47 spaces will be available for both long and short stay purposes. However, this may lead to commuters being displaced from the Railway Station car park so this additional space may not be available going forward and the situation should be monitored. On a Saturday there are 48 parking spaces that are unoccupied on Grenfell Road.

Alternative modes

Bus, cycling, and walking levels are lower than the South East average and there appears to be potential to encourage modal shift from private vehicles to these modes. This is particularly the case with cycling, as there is little in the way of cycle parking spaces in the town. There is also the potential to provide cycle tracks/lanes through the town centre. However, this is not anticipated to have a large effect on parking demand.

Recommendations & Next steps

The report shows that car parking capacity in Beaconsfield is close to or over the theoretical capacity and is likely to remain so for the foreseeable future.

As the current scenario predicts there will be a shortage of spaces in the town centre. There are two potential approaches to dealing with parking stress:

- Demand management: Reduce demand for parking through a range of measures, for example, changing the pricing regime and promotion of alternative modes of transport.
- Predict and provide: Provide more car parking spaces to meet forecast demand.

Demand management is the approach advocated by current policy guidance (see **Section 5**). As such we recommend that potential demand management measures are investigated further.

The next steps could include:

- Create 146 additional short stay spaces within the study area for 85% capacity, or an additional 454 spaces to achieve 70% capacity (this is on the assumption of current economic forecasts).†
- Create an additional 38 long stay spaces within the study area for 85% capacity (these could be used as short stay spaces on a Saturday). The number of spaces increases to 262 long stay and 192 short stay if 70% capacity is to be achieved.
- Further investigation of the change in parking charges. If the 30 minute tariff was re-introduced in the Council owned car parks within Beaconsfield a further 46 short stay spaces (85% capacity) would be required leading to an extra 192 (146+26) short stay spaces in total.
- By 2033 the on-street parking in Beaconsfield is expected to reach 85% parking stress or more. If a 70% capacity is to be achieved a further 90 spaces are needed on-street. It should be noted that Buckinghamshire County Council will be removing the 1-hour restriction on Grenfell Road, which will lead to 47 additional unrestricted spaces alleviating this some of this pressure. However, the use of this carriageway for on-street parking should be monitored as commuters may divert from the railway station or public car parks as a consequence.
- It is recommended that a further study is undertaken during the school summer holiday to establish the full extent of impact that the model village has on-street and within the car parks. This will enable the full impact to be examined and the additional number of spaces required to be quantified.
- Promotion of alternative modes of transport including additional cycle parking at the station and town centre and new cycle tracks/lanes.
- Investigate the feasibility of installing a Parking Guidance Information (PGI) System. These systems help drivers search for a space when capacity is limited in some car parks, as is the case in Beaconsfield. Consideration would need to be given to the costs of these systems, which are typically in the region of £50,000 per car park.
-

†It should be noted that congestion already occurs in the town so junction capacity analysis may be required in order to ensure the location of the additional car parking spaces is acceptable in highway safety terms.

Appendix A – Parking Map



500m Radii

Survey Scope - Beaconfield

Car Parks:
 Car parks marked A-F entry and exits movements recorded between 0800 - 1800.

Total number of vehicles recorded in each car park at start and end of survey.

On Street Surveys:
 Parking beat surveys carried out on roads within a 500m radius as indicated over four time periods, 0830, 1100, 13:30 and 1600.

All surveys carried out over two weekdays and one Saturday.

Key
 Camera location/direction

Appendix B – Details of TRICS sites

Retail (Comparison) Stores – TRICS Sites

Site Reference	Description	Location	Year	GFA/Units	Maximum Parking Accumulation	TRICS Standard (space per 100m ²)
CH-01-I-01	Local Shops - Chester	Neighbourhood Centre	2009	210	11	5.24
WC-01-I-01	Local Shops - Kilcoole	Town Centre	2010	550	24	4.36
SC-01-I-01	Local Shops - Milford	Edge of Centre	2010	359	17	4.74
DV-01-I-01	Local Shops - Plymouth	Suburban Area	2012	470	17	3.62
Average Standard (space per 100m²)						4.49

Retail (Convenience) Stores – TRICS Sites

Site Reference	Description	Location	Year	GFA/Units	Maximum Parking Accumulation	TRICS Standard (space per 100m ²)
WK-01-A-02	Food Superstore – Leamington Spa	Edge of Town	2013	8018	272	3.39
SM-01-A-02	Food Superstore - Minehead	Edge of Town	2012	4575	167	3.65
SC-01-A-08	Food Superstore - Redhill	Town Centre	2010	4746	185	3.90
WN-01-A-01	Food Superstore - Slough	Edge of Town	2012	6065	274	4.52
WK-01-A-03	Food Superstore - Warwick	Edge of Town	2013	7951	218	2.74
Average Standard (space per 100m²)						3.75

Site Reference: CH-01-I-01
 Created: Version: 2009(a)v6.3.1 16/01/09
 Latitude/Longitude: 53.1905, -2.8666
 Land Use Type: 01 - RETAIL/I - SHOPPING CENTRE - LOCAL SHOPS
 Region/Area: NORTH WESTCHESHIRE
 Version/Creation Date: 2009(a)v6.3.1 16/01/09

Description: LOCAL SHOPS
 Street: CHRISTLETON ROAD
 District:
 Town: CHESTER
 Post Code: CH3 5UQ

Location: Neighbourhood Centre (PPS6 Local Centre)
 Location Sub Category: Residential Zone
 Use Class: A1

Population within 500m: 3200
 Population within 1 Mile: 20,001 to 25,000
 Population within 5 Miles: 100,001 to 125,000
 Car ownership within 5 Miles: 1.1 to 1.5

Public Transport Provision Summary

Day	Period	Total buses/trams within 400m	Total Trains within 1000m	Total Services
Monday-Friday	0700-1900	278	154	432
Monday-Friday	0700-1000	58	38	96
Monday-Friday	1600-1900	56	44	100
Saturday	0700-1900	274	154	428
Sunday	0700-1900	62	96	158

Is site associated with a travel plan: No
 If not, are there any plans to implement a Travel Plan in the future? No
 Is survey data available before the implementation of the Travel Plan?
 Is the location of the site hilly or flat: Flat
 Urban Regeneration: No

Next survey: CH-01-I-02
 Gross floor area: 210 sqm
 Retail floor area: 160 sqm
 Total Employees: 20

No. of developments for this Site: 4
 No. of survey Days for this Site: 1

Comments

This site is located in a suburb of Chester, to the east of the city centre. It is a parade of shops on Christleton Road, which heads west towards the city centre and east to the junctions with the A5115 and the A55. The site is mostly surrounded by residential development. The site is situated on one of the main routes accessing Chester, with all the potential this provides for passing trade.

Bus (or tram) site accessibility

- Is there at least 1 bus (or tram) stop within the site frontage or within 400m of the site frontage? : Yes
- If yes to question 3, are there at least 2 buses (or trams) per hour (per direction between 0700 and 1900) with routes serving significant areas of population within a 5 kilometre radius? (Mon-Sat): Yes
- If yes to question 5, what are the service characteristics? (please complete the outline information below)

Destination (town/area)	Number per hour	Approx. journey time
Chester City Centre	3	5
Huntingdon	2	10
Nantwich	2	35
Waverton	2	20

Rail accessibility

7. Is there at least one railway station within 1 kilometre radius of the site?: Yes

9. If yes to question 7, are there at least 2 stopping trains per hour (per direction between 0700 and 1900) with routes serving stations within a 10 kilometre radius (Mon-Sat)?: Yes

10. If yes to question 9, what are the service characteristics? (please complete the outline information below)

Destination (town/area)	Number per hour	Approx. journey time
Crewe	4	25
Liverpool	2	45

11. Please enter general comments/views about the relevance, quality and importance of public transport services relating to this development.

Bus service frequencies are higher during peak times than as specified in the individual services table. In addition to the train services shown, there are hourly services available to Birmingham and Manchester.

Design features encouraging non-car modes

12. Pedestrians

The site is in close proximity to residential areas.

13. Pedal cycles

There are local cycle paths available.

14. Public transport

The site is in close proximity to local bus routes.

Design features encouraging non-car modes

Road Network Distance to Local Developments	
Year of Analysis	2009
Nearest Primary School	0.6 kilometres
Nearest Secondary School	0.6 kilometres
Nearest Local Shop/Corner Shop	0.2 kilometres
Nearest Main Supermarket	1.0 kilometres
Nearest Doctors Surgery	0.3 kilometres
Nearest Hospital with Minor Injuries/A & E	3.2 kilometres
Nearest Sports/Leisure Centre	1.8 kilometres

Census Data	
Year of Census	2001
Census Output Area/Data Zone	
Number of people employed within Census Output Area	60
Number of households within Census Output Area	107
Number of people living within Census Output Area	168
Area of Census Output Area (hectares)	2.00
Population density within Census Output Area (per hectare)	77.42

1

Site reference:	CH-01-I-01
Trade name:	THRESHER
Site area (h/a):	0.04
Gross floor area (sqm)	60
GFA not in use (sqm)	0
Retail floor area (sqm)	40
Open since	1960
Total Employees	6
Full Time Employees	1 20%
Part Time Employees	5 80%
Approximate % of total employees working standard 9-5 hours or similar	0%
Percentage Split of Employee Gender	
Male	50%
Female	50%
GFA per employee	10.000
Number of units	1
Name of nearest site	BRAHMS OFF-LICENCE
Distance to nearest similar site	1 Km
OPENING TIMES (24 Hour format)	
Mon to Thurs	10:00 to 22:00
Friday	10:00 to 22:00
Saturday	10:00 to 22:00
Sunday	10:00 to 22:00
Filling station	No
Cash card facilities	No

Comments

The site area shown is the total for the whole site.

Site reference:	CH-01-I-01
Trade name:	POST OFFICE
Site area (h/a):	0.04
Gross floor area (sqm)	50
GFA not in use (sqm)	0
Retail floor area (sqm)	40
Open since	1960
Total Employees	6
Full Time Employees	1 20%
Part Time Employees	5 80%
Approximate % of total employees working standard 9-5 hours or similar	0%
Percentage Split of Employee Gender	
Male	50%
Female	50%
GFA per employee	10.000
Number of units	1
Name of nearest site	HOOLE POST OFFICE
Distance to nearest similar site	1 Km
OPENING TIMES (24 Hour format)	
Mon to Thurs	08:30 to 17:30
Friday	08:30 to 17:30
Saturday	08:30 to 17:30
Sunday	00:00 to 00:00
Filling station	No
Cash card facilities	No

Comments

The site area shown is the total for the whole site.

Appendix

Site reference: CH-01-I-01
 Trade name: PHILIP SALT & CO (BUTCHERS)

Site area (h/a): 0.04
 Gross floor area (sqm) 50
 GFA not in use (sqm) 0
 Retail floor area (sqm) 40

Open since 1960
 Total Employees 6
 Full Time Employees 1 20%
 Part Time Employees 5 80%

Approximate % of total employees working
 standard 9-5 hours or similar 0%

Percentage Split of Employee Gender
 Male 50%
 Female 50%

GFA per employee 10.000
 Number of units 1
 Name of nearest site G VENABLES & SONS
 Distance to nearest similar site 2 Km

OPENING TIMES (24 Hour format)
 Mon to Thurs 08:30 to 17:30
 Friday 08:30 to 17:30
 Saturday 08:30 to 17:30
 Sunday 00:00 to 00:00

Filling station No
 Cash card facilities No

Comments

The site area shown is the total for the whole site.

Site reference:	CH-01-I-01
Trade name:	FARM SHOP
Site area (h/a):	0.04
Gross floor area (sqm)	50
GFA not in use (sqm)	0
Retail floor area (sqm)	40
Open since	1960
Total Employees	6
Full Time Employees	1 20%
Part Time Employees	5 80%
Approximate % of total employees working standard 9-5 hours or similar	0%
Percentage Split of Employee Gender	
Male	50%
Female	50%
GFA per employee	10.000
Number of units	1
Name of nearest site	MR FRUITY
Distance to nearest similar site	1 Km

OPENING TIMES (24 Hour format)

Mon to Thurs	08:30	to	17:30
Friday	08:30	to	17:30
Saturday	08:30	to	17:30
Sunday	00:00	to	00:00

Filling station	No
Cash card facilities	No

Comments

The site area shown is the total for the whole site.

On-Site parking

Total no. of parking spaces	9
Spaces Per 100m2 GFA	4.286
Spaces Per 100m2 RFA	5.625

Number of spaces

Employee	0
Disabled	0
Visitor/Customer	9
OGV parking bays	0
Cycle racks	0
OGV loading bays	0
Mother & Toddler	0
Motorcycle spaces	0

Parking charges No

Comments about the management of the site car park, along with enforcement measures

Parking consists of 9 on-street bays in a layby in front of the shops.

Site parking surface or non-surface (multi-storey/underground)
Surface

Site reference: CH-01-I-01 Survey date: 17/10/08 Day of week: Friday

Survey type: Manual Count
 AM weather: Mild and Light Rain
 PM weather: Mild and Cloudy

Initial car park occupancy: 1 Final car park occupancy: 0

BRACKETED ACCUMULATION FIGURES ARE NOT ABSOLUTE

Data proportions in %

Motor cars	90	Motor cycles	0	Public service	0
Light goods	10	OGV (1)	0	OGV (2)	0
				Taxis	0

Time	Arr 419	Dep 420	Totals	Parking Accum
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00				
07:00-08:00	11	7	18	5
08:00-09:00	27	26	53	6
09:00-10:00	33	30	63	9
10:00-11:00	35	36	71	8
11:00-12:00	37	36	73	9
12:00-13:00	55	53	108	11
13:00-14:00	39	40	79	10
14:00-15:00	48	52	100	6
15:00-16:00	39	39	78	6
16:00-17:00	37	38	75	5
17:00-18:00	27	28	55	4
18:00-19:00	22	20	42	6
19:00-20:00	9	15	24	0
20:00-21:00	0	0	0	0
21:00-22:00				
22:00-23:00				
23:00-24:00				

Comments

No PSV's visited the site during this survey.
 OGV's visiting the site park in the general parking area, as there are no specified OGV spaces/bays available.
 The maximum parking accumulation exceeding the number of available spaces at the site can be explained by the fact that off-site parking for the site was also included in this survey.

Site reference: CH-01-I-01 Survey date: 17/10/08 Day of week: Friday

Vehicles surveyed: OGV

Data proportions in % OGV (1) 100 OGV (2) 0

1 occupant per OGV is assumed, and included in the vehicle occupants count

Time	Arr 1	Dep 1	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00				
07:00-08:00	0	0	0	(0)
08:00-09:00	0	0	0	(0)
09:00-10:00	0	0	0	(0)
10:00-11:00	1	1	2	(0)
11:00-12:00	0	0	0	(0)
12:00-13:00	0	0	0	(0)
13:00-14:00	0	0	0	(0)
14:00-15:00	0	0	0	(0)
15:00-16:00	0	0	0	(0)
16:00-17:00	0	0	0	(0)
17:00-18:00	0	0	0	(0)
18:00-19:00	0	0	0	(0)
19:00-20:00	0	0	0	(0)
20:00-21:00	0	0	0	(0)
21:00-22:00				
22:00-23:00				
23:00-24:00				

Site reference: CH-01-I-01

Survey date: 17/10/08

Day of week: Friday

Vehicles surveyed: Taxis

Time	Arr 2	Dep 2	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00				
07:00-08:00	0	0	0	(0)
08:00-09:00	0	0	0	(0)
09:00-10:00	0	0	0	(0)
10:00-11:00	0	0	0	(0)
11:00-12:00	0	0	0	(0)
12:00-13:00	1	0	1	(1)
13:00-14:00	0	1	1	(0)
14:00-15:00	1	1	2	(0)
15:00-16:00	0	0	0	(0)
16:00-17:00	0	0	0	(0)
17:00-18:00	0	0	0	(0)
18:00-19:00	0	0	0	(0)
19:00-20:00	0	0	0	(0)
20:00-21:00	0	0	0	(0)
21:00-22:00				
22:00-23:00				
23:00-24:00				

Site reference: CH-01-I-01 Survey date: 17/10/08 Day of week: Friday

Vehicles surveyed: Cycles

Time	Arr 19	Dep 19	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00				
07:00-08:00	1	0	1	(1)
08:00-09:00	3	3	6	(1)
09:00-10:00	3	3	6	(1)
10:00-11:00	2	1	3	(2)
11:00-12:00	1	2	3	(1)
12:00-13:00	2	2	4	(1)
13:00-14:00	2	2	4	(1)
14:00-15:00	0	0	0	(1)
15:00-16:00	1	1	2	(1)
16:00-17:00	2	2	4	(1)
17:00-18:00	0	1	1	(0)
18:00-19:00	1	1	2	(0)
19:00-20:00	1	1	2	(0)
20:00-21:00	0	0	0	(0)
21:00-22:00				
22:00-23:00				
23:00-24:00				

Site Reference: WC-01-I-01
 Created: Version: 2011(a)v6.7.2 08/12/10
 Latitude/Longitude: 53.1052, -6.0641
 Land Use Type: 01 - RETAIL/I - SHOPPING CENTRE - LOCAL SHOPS
 Region/Area: LEINSTERWICKLOW
 Version/Creation Date: 2011(a)v6.7.2 08/12/10

Description: LOCAL SHOPS
 Street: MAIN STREET
 District:
 Town: KILCOOLE
 Post Code:

Location: Town Centre
 Location Sub Category: High Street
 Use Class: A1

Population within 500m: 1700
 Population within 1 Mile: 1,001 to 5,000
 Population within 5 Miles: 25,001 to 50,000
 Car ownership within 5 Miles: 1.1 to 1.5

Public Transport Provision Summary

Day	Period	Total buses/trams within 400m	Total Trains within 1000m	Total Services
Monday-Friday	0700-1900	33		33
Monday-Friday	0700-1000	12		12
Monday-Friday	1600-1900	9		9
Saturday	0700-1900	16		16
Sunday	0700-1900	12		12

Is site associated with a travel plan: No
 If not, are there any plans to implement a Travel Plan in the future? No
 Is survey data available before the implementation of the Travel Plan?
 Is the location of the site hilly or flat: Flat
 Urban Regeneration: No

Gross floor area: 550 sqm
 Retail floor area: 385 sqm
 Total Employees: 27

No. of developments for this Site: 4
 No. of survey Days for this Site: 1

Comments

This site is the Willowbrook shopping centre. It consists of 4 active retail units. There are an additional 4 units at the site which were vacant at the time of the survey. These have been excluded from the development details. This site is located on Main Street in Kilcoole town centre. Main Street runs south towards Rathnew and the N11, and north towards Bray and the M11. Kilcoole is located near the east coast.

Bus (or tram) site accessibility

3. Is there at least 1 bus (or tram) stop within the site frontage or within 400m of the site frontage? : Yes
 4. If yes to question 3, where it is necessary to cross a road between the development and the stop, is there a conveniently placed crossing facility? : Yes

11. Please enter general comments/views about the relevance, quality and importance of public transport

services relating to this development.

There is 1 bus per hour to Newcastle, with an approximate journey time of 5 minutes.

There is also an infrequent bus service to Dublin city centre, with an approximate journey time of 75 minutes. This service only runs during peak commuter hours.

Design features encouraging non-car modes

12. Pedestrians

The site is located within close proximity to local residential areas.

13. Pedal cycles

There are cycle paths in the local area.

14. Public transport

The site is located within close proximity to local bus routes.

Design features encouraging non-car modes

Road Network Distance to Local Developments	
Year of Analysis	2010
Nearest Primary School	0.2 kilometres
Nearest Secondary School	0.7 kilometres
Nearest Local Shop/Corner Shop	0.3 kilometres
Nearest Main Supermarket	4.5 kilometres
Nearest Doctors Surgery	0.2 kilometres
Nearest Hospital with Minor Injuries/A & E	14.5 kilometres
Nearest Sports/Leisure Centre	3.5 kilometres

Census Data	
Year of Census	2006
County	WICKLOW
Number of people employed within County	61736
Number of households within County	42870
Number of people living within County	126194

SITE PHOTO



Site reference:	WC-01-I-01
Trade name:	BELLA`S BUBBLES
Site area (h/a):	0.50
Gross floor area (sqm)	90
GFA not in use (sqm)	0
Retail floor area (sqm)	70
Open since	2007
Total Employees	3
Full Time Employees	2 21%
Part Time Employees	1 79%
Approximate % of total employees working standard 9-5 hours or similar	100%
Percentage Split of Employee Gender	
Male	33%
Female	67%
GFA per employee	14.737
Number of units	1
Name of nearest site	BARRYS, GREYSTONES
Distance to nearest similar site	4 Km

OPENING TIMES (24 Hour format)

Mon to Thurs	09:30	to	18:00
Friday	09:30	to	18:00
Saturday	09:30	to	18:00
Sunday	00:00	to	00:00

Filling station	No
Cash card facilities	No

Comments

This site is a launderette, with dry cleaning services.
 The site area shown is for the whole site.

Site reference:	WC-01-I-01
Trade name:	ENVY HAIR AND BEAUTY SALON
Site area (h/a):	0.00
Gross floor area (sqm)	90
GFA not in use (sqm)	0
Retail floor area (sqm)	80
Open since	2007
Total Employees	3
Full Time Employees	2 21%
Part Time Employees	1 79%
Approximate % of total employees working standard 9-5 hours or similar	100%
Percentage Split of Employee Gender	
Male	33%
Female	67%
GFA per employee	14.737
Number of units	1
Name of nearest site	CREATIVE TOUCH
Distance to nearest similar site	1 Km

OPENING TIMES (24 Hour format)

Mon to Thurs	10:00	to	17:00
Friday	10:00	to	18:00
Saturday	10:00	to	18:00
Sunday	00:00	to	00:00

Filling station	No
Cash card facilities	No

Comments

This site is a launderette, with dry cleaning services.
 The site area shown is for the whole site.

Site reference: WC-01-I-01
 Trade name: CLOTHES FOR YOU

Site area (h/a): -1.00
 Gross floor area (sqm) 90
 GFA not in use (sqm) 0
 Retail floor area (sqm) 85

Open since 2010
 Total Employees 3
 Full Time Employees 2 21%
 Part Time Employees 1 79%

Approximate % of total employees working
 standard 9-5 hours or similar 100%

Percentage Split of Employee Gender
 Male 33%
 Female 67%

GFA per employee 14.737
 Number of units 1
 Name of nearest site MATTERS OF THE HEART
 Distance to nearest similar site 4 Km

OPENING TIMES (24 Hour format)

Mon to Thurs	10:00	to	17:00
Friday	10:00	to	18:00
Saturday	10:00	to	18:00
Sunday	00:00	to	00:00

Filling station No
 Cash card facilities No

Comments

This site is a launderette, with dry cleaning services.
 The site area shown is for the whole site.

Site reference:	WC-01-I-01
Trade name:	CENTRA
Site area (h/a):	-1.00
Gross floor area (sqm)	280
GFA not in use (sqm)	0
Retail floor area (sqm)	150
Open since	2007
Total Employees	3
Full Time Employees	2 21%
Part Time Employees	1 79%
Approximate % of total employees working standard 9-5 hours or similar	100%
Percentage Split of Employee Gender	
Male	33%
Female	67%
GFA per employee	14.737
Number of units	2
Name of nearest site	TESCO EXPRESS
Distance to nearest similar site	1 Km

OPENING TIMES (24 Hour format)

Mon to Thurs	07:00	to	22:00
Friday	07:00	to	22:00
Saturday	07:00	to	22:00
Sunday	07:00	to	22:00

Filling station	No
Cash card facilities	No

Comments

This site is a launderette, with dry cleaning services.
 The site area shown is for the whole site.

On-Site parking

Total no. of parking spaces	66
Spaces Per 100m2 GFA	12.000
Spaces Per 100m2 RFA	17.143

Number of spaces

Employee	59
Disabled	2
Visitor/Customer	0
OGV parking bays	0
Cycle racks	0
OGV loading bays	0
Mother & Toddler	0
Motorcycle spaces	0

Parking charges No

Comments about the management of the site car park, along with enforcement measures

Gates are locked overnight and CCTV is in operation.

Site parking surface or non-surface (multi-storey/underground)

Surface

General Comments on Parking

There are a further five "Residents Only" spaces, included in the total shown. Residents have key access outside of store opening hours.

Site reference: WC-01-I-01 Survey date: 15/10/10 Day of week: Friday
 Survey type: Manual Count
 AM weather: Cold and Cloudy
 PM weather: Cold and Cloudy
 Initial car park occupancy: 4 Final car park occupancy: 7
 BRACKETED ACCUMULATION FIGURES ARE NOT ABSOLUTE

Data proportions in %
 Motor cars 86 Motor cycles 0 Public service 0
 Light goods 12 OGV (1) 2 OGV (2) 0
 Taxis 0

Time	Arr 971	Dep 968	Totals	Parking Accum
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00				
07:00-08:00	35	32	67	7
08:00-09:00	98	93	191	12
09:00-10:00	81	75	156	18
10:00-11:00	60	63	123	15
11:00-12:00	53	58	111	10
12:00-13:00	75	68	143	17
13:00-14:00	91	84	175	24
14:00-15:00	62	70	132	16
15:00-16:00	60	60	120	16
16:00-17:00	78	79	157	15
17:00-18:00	75	76	151	14
18:00-19:00	76	66	142	24
19:00-20:00	56	67	123	13
20:00-21:00	45	47	92	11
21:00-22:00	26	30	56	7
22:00-23:00				
23:00-24:00				

Comments

No PSVs entered or exited the site during the survey.

Site reference: WC-01-I-01 Survey date: 15/10/10 Day of week: Friday

Vehicles surveyed: OGV

Data proportions in % OGV (1) 83 OGV (2) 17

1 occupant per OGV is assumed, and included in the vehicle occupants count

Time	Arr 18	Dep 18	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00				
07:00-08:00	3	2	5	(1)
08:00-09:00	4	5	9	(0)
09:00-10:00	1	1	2	(0)
10:00-11:00	3	1	4	(2)
11:00-12:00	1	3	4	(0)
12:00-13:00	1	1	2	(0)
13:00-14:00	2	2	4	(0)
14:00-15:00	2	2	4	(0)
15:00-16:00	0	0	0	(0)
16:00-17:00	1	1	2	(0)
17:00-18:00	0	0	0	(0)
18:00-19:00	0	0	0	(0)
19:00-20:00	0	0	0	(0)
20:00-21:00	0	0	0	(0)
21:00-22:00	0	0	0	(0)
22:00-23:00				
23:00-24:00				

Site reference: WC-01-I-01 Survey date: 15/10/10 Day of week: Friday

Vehicles surveyed: Taxis

Time	Arr 1	Dep 1	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00				
07:00-08:00	0	0	0	(0)
08:00-09:00	0	0	0	(0)
09:00-10:00	0	0	0	(0)
10:00-11:00	0	0	0	(0)
11:00-12:00	0	0	0	(0)
12:00-13:00	0	0	0	(0)
13:00-14:00	0	0	0	(0)
14:00-15:00	0	0	0	(0)
15:00-16:00	0	0	0	(0)
16:00-17:00	1	1	2	(0)
17:00-18:00	0	0	0	(0)
18:00-19:00	0	0	0	(0)
19:00-20:00	0	0	0	(0)
20:00-21:00	0	0	0	(0)
21:00-22:00	0	0	0	(0)
22:00-23:00				
23:00-24:00				

Site reference: WC-01-I-01 Survey date: 15/10/10 Day of week: Friday

Vehicles surveyed: Cycles

Time	Arr 19	Dep 19	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00				
07:00-08:00	0	0	0	(0)
08:00-09:00	2	2	4	(0)
09:00-10:00	2	2	4	(0)
10:00-11:00	1	1	2	(0)
11:00-12:00	1	0	1	(1)
12:00-13:00	1	2	3	(0)
13:00-14:00	1	1	2	(0)
14:00-15:00	1	1	2	(0)
15:00-16:00	2	2	4	(0)
16:00-17:00	0	0	0	(0)
17:00-18:00	0	0	0	(0)
18:00-19:00	2	2	4	(0)
19:00-20:00	5	5	10	(0)
20:00-21:00	0	0	0	(0)
21:00-22:00	1	1	2	(0)
22:00-23:00				
23:00-24:00				

Site Reference: SC-01-I-01
 Created: Version: 2011(a)v6.7.2 13/01/11
 Latitude/Longitude: 51.1713, -0.6435
 Land Use Type: 01 - RETAIL/I - SHOPPING CENTRE - LOCAL SHOPS
 Region/Area: SOUTH EASTSURREY
 Version/Creation Date: 2011(a)v6.7.2 13/01/11

Description: LOCAL SHOPS
 Street: CHURCH ROAD
 District:
 Town: MILFORD
 Post Code: GU8 5JB

Location: Edge of Town Centre
 Location Sub Category: Residential Zone
 Use Class: A1

Population within 500m: 257
 Population within 1 Mile: 1,001 to 5,000
 Population within 5 Miles: 100,001 to 125,000
 Car ownership within 5 Miles: 1.1 to 1.5

Public Transport Provision Summary

Day	Period	Total buses/trams within 400m	Total Trains within 1000m	Total Services
Monday-Friday	0700-1900	72	96	168
Monday-Friday	0700-1000	18	24	42
Monday-Friday	1600-1900	18	24	42
Saturday	0700-1900	72	96	168
Sunday	0700-1900	36	48	84

Is site associated with a travel plan: No
 If not, are there any plans to implement a Travel Plan in the future? No
 Is survey data available before the implementation of the Travel Plan?
 Is the location of the site hilly or flat: Flat
 Urban Regeneration: No

Gross floor area 359 sqm
 Retail floor area 352 sqm
 Total Employees 32

No. of developments for this Site: 5
 No. of survey Days for this Site: 1

Comments

The total site area is 0.11 hectares and consists of 5 retail units.
 This site is located on Church Road, on the eastern edge of Milford town centre. Local roads run north-east towards Godalming and south towards the coast.

Bus (or tram) site accessibility

- Is there at least 1 bus (or tram) stop within the site frontage or within 400m of the site frontage? : Yes
- If yes to question 3, are there at least 2 buses (or trams) per hour (per direction between 0700 and 1900) with routes serving significant areas of population within a 5 kilometre radius? (Mon-Sat): Yes
- If yes to question 5, what are the service characteristics? (please complete the outline information below)

Destination (town/area)	Number per hour	Approx. journey time
Guildford	2	30
Guildford	2	25

Rail accessibility

7. Is there at least one railway station within 1 kilometre radius of the site?: Yes
 9. If yes to question 7, are there at least 2 stopping trains per hour (per direction between 0700 and 1900) with routes serving stations within a 10 kilometre radius (Mon-Sat)?: Yes
 10. If yes to question 9, what are the service characteristics? (please complete the outline information below)

Destination (town/area)	Number per hour	Approx. journey time
London Waterloo	2	58

Design features encouraging non-car modes

12. Pedestrians
 None

13. Pedal cycles
 None

14. Public transport
 None

Design features encouraging non-car modes

Road Network Distance to Local Developments	
Year of Analysis	2010
Nearest Primary School	0.3 kilometres
Nearest Secondary School	1.3 kilometres
Nearest Local Shop/Corner Shop	0.2 kilometres
Nearest Main Supermarket	3.2 kilometres
Nearest Doctors Surgery	2.1 kilometres
Nearest Hospital with Minor Injuries/A & E	3.2 kilometres
Nearest Sports/Leisure Centre	5.1 kilometres

Census Data	
Year of Census	2001
Census Output Area/Data Zone	43ULHJ0003
Number of people employed within Census Output Area	125
Number of households within Census Output Area	128
Number of people living within Census Output Area	289
Area of Census Output Area (hectares)	32.00
Population density within Census Output Area (per hectare)	9.07

SITE PHOTO



Site reference:	SC-01-I-01
Trade name:	CO-OP
Site area (h/a):	0.11
Gross floor area (sqm)	184
Retail floor area (sqm)	250
Open since	1997
Total Employees	15
Full Time Employees	11 83%
Part Time Employees	4 17%
Approximate % of total employees working standard 9-5 hours or similar	60%
Percentage Split of Employee Gender	
Male	40%
Female	60%
GFA per employee	5.000
Number of units	1
Name of nearest site	QUARRY HILL STORES
Distance to nearest similar site	1 Km

OPENING TIMES (24 Hour format)

Mon to Thurs	07:00	to	22:00
Friday	07:00	to	22:00
Saturday	07:00	to	22:00
Sunday	07:00	to	22:00

Filling station	No
Cash card facilities	No

Comments

The site area shown is for the whole site.

Site reference:	SC-01-I-01
Trade name:	DAPPER DRY CLEANERS
Site area (h/a):	-1.00
Gross floor area (sqm)	49
Retail floor area (sqm)	20
Open since	
Total Employees	15
Full Time Employees	11 83%
Part Time Employees	4 17%
Approximate % of total employees working standard 9-5 hours or similar	60%
Percentage Split of Employee Gender	
Male	40%
Female	60%
GFA per employee	5.000
Number of units	1
Name of nearest site	
Distance to nearest similar site	0 Km

OPENING TIMES (24 Hour format)

Mon to Thurs	09:00	to	16:30
Friday	09:00	to	16:30
Saturday	10:00	to	15:00
Sunday	00:00	to	00:00

Filling station	No
Cash card facilities	No

Comments

The site area shown is for the whole site.

Site reference: SC-01-I-01
Trade name: MEAT & FISH MARKET

Site area (h/a): -1.00
Gross floor area (sqm) 49
Retail floor area (sqm) 27

Open since
Total Employees 15
Full Time Employees 11 83%
Part Time Employees 4 17%
Approximate % of total employees working
standard 9-5 hours or similar 60%
Percentage Split of Employee Gender
Male 40%
Female 60%

GFA per employee 5.000
Number of units 1
Name of nearest site
Distance to nearest similar site 0 Km

OPENING TIMES (24 Hour format)
Mon to Thurs 09:00 to 17:00
Friday 09:00 to 15:00
Saturday 09:00 to 15:00
Sunday 00:00 to 00:00

Filling station No
Cash card facilities No

Comments

The site area shown is for the whole site.

Site reference:	SC-01-I-01
Trade name:	MILFORD WINE CENTRE
Site area (h/a):	-1.00
Gross floor area (sqm)	47
Retail floor area (sqm)	35
Open since	
Total Employees	15
Full Time Employees	11 83%
Part Time Employees	4 17%
Approximate % of total employees working standard 9-5 hours or similar	60%
Percentage Split of Employee Gender	
Male	40%
Female	60%
GFA per employee	5.000
Number of units	1
Name of nearest site	
Distance to nearest similar site	0 Km

OPENING TIMES (24 Hour format)

Mon to Thurs	10:00	to	18:00
Friday	10:00	to	18:00
Saturday	10:00	to	18:00
Sunday	00:00	to	00:00

Filling station	No
Cash card facilities	No

Comments

The site area shown is for the whole site.

Site reference: SC-01-I-01
Trade name: PINKS ESTATE AGENT

Site area (h/a): -1.00
Gross floor area (sqm) 30
Retail floor area (sqm) 20

Open since
Total Employees 15
Full Time Employees 11 83%
Part Time Employees 4 17%
Approximate % of total employees working
standard 9-5 hours or similar 60%
Percentage Split of Employee Gender
Male 40%
Female 60%

GFA per employee 5.000
Number of units 1
Name of nearest site
Distance to nearest similar site 0 Km

OPENING TIMES (24 Hour format)
Mon to Thurs 09:00 to 17:30
Friday 09:00 to 17:30
Saturday 09:00 to 17:30
Sunday 00:00 to 00:00

Filling station No
Cash card facilities No

Comments

The site area shown is for the whole site.

On-Site parking

Total no. of parking spaces	18
Spaces Per 100m2 GFA	5.014
Spaces Per 100m2 RFA	5.114

Number of spaces

Employee	0
Disabled	0
Visitor/Customer	17
OGV parking bays	0
Cycle racks	0
OGV loading bays	1
Mother & Toddler	0
Motorcycle spaces	0

Parking charges	No
Site parking surface or non-surface (multi-storey/underground)	Surface

Site reference: SC-01-I-01 Survey date: 24/09/10 Day of week: Friday
 Survey type: Manual Count
 AM weather: Mild and Clear
 PM weather: Mild and Light Rain
 Initial car park occupancy: 2 Final car park occupancy: 1
 BRACKETED ACCUMULATION FIGURES ARE NOT ABSOLUTE

Data proportions in %
 Motor cars 90 Motor cycles 0 Public service 0
 Light goods 9 OGV (1) 1 OGV (2) 0
 Taxis 0

Time	Arr 681	Dep 682	Totals	Parking Accum
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00	6	3	9	5
07:00-08:00	33	35	68	3
08:00-09:00	41	39	80	5
09:00-10:00	48	45	93	8
10:00-11:00	37	39	76	6
11:00-12:00	51	46	97	11
12:00-13:00	52	54	106	9
13:00-14:00	58	52	110	15
14:00-15:00	39	37	76	17
15:00-16:00	54	54	108	17
16:00-17:00	47	49	96	15
17:00-18:00	61	61	122	15
18:00-19:00	60	61	121	14
19:00-20:00	55	53	108	16
20:00-21:00	23	25	48	14
21:00-22:00	14	20	34	8
22:00-23:00	2	9	11	1
23:00-24:00				

Comments

No taxis or PSVs entered or exited the site during the survey.

Site reference: SC-01-I-01 Survey date: 24/09/10 Day of week: Friday

Vehicles surveyed: OGV

Data proportions in % OGV (1) 100 OGV (2) 0

1 occupant per OGV is assumed, and included in the vehicle occupants count

Time	Arr 4	Dep 4	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00	2	1	3	(1)
07:00-08:00	0	1	1	(0)
08:00-09:00	0	0	0	(0)
09:00-10:00	2	2	4	(0)
10:00-11:00	0	0	0	(0)
11:00-12:00	0	0	0	(0)
12:00-13:00	0	0	0	(0)
13:00-14:00	0	0	0	(0)
14:00-15:00	0	0	0	(0)
15:00-16:00	0	0	0	(0)
16:00-17:00	0	0	0	(0)
17:00-18:00	0	0	0	(0)
18:00-19:00	0	0	0	(0)
19:00-20:00	0	0	0	(0)
20:00-21:00	0	0	0	(0)
21:00-22:00	0	0	0	(0)
22:00-23:00	0	0	0	(0)
23:00-24:00				

Site Reference: DV-01-I-01
 Created: Version: 2013(a)v6.11.1 19/09/12
 Latitude/Longitude: 50.3888, -4.11
 Land Use Type: 01 - RETAIL/I - SHOPPING CENTRE - LOCAL SHOPS
 Region/Area: SOUTH WESTDEVON
 Version/Creation Date: 2013(a)v6.11.1 19/09/12

Description: LOCAL SHOPS
 Street: TORRIDGE WAY
 District: EFFORD
 Town: PLYMOUTH
 Post Code: PL3 6JG

Location: Suburban Area (PPS6 Out of Centre)
 Location Sub Category: Residential Zone
 Use Class: A1

Population within 500m: 3000
 Population within 1 Mile: 25,001 to 50,000
 Population within 5 Miles: 250,001 to 500,000
 Car ownership within 5 Miles: 1.1 to 1.5

Public Transport Provision Summary

Day	Period	Total buses/trams within 400m	Total Trains within 1000m	Total Services
Monday-Friday	0700-1900	118		118
Monday-Friday	0700-1000	30		30
Monday-Friday	1600-1900	28		28
Saturday	0700-1900	108		108
Sunday	0700-1900	38		38

Is site associated with a travel plan: No
 If not, are there any plans to implement a Travel Plan in the future? No
 Is survey data available before the implementation of the Travel Plan?
 Is the location of the site hilly or flat: Flat
 Urban Regeneration: No

Gross floor area: 470 sqm
 Retail floor area: 270 sqm
 Total Employees: 22

No. of developments for this Site: 5
 No. of survey Days for this Site: 1

Comments

The site is near the A38 which heads north joining with the A386 which continues north/west into Bristol. The A38 also runs east into Torquay.

Bus (or tram) site accessibility

- 3. Is there at least 1 bus (or tram) stop within the site frontage or within 400m of the site frontage? : Yes
- 5. If yes to question 3, are there at least 2 buses (or trams) per hour (per direction between 0700 and 1900) with routes serving significant areas of population within a 5 kilometre radius? (Mon-Sat): Yes
- 6. If yes to question 5, what are the service characteristics? (please complete the outline information below)

Destination (town/area)	Number per hour	Approx. journey time
Plymouth City Centre	3	15
Devonport	2	15

Design features encouraging non-car modes

12. Pedestrians

The site is within close proximity to local residential areas.

13. Pedal cycles

None

14. Public transport

The site is within close proximity to local bus routes.

Design features encouraging non-car modes

Road Network Distance to Local Developments	
Year of Analysis	2012
Nearest Primary School	0.1 kilometres
Nearest Secondary School	1.4 kilometres
Nearest Local Shop/Corner Shop	0.8 kilometres
Nearest Main Supermarket	1.6 kilometres
Nearest Doctors Surgery	0.1 kilometres
Nearest Hospital with Minor Injuries/A & E	3.0 kilometres
Nearest Sports/Leisure Centre	1.0 kilometres

Census Data	
Year of Census	2001
Census Output Area/Data Zone	E00076057
Number of people employed within Census Output Area	35
Number of households within Census Output Area	176
Number of people living within Census Output Area	205
Area of Census Output Area (hectares)	5.00
Population density within Census Output Area (per hectare)	37.34

SITE PHOTO



Site reference:	DV-01-I-01
Trade name:	CO-OPERATIVE FOOD
Site area (h/a):	0.14
Gross floor area (sqm)	145
GFA not in use (sqm)	0
Retail floor area (sqm)	90
Open since	2010
Total Employees	8
Full Time Employees	3 75%
Part Time Employees	5 25%
Approximate % of total employees working standard 9-5 hours or similar	0%
Percentage Split of Employee Gender	
Male	50%
Female	50%
GFA per employee	18.750
Number of units	1
Name of nearest site	Co-OP, PLYMOUTH
Distance to nearest similar site	1 Km

OPENING TIMES (24 Hour format)

Mon to Thurs	07:00	to	22:00
Friday	07:00	to	22:00
Saturday	07:00	to	22:00
Sunday	07:00	to	22:00

Filling station	No
Cash card facilities	No

Comments

The site area shown is the total for the whole site.

Site reference:	DV-01-I-01
Trade name:	ITS OUR PLAICE FISH & CHIPS
Site area (h/a):	0.14
Gross floor area (sqm)	65
GFA not in use (sqm)	0
Retail floor area (sqm)	35
Open since	2005
Total Employees	8
Full Time Employees	3 75%
Part Time Employees	5 25%
Approximate % of total employees working standard 9-5 hours or similar	0%
Percentage Split of Employee Gender	
Male	50%
Female	50%
GFA per employee	18.750
Number of units	1
Name of nearest site	EGGBUCKLAND F & CHIPS
Distance to nearest similar site	2 Km

OPENING TIMES (24 Hour format)

Mon to Thurs	11:30	to	01:30
Friday	11:30	to	01:30
Saturday	11:30	to	01:30
Sunday	16:30	to	20:00

Filling station	No
Cash card facilities	No

Comments

The site area shown is the total for the whole site.

Site reference:	DV-01-I-01
Trade name:	CO-OP PHARMACY
Site area (h/a):	0.14
Gross floor area (sqm)	95
GFA not in use (sqm)	0
Retail floor area (sqm)	50
Open since	2007
Total Employees	8
Full Time Employees	3 75%
Part Time Employees	5 25%
Approximate % of total employees working standard 9-5 hours or similar	0%
Percentage Split of Employee Gender	
Male	50%
Female	50%
GFA per employee	18.750
Number of units	1
Name of nearest site	PHARMACY, PLYMOUTH
Distance to nearest similar site	1 Km
OPENING TIMES (24 Hour format)	
Mon to Thurs	09:00 to 18:00
Friday	09:00 to 18:00
Saturday	00:00 to 00:00
Sunday	00:00 to 00:00
Filling station	No
Cash card facilities	No

Comments

The site area shown is the total for the whole site.

Appendix

Site reference: DV-01-I-01
 Trade name: QUALITY FAYRE

Site area (h/a): 0.14
 Gross floor area (sqm) 90
 GFA not in use (sqm) 0
 Retail floor area (sqm) 50

Open since 2006
 Total Employees 8
 Full Time Employees 3 75%
 Part Time Employees 5 25%

Approximate % of total employees working
 standard 9-5 hours or similar 0%

Percentage Split of Employee Gender
 Male 50%
 Female 50%

GFA per employee 18.750
 Number of units 1
 Name of nearest site BLUE BEAR DELI
 Distance to nearest similar site 3 Km

OPENING TIMES (24 Hour format)
 Mon to Thurs 08:00 to 16:00
 Friday 08:00 to 16:00
 Saturday 08:00 to 16:00
 Sunday 00:00 to 00:00

Filling station No
 Cash card facilities No

Comments

The site area shown is the total for the whole site.

Site reference:	DV-01-I-01
Trade name:	POST OFFICE
Site area (h/a):	0.14
Gross floor area (sqm)	75
GFA not in use (sqm)	0
Retail floor area (sqm)	45
Open since	1960
Total Employees	8
Full Time Employees	3 75%
Part Time Employees	5 25%
Approximate % of total employees working standard 9-5 hours or similar	0%
Percentage Split of Employee Gender	
Male	50%
Female	50%
GFA per employee	18.750
Number of units	0
Name of nearest site	POST OFFICE,PLYMOUTH
Distance to nearest similar site	1 Km
OPENING TIMES (24 Hour format)	
Mon to Thurs	06:00 to 17:30
Friday	06:00 to 17:30
Saturday	06:00 to 17:30
Sunday	06:00 to 12:00
Filling station	No
Cash card facilities	No

Comments

The site area shown is the total for the whole site.

On-Site parking

Total no. of parking spaces	13
Spaces Per 100m2 GFA	2.766
Spaces Per 100m2 RFA	4.815

Number of spaces

Employee	0
Disabled	0
Visitor/Customer	12
OGV parking bays	1
Cycle racks	0
OGV loading bays	0
Mother & Toddler	0
Motorcycle spaces	0

Parking charges No

Comments about the management of the site car park, along with enforcement measures

No parking enforcement was observed at the site.

Site parking surface or non-surface (multi-storey/underground)
Surface

General Comments on Parking

The shops have a small parking area. There is also on-street parking available.

Site reference: DV-01-I-01 Survey date: 17/07/12 Day of week: Tuesday

Survey type: Manual Count
 AM weather: Mild and Light Rain
 PM weather: Mild and Cloudy

Initial car park occupancy: 0 Final car park occupancy: 3

BRACKETED ACCUMULATION FIGURES ARE NOT ABSOLUTE

Data proportions in %

Motor cars	84	Motor cycles	1	Public service	0
Light goods	11	OGV (1)	0	OGV (2)	0
				Taxis	4

Time	Arr 429	Dep 426	Totals	Parking Accum
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00				
07:00-08:00	25	23	48	2
08:00-09:00	16	16	32	2
09:00-10:00	30	27	57	5
10:00-11:00	41	40	81	6
11:00-12:00	40	42	82	4
12:00-13:00	39	37	76	6
13:00-14:00	37	33	70	10
14:00-15:00	36	34	70	12
15:00-16:00	26	25	51	13
16:00-17:00	42	38	80	17
17:00-18:00	32	42	74	7
18:00-19:00	26	27	53	6
19:00-20:00	21	22	43	5
20:00-21:00	12	13	25	4
21:00-22:00	6	7	13	3
22:00-23:00				
23:00-24:00				

Site reference: DV-01-I-01 Survey date: 17/07/12 Day of week: Tuesday

Vehicles surveyed: Taxis

Time	Arr 17	Dep 17	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00				
07:00-08:00	2	2	4	(0)
08:00-09:00	1	1	2	(0)
09:00-10:00	3	3	6	(0)
10:00-11:00	2	2	4	(0)
11:00-12:00	4	4	8	(0)
12:00-13:00	3	3	6	(0)
13:00-14:00	0	0	0	(0)
14:00-15:00	0	0	0	(0)
15:00-16:00	0	0	0	(0)
16:00-17:00	1	1	2	(0)
17:00-18:00	1	1	2	(0)
18:00-19:00	0	0	0	(0)
19:00-20:00	0	0	0	(0)
20:00-21:00	0	0	0	(0)
21:00-22:00	0	0	0	(0)
22:00-23:00				
23:00-24:00				

Site reference: DV-01-I-01 Survey date: 17/07/12 Day of week: Tuesday

Vehicles surveyed: Cycles

Time	Arr 9	Dep 9	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00				
07:00-08:00	0	0	0	(0)
08:00-09:00	0	0	0	(0)
09:00-10:00	0	0	0	(0)
10:00-11:00	0	0	0	(0)
11:00-12:00	0	0	0	(0)
12:00-13:00	0	0	0	(0)
13:00-14:00	0	0	0	(0)
14:00-15:00	0	0	0	(0)
15:00-16:00	0	0	0	(0)
16:00-17:00	0	0	0	(0)
17:00-18:00	0	0	0	(0)
18:00-19:00	0	0	0	(0)
19:00-20:00	7	7	14	(0)
20:00-21:00	2	2	4	(0)
21:00-22:00	0	0	0	(0)
22:00-23:00				
23:00-24:00				

Site Reference: WK-01-A-02 Multi-Modal Site
 Created: Version: 2013(a)v6.11.2 08/01/13
 Latitude/Longitude: 52.27619, -1.51582
 Land Use Type: 01 - RETAIL/A - FOOD SUPERSTORE
 Region/Area: WEST MIDLANDSWARWICKSHIRE
 Version/Creation Date: 2013(a)v6.11.2 08/01/13

Description: ASDA
 Street: CHESTERTON DRIVE
 District: SYDENHAM
 Town: LEAMINGTON SPA
 Post Code: CV31 1YD

Location: Edge of Town
 Location Sub Category: Residential Zone
 Use Class: A1

Population within 500m: 2880
 Population within 1 Mile: 10,001 to 15,000
 Population within 5 Miles: 50,001 to 75,000
 Car ownership within 5 Miles: 0.6 to 1.0

Public Transport Provision Summary

Day	Period	Total buses/trams within 400m	Total Trains within 1000m	Total Services
Monday-Friday	0700-1900	48		48
Monday-Friday	0700-1000	12		12
Monday-Friday	1600-1900	14		14
Saturday	0700-1900	42		42
Sunday	0700-1900	38		38

Is site associated with a travel plan: No
 If not, are there any plans to implement a Travel Plan in the future? No
 Is survey data available before the implementation of the Travel Plan? No
 Is the location of the site hilly or flat: Flat
 Urban Regeneration: No

Gross floor area: 8018 sqm
 Retail floor area: 6013 sqm
 Total Employees: 460

No. of developments for this Site: 1
 No. of survey Days for this Site: 1

Comments

The site is near the A452 which runs south joining with the M40, the M4 which heads south/east into Banbury and further south/east into Oxford. The M40 also heads north/west joining with the M5 which runs north into Birmingham and south into Worcester. Within the local area there are such developments as a school, pub and residential areas. The site has 8 access points 2 of which are for vehicles.

Bus (or tram) site accessibility

- Is there at least 1 bus (or tram) stop within the site frontage or within 400m of the site frontage? : Yes
- If yes to question 3, where it is necessary to cross a road between the development and the stop, is there a conveniently placed crossing facility? : Yes
- If yes to question 3, are there at least 2 buses (or trams) per hour (per direction between 0700 and 1900) with routes serving significant areas of population within a 5 kilometre radius? (Mon-Sat): Yes
- If yes to question 5, what are the service characteristics? (please complete the outline information below)

Destination (town/area)	Number per hour	Approx. journey time
Lime Avenue	2	46

Design features encouraging non-car modes

12. Pedestrians

There are footpath links onto the site and crossing points within the car park to allow easier pedestrian trips.

13. Pedal cycles

There are smooth paths and ramps to allow cycle trips.

14. Public transport

There is a bus stop with a regular service right outside one of the footpaths.

Design features encouraging non-car modes

Road Network Distance to Local Developments	
Year of Analysis	2012
Nearest Primary School	1.2 kilometres
Nearest Secondary School	4.8 kilometres
Nearest Local Shop/Corner Shop	0.9 kilometres
Nearest Main Supermarket	3.3 kilometres
Nearest Doctors Surgery	0.3 kilometres
Nearest Hospital with Minor Injuries/A & E	4.5 kilometres
Nearest Sports/Leisure Centre	0.1 kilometres

Census Data	
Year of Census	2001
Census Output Area/Data Zone	E00159763
Number of people employed within Census Output Area	175
Number of households within Census Output Area	136
Number of people living within Census Output Area	324
Area of Census Output Area (hectares)	6.00
Population density within Census Output Area (per hectare)	51.92

SITE PHOTO



Site reference:	WK-01-A-02	Multi-Modal survey site
Trade name:	ASDA	
Site area (h/a):	2.78	
Gross floor area (sqm)	8018	
GFA not in use (sqm)	0	
Retail floor area (sqm)	6013	
RFA (non food)	0	
Open since	1980	
Total Employees	460	
Full Time Employees	200	43%
Part Time Employees	260	57%
Approximate % of total employees working standard 9-5 hours or similar	33%	
Percentage Split of Employee Gender		
Male	40%	
Female	60%	
GFA per employee	17.430	
Number of units	1	
Name of nearest site	TESCO	
Distance to nearest similar site	3 Km	
OPENING TIMES (24 Hour format)		
Mon to Thurs	07:00	to 23:00
Friday	07:00	to 23:00
Saturday	07:00	to 21:00
Sunday	10:00	to 16:00
Filling station	PFS is present at the site and is included in the count	
Cash card facilities	Yes	
Home Delivery	Yes	

Multi-Modal survey site

On-Site parking

Total no. of parking spaces	474
Spaces Per 100m2 GFA	5.912
Spaces Per 100m2 RFA	7.883

Number of spaces

Employee	0
Disabled	27
Visitor/Customer	432
OGV parking bays	0
Cycle racks	0
OGV loading bays	0
Mother & Toddler	15
Motorcycle spaces	0

Parking charges No

Comments about the management of the site car park, along with enforcement measures

The car park is managed by ASDA.

Site parking surface or non-surface (multi-storey/underground)
Surface

Site reference: WK-01-A-02 Survey date: 17/10/12 Day of week: Wednesday

Multi-Modal survey site

Vehicles surveyed: Total vehicles

Survey type: Manual Count
 AM weather: Cold and Clear
 PM weather: Cold and Light Rain

Initial car park occupancy: 12 Final car park occupancy: 42

BRACKETED ACCUMULATION FIGURES ARE NOT ABSOLUTE

Data proportions in %

Motor cars	94	Motor cycles	1	Public service	0
Light goods	4	OGV (1)	1	OGV (2)	0
				Taxis	0

Time	Arr 4633	Dep 4603	Totals	Parking Accum
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00				
07:00-08:00	136	35	171	113
08:00-09:00	223	182	405	154
09:00-10:00	336	250	586	240
10:00-11:00	351	319	670	272
11:00-12:00	360	376	736	256
12:00-13:00	351	365	716	242
13:00-14:00	392	364	756	270
14:00-15:00	339	388	727	221
15:00-16:00	358	391	749	188
16:00-17:00	397	371	768	214
17:00-18:00	454	463	917	205
18:00-19:00	424	442	866	187
19:00-20:00	249	321	570	115
20:00-21:00	184	218	402	81
21:00-22:00	79	118	197	42
22:00-23:00				
23:00-24:00				

Site reference: WK-01-A-02 Survey date: 17/10/12 Day of week: Wednesday
Multi-Modal survey site
Vehicles surveyed: OGV

Data proportions in % OGV (1) 96 OGV (2) 4

1 occupant per OGV is assumed, and included in the vehicle occupants count

Time	Arr 31	Dep 29	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00				
07:00-08:00	0	0	0	(0)
08:00-09:00	0	2	2	(-2)
09:00-10:00	0	3	3	(-5)
10:00-11:00	3	0	3	(-2)
11:00-12:00	3	5	8	(-4)
12:00-13:00	3	1	4	(-2)
13:00-14:00	6	7	13	(-3)
14:00-15:00	1	1	2	(-3)
15:00-16:00	3	3	6	(-3)
16:00-17:00	1	1	2	(-3)
17:00-18:00	3	3	6	(-3)
18:00-19:00	2	1	3	(-2)
19:00-20:00	2	1	3	(-1)
20:00-21:00	4	0	4	(3)
21:00-22:00	0	1	1	(2)
22:00-23:00				
23:00-24:00				

Site reference: WK-01-A-02

Survey date: 17/10/12

Day of week: Wednesday

Multi-Modal survey site

Vehicles surveyed: Taxis

Time	Arr 5	Dep 7	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00				
07:00-08:00	0	0	0	(0)
08:00-09:00	1	0	1	(1)
09:00-10:00	0	1	1	(0)
10:00-11:00	0	0	0	(0)
11:00-12:00	0	0	0	(0)
12:00-13:00	0	0	0	(0)
13:00-14:00	0	0	0	(0)
14:00-15:00	0	0	0	(0)
15:00-16:00	1	0	1	(1)
16:00-17:00	0	0	0	(1)
17:00-18:00	0	1	1	(0)
18:00-19:00	3	2	5	(1)
19:00-20:00	0	1	1	(0)
20:00-21:00	0	1	1	(-1)
21:00-22:00	0	1	1	(-2)
22:00-23:00				
23:00-24:00				

Site reference: WK-01-A-02

Survey date: 17/10/12

Day of week: Wednesday

Multi-Modal survey site

Vehicles surveyed: Cycles

Time	Arr 26	Dep 19	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00				
07:00-08:00	0	1	1	(-1)
08:00-09:00	3	0	3	(2)
09:00-10:00	0	0	0	(2)
10:00-11:00	3	0	3	(5)
11:00-12:00	2	0	2	(7)
12:00-13:00	3	5	8	(5)
13:00-14:00	0	1	1	(4)
14:00-15:00	1	0	1	(5)
15:00-16:00	0	1	1	(4)
16:00-17:00	1	0	1	(5)
17:00-18:00	0	3	3	(2)
18:00-19:00	1	4	5	(-1)
19:00-20:00	4	2	6	(1)
20:00-21:00	8	0	8	(9)
21:00-22:00	0	2	2	(7)
22:00-23:00				
23:00-24:00				

Site reference: WK-01-A-02 Survey date: 17/10/12 Day of week: Wednesday
Multi-Modal survey site
People Surveyed: Car/LGV/Motorcycle occupants

This count consists of car occupants, light goods vehicle occupants, motorcycle riders and OGV occupants
 Taxi drivers and drivers of private vehicles picking up/dropping off passengers at the site are excluded from the count

Time	1	2	3	4	5	6	7	Arr 5525	1	2	3	4	5	6	7	Dep 5459	Totals	Accum
00:00-01:00																		
01:00-02:00																		
02:00-03:00																		
03:00-04:00																		
04:00-05:00																		
05:00-06:00																		
06:00-07:00																		
07:00-08:00	113	23	0	0	0	0	0	159	32	3	0	0	0	0	0	38	197	(121)
08:00-09:00	184	39	0	0	0	0	0	262	176	6	0	0	0	0	0	188	450	(195)
09:00-10:00	273	63	0	0	0	0	0	399	242	8	0	0	0	0	0	258	657	(336)
10:00-11:00	268	81	2	0	0	0	0	436	310	10	0	0	0	0	0	330	766	(442)
11:00-12:00	293	67	0	0	0	0	0	427	336	32	5	2	0	0	0	423	850	(446)
12:00-13:00	277	71	2	1	0	0	0	429	309	52	3	0	0	0	0	422	851	(453)
13:00-14:00	332	60	0	0	0	0	0	452	329	32	2	1	0	0	0	403	855	(502)
14:00-15:00	294	45	0	0	0	0	0	384	299	80	9	0	0	0	0	486	870	(400)
15:00-16:00	311	47	0	0	0	0	0	405	298	83	10	0	0	0	0	494	899	(311)
16:00-17:00	337	59	0	1	0	0	0	459	281	82	8	0	0	0	0	469	928	(301)
17:00-18:00	379	74	0	0	0	1	0	533	350	104	9	0	0	0	0	585	1118	(249)
18:00-19:00	322	98	4	0	0	0	0	530	323	111	8	0	0	0	0	569	1099	(210)
19:00-20:00	173	76	0	0	0	0	0	325	257	63	1	0	0	0	0	386	711	(149)
20:00-21:00	142	42	0	0	0	0	0	226	173	42	3	0	0	0	0	266	492	(109)
21:00-22:00	59	20	0	0	0	0	0	99	97	18	3	0	0	0	0	142	241	(66)
22:00-23:00																		
23:00-24:00																		

Site reference: WK-01-A-02

Survey date: 17/10/12

Day of week: Wednesday

Multi-Modal survey site

People Surveyed: Pedestrians

Time	Arr 1068	Dep 1053	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00				
07:00-08:00	16	14	30	(2)
08:00-09:00	91	100	191	(-7)
09:00-10:00	70	54	124	(9)
10:00-11:00	95	60	155	(44)
11:00-12:00	64	88	152	(20)
12:00-13:00	93	65	158	(48)
13:00-14:00	70	85	155	(33)
14:00-15:00	78	80	158	(31)
15:00-16:00	159	107	266	(83)
16:00-17:00	78	96	174	(65)
17:00-18:00	62	76	138	(51)
18:00-19:00	80	60	140	(71)
19:00-20:00	53	52	105	(72)
20:00-21:00	32	82	114	(22)
21:00-22:00	27	34	61	(15)
22:00-23:00				
23:00-24:00				

Site reference: WK-01-A-02

Survey date: 17/10/12

Day of week: Wednesday

Multi-Modal survey site

People Surveyed: Public transport Users

Time	Arr 53	Dep 48	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00				
07:00-08:00	0	0	0	(0)
08:00-09:00	0	1	1	(-1)
09:00-10:00	5	3	8	(1)
10:00-11:00	8	7	15	(2)
11:00-12:00	9	9	18	(2)
12:00-13:00	8	8	16	(2)
13:00-14:00	7	6	13	(3)
14:00-15:00	3	4	7	(2)
15:00-16:00	2	1	3	(3)
16:00-17:00	5	4	9	(4)
17:00-18:00	2	0	2	(6)
18:00-19:00	3	1	4	(8)
19:00-20:00	0	0	0	(8)
20:00-21:00	1	4	5	(5)
21:00-22:00	0	0	0	(5)
22:00-23:00				
23:00-24:00				

Site reference: WK-01-A-02

Survey date: 17/10/12

Day of week: Wednesday

Multi-Modal survey site

People Surveyed: Bus/Tram Passengers

Time	Arr 53	Dep 48	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00				
07:00-08:00	0	0	0	(0)
08:00-09:00	0	1	1	(-1)
09:00-10:00	5	3	8	(1)
10:00-11:00	8	7	15	(2)
11:00-12:00	9	9	18	(2)
12:00-13:00	8	8	16	(2)
13:00-14:00	7	6	13	(3)
14:00-15:00	3	4	7	(2)
15:00-16:00	2	1	3	(3)
16:00-17:00	5	4	9	(4)
17:00-18:00	2	0	2	(6)
18:00-19:00	3	1	4	(8)
19:00-20:00	0	0	0	(8)
20:00-21:00	1	4	5	(5)
21:00-22:00	0	0	0	(5)
22:00-23:00				
23:00-24:00				

Site reference: WK-01-A-02

Survey date: 17/10/12

Day of week: Wednesday

Multi-Modal survey site

People Surveyed: Total people

Time	Arr 6672	Dep 6579	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00				
07:00-08:00	175	53	228	(122)
08:00-09:00	356	289	645	(189)
09:00-10:00	474	315	789	(348)
10:00-11:00	542	397	939	(493)
11:00-12:00	502	520	1022	(475)
12:00-13:00	533	500	1033	(508)
13:00-14:00	529	495	1024	(542)
14:00-15:00	466	570	1036	(438)
15:00-16:00	566	603	1169	(401)
16:00-17:00	543	569	1112	(375)
17:00-18:00	597	664	1261	(308)
18:00-19:00	614	634	1248	(288)
19:00-20:00	382	440	822	(230)
20:00-21:00	267	352	619	(145)
21:00-22:00	126	178	304	(93)
22:00-23:00				
23:00-24:00				

Site Reference: SM-01-A-02 Multi-Modal Site
 Created: Version: 2013(a)v6.11.1 16/10/12
 Latitude/Longitude: 51.2043, -3.4653
 Land Use Type: 01 - RETAIL/A - FOOD SUPERSTORE
 Region/Area: SOUTH WESTSOMERSET
 Version/Creation Date: 2013(a)v6.11.1 16/10/12

Description: MORRISONS
 Street: VULCAN ROAD
 District:
 Town: MINEHEAD
 Post Code: TA24 6DG

Location: Edge of Town
 Location Sub Category: Commercial Zone
 Use Class: A1

Population within 500m: 1200
 Population within 1 Mile: 5,001 to 10,000
 Population within 5 Miles: 5,001 to 25,000
 Car ownership within 5 Miles: 1.1 to 1.5

Public Transport Provision Summary

Day	Period	Total buses/trams within 400m	Total Trains within 1000m	Total Services
Monday-Friday	0700-1900	144	12	156
Monday-Friday	0700-1000	36		36
Monday-Friday	1600-1900	36	4	40
Saturday	0700-1900	144	12	156
Sunday	0700-1900	26	12	38

Is site associated with a travel plan: Yes
 If not, are there any plans to implement a Travel Plan in the future?
 Is survey data available before the implementation of the Travel Plan? No
 Is the location of the site hilly or flat: Flat
 Urban Regeneration: Yes

Gross floor area: 4575 sqm
 Retail floor area: 2125 sqm
 Total Employees: 151

No. of developments for this Site: 1
 No. of survey Days for this Site: 1

Comments

The site was previously the railway goods yards and workshops. The site is near Station Road which runs south/east joining with the M5. The M5 heads north into Bridgwater and further north/east into Bristol. The M5 also heads south/west into Exeter. Within the local area there are industrial areas. The site has 7 access points 3 of which are for vehicles.

Bus (or tram) site accessibility

- Is there at least 1 bus (or tram) stop within the site frontage or within 400m of the site frontage? : Yes
- If yes to question 3, where it is necessary to cross a road between the development and the stop, is there a conveniently placed crossing facility? : Yes
- If yes to question 3, are there at least 2 buses (or trams) per hour (per direction between 0700 and 1900) with routes serving significant areas of population within a 5 kilometre radius? (Mon-Sat): Yes
- If yes to question 5, what are the service characteristics? (please complete the outline information below)

Destination (town/area)	Number per hour	Approx. journey time
Taunton	2	75

Rail accessibility

7. Is there at least one railway station within 1 kilometre radius of the site?: Yes
 8. If yes to question 7, is pedestrian access to the station satisfactory?: Yes

11. Please enter general comments/views about the relevance, quality and importance of public transport services relating to this development.

There are 3 additional bus services, 2 of which come once an hour. The first is Taunton and has a journey time of 75 minutes; the second is to Periton and has a journey time of 10 minutes. The third is to Porlock Weir which comes 9 times per day and has a journey time of 25 minutes.

Design features encouraging non-car modes

12. Pedestrians

There are footpath within close proximity to Butlin's holiday camp.

13. Pedal cycles

There are local cycle paths and cycle parking at site.

14. Public transport

The site is in close proximity to train stations and bus services.

Design features encouraging non-car modes

Road Network Distance to Local Developments	
Year of Analysis	2012
Nearest Primary School	0.8 kilometres
Nearest Secondary School	0.6 kilometres
Nearest Local Shop/Corner Shop	0.5 kilometres
Nearest Main Supermarket	0.3 kilometres
Nearest Doctors Surgery	0.5 kilometres
Nearest Hospital with Minor Injuries/A & E	0.5 kilometres
Nearest Sports/Leisure Centre	1.0 kilometres

Census Data	
Year of Census	2001
Census Output Area/Data Zone	E00149449
Number of people employed within Census Output Area	117
Number of households within Census Output Area	124
Number of people living within Census Output Area	308
Area of Census Output Area (hectares)	30.00
Population density within Census Output Area (per hectare)	10.25

SITE PHOTO



Site reference:	SM-01-A-02	Multi-Modal survey site
Trade name:	MORRISIONS	
Site area (h/a):	1.78	
Gross floor area (sqm)	4575	
GFA not in use (sqm)	0	
Retail floor area (sqm)	2125	
RFA (non food)	150	
Open since	2010	
Total Employees	151	
Full Time Employees	23	15%
Part Time Employees	128	85%
Approximate % of total employees working standard 9-5 hours or similar	0%	
Percentage Split of Employee Gender		
Male	40%	
Female	60%	
GFA per employee	30.298	
Number of units	2	
Name of nearest site	TESCO, MINEHEAD	
Distance to nearest similar site	0 Km	
OPENING TIMES (24 Hour format)		
Mon to Thurs	08:00	to 21:00
Friday	08:00	to 21:00
Saturday	08:00	to 21:00
Sunday	10:00	to 16:00
Filling station	PFS is present at the site and is included in the count	
Cash card facilities	Yes	
Home Delivery	No	

Multi-Modal survey site

On-Site parking

Total no. of parking spaces	272
Spaces Per 100m2 GFA	5.945
Spaces Per 100m2 RFA	12.800

Number of spaces

Employee	0
Disabled	17
Visitor/Customer	235
OGV parking bays	0
Cycle racks	20
OGV loading bays	2
Mother & Toddler	10
Motorcycle spaces	8

Parking charges No

Comments about the management of the site car park, along with enforcement measures

No parking enforcement was observed at the site.

Site parking surface or non-surface (multi-storey/underground)

Surface

General Comments on Parking

Train users parked at the site, but such trips were excluded from the survey.

Site reference: SM-01-A-02 Survey date: 14/07/12 Day of week: Saturday

Multi-Modal survey site

Vehicles surveyed: Total vehicles

Survey type: Manual Count
 AM weather: Mild and Light Rain
 PM weather: Mild and Cloudy

Initial car park occupancy: 24 Final car park occupancy: 4

BRACKETED ACCUMULATION FIGURES ARE NOT ABSOLUTE

Data proportions in %

Motor cars	94	Motor cycles	1	Public service	0
Light goods	5	OGV (1)	0	OGV (2)	0
				Taxis	0

Time	Arr 2512	Dep 2532	Totals	Parking Accum
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00				
07:00-08:00	28	12	40	40
08:00-09:00	110	82	192	68
09:00-10:00	171	160	331	79
10:00-11:00	267	219	486	127
11:00-12:00	277	251	528	153
12:00-13:00	317	304	621	166
13:00-14:00	246	245	491	167
14:00-15:00	231	236	467	162
15:00-16:00	209	227	436	144
16:00-17:00	199	224	423	119
17:00-18:00	184	245	429	58
18:00-19:00	146	154	300	50
19:00-20:00	73	92	165	31
20:00-21:00	35	63	98	3
21:00-22:00	19	18	37	4
22:00-23:00				
23:00-24:00				

Comments

Non users parked at the site. These were people using the railway as the prices for parking at the station were considered high. Also people parked for train spotting purposes as the rail line has steam trains. Some of these people may have used the store on their return, although we have assumed that they did not. There were around 50 cars and these have been excluded.

Site reference: SM-01-A-02 Survey date: 14/07/12 Day of week: Saturday
Multi-Modal survey site
Vehicles surveyed: OGV

Data proportions in % OGV (1) 30 OGV (2) 70

1 occupant per OGV is assumed, and included in the vehicle occupants count

Time	Arr 10	Dep 10	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00				
07:00-08:00	1	0	1	(1)
08:00-09:00	0	1	1	(0)
09:00-10:00	0	0	0	(0)
10:00-11:00	2	2	4	(0)
11:00-12:00	2	2	4	(0)
12:00-13:00	1	1	2	(0)
13:00-14:00	0	0	0	(0)
14:00-15:00	1	1	2	(0)
15:00-16:00	0	0	0	(0)
16:00-17:00	0	0	0	(0)
17:00-18:00	2	2	4	(0)
18:00-19:00	1	1	2	(0)
19:00-20:00	0	0	0	(0)
20:00-21:00	0	0	0	(0)
21:00-22:00	0	0	0	(0)
22:00-23:00				
23:00-24:00				

Site reference: SM-01-A-02

Survey date: 14/07/12

Day of week: Saturday

Multi-Modal survey site

Vehicles surveyed: PSV

Time	Arr 10	Dep 10	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00				
07:00-08:00	0	0	0	(0)
08:00-09:00	2	2	4	(0)
09:00-10:00	1	1	2	(0)
10:00-11:00	1	1	2	(0)
11:00-12:00	0	0	0	(0)
12:00-13:00	2	2	4	(0)
13:00-14:00	0	0	0	(0)
14:00-15:00	0	0	0	(0)
15:00-16:00	0	1	1	(-1)
16:00-17:00	2	2	4	(-1)
17:00-18:00	1	1	2	(-1)
18:00-19:00	1	0	1	(0)
19:00-20:00	0	0	0	(0)
20:00-21:00	0	0	0	(0)
21:00-22:00				
22:00-23:00				
23:00-24:00				

Site reference: SM-01-A-02

Survey date: 14/07/12

Day of week: Saturday

Multi-Modal survey site

Vehicles surveyed: Taxis

Time	Arr 2	Dep 2	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00				
07:00-08:00	0	0	0	(0)
08:00-09:00	0	0	0	(0)
09:00-10:00	0	0	0	(0)
10:00-11:00	0	0	0	(0)
11:00-12:00	0	0	0	(0)
12:00-13:00	0	0	0	(0)
13:00-14:00	1	1	2	(0)
14:00-15:00	0	0	0	(0)
15:00-16:00	1	1	2	(0)
16:00-17:00	0	0	0	(0)
17:00-18:00	0	0	0	(0)
18:00-19:00	0	0	0	(0)
19:00-20:00	0	0	0	(0)
20:00-21:00	0	0	0	(0)
21:00-22:00	0	0	0	(0)
22:00-23:00				
23:00-24:00				

Site reference: SM-01-A-02

Survey date: 14/07/12

Day of week: Saturday

Multi-Modal survey site

Vehicles surveyed: Cycles

Time	Arr 49	Dep 49	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00				
07:00-08:00	0	0	0	(0)
08:00-09:00	3	3	6	(0)
09:00-10:00	6	4	10	(2)
10:00-11:00	0	1	1	(1)
11:00-12:00	1	1	2	(1)
12:00-13:00	2	1	3	(2)
13:00-14:00	7	5	12	(4)
14:00-15:00	2	4	6	(2)
15:00-16:00	1	3	4	(0)
16:00-17:00	12	6	18	(6)
17:00-18:00	6	10	16	(2)
18:00-19:00	4	4	8	(2)
19:00-20:00	3	5	8	(0)
20:00-21:00	2	2	4	(0)
21:00-22:00	0	0	0	(0)
22:00-23:00				
23:00-24:00				

Site reference: SM-01-A-02 Survey date: 14/07/12 Day of week: Saturday
Multi-Modal survey site
People Surveyed: Car/LGV/Motorcycle occupants

This count consists of car occupants, light goods vehicle occupants, motorcycle riders and OGV occupants
 Taxi drivers and drivers of private vehicles picking up/dropping off passengers at the site are excluded from the count

Time	1	2	3	4	5	6	7	Arr 4293	1	2	3	4	5	6	7	Dep 4395	Totals	Accum
00:00-01:00																		
01:00-02:00																		
02:00-03:00																		
03:00-04:00																		
04:00-05:00																		
05:00-06:00																		
06:00-07:00																		
07:00-08:00	18	9	1	0	0	0	0	39	9	3	0	0	0	0	0	15	54	(24)
08:00-09:00	77	29	2	0	0	0	0	141	61	18	1	0	0	0	0	100	241	(65)
09:00-10:00	111	52	5	2	0	0	0	238	106	46	4	3	0	0	0	222	460	(81)
10:00-11:00	136	117	7	6	0	0	0	415	121	88	4	4	1	0	0	330	745	(166)
11:00-12:00	128	119	22	7	0	0	0	460	106	117	16	12	0	0	0	436	896	(190)
12:00-13:00	144	140	23	9		0	0	529	134	124	30	12	2	0	0	530	1059	(189)
13:00-14:00	82	109	35	20	0	0	0	485	97	115	25	7	0	0	0	430	915	(244)
14:00-15:00	99	95	21	15	1	0	0	417	85	101	27	23	0	0	0	460	877	(201)
15:00-16:00	72	106	17	10	2	0	0	385	88	102	22	12	1	0	0	411	796	(175)
16:00-17:00	67	90	29	9	3	0	0	385	81	106	25	8	2	0	0	410	795	(150)
17:00-18:00	80	78	18	7	0	0	0	318	100	100	33	9	2	0	0	445	763	(23)
18:00-19:00	71	53	12	8	2	0	0	255	69	51	18	13	3	0	0	292	547	(-14)
19:00-20:00	36	27	6	4	0	0	0	124	44	33	8	6	1	0	0	163	287	(-53)
20:00-21:00	10	18	3	4	0	0	0	71	23	28	10	2	0	0	0	117	188	(-99)
21:00-22:00	11	6	1	0	1	0	0	31	8	7	1	1	1	0	0	34	65	(-102)
22:00-23:00																		
23:00-24:00																		

Site reference: SM-01-A-02

Survey date: 14/07/12

Day of week: Saturday

Multi-Modal survey site

People Surveyed: Pedestrians

Time	Arr 691	Dep 623	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00				
07:00-08:00	3	0	3	(3)
08:00-09:00	32	17	49	(18)
09:00-10:00	20	17	37	(21)
10:00-11:00	49	36	85	(34)
11:00-12:00	56	43	99	(47)
12:00-13:00	64	68	132	(43)
13:00-14:00	72	80	152	(35)
14:00-15:00	77	44	121	(68)
15:00-16:00	79	51	130	(96)
16:00-17:00	46	56	102	(86)
17:00-18:00	83	71	154	(98)
18:00-19:00	54	58	112	(94)
19:00-20:00	26	46	72	(74)
20:00-21:00	30	35	65	(69)
21:00-22:00	0	1	1	(68)
22:00-23:00				
23:00-24:00				

Site reference: SM-01-A-02 Survey date: 14/07/12 Day of week: Saturday

Multi-Modal survey site

People Surveyed: Public transport Users

Time	Arr 62	Dep 49	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00				
07:00-08:00	0	0	0	(0)
08:00-09:00	3	3	6	(0)
09:00-10:00	1	1	2	(0)
10:00-11:00	1	1	2	(0)
11:00-12:00	10	1	11	(9)
12:00-13:00	10	6	16	(13)
13:00-14:00	13	5	18	(21)
14:00-15:00	7	10	17	(18)
15:00-16:00	13	13	26	(18)
16:00-17:00	3	8	11	(13)
17:00-18:00	1	1	2	(13)
18:00-19:00	0	0	0	(13)
19:00-20:00	0	0	0	(13)
20:00-21:00	0	0	0	(13)
21:00-22:00	0	0	0	(13)
22:00-23:00				
23:00-24:00				

Site reference: SM-01-A-02 Survey date: 14/07/12 Day of week: Saturday
Multi-Modal survey site
People Surveyed: Bus/Tram Passengers

Time	Arr 29	Dep 27	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00				
07:00-08:00	0	0	0	(0)
08:00-09:00	0	0	0	(0)
09:00-10:00	0	0	0	(0)
10:00-11:00	0	0	0	(0)
11:00-12:00	1	1	2	(0)
12:00-13:00	6	2	8	(4)
13:00-14:00	8	5	13	(7)
14:00-15:00	4	4	8	(7)
15:00-16:00	8	10	18	(5)
16:00-17:00	2	5	7	(2)
17:00-18:00	0	0	0	(2)
18:00-19:00	0	0	0	(2)
19:00-20:00	0	0	0	(2)
20:00-21:00	0	0	0	(2)
21:00-22:00	0	0	0	(2)
22:00-23:00				
23:00-24:00				

Site reference: SM-01-A-02

Survey date: 14/07/12

Day of week: Saturday

Multi-Modal survey site

People Surveyed: Coach Passengers

Time	Arr 16	Dep 16	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00				
07:00-08:00	0	0	0	(0)
08:00-09:00	3	3	6	(0)
09:00-10:00	1	1	2	(0)
10:00-11:00	1	1	2	(0)
11:00-12:00	0	0	0	(0)
12:00-13:00	4	4	8	(0)
13:00-14:00	0	0	0	(0)
14:00-15:00	0	0	0	(0)
15:00-16:00	5	3	8	(2)
16:00-17:00	1	3	4	(0)
17:00-18:00	1	1	2	(0)
18:00-19:00	0	0	0	(0)
19:00-20:00	0	0	0	(0)
20:00-21:00	0	0	0	(0)
21:00-22:00	0	0	0	(0)
22:00-23:00				
23:00-24:00				

Site reference: SM-01-A-02

Survey date: 14/07/12

Day of week: Saturday

Multi-Modal survey site

People Surveyed: Train Passengers

Time	Arr 17	Dep 6	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00				
07:00-08:00	0	0	0	(0)
08:00-09:00	0	0	0	(0)
09:00-10:00	0	0	0	(0)
10:00-11:00	0	0	0	(0)
11:00-12:00	9	0	9	(9)
12:00-13:00	0	0	0	(9)
13:00-14:00	5	0	5	(14)
14:00-15:00	3	6	9	(11)
15:00-16:00	0	0	0	(11)
16:00-17:00	0	0	0	(11)
17:00-18:00	0	0	0	(11)
18:00-19:00	0	0	0	(11)
19:00-20:00	0	0	0	(11)
20:00-21:00	0	0	0	(11)
21:00-22:00	0	0	0	(11)
22:00-23:00				
23:00-24:00				

Site reference: SM-01-A-02

Survey date: 14/07/12

Day of week: Saturday

Multi-Modal survey site

People Surveyed: Total people

Time	Arr 5095	Dep 5116	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00				
07:00-08:00	42	15	57	(27)
08:00-09:00	179	123	302	(83)
09:00-10:00	265	244	509	(104)
10:00-11:00	465	368	833	(201)
11:00-12:00	527	481	1008	(247)
12:00-13:00	605	605	1210	(247)
13:00-14:00	577	520	1097	(304)
14:00-15:00	503	518	1021	(289)
15:00-16:00	478	478	956	(289)
16:00-17:00	446	480	926	(255)
17:00-18:00	408	527	935	(136)
18:00-19:00	313	354	667	(95)
19:00-20:00	153	214	367	(34)
20:00-21:00	103	154	257	(-17)
21:00-22:00	31	35	66	(-21)
22:00-23:00				
23:00-24:00				

Site Reference: SC-01-A-08 Multi-Modal Site
 Created: Version: 2010(b)v6.6.2 04/08/10
 Latitude/Longitude: 51.2415, -0.1676
 Land Use Type: 01 - RETAIL/A - FOOD SUPERSTORE
 Region/Area: SOUTH EASTSURREY
 Version/Creation Date: 2010(b)v6.6.2 04/08/10

Description: SAINSBURY'S
 Street: LONDON ROAD
 District:
 Town: REDHILL
 Post Code: RH1 1NN

Location: Town Centre
 Location Sub Category: Retail Zone
 Use Class: A1

Population within 500m: 2500
 Population within 1 Mile: 10,001 to 15,000
 Population within 5 Miles: 125,001 to 250,000
 Car ownership within 5 Miles: 1.1 to 1.5

Public Transport Provision Summary

Day	Period	Total buses/trams within 400m	Total Trains within 1000m	Total Services
Monday-Friday	0700-1900	320	192	512
Monday-Friday	0700-1000	80	48	128
Monday-Friday	1600-1900	74	48	122
Saturday	0700-1900	208	72	280
Sunday	0700-1900	48	38	86

Is site associated with a travel plan: No
 If not, are there any plans to implement a Travel Plan in the future? No
 Is survey data available before the implementation of the Travel Plan?
 Is the location of the site hilly or flat: Flat
 Urban Regeneration: No

Gross floor area 4746 sqm
 Retail floor area 2755 sqm
 Total Employees 185

No. of developments for this Site: 1
 No. of survey Days for this Site: 1

Comments

This site is located in Redhill town centre, on London Road. London Road runs north out of Redhill, towards the M25. Other local roads lead south towards Gatwick Airport, east towards Godstone and west towards Dorking. The site has 1 vehicle and 1 pedestrian access point. There are residential and retail developments, and other various town centre developments, in the local area.

Bus (or tram) site accessibility

- Is there at least 1 bus (or tram) stop within the site frontage or within 400m of the site frontage? : Yes
- If yes to question 3, where it is necessary to cross a road between the development and the stop, is there a conveniently placed crossing facility? : Yes
- If yes to question 3, are there at least 2 buses (or trams) per hour (per direction between 0700 and 1900) with routes serving significant areas of population within a 5 kilometre radius? (Mon-Sat): Yes
- If yes to question 5, what are the service characteristics? (please complete the outline information below)

Destination (town/area)	Number per hour	Approx. journey time
West Croydon	4	59
Crawley/Maidenflower	3	65
Reigate	2	32

Rail accessibility

- 7. Is there at least one railway station within 1 kilometre radius of the site?: Yes
- 8. If yes to question 7, is pedestrian access to the station satisfactory?: Yes
- 9. If yes to question 7, are there at least 2 stopping trains per hour (per direction between 0700 and 1900) with routes serving stations within a 10 kilometre radius (Mon-Sat)?: Yes
- 10. If yes to question 9, what are the service characteristics? (please complete the outline information below)

Destination (town/area)	Number per hour	Approx. journey time
Reigate	4	5
Guildford	2	26
Tonbridge	2	30

Design features encouraging non-car modes

12. Pedestrians

The local high street is pedestrianised.

13. Pedal cycles

There are cycle lanes throughout the local area.

14. Public transport

There are many bus and rail services available in the local area.

Design features encouraging non-car modes

Road Network Distance to Local Developments	
Year of Analysis	2010
Nearest Primary School	0.5 kilometres
Nearest Secondary School	0.3 kilometres
Nearest Local Shop/Corner Shop	0.2 kilometres
Nearest Main Supermarket	0.2 kilometres
Nearest Doctors Surgery	0.5 kilometres
Nearest Hospital with Minor Injuries/A & E	2.4 kilometres
Nearest Sports/Leisure Centre	0.8 kilometres

Census Data	
Year of Census	2001
Census Output Area/Data Zone	43UFGG0010
Number of people employed within Census Output Area	174
Number of households within Census Output Area	133
Number of people living within Census Output Area	204
Area of Census Output Area (hectares)	13.00
Population density within Census Output Area (per hectare)	15.44

SITE PHOTO



Site reference:	SC-01-A-08	Multi-Modal survey site
Trade name:	SAINSBURY'S	
Site area (h/a):	-1.00	
Gross floor area (sqm)	4746	
GFA not in use (sqm)	0	
Retail floor area (sqm)	2755	
RFA (non food)	0	
Open since	1985	
Total Employees	185	
Full Time Employees	63	34%
Part Time Employees	122	66%
Approximate % of total employees working standard 9-5 hours or similar	40%	
Percentage Split of Employee Gender		
Male	20%	
Female	80%	
GFA per employee	25.654	
Number of units	1	
Name of nearest site	MORRISONS	
Distance to nearest similar site	2 Km	
OPENING TIMES (24 Hour format)		
Mon to Thurs	07:00	to 22:00
Friday	07:00	to 22:00
Saturday	07:00	to 22:00
Sunday	10:00	to 16:00
Filling station	There is no PFS at the site	
Cash card facilities	No	
Home Delivery		

Multi-Modal survey site

On-Site parking

Number of spaces

Employee	0
Disabled	13
Visitor/Customer	327
OGV parking bays	0
Cycle racks	12
OGV loading bays	3
Mother & Toddler	14
Motorcycle spaces	6

Parking charges Yes

Comments on parking charges

The first 30 minutes of parking is free. After this time, parking is charged at £1 per hour, up to a maximum of 3 hours.

Comments about the management of the site car park, along with enforcement measures

There are regular patrols of the car park, and there is CCTV in place.

Site parking surface or non-surface (multi-storey/underground)

Non-Surface

General Comments on Parking

The car park is shared with the Harlequin Centre, which has a lift that accesses the car park. As the car park is public the number of spaces cannot be included as a trip rate calculation parameter. This is why the total number of spaces field is shown as blank.

Site reference: SC-01-A-08 Survey date: 08/07/10 Day of week: Thursday

Multi-Modal survey site

Vehicles surveyed: Total vehicles

Survey type: Manual Count
 AM weather: Hot and Cloudy
 PM weather: Hot and Clear

Initial car park occupancy: Final car park occupancy:

BRACKETED ACCUMULATION FIGURES ARE NOT ABSOLUTE

Data proportions in %

Motor cars	98	Motor cycles	0	Public service	0
Light goods	0	OGV (1)	0	OGV (2)	0
				Taxis	2

Time	Arr 3376	Dep 3348	Totals	Parking Accum
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00	5	4	9	(1)
07:00-08:00	90	55	145	(36)
08:00-09:00	175	108	283	(103)
09:00-10:00	218	195	413	(126)
10:00-11:00	294	261	555	(159)
11:00-12:00	293	267	560	(185)
12:00-13:00	280	313	593	(152)
13:00-14:00	336	322	658	(166)
14:00-15:00	348	335	683	(179)
15:00-16:00	308	316	624	(171)
16:00-17:00	251	279	530	(143)
17:00-18:00	244	269	513	(118)
18:00-19:00	187	204	391	(101)
19:00-20:00	130	165	295	(66)
20:00-21:00	132	117	249	(81)
21:00-22:00	83	129	212	(35)
22:00-23:00	2	9	11	(28)
23:00-24:00				

Comments

No PSV's entered or exited the site during this survey.

There is a taxi rank directly in front of the store.

It is noted that there are many more train passenger arrivals than departures recorded, but the survey data has been checked and is correct, and the total people arrivals and departures balance well and compensate for this. It is unclear what is the cause of this particular phenomenon.

There are significant pedestrians recorded at this site. This can be explained by the fact that there is significant residential population within walking distance of the town centre. Another possible influence may be the fact that it was market day on the day of this survey, with Redhill's market located in the pedestrianised precinct immediately adjacent to the store.

Site reference: SC-01-A-08 Survey date: 08/07/10 Day of week: Thursday
Multi-Modal survey site
Vehicles surveyed: OGV

Data proportions in % OGV (1) 46 OGV (2) 54

1 occupant per OGV is assumed, and included in the vehicle occupants count

Time	Arr 6	Dep 7	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00	1	2	3	(-1)
07:00-08:00	0	0	0	(-1)
08:00-09:00	1	1	2	(-1)
09:00-10:00	1	1	2	(-1)
10:00-11:00	0	0	0	(-1)
11:00-12:00	0	0	0	(-1)
12:00-13:00	0	0	0	(-1)
13:00-14:00	1	1	2	(-1)
14:00-15:00	0	0	0	(-1)
15:00-16:00	1	0	1	(0)
16:00-17:00	0	1	1	(-1)
17:00-18:00	0	0	0	(-1)
18:00-19:00	0	0	0	(-1)
19:00-20:00	0	0	0	(-1)
20:00-21:00	0	0	0	(-1)
21:00-22:00	0	0	0	(-1)
22:00-23:00	1	1	2	(-1)
23:00-24:00				

Site reference: SC-01-A-08

Survey date: 08/07/10

Day of week: Thursday

Multi-Modal survey site

Vehicles surveyed: Taxis

Time	Arr 65	Dep 65	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00	0	0	0	(0)
07:00-08:00	0	0	0	(0)
08:00-09:00	1	2	3	(-1)
09:00-10:00	2	2	4	(-1)
10:00-11:00	5	4	9	(0)
11:00-12:00	6	6	12	(0)
12:00-13:00	10	6	16	(4)
13:00-14:00	1	4	5	(1)
14:00-15:00	0	5	5	(-4)
15:00-16:00	8	7	15	(-3)
16:00-17:00	9	7	16	(-1)
17:00-18:00	6	6	12	(-1)
18:00-19:00	9	9	18	(-1)
19:00-20:00	4	4	8	(-1)
20:00-21:00	1	0	1	(0)
21:00-22:00	3	3	6	(0)
22:00-23:00	0	0	0	(0)
23:00-24:00				

Site reference: SC-01-A-08

Survey date: 08/07/10

Day of week: Thursday

Multi-Modal survey site

Vehicles surveyed: Cycles

Time	Arr 32	Dep 32	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00	0	0	0	(0)
07:00-08:00	1	1	2	(0)
08:00-09:00	1	0	1	(1)
09:00-10:00	2	3	5	(0)
10:00-11:00	1	2	3	(-1)
11:00-12:00	1	0	1	(0)
12:00-13:00	3	2	5	(1)
13:00-14:00	1	2	3	(0)
14:00-15:00	1	1	2	(0)
15:00-16:00	4	1	5	(3)
16:00-17:00	1	1	2	(3)
17:00-18:00	5	5	10	(3)
18:00-19:00	3	1	4	(5)
19:00-20:00	3	4	7	(4)
20:00-21:00	2	4	6	(2)
21:00-22:00	3	4	7	(1)
22:00-23:00	0	1	1	(0)
23:00-24:00				

Site reference: SC-01-A-08 Survey date: 08/07/10 Day of week: Thursday
Multi-Modal survey site
People Surveyed: Car/LGV/Motorcycle occupants

This count consists of car occupants, light goods vehicle occupants, motorcycle riders and OGV occupants
 Taxi drivers and drivers of private vehicles picking up/dropping off passengers at the site are excluded from the count

Time	1	2	3	4	5	6	7	Arr 4302	1	2	3	4	5	6	7	Dep 4325	Totals	Accum
00:00-01:00																		
01:00-02:00																		
02:00-03:00																		
03:00-04:00																		
04:00-05:00																		
05:00-06:00																		
06:00-07:00	2	3	0	0	0	0	0	8	3	1	0	0	0	0	0	5	13	(3)
07:00-08:00	75	15	0	0	0	0	0	105	44	11	0	0	0	0	0	66	171	(42)
08:00-09:00	147	26	1	0	0	0	0	202	93	15	0	0	0	0	0	123	325	(121)
09:00-10:00	165	48	3	2	0	0	0	278	138	50	7	0	0	0	0	259	537	(140)
10:00-11:00	200	80	9	0	0	0	0	387	176	85	0	0	0	0	0	346	733	(181)
11:00-12:00	215	57	15	0	0	0	0	374	204	54	9	0	0	0	0	339	713	(216)
12:00-13:00	214	49	14	0	0	0	0	354	227	78	6	2	0	0	0	409	763	(161)
13:00-14:00	266	59	4	6	0	0	0	420	196	64	12	0	0	0	0	360	780	(221)
14:00-15:00	247	94	7	0	0	0	0	456	232	80	15	4	0	0	0	453	909	(224)
15:00-16:00	214	66	15	6	0	0	0	415	224	88	4	0	0	0	0	412	827	(227)
16:00-17:00	193	32	10	7	0	0	0	315	209	53	12	5	0	0	0	371	686	(171)
17:00-18:00	191	41	6	0	0	0	0	291	207	46	14	2	0	0	0	349	640	(113)
18:00-19:00	120	42	11	5	0	0	0	257	131	65	7	1	0	0	0	286	543	(84)
19:00-20:00	75	43	6	1	0	0	0	183	116	35	13	1	0	0	0	229	412	(38)
20:00-21:00	100	30	2	0	0	0	0	166	90	21	5	1	0	0	0	151	317	(53)
21:00-22:00	71	9	0	0	0	0	0	89	101	28	0	0	0	0	0	157	246	(-15)
22:00-23:00	2	0	0	0	0	0	0	2	8	1	0	0	0	0	0	10	12	(-23)
23:00-24:00																		

Site reference: SC-01-A-08

Survey date: 08/07/10

Day of week: Thursday

Multi-Modal survey site

People Surveyed: Pedestrians

Time	Arr 2223	Dep 2543	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00	1	0	1	(1)
07:00-08:00	82	79	161	(4)
08:00-09:00	120	165	285	(-41)
09:00-10:00	137	148	285	(-52)
10:00-11:00	165	200	365	(-87)
11:00-12:00	187	250	437	(-150)
12:00-13:00	198	153	351	(-105)
13:00-14:00	222	281	503	(-164)
14:00-15:00	157	155	312	(-162)
15:00-16:00	169	195	364	(-188)
16:00-17:00	160	215	375	(-243)
17:00-18:00	209	194	403	(-228)
18:00-19:00	135	154	289	(-247)
19:00-20:00	119	154	273	(-282)
20:00-21:00	90	131	221	(-323)
21:00-22:00	72	66	138	(-317)
22:00-23:00	0	3	3	(-320)
23:00-24:00				

Site reference: SC-01-A-08

Survey date: 08/07/10

Day of week: Thursday

Multi-Modal survey site

People Surveyed: Public transport Users

Time	Arr 956	Dep 616	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00	1	0	1	(1)
07:00-08:00	18	23	41	(-4)
08:00-09:00	51	13	64	(34)
09:00-10:00	71	8	79	(97)
10:00-11:00	77	52	129	(122)
11:00-12:00	126	119	245	(129)
12:00-13:00	111	74	185	(166)
13:00-14:00	111	75	186	(202)
14:00-15:00	73	47	120	(228)
15:00-16:00	65	44	109	(249)
16:00-17:00	54	50	104	(253)
17:00-18:00	55	53	108	(255)
18:00-19:00	75	23	98	(307)
19:00-20:00	44	14	58	(337)
20:00-21:00	20	15	35	(342)
21:00-22:00	4	6	10	(340)
22:00-23:00	0	0	0	(340)
23:00-24:00				

Site reference: SC-01-A-08

Survey date: 08/07/10

Day of week: Thursday

Multi-Modal survey site

People Surveyed: Bus/Tram Passengers

Time	Arr 678	Dep 540	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00	1	0	1	(1)
07:00-08:00	11	16	27	(-4)
08:00-09:00	20	8	28	(8)
09:00-10:00	56	6	62	(58)
10:00-11:00	77	47	124	(88)
11:00-12:00	119	107	226	(100)
12:00-13:00	88	70	158	(118)
13:00-14:00	66	71	137	(113)
14:00-15:00	70	46	116	(137)
15:00-16:00	47	44	91	(140)
16:00-17:00	42	47	89	(135)
17:00-18:00	28	40	68	(123)
18:00-19:00	26	15	41	(134)
19:00-20:00	10	8	18	(136)
20:00-21:00	14	10	24	(140)
21:00-22:00	3	5	8	(138)
22:00-23:00	0	0	0	(138)
23:00-24:00				

Site reference: SC-01-A-08

Survey date: 08/07/10

Day of week: Thursday

Multi-Modal survey site

People Surveyed: Train Passengers

Time	Arr 278	Dep 76	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00	0	0	0	(0)
07:00-08:00	7	7	14	(0)
08:00-09:00	31	5	36	(26)
09:00-10:00	15	2	17	(39)
10:00-11:00	0	5	5	(34)
11:00-12:00	7	12	19	(29)
12:00-13:00	23	4	27	(48)
13:00-14:00	45	4	49	(89)
14:00-15:00	3	1	4	(91)
15:00-16:00	18	0	18	(109)
16:00-17:00	12	3	15	(118)
17:00-18:00	27	13	40	(132)
18:00-19:00	49	8	57	(173)
19:00-20:00	34	6	40	(201)
20:00-21:00	6	5	11	(202)
21:00-22:00	1	1	2	(202)
22:00-23:00	0	0	0	(202)
23:00-24:00				

Site reference: SC-01-A-08

Survey date: 08/07/10

Day of week: Thursday

Multi-Modal survey site

People Surveyed: Total people

Time	Arr 7513	Dep 7516	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00	10	5	15	(5)
07:00-08:00	206	169	375	(42)
08:00-09:00	374	301	675	(115)
09:00-10:00	488	418	906	(185)
10:00-11:00	630	600	1230	(215)
11:00-12:00	688	708	1396	(195)
12:00-13:00	666	638	1304	(223)
13:00-14:00	754	718	1472	(259)
14:00-15:00	687	656	1343	(290)
15:00-16:00	653	652	1305	(291)
16:00-17:00	530	637	1167	(184)
17:00-18:00	560	601	1161	(143)
18:00-19:00	470	464	934	(149)
19:00-20:00	349	401	750	(97)
20:00-21:00	278	301	579	(74)
21:00-22:00	168	233	401	(9)
22:00-23:00	2	14	16	(-3)
23:00-24:00				

Site Reference: WN-01-A-01 Multi-Modal Site
 Created: Version: 2012(b)v6.10.2 09/03/12
 Latitude/Longitude: 51.52062, -0.66823
 Land Use Type: 01 - RETAIL/A - FOOD SUPERSTORE
 Region/Area: SOUTH EASTWINDSOR & MAIDENHEAD
 Version/Creation Date: 2012(b)v6.10.2 09/03/12

Description: SAINSBURYS
 Street: LAKE END ROAD
 District: LENT RISE
 Town: SLOUGH
 Post Code: SL6 0QH

Location: Edge of Town
 Location Sub Category: Residential Zone
 Use Class: A1

Population within 500m: 605
 Population within 1 Mile: 5,001 to 10,000
 Population within 5 Miles: 100,001 to 125,000
 Car ownership within 5 Miles: 1.6 to 2.0

Public Transport Provision Summary

Day	Period	Total buses/trams within 400m	Total Trains within 1000m	Total Services
Monday-Friday	0700-1900	48	48	96
Monday-Friday	0700-1000	48	48	96
Monday-Friday	1600-1900	12	12	24
Saturday	0700-1900	12	12	24
Sunday	0700-1900	36	28	64

Is site associated with a travel plan: No
 If not, are there any plans to implement a Travel Plan in the future? No
 Is survey data available before the implementation of the Travel Plan?
 Is the location of the site hilly or flat: Flat
 Urban Regeneration: No

Gross floor area: 6065 sqm
 Retail floor area: 3704 sqm
 Total Employees: 292

No. of developments for this Site: 1
 No. of survey Days for this Site: 2

Comments

This site is located at the western edge of Slough, with Maidenhead further to the west. It is off the A4 Bath Road, which heads west towards Maidenhead and east through Slough. The site's vehicle access is off the B3026, which heads south past the M4 motorway to the village of Domey. The site has a total of 4 access points. There is a single vehicle access, plus 3 pedestrian accesses at various points around the site's boundary. The site has open land to the south, with residential streets in other directions.

Bus (or tram) site accessibility

- 3. Is there at least 1 bus (or tram) stop within the site frontage or within 400m of the site frontage? : Yes
- 4. If yes to question 3, where it is necessary to cross a road between the development and the stop, is there a conveniently placed crossing facility? : Yes
- 5. If yes to question 3, are there at least 2 buses (or trams) per hour (per direction between 0700 and 1900) with routes

serving significant areas of population within a 5 kilometre radius? (Mon-Sat): Yes
 6. If yes to question 5, what are the service characteristics? (please complete the outline information below)

Destination (town/area)	Number per hour	Approx. journey time
Slough Bus Station	2	14

Rail accessibility

7. Is there at least one railway station within 1 kilometre radius of the site?: Yes
 8. If yes to question 7, is pedestrian access to the station satisfactory?: Yes
 9. If yes to question 7, are there at least 2 stopping trains per hour (per direction between 0700 and 1900) with routes serving stations within a 10 kilometre radius (Mon-Sat)?: Yes
 10. If yes to question 9, what are the service characteristics? (please complete the outline information below)

Destination (town/area)	Number per hour	Approx. journey time
Slough	2	8

Design features encouraging non-car modes

12. Pedestrians

There is a pedestrian controlled signalised crossing point on the A4 Bath Road directly to the north of the site.

13. Pedal cycles

There is an off-road shared footway/cycleway on the western side of the B3026 Lake End Road.

14. Public transport

There are bus stops on the northern and southern side of the A4 Bath Road.

Design features encouraging non-car modes

Road Network Distance to Local Developments	
Year of Analysis	2011
Nearest Primary School	1.1 kilometres
Nearest Secondary School	1.1 kilometres
Nearest Local Shop/Corner Shop	0.6 kilometres
Nearest Main Supermarket	3.5 kilometres
Nearest Doctors Surgery	0.3 kilometres
Nearest Hospital with Minor Injuries/A & E	5.9 kilometres
Nearest Sports/Leisure Centre	3.6 kilometres

Census Data	
Year of Census	2001
Census Output Area/Data Zone	11UEGF0001
Number of people employed within Census Output Area	165
Number of households within Census Output Area	106
Number of people living within Census Output Area	301
Area of Census Output Area (hectares)	191.00
Population density within Census Output Area (per hectare)	1.58

Site reference:	WN-01-A-01	Multi-Modal survey site
Trade name:	SAINSBURYS	
Site area (h/a):	2.56	
Gross floor area (sqm)	6065	
GFA not in use (sqm)	0	
Retail floor area (sqm)	3704	
RFA (non food)	147	
Open since	1996	
Total Employees	292	
Full Time Employees	106	36%
Part Time Employees	186	64%
Approximate % of total employees working standard 9-5 hours or similar	30%	
Percentage Split of Employee Gender		
Male	52%	
Female	48%	
GFA per employee	20.771	
Number of units	1	
Name of nearest site	SAINSBURY'S	
Distance to nearest similar site	3 Km	
OPENING TIMES (24 Hour format)		
Mon to Thurs	06:00	to 24:00
Friday	06:00	to 24:00
Saturday	06:00	to 22:00
Sunday	10:00	to 16:00
Filling station	There is no PFS at the site	
Cash card facilities	Yes	
Home Delivery		

Multi-Modal survey site

On-Site parking

Total no. of parking spaces	549
Spaces Per 100m2 GFA	9.052
Spaces Per 100m2 RFA	14.822

Number of spaces

Employee	15
Disabled	50
Visitor/Customer	459
OGV parking bays	0
Cycle racks	0
OGV loading bays	7
Mother & Toddler	18
Motorcycle spaces	0

Parking charges No

Comments about the management of the site car park, along with enforcement measures

The car park is managed by Sainsburys. There are gated barriers at the site, and wardens patrol the car park enforcing a maximum stay with fines.

Site parking surface or non-surface (multi-storey/underground)
Surface

Site reference: WN-01-A-01 Survey date: 07/10/11 Day of week: Friday

Multi-Modal survey site

Vehicles surveyed: Total vehicles

Survey type: Manual Count

AM weather: Mild and Clear

PM weather: Mild and Clear

Initial car park occupancy: 5 Final car park occupancy: 15

BRACKETED ACCUMULATION FIGURES ARE NOT ABSOLUTE

Data proportions in %

Motor cars	96	Motor cycles	0	Public service	0
Light goods	4	OGV (1)	0	OGV (2)	0
				Taxis	0

Time	Arr 4627	Dep 4617	Totals	Parking Accum
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00	62	19	81	48
07:00-08:00	177	137	314	88
08:00-09:00	244	214	458	118
09:00-10:00	370	242	612	246
10:00-11:00	360	352	712	254
11:00-12:00	372	370	742	256
12:00-13:00	367	349	716	274
13:00-14:00	346	391	737	229
14:00-15:00	426	400	826	255
15:00-16:00	361	369	730	247
16:00-17:00	300	306	606	241
17:00-18:00	416	463	879	194
18:00-19:00	406	428	834	172
19:00-20:00	208	296	504	84
20:00-21:00	115	157	272	42
21:00-22:00	76	92	168	26
22:00-23:00	21	32	53	15
23:00-24:00				

Comments

No PSV's visited the site during this survey.

Site reference: WN-01-A-01 Survey date: 07/10/11 Day of week: Friday
Multi-Modal survey site
Vehicles surveyed: OGV

Data proportions in % OGV (1) 76 OGV (2) 24

1 occupant per OGV is assumed, and included in the vehicle occupants count

Time	Arr 17	Dep 17	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00	2	0	2	(2)
07:00-08:00	1	3	4	(0)
08:00-09:00	2	1	3	(1)
09:00-10:00	2	2	4	(1)
10:00-11:00	2	1	3	(2)
11:00-12:00	0	3	3	(-1)
12:00-13:00	1	0	1	(0)
13:00-14:00	1	1	2	(0)
14:00-15:00	1	1	2	(0)
15:00-16:00	1	0	1	(1)
16:00-17:00	2	3	5	(0)
17:00-18:00	0	1	1	(-1)
18:00-19:00	1	0	1	(0)
19:00-20:00	1	0	1	(1)
20:00-21:00	0	1	1	(0)
21:00-22:00	0	0	0	(0)
22:00-23:00	0	0	0	(0)
23:00-24:00				

Site reference: WN-01-A-01

Survey date: 07/10/11

Day of week: Friday

Multi-Modal survey site

Vehicles surveyed: Taxis

Time	Arr 12	Dep 12	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00	0	0	0	(0)
07:00-08:00	0	0	0	(0)
08:00-09:00	0	0	0	(0)
09:00-10:00	1	1	2	(0)
10:00-11:00	1	0	1	(1)
11:00-12:00	1	1	2	(1)
12:00-13:00	1	1	2	(1)
13:00-14:00	1	2	3	(0)
14:00-15:00	2	1	3	(1)
15:00-16:00	0	1	1	(0)
16:00-17:00	1	0	1	(1)
17:00-18:00	2	1	3	(2)
18:00-19:00	2	4	6	(0)
19:00-20:00	0	0	0	(0)
20:00-21:00	0	0	0	(0)
21:00-22:00	0	0	0	(0)
22:00-23:00	0	0	0	(0)
23:00-24:00				

Site reference: WN-01-A-01

Survey date: 07/10/11

Day of week: Friday

Multi-Modal survey site

Vehicles surveyed: Cycles

Time	Arr 35	Dep 35	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00	0	0	0	(0)
07:00-08:00	3	4	7	(-1)
08:00-09:00	0	1	1	(-2)
09:00-10:00	3	2	5	(-1)
10:00-11:00	4	5	9	(-2)
11:00-12:00	4	2	6	(0)
12:00-13:00	1	2	3	(-1)
13:00-14:00	4	1	5	(2)
14:00-15:00	2	2	4	(2)
15:00-16:00	3	1	4	(4)
16:00-17:00	2	5	7	(1)
17:00-18:00	2	3	5	(0)
18:00-19:00	3	3	6	(0)
19:00-20:00	2	1	3	(1)
20:00-21:00	2	3	5	(0)
21:00-22:00	0	0	0	(0)
22:00-23:00	0	0	0	(0)
23:00-24:00				

Site reference: WN-01-A-01 Survey date: 07/10/11 Day of week: Friday
Multi-Modal survey site
People Surveyed: Car/LGV/Motorcycle occupants

This count consists of car occupants, light goods vehicle occupants, motorcycle riders and OGV occupants
 Taxi drivers and drivers of private vehicles picking up/dropping off passengers at the site are excluded from the count

Time	1	2	3	4	5	6	7	Arr 5893	1	2	3	4	5	6	7	Dep 5865	Totals	Accum
00:00-01:00																		
01:00-02:00																		
02:00-03:00																		
03:00-04:00																		
04:00-05:00																		
05:00-06:00																		
06:00-07:00	56	6	0	0	0	0	0	68	17	2	0	0	0	0	0	21	89	(47)
07:00-08:00	161	11	5	0	0	0	0	198	126	11	0	0	0	0	0	148	346	(97)
08:00-09:00	214	32	7	1	0	0	0	303	189	21	4	0	0	0	0	243	546	(157)
09:00-10:00	294	69	6	1	0	0	0	454	197	41	3	1	0	0	0	292	746	(319)
10:00-11:00	273	75	9	3	0	0	0	462	291	58	0	3	0	0	0	419	881	(362)
11:00-12:00	274	89	8	1	0	0	0	480	266	97	5	2	0	0	0	483	963	(359)
12:00-13:00	289	69	5	4	0	0	0	458	271	65	11	2	0	0	0	442	900	(375)
13:00-14:00	260	70	14	2	0	0	0	450	299	78	11	3	0	0	0	500	950	(325)
14:00-15:00	319	84	6	4	3	0	0	536	312	77	9	2	0	0	0	501	1037	(360)
15:00-16:00	278	67	13	3	0	0	0	463	269	80	14	5	1	0	0	496	959	(327)
16:00-17:00	236	49	10	4	1	0	0	385	197	90	15	2	2	0	0	440	825	(272)
17:00-18:00	312	116	12	6	0	0	0	604	334	112	13	3	1	0	0	614	1218	(262)
18:00-19:00	327	70	8	1	0	0	0	495	327	83	14	4	0	0	0	551	1046	(206)
19:00-20:00	143	56	7	2	0	0	0	284	227	67	2	0	0	0	0	367	651	(123)
20:00-21:00	95	19	1	0	0	0	0	136	121	35	1	0	0	0	0	194	330	(65)
21:00-22:00	65	10	1	0	0	0	0	88	65	25	2	0	0	0	0	121	209	(32)
22:00-23:00	13	8	0	0	0	0	0	29	31	1	0	0	0	0	0	33	62	(28)
23:00-24:00																		

Site reference: WN-01-A-01

Survey date: 07/10/11

Day of week: Friday

Multi-Modal survey site

People Surveyed: Pedestrians

Time	Arr 345	Dep 332	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00	2	2	4	(0)
07:00-08:00	15	12	27	(3)
08:00-09:00	18	18	36	(3)
09:00-10:00	35	22	57	(16)
10:00-11:00	21	20	41	(17)
11:00-12:00	21	22	43	(16)
12:00-13:00	23	25	48	(14)
13:00-14:00	31	25	56	(20)
14:00-15:00	29	23	52	(26)
15:00-16:00	25	30	55	(21)
16:00-17:00	34	38	72	(17)
17:00-18:00	34	26	60	(25)
18:00-19:00	31	32	63	(24)
19:00-20:00	16	19	35	(21)
20:00-21:00	8	15	23	(14)
21:00-22:00	2	3	5	(13)
22:00-23:00	0	0	0	(13)
23:00-24:00				

Site reference: WN-01-A-01

Survey date: 07/10/11

Day of week: Friday

Multi-Modal survey site

People Surveyed: Public transport Users

Time	Arr 29	Dep 29	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00	2	0	2	(2)
07:00-08:00	6	8	14	(0)
08:00-09:00	1	1	2	(0)
09:00-10:00	3	2	5	(1)
10:00-11:00	3	4	7	(0)
11:00-12:00	3	3	6	(0)
12:00-13:00	3	2	5	(1)
13:00-14:00	2	4	6	(-1)
14:00-15:00	3	0	3	(2)
15:00-16:00	0	0	0	(2)
16:00-17:00	1	2	3	(1)
17:00-18:00	0	0	0	(1)
18:00-19:00	2	3	5	(0)
19:00-20:00	0	0	0	(0)
20:00-21:00	0	0	0	(0)
21:00-22:00	0	0	0	(0)
22:00-23:00	0	0	0	(0)
23:00-24:00				

Site reference: WN-01-A-01

Survey date: 07/10/11

Day of week: Friday

Multi-Modal survey site

People Surveyed: Bus/Tram Passengers

Time	Arr 29	Dep 29	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00	2	0	2	(2)
07:00-08:00	6	8	14	(0)
08:00-09:00	1	1	2	(0)
09:00-10:00	3	2	5	(1)
10:00-11:00	3	4	7	(0)
11:00-12:00	3	3	6	(0)
12:00-13:00	3	2	5	(1)
13:00-14:00	2	4	6	(-1)
14:00-15:00	3	0	3	(2)
15:00-16:00	0	0	0	(2)
16:00-17:00	1	2	3	(1)
17:00-18:00	0	0	0	(1)
18:00-19:00	2	3	5	(0)
19:00-20:00	0	0	0	(0)
20:00-21:00	0	0	0	(0)
21:00-22:00	0	0	0	(0)
22:00-23:00	0	0	0	(0)
23:00-24:00				

Site reference: WN-01-A-01

Survey date: 07/10/11

Day of week: Friday

Multi-Modal survey site

People Surveyed: Total people

Time	Arr 6302	Dep 6261	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00	72	23	95	(49)
07:00-08:00	222	172	394	(99)
08:00-09:00	322	263	585	(158)
09:00-10:00	495	318	813	(335)
10:00-11:00	490	448	938	(377)
11:00-12:00	508	510	1018	(375)
12:00-13:00	485	471	956	(389)
13:00-14:00	487	530	1017	(346)
14:00-15:00	570	526	1096	(390)
15:00-16:00	491	527	1018	(354)
16:00-17:00	422	485	907	(291)
17:00-18:00	640	643	1283	(288)
18:00-19:00	531	589	1120	(230)
19:00-20:00	302	387	689	(145)
20:00-21:00	146	212	358	(79)
21:00-22:00	90	124	214	(45)
22:00-23:00	29	33	62	(41)
23:00-24:00				

Site reference: WN-01-A-01 Survey date: 08/10/11 Day of week: Saturday

Multi-Modal survey site

Vehicles surveyed: Total vehicles

Survey type: Manual Count
 AM weather: Mild and Cloudy
 PM weather: Mild and Cloudy

Initial car park occupancy: 3 Final car park occupancy: 19

BRACKETED ACCUMULATION FIGURES ARE NOT ABSOLUTE

Data proportions in %

Motor cars	96	Motor cycles	0	Public service	0
Light goods	4	OGV (1)	0	OGV (2)	0
				Taxis	0

Time	Arr 4394	Dep 4378	Totals	Parking Accum
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00	46	6	52	43
07:00-08:00	127	73	200	97
08:00-09:00	221	161	382	157
09:00-10:00	261	234	495	184
10:00-11:00	361	287	648	258
11:00-12:00	481	468	949	271
12:00-13:00	439	440	879	270
13:00-14:00	436	453	889	253
14:00-15:00	403	385	788	271
15:00-16:00	461	453	914	279
16:00-17:00	425	487	912	217
17:00-18:00	351	394	745	174
18:00-19:00	240	316	556	98
19:00-20:00	87	119	206	66
20:00-21:00	37	52	89	51
21:00-22:00	18	44	62	25
22:00-23:00	0	6	6	19
23:00-24:00				

Comments

No PSV's visited the site during this survey.

Site reference: WN-01-A-01 Survey date: 08/10/11 Day of week: Saturday
Multi-Modal survey site
Vehicles surveyed: OGV

Data proportions in % OGV (1) 56 OGV (2) 44

1 occupant per OGV is assumed, and included in the vehicle occupants count

Time	Arr 9	Dep 9	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00	0	0	0	(0)
07:00-08:00	1	1	2	(0)
08:00-09:00	2	2	4	(0)
09:00-10:00	1	1	2	(0)
10:00-11:00	1	0	1	(1)
11:00-12:00	0	1	1	(0)
12:00-13:00	0	0	0	(0)
13:00-14:00	1	1	2	(0)
14:00-15:00	1	0	1	(1)
15:00-16:00	1	1	2	(1)
16:00-17:00	0	1	1	(0)
17:00-18:00	1	1	2	(0)
18:00-19:00	0	0	0	(0)
19:00-20:00	0	0	0	(0)
20:00-21:00	0	0	0	(0)
21:00-22:00	0	0	0	(0)
22:00-23:00	0	0	0	(0)
23:00-24:00				

Site reference: WN-01-A-01

Survey date: 08/10/11

Day of week: Saturday

Multi-Modal survey site

Vehicles surveyed: Taxis

Time	Arr 17	Dep 17	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00	0	0	0	(0)
07:00-08:00	3	2	5	(1)
08:00-09:00	2	3	5	(0)
09:00-10:00	1	1	2	(0)
10:00-11:00	1	0	1	(1)
11:00-12:00	2	1	3	(2)
12:00-13:00	1	2	3	(1)
13:00-14:00	2	3	5	(0)
14:00-15:00	1	1	2	(0)
15:00-16:00	1	1	2	(0)
16:00-17:00	2	1	3	(1)
17:00-18:00	1	1	2	(1)
18:00-19:00	0	1	1	(0)
19:00-20:00	0	0	0	(0)
20:00-21:00	0	0	0	(0)
21:00-22:00	0	0	0	(0)
22:00-23:00	0	0	0	(0)
23:00-24:00				

Site reference: WN-01-A-01

Survey date: 08/10/11

Day of week: Saturday

Multi-Modal survey site

Vehicles surveyed: Cycles

Time	Arr 45	Dep 45	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00	3	0	3	(3)
07:00-08:00	1	4	5	(0)
08:00-09:00	3	2	5	(1)
09:00-10:00	1	1	2	(1)
10:00-11:00	3	2	5	(2)
11:00-12:00	1	1	2	(2)
12:00-13:00	8	7	15	(3)
13:00-14:00	3	5	8	(1)
14:00-15:00	2	5	7	(-2)
15:00-16:00	3	5	8	(-4)
16:00-17:00	11	7	18	(0)
17:00-18:00	3	2	5	(1)
18:00-19:00	3	4	7	(0)
19:00-20:00	0	0	0	(0)
20:00-21:00	0	0	0	(0)
21:00-22:00	0	0	0	(0)
22:00-23:00	0	0	0	(0)
23:00-24:00				

Site reference: WN-01-A-01 Survey date: 08/10/11 Day of week: Saturday
Multi-Modal survey site
People Surveyed: Car/LGV/Motorcycle occupants

This count consists of car occupants, light goods vehicle occupants, motorcycle riders and OGV occupants
 Taxi drivers and drivers of private vehicles picking up/dropping off passengers at the site are excluded from the count

Time	1	2	3	4	5	6	7	Arr 6365	1	2	3	4	5	6	7	Dep 6339	Totals	Accum
00:00-01:00																		
01:00-02:00																		
02:00-03:00																		
03:00-04:00																		
04:00-05:00																		
05:00-06:00																		
06:00-07:00	46	0	0	0	0	0	0	46	6	0	0	0	0	0	0	6	52	(40)
07:00-08:00	113	13	1	0	0	0	0	142	59	11	2	1	0	0	0	91	233	(91)
08:00-09:00	173	43	4	1	0	0	0	275	132	23	5	1	0	0	0	197	472	(169)
09:00-10:00	188	60	11	2	0	0	0	349	171	55	4	4	0	0	0	309	658	(209)
10:00-11:00	235	107	10	9	0	0	0	515	185	85	13	4	0	0	0	410	925	(314)
11:00-12:00	288	167	12	14	0	0	0	714	301	144	20	3	0	0	0	661	1375	(367)
12:00-13:00	253	169	9	8	0	0	0	650	258	160	13	9	0	0	0	653	1303	(364)
13:00-14:00	260	156	13	6	1	0	0	640	296	132	14	11	0	0	0	646	1286	(358)
14:00-15:00	241	142	15	5	0	0	0	590	219	146	11	8	1	0	0	581	1171	(367)
15:00-16:00	252	189	10	10	0	0	0	700	276	151	18	8	0	0	0	664	1364	(403)
16:00-17:00	279	125	10	9	2	0	0	605	279	170	22	16	0	0	0	749	1354	(259)
17:00-18:00	203	109	22	15	2	0	0	557	239	122	16	15	2	0	0	601	1158	(215)
18:00-19:00	138	80	12	8	2	0	0	376	222	68	10	13	3	0	0	455	831	(136)
19:00-20:00	57	20	7	3	0	0	0	130	80	21	10	7	1	0	0	185	315	(81)
20:00-21:00	23	11	3	0	0	0	0	54	34	15	3	0	0	0	0	73	127	(62)
21:00-22:00	14	4	0	0	0	0	0	22	37	7	0	0	0	0	0	51	73	(33)
22:00-23:00	0	0	0	0	0	0	0	0	5	1	0	0	0	0	0	7	7	(26)
23:00-24:00																		

Site reference: WN-01-A-01

Survey date: 08/10/11

Day of week: Saturday

Multi-Modal survey site

People Surveyed: Pedestrians

Time	Arr 311	Dep 299	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00	3	2	5	(1)
07:00-08:00	5	8	13	(-2)
08:00-09:00	18	16	34	(0)
09:00-10:00	21	22	43	(-1)
10:00-11:00	25	22	47	(2)
11:00-12:00	31	36	67	(-3)
12:00-13:00	23	20	43	(0)
13:00-14:00	23	23	46	(0)
14:00-15:00	29	28	57	(1)
15:00-16:00	30	26	56	(5)
16:00-17:00	28	23	51	(10)
17:00-18:00	28	25	53	(13)
18:00-19:00	27	22	49	(18)
19:00-20:00	8	12	20	(14)
20:00-21:00	7	8	15	(13)
21:00-22:00	5	5	10	(13)
22:00-23:00	0	1	1	(12)
23:00-24:00				

Site reference: WN-01-A-01

Survey date: 08/10/11

Day of week: Saturday

Multi-Modal survey site

People Surveyed: Public transport Users

Time	Arr 18	Dep 18	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00	0	0	0	(0)
07:00-08:00	0	0	0	(0)
08:00-09:00	2	0	2	(2)
09:00-10:00	3	3	6	(2)
10:00-11:00	1	2	3	(1)
11:00-12:00	2	2	4	(1)
12:00-13:00	0	1	1	(0)
13:00-14:00	0	0	0	(0)
14:00-15:00	7	5	12	(2)
15:00-16:00	0	2	2	(0)
16:00-17:00	0	0	0	(0)
17:00-18:00	3	3	6	(0)
18:00-19:00	0	0	0	(0)
19:00-20:00	0	0	0	(0)
20:00-21:00	0	0	0	(0)
21:00-22:00	0	0	0	(0)
22:00-23:00	0	0	0	(0)
23:00-24:00				

Site reference: WN-01-A-01

Survey date: 08/10/11

Day of week: Saturday

Multi-Modal survey site

People Surveyed: Bus/Tram Passengers

Time	Arr 18	Dep 18	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00	0	0	0	(0)
07:00-08:00	0	0	0	(0)
08:00-09:00	2	0	2	(2)
09:00-10:00	3	3	6	(2)
10:00-11:00	1	2	3	(1)
11:00-12:00	2	2	4	(1)
12:00-13:00	0	1	1	(0)
13:00-14:00	0	0	0	(0)
14:00-15:00	7	5	12	(2)
15:00-16:00	0	2	2	(0)
16:00-17:00	0	0	0	(0)
17:00-18:00	3	3	6	(0)
18:00-19:00	0	0	0	(0)
19:00-20:00	0	0	0	(0)
20:00-21:00	0	0	0	(0)
21:00-22:00	0	0	0	(0)
22:00-23:00	0	0	0	(0)
23:00-24:00				

Site reference: WN-01-A-01

Survey date: 08/10/11

Day of week: Saturday

Multi-Modal survey site

People Surveyed: Total people

Time	Arr 6739	Dep 6701	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00	52	8	60	(44)
07:00-08:00	148	103	251	(89)
08:00-09:00	298	215	513	(172)
09:00-10:00	374	335	709	(211)
10:00-11:00	544	436	980	(319)
11:00-12:00	748	700	1448	(367)
12:00-13:00	681	681	1362	(367)
13:00-14:00	666	674	1340	(359)
14:00-15:00	628	619	1247	(368)
15:00-16:00	733	697	1430	(404)
16:00-17:00	644	779	1423	(269)
17:00-18:00	591	631	1222	(229)
18:00-19:00	406	481	887	(154)
19:00-20:00	138	197	335	(95)
20:00-21:00	61	81	142	(75)
21:00-22:00	27	56	83	(46)
22:00-23:00	0	8	8	(38)
23:00-24:00				

Site Reference: WK-01-A-03 Multi-Modal Site
 Created: Version: 2013(a)v6.11.2 09/01/13
 Latitude/Longitude: 52.2862, -1.5641
 Land Use Type: 01 - RETAIL/A - FOOD SUPERSTORE
 Region/Area: WEST MIDLANDS/WARWICKSHIRE
 Version/Creation Date: 2013(a)v6.11.2 09/01/13

Description: TESCO
 Street: EMSCOTE ROAD
 District:
 Town: WARWICK
 Post Code: CV34 5QJ

Location: Edge of Town
 Location Sub Category: Residential Zone
 Use Class: A1

Population within 500m: 1821
 Population within 1 Mile: 5,001 to 10,000
 Population within 5 Miles: 75,001 to 100,000
 Car ownership within 5 Miles: 1.1 to 1.5

Public Transport Provision Summary

Day	Period	Total buses/trams within 400m	Total Trains within 1000m	Total Services
Monday-Friday	0700-1900	192		192
Monday-Friday	0700-1000	36		36
Monday-Friday	1600-1900	36		36
Saturday	0700-1900	190		190
Sunday	0700-1900	148		148

Is site associated with a travel plan: No
 If not, are there any plans to implement a Travel Plan in the future? No
 Is survey data available before the implementation of the Travel Plan?
 Is the location of the site hilly or flat: Flat
 Urban Regeneration: No

Gross floor area: 7951 sqm
 Retail floor area: 5873 sqm
 Total Employees: 306

No. of developments for this Site: 1
 No. of survey Days for this Site: 1

Comments

The site is on Emscote Road which runs south joining with the M40, the M4 which heads south/east into Banbury and further south/east into Oxford. The M40 also heads north/west joining with the M5 which runs north into Birmingham and south into Worcester. The site is on the A452 which runs south joining with the M40, the M4 which heads south/east into Banbury and further south/east into Oxford. The M40 also heads north/west joining with the M5 which runs north into Birmingham and south into Worcester. The site is surrounded by residential areas. The site has 2 access points 1 of which is for vehicles.

Bus (or tram) site accessibility

- 3. Is there at least 1 bus (or tram) stop within the site frontage or within 400m of the site frontage? : Yes
- 4. If yes to question 3, where it is necessary to cross a road between the development and the stop, is there a conveniently placed crossing facility? : Yes
- 5. If yes to question 3, are there at least 2 buses (or trams) per hour (per direction between 0700 and 1900) with routes

serving significant areas of population within a 5 kilometre radius? (Mon-Sat): Yes
 6. If yes to question 5, what are the service characteristics? (please complete the outline information below)

Destination (town/area)	Number per hour	Approx. journey time
Stratford	4	49
Warwick Hospital	4	60

Design features encouraging non-car modes

12. Pedestrians

There are footpath links onto the site and crossing points within the car park to allow easier pedestrian trips.

13. Pedal cycles

There are smooth paths and ramps to allow cycle trips.

14. Public transport

There is a bus stop with a regular service right outside one of the footpaths.

Design features encouraging non-car modes

Road Network Distance to Local Developments	
Year of Analysis	2012
Nearest Primary School	2.2 kilometres
Nearest Secondary School	1.4 kilometres
Nearest Local Shop/Corner Shop	1.8 kilometres
Nearest Main Supermarket	2.7 kilometres
Nearest Doctors Surgery	1.7 kilometres
Nearest Hospital with Minor Injuries/A & E	2.0 kilometres
Nearest Sports/Leisure Centre	1.6 kilometres

Census Data	
Year of Census	2006
Census Output Area/Data Zone	E00159703
Number of people employed within Census Output Area	217
Number of households within Census Output Area	198
Number of people living within Census Output Area	310
Area of Census Output Area (hectares)	13.00
Population density within Census Output Area (per hectare)	23.84

SITE PHOTO



Site reference:	WK-01-A-03	Multi-Modal survey site
Trade name:	TESCO	
Site area (h/a):	2.71	
Gross floor area (sqm)	7951	
GFA not in use (sqm)	0	
Retail floor area (sqm)	5873	
RFA (non food)	1009	
Open since	1999	
Total Employees	306	
Full Time Employees	104	33%
Part Time Employees	202	67%
Approximate % of total employees working standard 9-5 hours or similar	33%	
Percentage Split of Employee Gender		
Male	35%	
Female	65%	
GFA per employee	25.984	
Number of units	2	
Name of nearest site	SAINSBURY'S	
Distance to nearest similar site	1 Km	
OPENING TIMES (24 Hour format)		
Mon to Thurs	06:00	to 24:00
Friday	00:00	to 24:00
Saturday	00:00	to 24:00
Sunday	10:00	to 16:00
Filling station	PFS is present at the site and is included in the count	
Cash card facilities	Yes	
Home Delivery	No	

Comments

The Petrol Station on site is 24/7, it has a pump and pay service at night.

Multi-Modal survey site

On-Site parking

Total no. of parking spaces	564
Spaces Per 100m2 GFA	7.093
Spaces Per 100m2 RFA	9.603

Number of spaces

Employee	0
Disabled	28
Visitor/Customer	510
OGV parking bays	0
Cycle racks	0
OGV loading bays	0
Mother & Toddler	21
Motorcycle spaces	5

Parking charges No

Comments about the management of the site car park, along with enforcement measures
Tesco's manage their own car park.

Site parking surface or non-surface (multi-storey/underground)
Surface

Site reference: WK-01-A-03 Survey date: 16/10/12 Day of week: Tuesday

Multi-Modal survey site

Vehicles surveyed: Total vehicles

Survey type: Manual Count
 AM weather: Mild and Windy
 PM weather: Cold and Clear

Initial car park occupancy: 12 Final car park occupancy: 45

BRACKETED ACCUMULATION FIGURES ARE NOT ABSOLUTE

Data proportions in %

Motor cars	94	Motor cycles	1	Public service	0
Light goods	4	OGV (1)	1	OGV (2)	0
				Taxis	0

Time	Arr 4524	Dep 4491	Totals	Parking Accum
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00				
07:00-08:00	108	102	210	18
08:00-09:00	169	127	296	60
09:00-10:00	311	216	527	155
10:00-11:00	336	278	614	213
11:00-12:00	370	367	737	216
12:00-13:00	383	402	785	197
13:00-14:00	373	352	725	218
14:00-15:00	336	378	714	176
15:00-16:00	355	355	710	176
16:00-17:00	352	388	740	140
17:00-18:00	424	352	776	212
18:00-19:00	389	444	833	157
19:00-20:00	300	375	675	82
20:00-21:00	187	216	403	53
21:00-22:00	131	139	270	45
22:00-23:00				
23:00-24:00				

Site reference: WK-01-A-03 Survey date: 16/10/12 Day of week: Tuesday
Multi-Modal survey site
Vehicles surveyed: OGV

Data proportions in % OGV (1) 85 OGV (2) 15

1 occupant per OGV is assumed, and included in the vehicle occupants count

Time	Arr 36	Dep 38	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00				
07:00-08:00	3	2	5	(1)
08:00-09:00	4	5	9	(0)
09:00-10:00	2	5	7	(-3)
10:00-11:00	1	3	4	(-5)
11:00-12:00	3	4	7	(-6)
12:00-13:00	4	0	4	(-2)
13:00-14:00	2	1	3	(-1)
14:00-15:00	1	3	4	(-3)
15:00-16:00	2	5	7	(-6)
16:00-17:00	2	0	2	(-4)
17:00-18:00	3	0	3	(-1)
18:00-19:00	5	4	9	(0)
19:00-20:00	1	5	6	(-4)
20:00-21:00	1	0	1	(-3)
21:00-22:00	2	1	3	(-2)
22:00-23:00				
23:00-24:00				

Site reference: WK-01-A-03

Survey date: 16/10/12

Day of week: Tuesday

Multi-Modal survey site

Vehicles surveyed: PSV

Time	Arr 8	Dep 8	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00				
07:00-08:00	1	1	2	(0)
08:00-09:00	0	0	0	(0)
09:00-10:00	1	1	2	(0)
10:00-11:00	1	1	2	(0)
11:00-12:00	0	0	0	(0)
12:00-13:00	0	0	0	(0)
13:00-14:00	1	1	2	(0)
14:00-15:00	1	2	3	(-1)
15:00-16:00	0	0	0	(-1)
16:00-17:00	0	0	0	(-1)
17:00-18:00	1	1	2	(-1)
18:00-19:00	1	0	1	(0)
19:00-20:00	1	1	2	(0)
20:00-21:00	0	0	0	(0)
21:00-22:00	0	0	0	(0)
22:00-23:00				
23:00-24:00				

Site reference: WK-01-A-03

Survey date: 16/10/12

Day of week: Tuesday

Multi-Modal survey site

Vehicles surveyed: Taxis

Time	Arr 2	Dep 5	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00				
07:00-08:00	0	0	0	(0)
08:00-09:00	0	0	0	(0)
09:00-10:00	0	0	0	(0)
10:00-11:00	0	0	0	(0)
11:00-12:00	0	0	0	(0)
12:00-13:00	0	0	0	(0)
13:00-14:00	0	0	0	(0)
14:00-15:00	0	0	0	(0)
15:00-16:00	1	1	2	(0)
16:00-17:00	0	0	0	(0)
17:00-18:00	1	0	1	(1)
18:00-19:00	0	1	1	(0)
19:00-20:00	0	1	1	(-1)
20:00-21:00	0	2	2	(-3)
21:00-22:00	0	0	0	(-3)
22:00-23:00				
23:00-24:00				

Site reference: WK-01-A-03

Survey date: 16/10/12

Day of week: Tuesday

Multi-Modal survey site

Vehicles surveyed: Cycles

Time	Arr 31	Dep 32	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00				
07:00-08:00	0	0	0	(0)
08:00-09:00	2	0	2	(2)
09:00-10:00	0	0	0	(2)
10:00-11:00	0	2	2	(0)
11:00-12:00	1	2	3	(-1)
12:00-13:00	3	3	6	(-1)
13:00-14:00	2	2	4	(-1)
14:00-15:00	1	0	1	(0)
15:00-16:00	1	1	2	(0)
16:00-17:00	2	1	3	(1)
17:00-18:00	5	1	6	(5)
18:00-19:00	7	12	19	(0)
19:00-20:00	5	4	9	(1)
20:00-21:00	0	2	2	(-1)
21:00-22:00	2	2	4	(-1)
22:00-23:00				
23:00-24:00				

Site reference: WK-01-A-03 Survey date: 16/10/12 Day of week: Tuesday
Multi-Modal survey site
People Surveyed: Car/LGV/Motorcycle occupants

This count consists of car occupants, light goods vehicle occupants, motorcycle riders and OGV occupants
 Taxi drivers and drivers of private vehicles picking up/dropping off passengers at the site are excluded from the count

Time	1	2	3	4	5	6	7	Arr 5427	1	2	3	4	5	6	7	Dep 5190	Totals	Accum
00:00-01:00																		
01:00-02:00																		
02:00-03:00																		
03:00-04:00																		
04:00-05:00																		
05:00-06:00																		
06:00-07:00																		
07:00-08:00	103	4	0	0	1	0	0	116	90	12	0	0	0	0	0	114	230	(2)
08:00-09:00	150	19	0	0	0	0	0	188	108	19	0	0	0	0	0	146	334	(44)
09:00-10:00	259	51	0	0	0	0	1	368	180	36	0	0	0	0	0	252	620	(160)
10:00-11:00	262	72	1	0	0	0	1	416	229	49	0	0	0	0	0	327	743	(249)
11:00-12:00	291	79	0	0	0	0	0	449	281	86	0	0	0	0	0	453	902	(245)
12:00-13:00	296	87	0	0	0	0	0	470	372	30	0	0	0	0	0	432	902	(283)
13:00-14:00	283	85	4	0	0	0	1	472	322	30	0	0	0	0	0	382	854	(373)
14:00-15:00	266	64	6	0	0	0	0	412	356	22	0	0	0	0	0	400	812	(385)
15:00-16:00	278	68	9	0	0	0	0	441	321	33	1	0	0	0	0	390	831	(436)
16:00-17:00	234	109	8	1	0	0	0	480	325	63	0	0	0	0	0	451	931	(465)
17:00-18:00	345	76	3	0	0	0	0	506	250	98	5	0	1	0	0	466	972	(505)
18:00-19:00	357	29	3	0	0	0	0	424	365	77	1	0	0	0	0	522	946	(407)
19:00-20:00	272	27	0	0	0	0	1	333	315	58	3	0	0	0	0	440	773	(300)
20:00-21:00	170	16	1	0	0	0	0	205	180	38	0	0	0	0	0	256	461	(249)
21:00-22:00	115	16	0	0	0	0	0	147	119	20	0	0	0	0	0	159	306	(237)
22:00-23:00																		
23:00-24:00																		

Site reference: WK-01-A-03

Survey date: 16/10/12

Day of week: Tuesday

Multi-Modal survey site

People Surveyed: Pedestrians

Time	Arr 617	Dep 797	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00				
07:00-08:00	12	13	25	(-1)
08:00-09:00	26	24	50	(1)
09:00-10:00	45	25	70	(21)
10:00-11:00	35	45	80	(11)
11:00-12:00	42	42	84	(11)
12:00-13:00	66	68	134	(9)
13:00-14:00	51	75	126	(-15)
14:00-15:00	37	55	92	(-33)
15:00-16:00	64	64	128	(-33)
16:00-17:00	54	73	127	(-52)
17:00-18:00	60	73	133	(-65)
18:00-19:00	42	79	121	(-102)
19:00-20:00	47	76	123	(-131)
20:00-21:00	15	47	62	(-163)
21:00-22:00	21	38	59	(-180)
22:00-23:00				
23:00-24:00				

Site reference: WK-01-A-03

Survey date: 16/10/12

Day of week: Tuesday

Multi-Modal survey site

People Surveyed: Public transport Users

Time	Arr 67	Dep 37	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00				
07:00-08:00	3	0	3	(3)
08:00-09:00	1	0	1	(4)
09:00-10:00	5	0	5	(9)
10:00-11:00	5	4	9	(10)
11:00-12:00	9	1	10	(18)
12:00-13:00	17	9	26	(26)
13:00-14:00	11	7	18	(30)
14:00-15:00	5	5	10	(30)
15:00-16:00	4	9	13	(25)
16:00-17:00	4	0	4	(29)
17:00-18:00	1	1	2	(29)
18:00-19:00	0	1	1	(28)
19:00-20:00	2	0	2	(30)
20:00-21:00	0	0	0	(30)
21:00-22:00	0	0	0	(30)
22:00-23:00				
23:00-24:00				

Site reference: WK-01-A-03

Survey date: 16/10/12

Day of week: Tuesday

Multi-Modal survey site

People Surveyed: Bus/Tram Passengers

Time	Arr 66	Dep 37	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00				
07:00-08:00	3	0	3	(3)
08:00-09:00	1	0	1	(4)
09:00-10:00	5	0	5	(9)
10:00-11:00	5	4	9	(10)
11:00-12:00	8	1	9	(17)
12:00-13:00	17	9	26	(25)
13:00-14:00	11	7	18	(29)
14:00-15:00	5	5	10	(29)
15:00-16:00	4	9	13	(24)
16:00-17:00	4	0	4	(28)
17:00-18:00	1	1	2	(28)
18:00-19:00	0	1	1	(27)
19:00-20:00	2	0	2	(29)
20:00-21:00	0	0	0	(29)
21:00-22:00	0	0	0	(29)
22:00-23:00				
23:00-24:00				

Site reference: WK-01-A-03

Survey date: 16/10/12

Day of week: Tuesday

Multi-Modal survey site

People Surveyed: Train Passengers

Time	Arr 1	Dep 0	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00				
07:00-08:00	0	0	0	(0)
08:00-09:00	0	0	0	(0)
09:00-10:00	0	0	0	(0)
10:00-11:00	0	0	0	(0)
11:00-12:00	1	0	1	(1)
12:00-13:00	0	0	0	(1)
13:00-14:00	0	0	0	(1)
14:00-15:00	0	0	0	(1)
15:00-16:00	0	0	0	(1)
16:00-17:00	0	0	0	(1)
17:00-18:00	0	0	0	(1)
18:00-19:00	0	0	0	(1)
19:00-20:00	0	0	0	(1)
20:00-21:00	0	0	0	(1)
21:00-22:00	0	0	0	(1)
22:00-23:00				
23:00-24:00				

Site reference: WK-01-A-03

Survey date: 16/10/12

Day of week: Tuesday

Multi-Modal survey site

People Surveyed: Total people

Time	Arr 6142	Dep 6056	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00				
07:00-08:00	131	127	258	(4)
08:00-09:00	217	170	387	(51)
09:00-10:00	418	277	695	(192)
10:00-11:00	456	378	834	(270)
11:00-12:00	501	498	999	(273)
12:00-13:00	556	512	1068	(317)
13:00-14:00	536	466	1002	(387)
14:00-15:00	455	460	915	(382)
15:00-16:00	510	464	974	(428)
16:00-17:00	540	525	1065	(443)
17:00-18:00	572	541	1113	(474)
18:00-19:00	473	614	1087	(333)
19:00-20:00	387	520	907	(200)
20:00-21:00	220	305	525	(115)
21:00-22:00	170	199	369	(86)
22:00-23:00				
23:00-24:00				

Appendix C – Beaconsfield New Town Waiting Restriction Traffic Regulation Orders

Beaconsfield New Town waiting restriction TRO proposals 2013

No	Street	Proposal to introduce:	Effect:
1	Assheton Rd	Double yellow lines at the junctions with Sandleswood End and Bearswood End	To prohibit waiting at any time for junction protection
2	Bearswood End	Double yellow lines at the junctions with Assheton Rd and Brownswood Rd	To prohibit waiting at any time for junction protection
3	Brownswood Road	Double yellow lines at the junctions with Sandleswood End and Bearswood End	To prohibit waiting at any time for junction protection
4	Butlers Court Road	Double yellow lines at the junction with Wattleton rd	To prohibit waiting at any time for junction protection
5	Caledon Rd	Double yellow lines at the junction with Wilton Crescent Single yellow lines at the junctions with One Tree lane and Wilton Rd to prevent all day commuter parking	To prohibit waiting at any time for junction protection To prohibit waiting Mon-Fri. 11am-12 noon
6	Candlemas Mead	Double yellow lines along both sides of certain lengths of the northern and western flanks of the road Single yellow lines along certain lengths of east and western sides of the road to allow traffic to pass the narrow sections safely and prevent all day commuter parking	To prohibit waiting at any time on junction(s) To prohibit waiting Mon-Fri 11am -12 noon
7	Copperfields	Double yellow lines to both sides of the southern end of the road at the junction with Brownswood Rd	To prohibit waiting at any time for junction protection
8	Curzon Avenue	Double yellow lines along certain lengths of north and southern sides of the road and at the junction with Sandleswood End	To prohibit waiting at any time to allow traffic to pass the narrow sections safely and for junction protection
	Grenfell Rd	Double yellow lines along the southern side of the road at the junction with Wilton Crescent and Wilton Rd <i>To revoke the current single yellow line to the southern side, effective Mon-Fri 11am – 12noon</i>	To prohibit waiting at any time for junction protection <i>To allow parking where the current restriction applies</i>

	No	Street	Proposal to introduce:	Effect:
9	Ledborough Lane	Double yellow lines to the southern side covering the junctions leading into Wilton road	To prohibit waiting at any time for junction protection	
10	Malkin Drive	Double yellow lines along the entire northern side and around the turning head of the cul-de-sac. Also at the junction with Woodside Avenue, Single yellow lines along part of the southern side of the road to prevent all day commuter parking	To prohibit waiting at any time to allow traffic to pass the narrow section safely and for junction protection	
11	One Tree Lane	Single yellow lines throughout the whole length and both sides, to prevent all day commuter parking	To prohibit waiting Mon-Fri 11am - 12 noon	
12	Old Lodge Drive	Double yellow lines to both sides of the road at the junctions with Wattleton Road	To prohibit waiting at any time for junction protection	
13	Redwood Place	Double yellow lines to the north eastern side of the entire road (to private boundary) except for a disabled persons parking space near the Wattleton Rd junction A disabled persons parking space on the north western side from a point 15 metres north west of the junction with Wattleton Rd	To prohibit waiting at any time to allow traffic to pass the narrow section safely and for junction protection	
14	Rolfe Close	Double yellow lines on both sides at the junction with Wattleton Rd, on the entire north eastern side and the turning head	To permit blue badge holders to opportunity to park in a designated space	
15	Sandelswood End	Single yellow lines along part of the south western side of the road to prevent all day commuter parking Double yellow lines to both sides of the road at the junctions with Assheton Rd, Curzon Avenue and Brownswood Rd	To prohibit waiting Mon-Fri 10am – 11am and 2pm - 3pm To prohibit waiting at any time for junction protection	
16	The Spinney	Double yellow lines on both sides at the junction with Wattleton Rd	To prohibit waiting at any time for junction protection	

No	Street	Proposal to introduce:	Effect:
17	Wattleton Rd	Double yellow lines at the junctions with Butlers Court Rd, The Spinney and on both sides of the road from the junction with The Spinney to a point at the boundary of house numbers 31 and 33. At the Redwood Place and Old Lodge Drive cross roads junction. From the Redwood Place junction (north side) north east to a point at the boundary of house numbers 94 and 96. From the Rolfe Close Junction south east side for a distance of 15 metres south west wards and 20 metres north eastwards Formal "school keep clear" restrictions out side the school entrance	To prohibit waiting at any time for junction protection and dangerous parking on the bends
18	Warwick Rd	Limited waiting parking spaces along certain lengths of the south side – same extents, but extending the time periods permitted to park / return to park	Prohibit stopping on the restriction Mon-Fri 8am-5pm To allow permissive parking between Mon-Sat 8am – 6pm for a maximum stay of 2 hours and no return within 2 hours (was max stay 1 hour no return 1 hour)
19	Wilton Crescent	Double yellow lines to the northern end of the road at the junction with Wilton Rd	To prohibit waiting at any time for junction protection
20	Wilton rd	Double yellow lines to the northern end of the road at the crescent and junction with Ledborough Lane and at the southern end junction with Grenfell Rd Single yellow lines along both sides of the whole length the road (between the proposed double yellow lines) to allow traffic to pass the narrow sections safely and prevent all day commuter parking	To prohibit waiting at any time for junction protection To prohibit waiting Mon-Fri 11am -12 noon
21	Woodside Ave	Double yellow lines at the junction with Malkin Drive Single yellow line to the inner side of the curved avenue from Malkin Drive to a point 10 metres north of Woodside Rd	To prohibit waiting at any time for junction protection To prohibit waiting Mon-Fri 11.00 to 12.00 noon
22	Woodside Rd	Double yellow lines to the southern side at the junction with Woodside Close	To prohibit waiting at any time for junction protection

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Parking Study

Gerrards Cross Car Parking Capacity Survey - 2014 to 2033

Prepared for South Bucks District Council

By YES Engineering



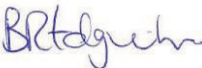
March 2014



Revision History

Revision N°	Prepared By	Description	Date

Document Acceptance

Action	Name	Signed	Date
Prepared by	K Backhouse		March 2014
Reviewed by	P Willis		March 2014
Approved by	B Edgecombe		March 2014
on behalf of	YES Engineering		

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 (unless YES Engineering has expressly agreed otherwise with the Client in writing)

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1 Introduction

South Bucks District Council commissioned YES Engineering Ltd to produce a Car Parking Survey for Gerrards Cross for the period 2014 to 2033.

The purpose of this study is to identify car parking requirements up to 2033, taking into account predicted growth, planning commitments for the district centre and existing information on car parking utilisation.

The review sets out the results of new surveys undertaken of the current usage of existing car parks and on street space, suggests capacity requirements to 2033 including the balance of long and short stay parking, compares car parking provision with other town centres, and evaluates alternative modes of transport.

The Parking Survey will inform and provide robust evidence for the Council's Delivery Development Plan Document (DDPD) on current and future parking needs to service Gerrards Cross.

2 Parking Surveys 2014

2.1 Introduction

YES Engineering conducted parking surveys on Thursday 16th January 2014 and Saturday 18th January 2014. The surveys consisted of on-street parking beat surveys around the town centre and wider area, and video parking surveys of the following car parks, as shown in **Appendix A**:

- Gerrards Cross Rail Station overflow car park (off Orchehill Rise)
- Gerrards Cross Rail Station car park (off Station Approach)
- Station Road car park
- Tesco car park
- Bulstrode Way car park
- Sainsburys Local car park
- Packhorse Road car park

Further parking beat surveys, and additional video surveys were carried out at the Station Road car park on Tuesday 21st January 2014 in order to verify the results. However, it should be noted that the weather was cold with intermittent rain and is likely to have a different profile during the summer months.

The Institute of Highways and Transportation published 'Parking Strategies & Management' guidelines in July 2005. Chapter 6 of this document provides advice on how much car parking should be provided. This section reads, '*Attempts to limit demand by allowing parking shortages to occur (i.e. when the car park is full) should be avoided, since the absence of spaces available for use causes frustration and "searching" traffic, which is inefficient and environmentally damaging.....Set charges and controls at a level that will keep demand at no more than about 85% of capacity.*'

This operational maximum allows vehicles to search for a space within a reasonable time, without impacting on the surrounding highway network. When this 85% threshold is passed drivers may find it hard to find a parking space, and this situation is commonly referred to as "parking stress". This criteria has been applied to the parking demand set out in this report.

2.2 2014 Off-Street Surveys

Table 2.1 shows the current off-street parking provision in the town centre and the related parking charges.

Table 2.1 Current off-road parking provision

Car Park	Spaces	Disabled	Charges	Operating Hours
Gerrards Cross Rail Station Overflow (off Orchehill Rise)	128	0	Daily rate £5.50 Off peak rate £5.50 Weekly rate £20 Monthly rate £76 Annual rate £800	Monday to Sunday 24 hours a day
Gerrards Cross Rail Station (off Station Approach)	334	7	Daily rate £7 Off peak rate £4.50 Weekly rate £26 Monthly rate £99 Annual rate £1040	Monday to Sunday 24 hours a day
Station Road Car Park	129	8	Up to 1 hour £1.10 Up to 2 hours £1.70 Up to 3 hours £2.30 Up to 4 hours £3.00 Up to 24 hours £4.40 All Day £1 3 months £260 6 months £470 6 months £353	Monday to Saturday 0800 – 1800 hours Sundays and Bank Holidays Season Tickets Residents Permits
Tesco Car Park	284	15	Free	Up to 3 hours
Bulstrode Way Car Park	34	2	Up to 1 hour £1.10 Up to 2 hours £1.70 Up to 3 hours £2.30 All Day £1 3 months £260 6 months £470 6 months £364	Monday to Saturday 0800 – 1800 hours Sundays and Bank Holidays Season Tickets Residents Permits
Sainsburys Local Car Park	19	1	Free	Up to 45 minutes
Packhorse Road Car Park	64 (80 on Saturdays)	4	Up to 1 hour £1.10 Up to 2 hours £1.70 Up to 3 hours £3.30 Up to 4 hours £4.10 Up to 24 hours £6.40 All Day £1 3 months £280 6 months £520 6 months £390	Monday to Saturday 0800 – 1800 hours Sundays and Bank Holidays Season Tickets Residents Permits
TOTAL	992 (1008 on Saturdays)	29		

Off-Street car parks – Thursday 16th January 2014

All of the surveyed car parks were at or near their theoretical capacity (85% full) at some point during Thursday. It should be noted that Packhorse Road car park became 94% full so there is no capacity for growth. **Table 2.2** sets out the maximum occupancy of the car parks and **Figure 2.1** shows the profile of use per car park throughout the day.

Table 2.2 Off-Street Car Park Occupancy – Thursday 16th January 2014

Reference on Appendix A	Car Park	Capacity	Maximum Occupancy	Maximum as a %age of Capacity
A	Gerrards Cross Rail Station Overflow (off Orchehill Rise)	128	107	84%
B	Gerrards Cross Rail Station (off Station Approach)	334	280	84%
C	Station Road Car Park	129	103	80%
D	Tesco Car Park	284	227	80%
E	Bulstrode Way Car Park	34	26	76%
F	Sainsburys Local Car Park	19	16	84%
G	Packhorse Road Car Park	64	60	94%

Figure 2.1 Off-Street Car Park Occupancy, by Time – Thursday 16th January 2014

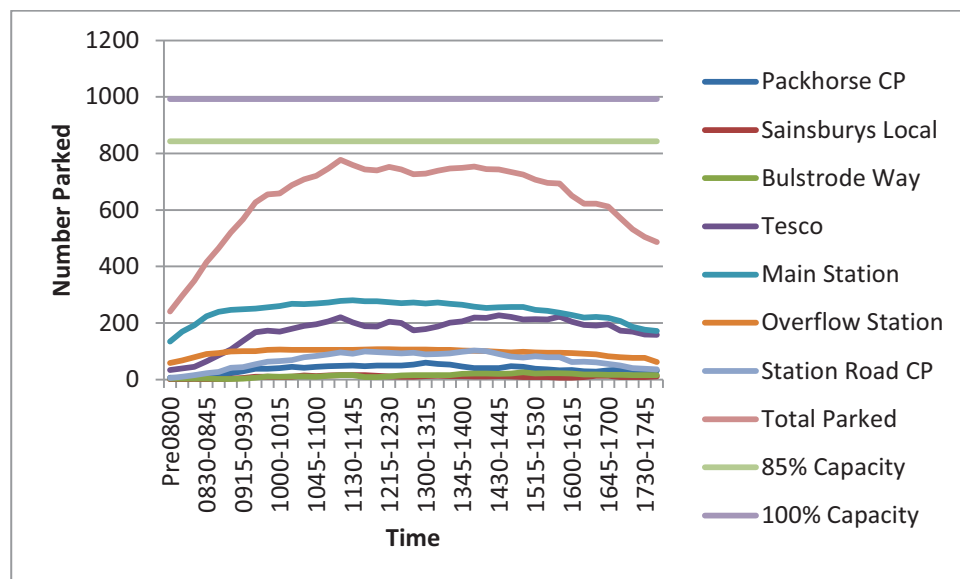


Figure 2.1 shows that the peak parking utilisation across the seven surveyed car parks occurred at 11.15am, with 777 of the 992 available spaces used (78% utilisation). The two railway station car parks provide the vast majority of long stay parking in the town. At 11.15am 378 of the 462 spaces were used giving a percentage utilisation of 82% although the vast majority of cars arrived before 09.00am as they are used by commuters travelling further afield.

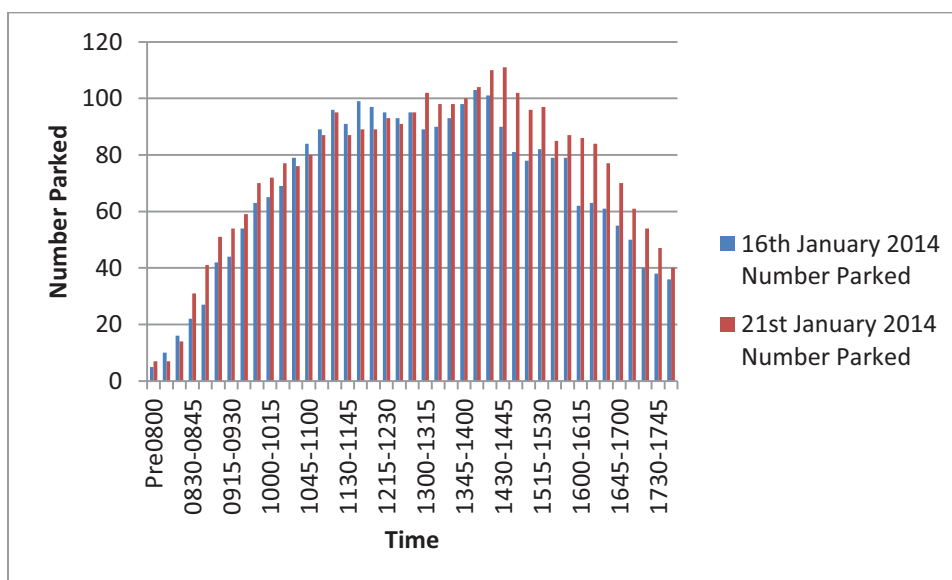
The remaining five car parks used mainly for short stay parking had a total of 399 vehicles parked during the 11.15am peak, which amounts to 75% utilisation of the 530 spaces.

It should be noted that congestion occurred within the town centre Packhorse Road corridor during peak hours. In addition to this, the Railway Station/Tesco/Packhorse Road and Station Road/Ethorpe Close/Packhorse Road junctions experienced queuing with blocking of the junctions during interpeak times.

Figure 2.1 also shows the short stay car parks have similar usage patterns throughout the day. The station car parks fill very quickly until around 9am then reach a peak at 11.15 before maintaining a steady usage until around 17:00 when they empty fairly quickly.

A further video survey was conducted at the Station Road car park on Tuesday 21st January 2014 to establish that the profile given in **Figure 2.1** above is a normal weekday pattern. The results for both 16th January and 21st January 2014 for Station Road Car Park are set out in **Figure 2.2**, and they demonstrate that the results are representative and therefore robust.

Figure 2.2 Station Road Car Park Occupancy – Thursday 16th Jan 2014 and Tuesday 21st Jan 2014



Off-Street car parks – Saturday 18th January 2014

As mentioned at 2.1 above, further surveys were conducted at the car parks on Saturday 18th January 2014. The results of maximum occupancy are presented in **Table 2.3** below and the daily profile in **Figure 2.3**. It should be noted that a further 16 spaces are available on a Saturday for users of the Packhorse Road car park.

Table 2.3 Off-Street Car Park Occupancy – Saturday 18th January 2014

Reference on Appendix A	Car Park	Capacity	Maximum Occupancy	Maximum as a %age of Capacity
A	Gerrards Cross Station Overflow (off Orchehill Rise)	128	8	>1%
B	Gerrards Cross Station (off Station Approach)	334	100	30%
C	Station Road Car Park	129	81	63%
D	Tesco Car Park	284	299	105%
E	Bulstrode Way Car Park	34	32	94%
F	Sainsburys Local Car Park	19	17	89%
G	Packhorse Road Car Park	80	61	76%
TOTAL		1,008	598	59%

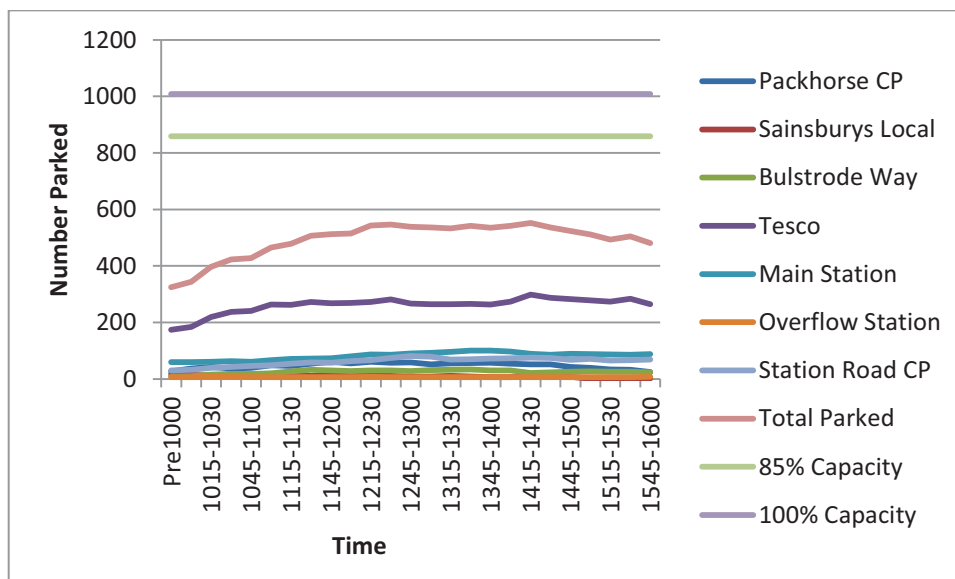
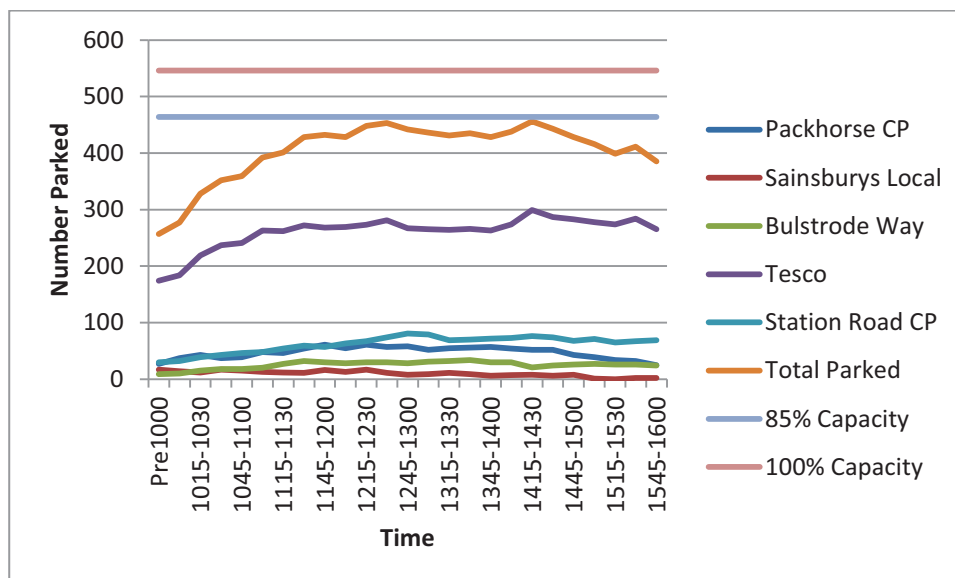
Figure 2.3 Off-Street Car Park Occupancy, by Time – Saturday 18th January 2014

Figure 2.3 appears to show that there is ample spare capacity on a Saturday. However, when you remove the long stay provision from the analysis and consider the short stay car parks only (**Figure 2.4**) it is evident that parking stress is high. The peak parking utilisation across the five surveyed car parks occurred at 2.15pm, with 456 of the 546 available spaces used. This is at the 85% operational maximum, but masks the fact that the Tesco car park was over 100% utilised. The usage pattern is broadly similar across each of the five car parks.

Figure 2.4 Off-Street Short Stay Car Park Occupancy, by Time – Saturday 18th January 2014



2.3 Parking Ticket Data and 2010 to 2013 Parking Survey Data

South Bucks District Council supplied ticket data for each of their car parks (Bulstrode Way, Packhorse Road, and Station Road) for the dates where parking surveys were conducted (16th and 18th January 2014). The Council also supplied information relating to ticket receipts and revenue for 5 consecutive years commencing 2008/2009 to 2012/2013. A copy of this data can be supplied on request.

In addition to the above, South Bucks District Council supplied data for parking surveys carried out at each of the council car parks for dates between 2010 and 2013.

The ticket and survey data has been used to consider each of the council car parks in turn.

Bulstrode Way Car Park

Table 2.4 sets out the number of tickets sold per ticket value on Thursday 16th January 2014 and Saturday 18th January 2014.

Table 2.4 Bulstrode Way Car Park Ticket Receipts and Revenue (January 2014 Parking Survey)

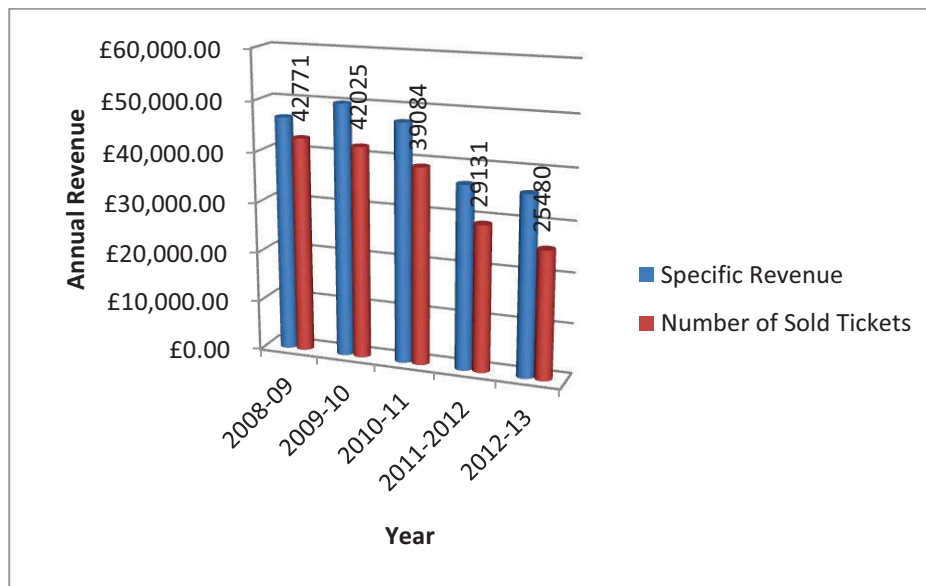
Ticket Value	£1.10	£1.70	£2.30	Total
Thursday 16th January				
Specific Revenue	£37.40	£45.90	£41.40	£124.70
Sold Tickets	34	27	18	79
Saturday 18th January				
Specific Revenue	£47.30	£74.80	£43.70	£165.80
Sold Tickets	43	44	19	106

The yearly data for Bulstrode Way Car Park has also been examined and presented in **Table 2.5** and the yearly trend illustrated in the graph set out at **Figure 2.5**.

Table 2.5 Bulstrode Way Car Park Ticket Receipts and Revenue (2008 to 2013)

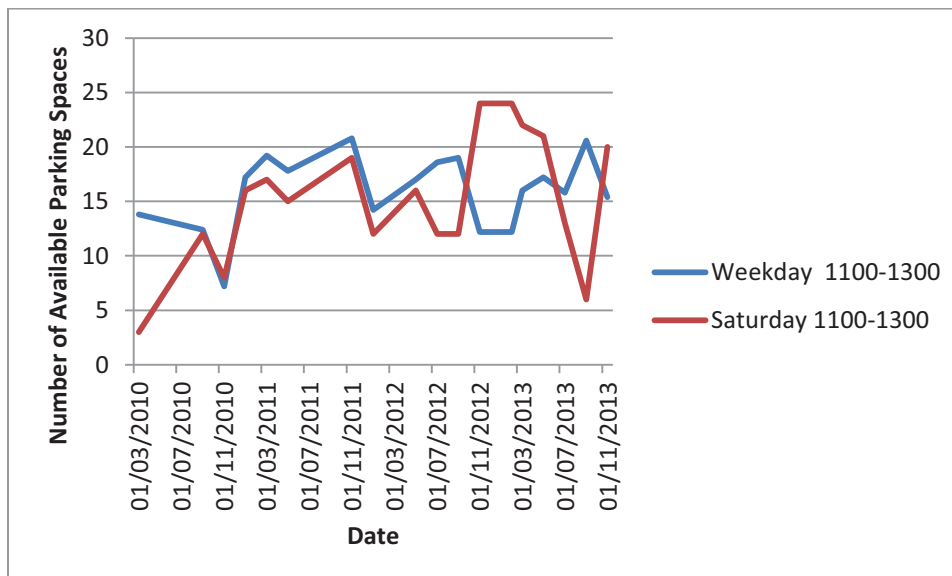
Year	2008/09	2009/10	2010/11	2011/12	2012/13
Specific Revenue	£46,640.70	£50,045.60	£47,313.00	£36,457.30	£35,750.70
Sold Tickets	42771	42025	39084	29131	25480

Figure 2.5 Bulstrode Way Car Park Ticket Receipts and Revenue (2008 to 2013)



The parking survey data (2010 to 2013) has also been examined and the number of available spaces between 1100 and 1300 hours, the period of heaviest use, has been set out in **Figure 2.6** below for both the weekday and Saturday.

Figure 2.6 Bulstrode Way Car Park 2-010 to 2013 – Weekday and Saturday Parking Availability (1100 to 1300 hours)



There is a clear reduction in use of the Bulstrode Way car park since the end of 2010. This was when the Tesco store opened in Gerrards Cross.

It can be seen from **Figure 2.6** that the car park usage demonstrates that there is little spare capacity in the Bulstrode Way Car Park. This coincides with the 2014 parking survey which revealed that there were just 8 and 2 spaces available at peak times for the weekday and Saturday respectively.

Packhorse Road Car Park

Table 2.6 sets out the number of tickets sold per ticket value on Thursday 16th January 2014 and Saturday 18th January 2014.

Table 2.6 Packhorse Road Car Park Ticket Receipts and Revenue (January 2014 Parking Survey)

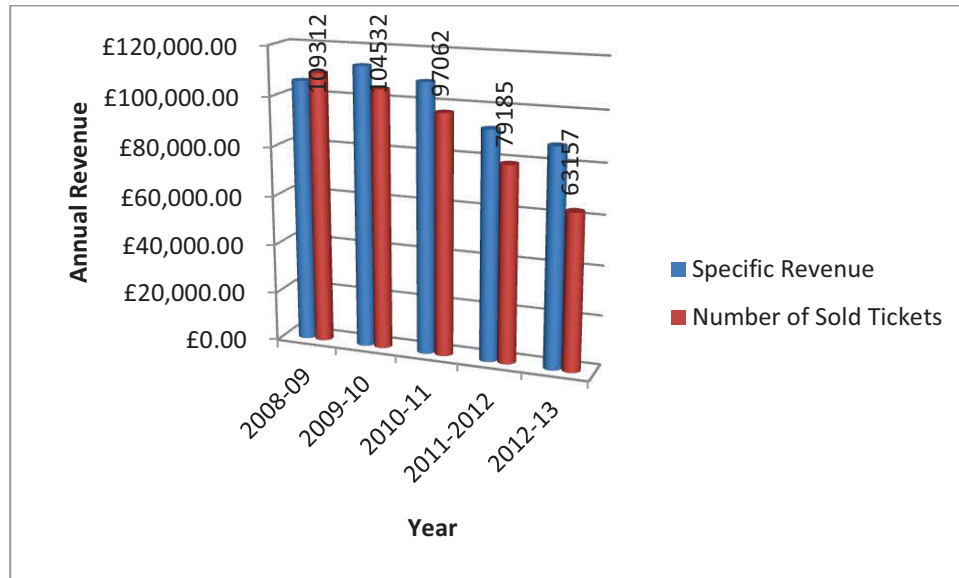
Ticket Value	£1.10	£1.70	£3.30	£4.10	£6.40	Total
Thursday 16th January						
Specific Revenue	£113.30	£79.90	£13.20	£0.00	£19.20	£225.60
Sold Tickets	103	47	4	0	3	157
Saturday 18th January						
Specific Revenue	£162.80	£136.00	£42.90	£16.40	£19.20	£377.30
Sold Tickets	148	80	13	4	3	248

The yearly data for Packhorse Road Car Park has also been examined and presented in **Table 2.7** and the yearly trend illustrated in the graph set out at **Figure 2.7**.

Table 2.7 Packhorse Road Car Park Ticket Receipts and Revenue (2008 to 2013)

Year	2008/09	2009/10	2010/11	2011/12	2012/13
Specific Revenue	£105,883.90	£113,057.50	£108,372.00	£92,054.00	£87,603.60
Sold Tickets	109312	104532	97062	79185	63157

Figure 2.7 Packhorse Road Car Park Ticket Receipts and Revenue (2008 to 2013)



As for usage of the Packhorse Road car park it is shown that this dropped significantly when the Tesco store opened. The parking survey data (2010 to 2013) has also been examined for the Packhorse Road car park and the number of available spaces between 1100 and 1300 hours, the period of heaviest use, has been set out in **Figure 2.8** below for both the weekday and Saturday.

Figure 2.8 Packhorse Road Car Park 2010 to 2013 – Weekday and Saturday Parking Availability (1100 to 1300 hours)

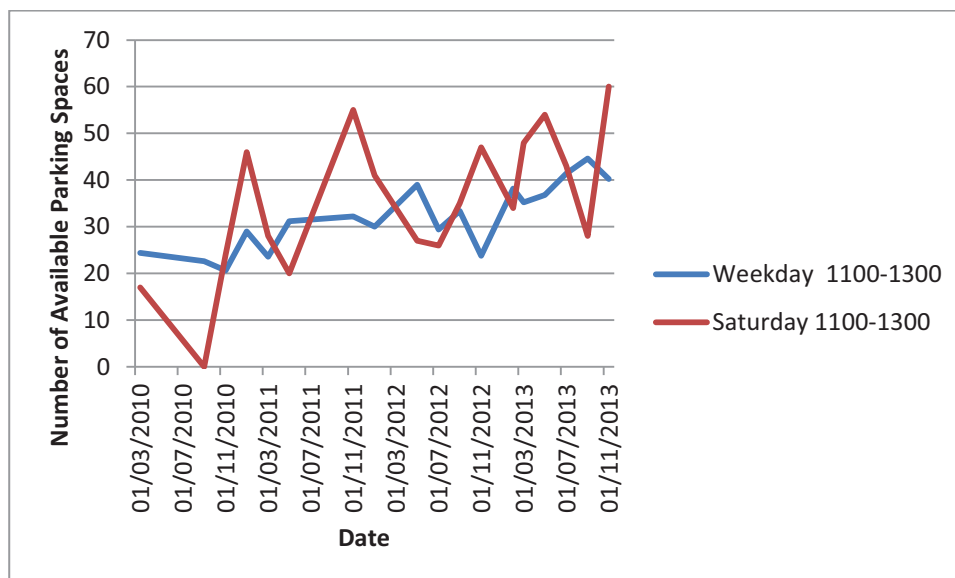


Figure 2.8 reveals that the car park usage has reduced over time with over 20 spaces being available on both days in the Packhorse Road Car Park. This coincides with the 2014 parking survey for Saturday which revealed that there were 19 spaces available. However, the weekday survey in 2014 showed there were just 4 available spaces at the peak time on the Thursday. Fluctuation of demand varies on a day to day basis.

Station Road Car Park

Table 2.8 sets out the number of tickets sold per ticket value on Thursday 16th January 2014 and Saturday 18th January 2014 for the Station Road Car Park.

Table 2.8 Station Road Car Park Ticket Receipts and Revenue (January 2014 Parking Survey)

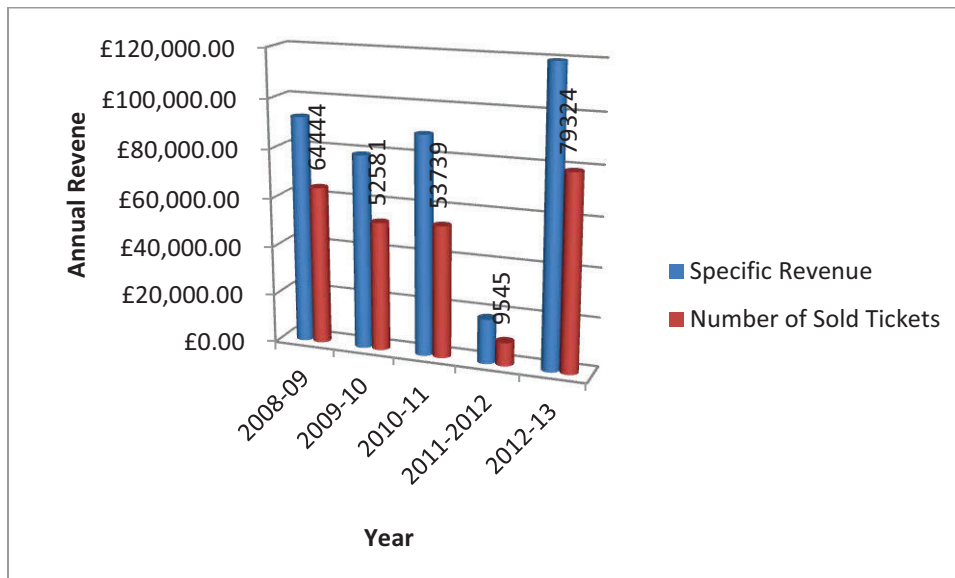
Ticket Value	£1.10	£1.70	£2.30	£4.40	Total
Thursday 16th January					
Specific Revenue	£213.40	£86.70	£46.00	£189.20	£535.30
Sold Tickets	194	51	20	43	308
Saturday 18th January					
Specific Revenue	£378.40	£90.10	£66.70	£70.40	£605.60
Sold Tickets	344	53	29	16	442

The yearly data for Station Road Car Park has also been examined and presented in **Table 2.9** and the yearly trend illustrated in the graph set out at **Figure 2.9**.

Table 2.9 Station Road Car Park Ticket Receipts and Revenue (2008 to 2013)

Year	2008/09	2009/10	2010/11	2011/12	2012/13
Specific Revenue	£92,459.70	£79,132.50	£89,083.50	£18,159.50	£119,714.40
Sold Tickets	64444	52581	53739	9545	79324

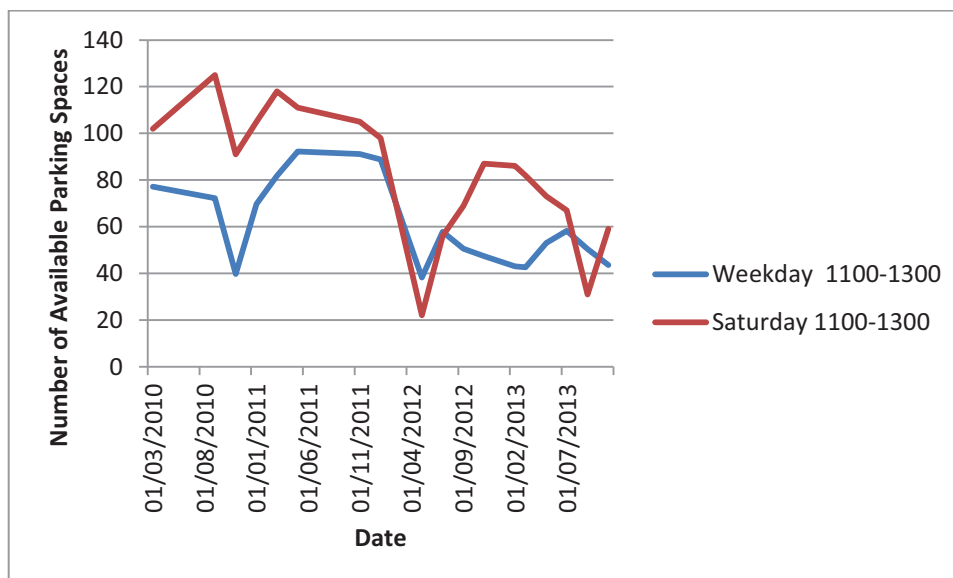
Figure 2.9 Station Road Car Park Ticket Receipts and Revenue (2008 to 2013)



The 2011/2012 ticket receipts reduced significantly before rising again in 2012/2013 to levels above that achieved before 2011. The reasons for this include the opening of the Tesco store at the end of 2010, and the closure of the Station Road car park for reconfiguration and resurfacing towards the end of 2011. When the Waitrose store opened at the end of May 2012 car park usage increased significantly.

The parking survey data (2010 to 2013) has been examined for the Station Road car park and the number of available spaces between 1100 and 1300 hours, the period of heaviest use, has been set out in **Figure 2.10** below for both the weekday and Saturday.

Figure 2.10 Station Road Car Park 2010 to 2013 – Weekday and Saturday Parking Availability (1100 to 1300 hours)



General Observations

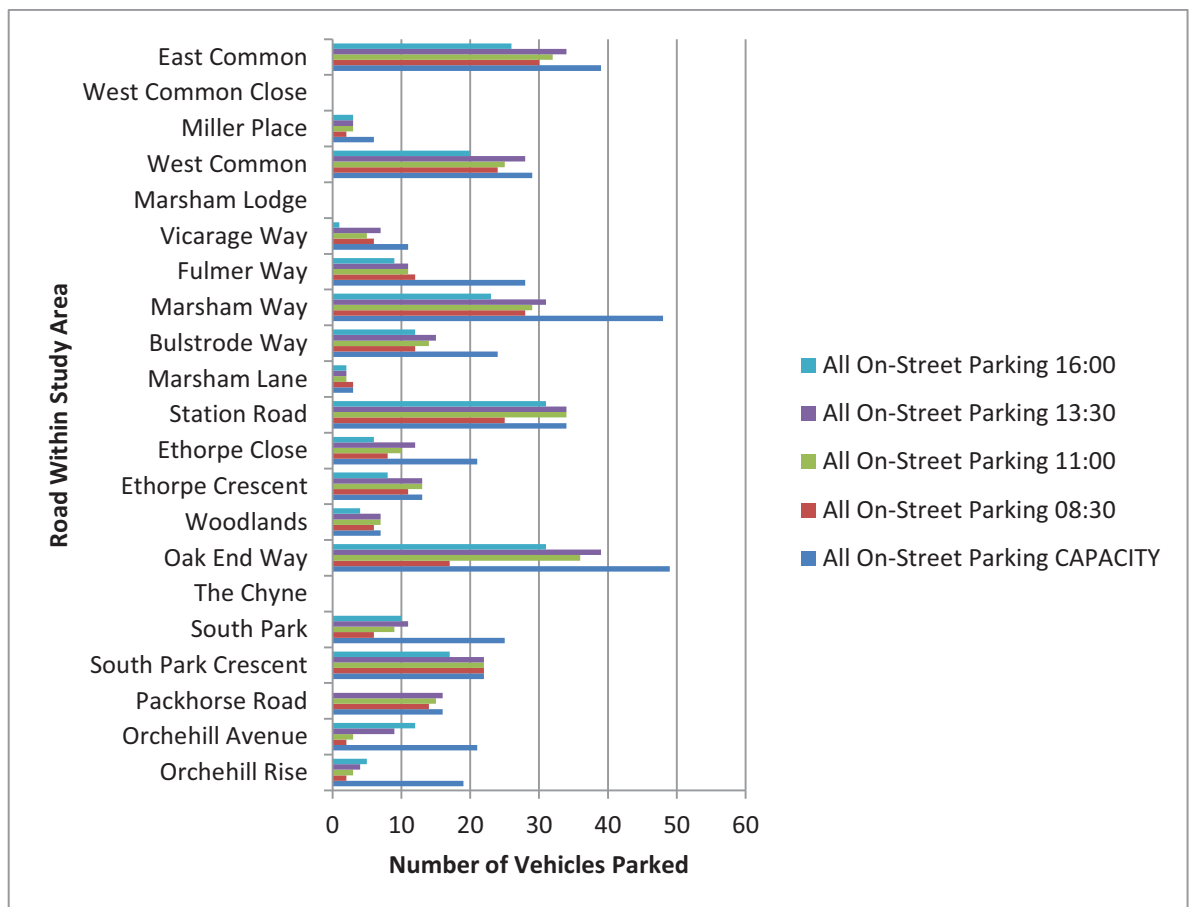
When considering all car parks, except Gerrards Cross railway station car parks, the remaining car parks experience a 34% higher usage on the Saturday when compared with the Thursday survey in 2014. The extra use is for a period of up to 2 hours.

The yearly data for Bulstrode Way and Packhorse Road Car Parks show that there was a drop in the number using the car park between 2009 and 2013. This was most likely due to the recession and the opening of the Tesco Store. However, revenue has risen since 2011/2012 when the half an hour ticket tariff was removed in 2011 so drivers have to purchase a ticket for at least one hour.

2.4 On-Street Surveys – Thursday 16th January 2014

In order to obtain an overall picture of parking availability across the town on-street car parking surveys were also conducted on Thursday 16th and Saturday 18th January 2014. These surveys took place at 0830, 1100, 1330 and 1600 hours on the Thursday and at 1100 and 1330 hours on the Saturday. The study area is a 500m radius of the town and is shown in **Appendix A**.

The weekday survey is considered in **Section 2.4**. There are 408 spaces on-street available for visitors to the town centre, of which 298 spaces were used at the peak time of 1.30pm. This equates to 73% of the on-street parking provision. **Figure 2.11** shows the level of parking on each of the roads within the study area for each time period.

Figure 2.11 On-Street Car Park Occupancy – Thursday 16th January 2014

It can be seen from the graph set out as **Figure 2.11** above that East Common, West Common, Station Road, Ethorpe Crescent, South Park Crescent, and Packhorse Road are used close to their maximum capacity. This is due to their central location within the town centre and that no parking charges are imposed.

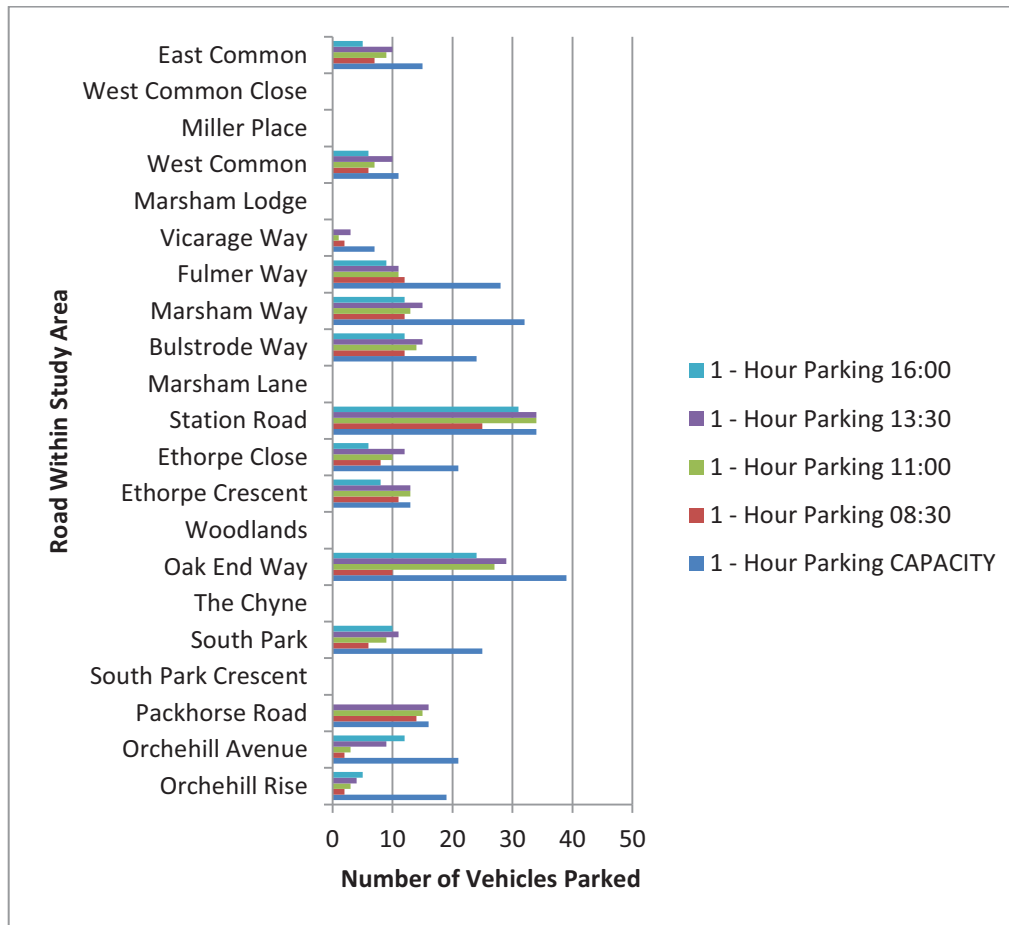
Taking this into consideration the on-street provision has been examined further to establish the current demand for space for short stay and unrestricted parking purposes.

Short Stay On-Street Parking

Parking restrictions are imposed at various locations within the study area, which allow free parking for up to 1 hour with no return for 1 hour for short stay parking purposes. There are 298 spaces on-street with this restriction and a maximum of 192 spaces (64%) were used during the peak time of 1.30pm. **Figure 2.12** shows on-street car parking occupancy of the short stay spaces for each time period on Thursday 16th January 2014.

It can be seen that the spaces on Packhorse Road, Ethorpe Crescent and Station Road were used to full capacity, and Orchehill Avenue and West Common came very close to full utilisation.

Figure 2.12 Short Stay On-Street Car Park Occupancy – Thursday 16th January 2014

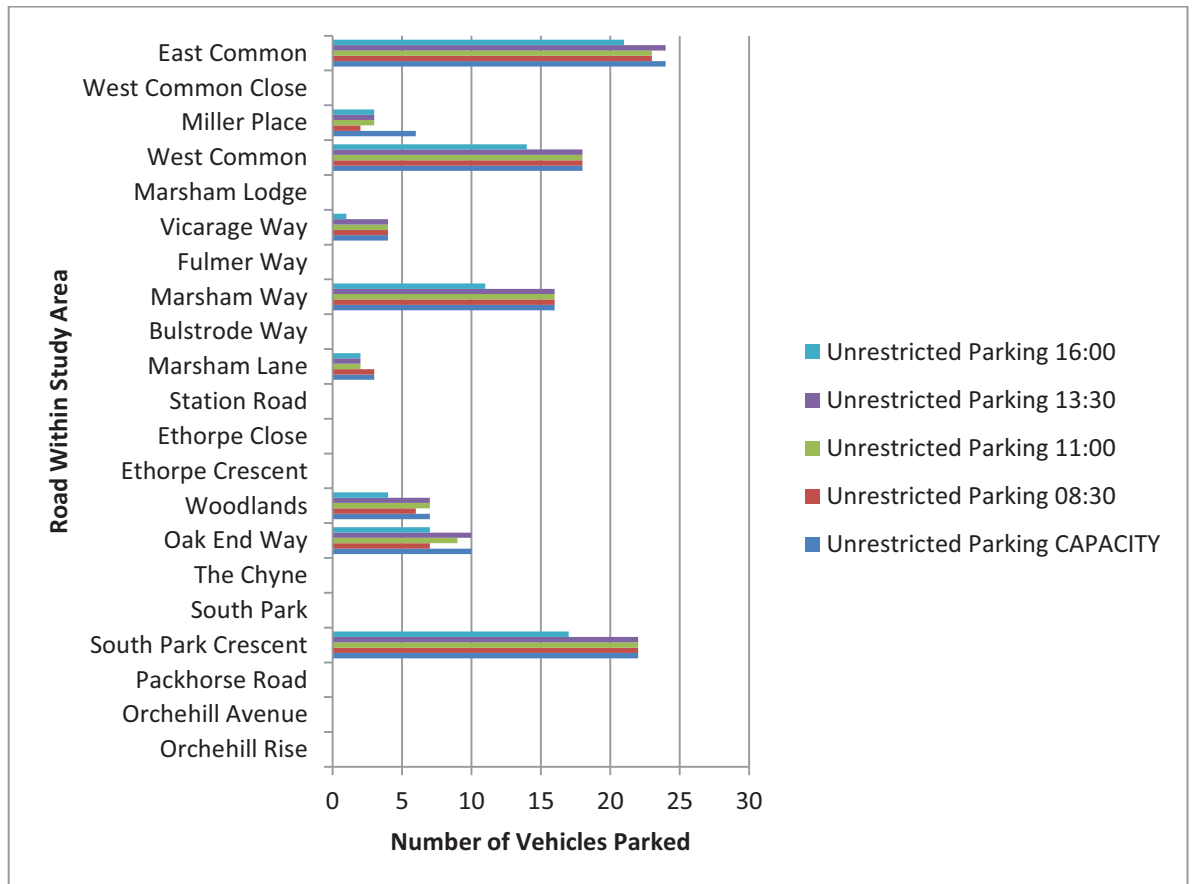


Unrestricted On-Street Parking

There are also 110 on-street parking spaces within the study area that are not subject to parking controls. These spaces can therefore be used for both long stay and short stay purposes. It was found that a maximum of 106 spaces were used during the 1.30 pm peak time, some 96% of available space. Most of these spaces were used throughout the day on the Thursday.

Figure 2.13 shows car parking usage on each of the roads within the study area for each time period considered.

Figure 2.13 Unrestricted On-Street Car Park Occupancy – Thursday 16th January 2014

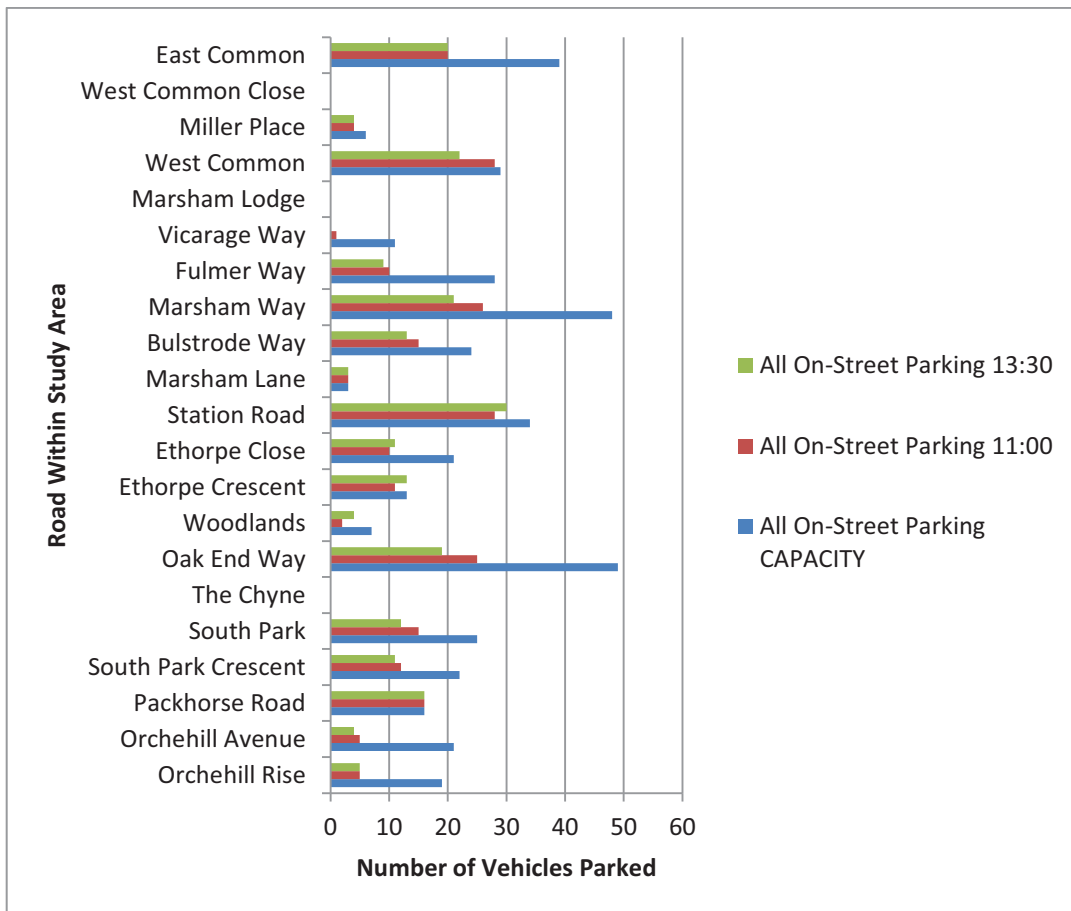


2.5 On-Street Surveys – Saturday 18th January 2014

As previously mentioned car parking surveys were also conducted on Saturday 18th January 2014 at 1100 and 1330 hours.

There are 415 spaces on-street available for visitors to the town centre, of which 298 spaces were used at the peak time of 11am. This equates to 72% of the on-street parking provision. **Figure 2.14** shows the level of parking on each of the roads within the study area for each time period.

Figure 2.14 On-Street Car Park Occupancy – Saturday 18th January 2014

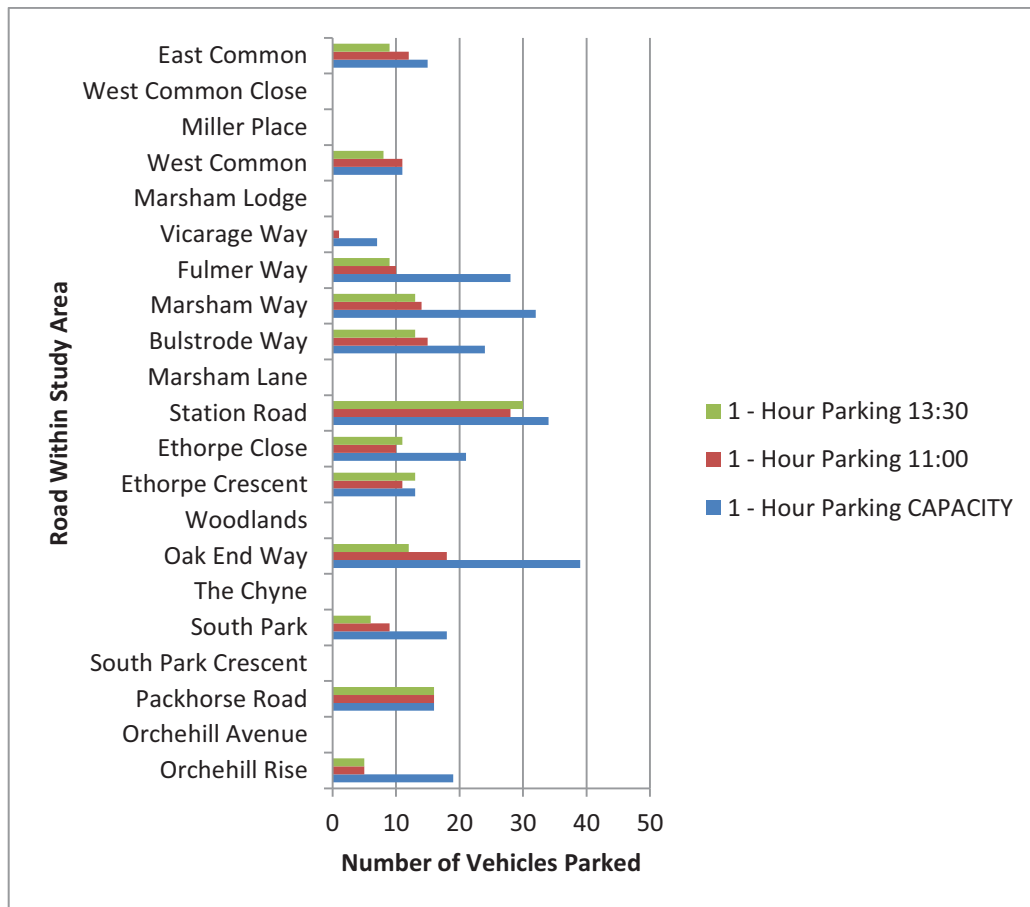


It can be seen from the graph set out as **Figure 2.14** above that West Common, Station Road, Ethorpe Crescent, and Packhorse Road are used close to their maximum capacity.

Taking this into consideration the on-street provision has been examined further to establish the current demand for space for short stay and unrestricted parking purposes.

Short Stay On-Street Parking

Parking restrictions are imposed at various locations within the study area, which allow parking for up to 1 hour with no return for 1 hour for short stay parking purposes. There are 277 spaces on-street with this restriction on a Saturday and a maximum of 160 spaces (58%) were used during the peak time of 11am. **Figure 2.15** shows on-street car parking occupancy of the short stay spaces for each time period on Saturday 18th January 2014.

Figure 2.15 Short Stay On-Street Car Park Occupancy – Saturday 18th January 2014

It can be seen that West Common, Station Road, Ethorpe Crescent, and Packhorse Road are used close to or at their maximum capacity.

Unrestricted On-Street Parking

There are also 138 on-street parking spaces within the study area that are not subject to parking controls. These spaces can therefore be used for both long stay and short stay purposes. It was found that a maximum of just 76 spaces were used during the 11am peak time, which is 55% of available space.

The long stay demand on the Thursday and reduction in need on a Saturday clearly indicates that the unrestricted carriageways within the study area are used predominantly by commuters during the week.

3 Land use assumptions

3.1 New Development

Existing residential figures in Gerrards Cross for 2014 have been derived from the 2011 Census (Super Output Area Middle Layer – South Bucks 002) and list of built development since that date provided by the South Bucks Sustainable Development – Planning Policy Team. Future figures for 2026 are based on the additional residential properties to be built in accordance with the aim of the South Bucks District Council Core Strategy adopted February 2011.

The Core Strategy 2006 to 2026 sets out a need for 287 new dwellings in Gerrards Cross over the plan period. This is a growth of 14 dwellings per year. As this parking study needs to consider growth to 2033 the same assumption of growth rate per annum as the Core Strategy is used.

Gerrards Cross has been subject to recent change with respect to retail development with the opening of the Tesco superstore opposite Station Approach in December 2010 and Waitrose on Station Road at the end of May 2012.

To complement this provision South Bucks District Council has identified a need for a further 800m² of comparison retail floor space to 2026 in the Core Strategy¹. Again as this parking study needs to consider growth to 2033 the same assumption of growth rate per annum for the Core Strategy of 40m² is used.

Although the Core Strategy states that employment use would be supported in the District Centres (Beaconsfield and Gerrards Cross) no growth has been identified in the plan period for this type of use.

Taking into consideration the above, the following land use assumptions set out in **Table 3.1** will be used to calculate future parking demand.

Table 3.1 Land Use Assumptions

Gerrards Cross	Existing	Additional to 2026	Additional 2026 to 2033	Growth by 2033
Residential (households)	3,369	52	98	4.5%
Retail - Convenience (m ²)†	4,932	0	0	0%
Retail – Comparison (m ²)†	4,023	800	280	25.6%

†Retail figures are derived from the 'Joint Retail/Town Centre Study' by Nathaniel Lichfield & Partners

¹ Comparison floorspace has been defined in the Core Strategy as 'floorspace used for the sale of durable goods such as clothing, household goods, furniture, diy and electrical goods'

4 Parking forecast 2033

4.1 Forecasting methodology

With any forecast methodology there are a range of factors that may affect the results and add to the uncertainty, including:

- Growth in the economy
- Level of internet shopping (assume retail study is up to date in this regard)
- Provision of public transport and walking and cycling facilities
- Price of petrol
- Numerous other factors, including local factors

We have used two methodologies to produce parking forecasts for 2033:

1. We have provided a growth forecast using TEMPRO (Trip End Model presentation Programme) based on planning growth (which sets out the combined effect of increase in households and employment), and car ownership growth.
2. As a sense check, we have also provided a forecast based on the additional comparison retail floor area using TRICS data, which focuses on parking need at the destination.

4.2 TEMPRO Growth

The growth figures for planning and car ownership for the Gerrards Cross area was obtained from the TEMPRO (Nationally produced planning and traffic forecasts) database for the period 2014 to 2033. This information has been set out in **Table 4.1**. A growth of 8.3% to 2033 is predicted using this methodology.

Table 4.1 Growth factors

	TEMPRO
Planning Growth	1.027
Car Ownership Growth	1.056
Combined Factor	1.083

This growth rate was then applied to the parking survey data to estimate the impact on each car park for the weekday and Saturday as shown in **Table 4.2** and **Table 4.3** respectively.

Table 4.2 Off-street parking forecast 2033 (Weekday)

Car Park	Capacity	Maximum Occupancy		Maximum as a %age of Capacity	
		2014	2033	2014	2033
Gerrards Cross Station Overflow (off Orchehill Rise)	128	107	116	84%	91%
Gerrards Cross Station (off Station Approach)	334	280	303	84%	91%
Station Road Car Park	129	103	112	80%	87%
Tesco Car Park	284	227	246	80%	87%
Bulstrode Way Car Park	34	26	28	76%	82%
Sainsburys Local Car Park	19	16	17	84%	89%
Packhorse Road Car Park	64	60	65	94%	102%
TOTAL	992	815	887	82%	89%

Table 4.2 shows that by 2033 there is likely to be significant parking stress at all the car parks, except for Bulstrode Way Car Park on a weekday. However, even this car park is close to the 85% theoretical capacity. Across all Gerrards Cross car parks there is likely to be little spare capacity.

Table 4.3 Off-street parking forecast 2033 (Saturday)

Car Park	Capacity	Maximum Occupancy		Maximum as a %age of Capacity	
		2014	2033	2014	2033
Gerrards Cross Station Overflow (off Orchehill Rise)	128	8	9	>1%	>1%
Gerrards Cross Station (off Station Approach)	334	100	108	30%	32%
Station Road Car Park	129	81	87	63%	67%
Tesco Car Park	284	299	324	105%	114%
Bulstrode Way Car Park	34	32	35	94%	103%
Sainsburys Local Car Park	19	17	18	89%	95%
Packhorse Road Car Park	80	61	66	76%	83%
TOTAL	1,008	598	647	59%	64%

Likewise, **Table 4.3** shows that there is likely to be significant parking stress at Tesco, Bulstrode Way, and Sainsburys Local car parks on a Saturday in 2033. Packhorse Road Car Park is approaching its theoretical capacity but there is some spare capacity in the Station Road Car Park.

TEMPRO growth has also been applied to the on-street car parking availability in the town. The weekday and Saturday parking forecasts are set out in **Tables 4.4** and **4.5**.

Table 4.4 On-street parking forecast 2033 (weekday)

Street	Capacity	Maximum Occupancy		Maximum as a %age of Capacity	
		2014	2033	2014	2033
Orchehill Rise	19	4	4	21%	21%
Orchehill Avenue	21	9	10	43%	48%
Packhorse Road	16	16	17	100%	106%
South Park Crescent	22	22	24	100%	109%
South Park	25	11	12	44%	48%
Oak End Way	49	39	42	80%	86%
Woodlands	7	7	8	100%	114%
Ethorpe Crescent	13	13	14	100%	108%
Ethorpe Close	21	12	13	57%	62%
Station Road	34	34	37	100%	109%
Marsham Lane	3	2	2	67%	67%
Bulstrode Way	24	15	16	63%	67%
Marsham Way	48	31	34	65%	71%
Fulmer Way	28	11	12	39%	43%
Vicarage Way	11	7	8	64%	73%
West Common	29	28	30	97%	103%
Miller Place	6	3	3	50%	50%
East Common	39	34	37	87%	95%
TOTAL	415	298	323	72%	78%

Table 4.4 shows that there is likely to be increased parking stress at the on-street locations on a weekday in 2033.

Table 4.5 On-street parking forecast 2033 (Saturday)

Street	Capacity	Maximum Occupancy		Maximum as a %age of Capacity	
		2014	2033	2014	2033
Orchehill Rise	19	5	5	26%	26%
Orchehill Avenue	21	5	5	24%	24%
Packhorse Road	16	16	17	100%	106%
South Park Crescent	22	12	13	55%	59%
South Park	25	15	16	60%	64%
Oak End Way	49	25	27	51%	55%
Woodlands	7	2	2	29%	29%
Ethorpe Crescent	13	11	12	85%	92%
Ethorpe Close	21	10	11	48%	52%
Station Road	34	28	30	82%	88%
Marsham Lane	3	3	3	100%	100%
Bulstrode Way	24	15	16	63%	67%
Marsham Way	48	26	28	54%	58%
Fulmer Way	28	10	11	36%	39%
Vicarage Way	11	1	1	9%	9%
West Common	29	28	30	97%	103%
Miller Place	6	4	4	67%	67%
East Common	39	20	22	51%	56%
TOTAL	415	236	253	57%	61%

Table 4.5 indicates that there is also likely to be increased parking stress at on-street locations on a Saturday in 2033, particularly on Packhorse Road, Ethorpe Crescent, Station Road, Marsham Lane, and West Common.

4.3 Retail Growth Using TRICS

This forecast is based on parking data obtained from comparable sites at other locations in the South East, obtained from the TRICS database. The TRICS database contains surveys of a wide range of developments across the UK, including parking surveys. Full details of the comparison goods sites used can be found in **Appendix B**.

Table 3.1 above shows an additional 1,080m² of comparison retail floor space is to be provided in Gerrards Cross. Applying the average TRICS rate of 4.49 parking spaces per 100m² from the selected sites set out in **Appendix B** for this use, a further 48 parking spaces will be needed on a short stay basis (up to 3 hours).

The TEMPRO growth method indicated that a further 72 spaces is needed during the week and an extra 49 spaces on a Saturday. As commuters would be included in the weekday forecast it is likely that 49 spaces are needed for the retail element (short stay) and the remaining 23 for long stay purposes. These figures coincide with the prediction in retail parking demand of 48 spaces associated with the increase in retail floor space obtained using TRICS data.

Taking the above factors into account the forecast based on TEMPRO growth appears reasonable. However, due to uncertainty in the forecasting over a 20 year time period, there is the possibility that car ownership growth or a change in the level of development may occur. Due to this future growth may be higher or lower for determining the number of car parking spaces required.

5 Policy Context

5.1 National Policy

The **National Planning Policy Framework (CLG 2012)** set out Government's planning policies for England and how these are expected to be applied. The policy places emphasis on promoting sustainable forms of transport, recognising that different policies and measures will be required in different communities and opportunities to maximise sustainable transport solutions will vary from urban to rural area. The document goes on to state:

"Encouragement should be given to solutions which support reductions in greenhouse gas emissions and reduce congestion. In preparing Local Plans, local planning authorities should therefore support a pattern of development which, where reasonable to do so, facilitates the use of sustainable modes of transport (page 9)"

Specifically related to parking, the document states:

"Local authorities should seek to improve the quality of parking in town centres so that it is convenient, safe and secure, including appropriate provision for motorcycles. They should set appropriate parking charges that do not undermine the vitality of town centres. Parking enforcement should be proportionate (page 11)".

5.2 Local Policy

Buckinghamshire's Local Transport Plan 2011-2016 (Transport for Buckinghamshire 2011) sets out the counties transport policies and strategies. The policy continues the theme of promoting sustainable travel, along with effective car parking management. The objectives of the plan are:

- Maintain or improve the reliability of journey times on key routes
- Improve connectivity and access between key centres
- Deliver transport improvements to support and facilitate sustainable housing and employment growth
- Ensure local transport networks are resilient and adaptable to shocks and impacts
- Reduce the need to travel
- Increase the proportion of people travelling by low emission modes of transport
- Protect improve and maintain the local environment
- Reduce carbon emissions and waste associated with the Transport Authority
- Improve health by encouraging walking and cycling
- Reduce the negative impact of poor air quality
- Enable disadvantaged people to access employment sites and opportunities
- Enable disadvantaged people to access key services and facilities
- Encourage and support the delivery and planning of local transport services by local groups, communities and individuals

Specifically related to parking, the document states:

"Parking management can be used to help to manage the demand for road space within our towns and villages. This tool will not be used to penalise car drivers, as there are many areas of the county that do not have alternative means of travel. Consideration needs to be given to the provision of a balanced sustainable mix of short and longer term parking. The appropriate use of parking management, through pricing and capacity control, can reduce demand during the peak period and improve the economic vitality of an area by increasing

the turnover of vehicles. Parking controls will be supported by effective enforcement measures, in the interests of ensuring efficient use of the spaces available and in the interests of safety and traffic flow.

In our larger urban areas, parking and access studies are undertaken with the District Councils to inform the level (quantity) of on-street parking within the town centres; the pricing and use of off-street car parks; workplace parking supply and management; and the future growth in parking demand. By finding the right balance between these options, parking management can make a significant contribution to town centre economic vitality and peak period congestion reduction.

In our smaller towns and villages, parking is managed with similar tools, capacity and charging, however with a different economic and congestion management context. The aim is to ensure that the local economy is supported by suitable parking facilities, but sustainable travel alternatives for local journeys are encouraged (page 74)”.

The document goes on to state:

“The approach to managing congestion on the road network will include ...:

- *Encouraging travel by greener modes rather than the car. Such as through encouraging the use of travel plans and through supporting improved facilities for the promotion of walking, cycling and passenger transport.*
- *Strategies to better manage parking and actively discourage people with attractive alternatives from driving to town centres (page 76)”.*

Specifically relating to cycle links and access to stations, the document states:

“The county strategy will support the delivery of this Plan’s objectives through a range of key initiatives and projects [including] Develop better walking and cycling access to stations including expansion of cycle parking in partnership with Train Operators (page 91)”.

The **South Bucks Core Strategy (2011)** sets out a vision and policies for the District. Core Policy 7: Accessibility and Transport, states:

“The Council will seek to improve accessibility to services and ensure a safe and sustainable transport network by supporting the rebalancing of the transport system in favour of more sustainable modes of transport, whilst recognising that in rural parts of the District, the car will remain the primary mode of travel.

This rebalancing will be achieved by:

- *Focusing new development that generates substantial transport movements in locations that are accessible by public transport, walking and cycling.*
- *Working with the highway authority, Rights of Way and Access Group, and others to improve transport choices for local residents, especially in rural parts of the District.*
- *Encouraging safe and attractive improvements to pedestrian and cyclist routes and facilities.*
- *Supporting the greater use of rail services, including improvements to parking at train*

stations and connecting bus services where viable.

- Ensuring that the impact of new development on the road network is minimised and mitigated through the use of 'mobility management' measures such as Travel Plans, parking charges and car parking levels.*
- Supporting public transport schemes, including Crossrail, as long as there are strong environmental safeguards in place.*

Existing traffic congestion to the east of Beaconsfield will be addressed through a range of measures, which could include provision of an A355 / A40 Relief Road later in the Plan period. The adverse impacts associated with HGV movements in and around Iver Village and Richings Park will be addressed through land use changes. Should these prove unsuccessful, or other opportunities arise, further consideration will be given to the scope for provision of a relief road or other alternative means of access to the employment sites in the South of Iver Opportunity Area. Impacts on Junction 1 of the M40 will be kept under review, with mitigation measures, including infrastructure improvements, potentially being needed later in the Plan period.

Further details of the measures that will be taken to implement this policy, including when travel plans will be required and the application of new parking standards, will be addressed in the Development Management DPD."

"Developments which are car-dependent or promote unsustainable travel behaviour will not be supported. Major developments, employers and institutions should develop travel plans to promote sustainable travel behaviour. The Council will work with partners to promote walking and cycling as an integral and highly sustainable means of transport focused on centres, schools, work-places, and public transport interchanges".

6 Alternative modes

Figure 6.1 shows the mode of travel to work for Gerrards Cross, as detailed in the 2011 Census. The results show higher than average percentage for working from home, and train use. Car use is slightly higher than average for the South East. However, Bus, Bicycle, and On Foot, were significantly below the average for the South East.

Table 6.1 2011 Census mode share

Mode of Travel	Gerrards Cross	South East England
Work mainly from or at home	14%	7%
Train	16%	2%
Bus	>1%	5%
Motorcycle	>1%	1%
Car or Van	69%	62%
Passenger of Car or Van	3%	5%
Bicycle	>1%	4%
On Foot	6%	14%
Other Method of Travel to Work	>1%	1%

6.1 Public Transport

Figure 6.1 and **Table 6.2** show the bus routes currently serving Gerrards Cross.

Figure 6.1 Bus network map



Table 6.2 Bus frequencies

Service	Operator	Route	Mon – Fri	Saturday
A30	Carousel	Chesham – Amersham – Chalfonts – Uxbridge - Heathrow	Hourly	Hourly
335	Redline Buses	Slough – Gerrards Cross – Chalfont St Peter – Chalfont Common	Every 2 Hours	4 per day
353	Red Rose Travel	Hemel Hempstead – Chesham – Amersham – Gerrards Cross - Slough	Hourly	Every 2 Hours

It can be seen that a limited range of bus services stop at Gerrards Cross with low frequency services during weekday daytime. There are no Sunday services for the A30 and 335 bus routes and 4 buses a day offered on a Sunday for the 353 bus route. There is limited scope to encourage bus travel with the current bus services on offer.

For longer distance trips Gerrards Cross Station operated by Chiltern Railways provides two trains an hour to London Marylebone, with a travel time of just 26 minutes. Destinations in the opposite direction include Aylesbury, Bicester North, Princes Risborough, and High Wycombe. The choice of Chiltern Railways services is a more desirable mode of travel for commuters using public transport.

There are two parking spaces with electric charging points available at Gerrards Cross Station. It may be prudent to install the infrastructure for electric charging points within the council run car parks for the long stay users (season/resident ticket holders and commuters). However, there was no evidence to show that the spaces are used as they were empty on both 16th and 18th January 2014.

6.2 Walking & Cycling

Figure 6.2 shows that the centre of Gerrards Cross is contained within walking distance (400m, 5 minute walk). The car parks are within easy walking distance of each other and the centre.

Figure 6.2 Walk map



There are no cycle routes available for cyclists in the Gerrards Cross study area. Although there are 24 covered cycle parking spaces available at Gerrards Cross Station, there is no cycle parking facilities elsewhere in the town.

Despite the lack of routes and cycle stands it appears that commuters are cycling to the station. Also, during site visits on very cold January mornings it was noted that cyclists had chained their bikes to railings on Packhorse Road.

This indicates that there is a significant opportunity to further encourage more people to cycle through implementation of cycle routes and provision of additional cycle parking, particularly in the town centre.

7 Pricing

Table 7.1 shows that parking in Gerrards Cross is comparable to Beaconsfield but more expensive compared to the remaining neighbouring centres.

Table 7.1 Car Park Pricing at Comparable Towns

Centre	Distance (miles)	Approximate Cost		
		1 hour	2 hours	3 hours
Amersham-on-the-Hill	7	£0.60	£1.20	£1.80
Beaconsfield	5	£1.10	£1.70	£2.30
Berkhamsted	14	£0.50	£1.00	£1.40
Chesham	9	£0.60	£1.20	£1.80
Gerrards Cross	-	£1.10	£1.70	£2.30
High Wycombe	10	£1.00	£1.50	£2.00

Pricing is an effective tool for managing demand as motorists appear to be particularly sensitive to parking prices because they are a direct charge. Compared with other out-of-pocket expenses, parking charges have a greater effect on vehicle trips. For example, a £1 per trip parking charge is likely to cause the same reduction in vehicle travel as a fuel price increase that averages £1.50 to £2 per trip².

Conversely, a reduction in parking prices is likely to draw more people in to the town centre and may help to revitalise the local economy. The use of free-parking days could also be an effective tool to help boost the local economy.

It is understood that Buckinghamshire County Council is reviewing the parking restrictions on-street in Gerrards Cross. If parking restrictions were imposed on roads within the study area that is currently unrestricted up to 110 parking spaces could be displaced and parking charges in the off-street car parks should be reviewed.

Following the removal of the 30 minute tariff in 2011/2012 there was a reduction in use of the Bulstrode Way and Packhorse Road car parks of 18% the following year. However, there was a significant reduction in use of the Station Road car park in 2011/2012 due to the closure for reconfiguration so drivers who usually parked at Station Road may have used Bulstrode Way and Packhorse Road, Tesco, or parked on-street as the two alternative council run car parks are remote from Station Road. This information is therefore not reliable.

Taking this into consideration, the council run Beaconsfield car parks were examined for change in use following the removal of the 30 minute tariff during the same year. This data revealed that there was a reduction in use of 16% for 2012/2103 when compared with the previous year in the Warwick Road, Altons Burkes Road, and Penscroft Burkes Road car park. This demonstrates that the reduction in use of the Bulstrode Way and Packhorse Road car parks in 2012/2013 as a consequence of tariff change was valid.

² VTPI (2009) Transport Elasticises, TDM Encyclopaedia. http://www.vtpi.org/tdm/tdm11.htm#_Toc161022578

It should be noted that if the 30 minute tariff was reintroduced the increase in use of the 3 council run car parks in Gerrards Cross is anticipated to be 34 spaces during the week and 31 on a Saturday. It is clear that change in tariff can have a marked effect on the number of parking spaces required.

Another possible change in tariff has been proposed by Gerrards Cross Parish Council in a Buckinghamshire Advertiser article dated 27th February 2014. The Parish Council would like to introduce free parking for up to an hour or 30 minutes in the council run car parks. This would clearly have an impact in demand for space and have the potential to redistribute some of the parking from the Tesco car park.

The ticket data provided by South Bucks Council reveals that for the tariff of up to 1 hour revenue of £113,972 (just under £9,500 per month) was received in the council car parks during 2012/13. This revenue was made up of £15,586 for Bulstrode Way, £42,392 for Packhorse Road, and £54,994 for Station Road car parks respectively. It is not possible to quantify the additional number of spaces that would be required to accommodate the extra demand for space within the council run car parks, however, it is likely to be at least 16% or 34 spaces (which was the figure from the change in tariff from up to 30 minutes to up to 1 hour being imposed). It is recommended that free parking for up to 1 hour is imposed for a 3 month trial period to establish if additional space will be required to accommodate the free parking.

8 Summary and Recommendations

Off-Street Parking

Table 8.1 shows that by 2033 there is likely to be significant parking stress at all the car parks, except for Bulstrode Way Car Park on a weekday. However, even this car park is close to the 85% theoretical capacity. Across all Gerrards Cross car parks there is likely to be little spare capacity.

Table 8.1 Off-street parking forecast 2033 (Weekday)

Car Park	Capacity	Maximum Occupancy		Maximum as a %age of Capacity	
		2014	2033	2014	2033
Gerrards Cross Station Overflow (off Orchehill Rise)	128	107	116	84%	91%
Gerrards Cross Station (off Station Approach)	334	280	303	84%	91%
Station Road Car Park	129	103	112	80%	87%
Tesco Car Park	284	227	246	80%	87%
Bulstrode Way Car Park	34	26	28	76%	82%
Sainsburys Local Car Park	19	16	17	84%	89%
Packhorse Road Car Park	64	60	65	94%	102%
TOTAL	992	815	887	82%	89%

There needs to be at least 1,043 parking spaces to allow the theoretical capacity of 85% to be achieved. This is an additional 51 spaces during the weekday above the existing level. Gerrards Cross railway station parking areas are anticipated to be 91% utilised by 2033, with a need for 419 spaces. In order to ensure these car parks are no more than 85% full 493 spaces are needed but only 462 spaces are available. Therefore it is recommended a further 31 long stay spaces are provided within the town.

Table 4.3 above demonstrated that Gerrards Cross station and overflow car park had ample spare capacity on a Saturday at maximum usage of >1% and 32% respectively. **Table 8.2** therefore sets out the Saturday parking demand in the remainder of the off-street car parks in Gerrards Cross.

It can be seen in **Table 8.2** that there is severe parking stress in Gerrards Cross on a Saturday within the car parks primarily used for short stay purposes. There needs to be at least 625 short stay parking spaces to allow the theoretical capacity of 85% to be achieved using current economic forecasts. This is an additional 79 spaces over and above the existing level of parking that needs to be available for use during Saturdays.

The South Bucks Parking Team has also requested that figures for 70% capacity are provided. The highest demand would be during on a weekday. If sufficient space was provided to allow 70% capacity, this would lead to an additional 275 spaces being required on a weekday, of which 136 should be long stay and 139 short stay.

Table 8.2 Off-street parking forecast 2033 (Saturday)

Car Park	Capacity	Maximum Occupancy		Maximum as a %age of Capacity	
		2014	2033	2014	2033
Station Road Car Park	129	81	87	63%	67%
Tesco Car Park	284	299	324	105%	114%
Bulstrode Way Car Park	34	32	35	94%	103%
Sainsburys Local Car Park	19	17	18	89%	95%
Packhorse Road Car Park	80	61	66	76%	83%
TOTAL	546	490	530	90%	97%

These forecasts are based on the assumption that the current tariff structures will remain in place, with the price of a ticket increasing with inflation and in-line with price changes at competing town centres.

On-Street Parking

It has been demonstrated in Section 4.2 above that although there is spare capacity on-street now and in 2033, the on-street parking in the core town centre area is experiencing very high parking stress. It is therefore not advised that the spare parking provision on-street could be used to accommodate the additional need in 2033.

It should also be borne in mind that Buckinghamshire County Council is reviewing on-street parking restrictions in the Gerrards Cross area. This could potentially lead to some or all of the unrestricted parking space being lost. This future change needs to be considered for future off-street need as up to 110 parking spaces may need to be displaced.

An additional 46 spaces are required on-street if a 70% capacity is to be achieved.

Alternative modes

Bus, cycling, and walking levels are lower than the South East average and there appears to be potential to encourage modal shift from private vehicles to these modes. This is particularly the case with cycling, as there is little in the way of cycle parking spaces in the town. There is also the potential to provide cycle tracks/lanes through the town centre. However, this is not anticipated to have a large effect on parking demand.

Recommendations & Next steps

The report shows that car parking capacity in Gerrards Cross is close to or over the theoretical capacity and is likely to remain so for the foreseeable future.

As the current scenario predicts there will be a shortage of spaces in the town centre. There are two potential approaches to dealing with parking stress:

- Demand management: Reduce demand for parking through a range of measures, for example, changing the pricing regime and promotion of alternative modes of transport.

- Predict and provide: Provide more car parking spaces to meet forecast demand.

Demand management is the approach advocated by current policy guidance (see **Section 5**). As such we recommend that potential demand management measures are investigated further.

The next steps could include:

- Create additional 79 short stay spaces within the study area for 85% capacity, or an additional 139 spaces to achieve 70% capacity (this is on the assumption of current economic forecasts).†
- Create 31 additional long stay spaces within the study area if an 85% capacity is to be achieved (26 of these could be short stay spaces on a Saturday). For a 70% capacity 136 short stay spaces are needed.
- Further investigation of the proposed changes in on-street parking restrictions within the Gerrards Cross study area with Buckinghamshire County Council. This will assist in establishing any displacement in car parking that could occur. Up to 110 additional on-street parking spaces may be required as a consequence. An additional 46 spaces are required on-street if a 70% capacity is to be achieved.
- Investigate alteration to tariffs within the council run car parks. The reintroduction of the 30 minute tariff within the council run car parks would lead to an additional 34 parking spaces having to be provided.
- The ticket data provided by South Bucks Council reveals that revenue of approximately £9,500 per month would be lost if free parking was introduced for up to 1 hour. It is recommended that free parking for up to 1 hour is imposed for a 3 month trial period to establish if additional space will be required to accommodate the free parking.
- Promotion of alternative modes of transport including additional cycle parking at the station and town centre and new cycle tracks/lanes.
- Investigate the feasibility of installing a Parking Guidance Information (PGI) System. These systems help drivers search for a space when capacity is limited in some car parks, as is the case in Gerrards Cross. Consideration would need to be given to the costs of these systems, which are typically in the region of £50,000 per car park.

† It should be noted that congestion already occurs in the town so junction capacity analysis may be required in order to ensure the location of the additional car parking spaces is acceptable in highway safety terms.

Appendix A – Parking Map

Survey Scope - Gerrards Cross

Cross

Car Parks:

Car parks marked A-E entry and exits movements recorded between 0800 - 1800.

Total number of vehicles recorded in each car park at start and end of survey.

On Street Surveys:

Parking beat surveys carried out on roads within a 500m radius as indicated over four time periods, 0830, 1100, 13.30 and 1600.

All surveys carried out over two weekdays and one Saturday.

Key
 Camera Direction/Location



Appendix B – Details of TRICS sites

Appendix

Retail (Comparison) Stores – TRICS Sites

Site Reference	Description	Location	Year	GFA/Units	Maximum Parking Accumulation	TRICS Standard (space per 100m ²)
CH-01-I-01	Local Shops - Chester	Neighbourhood Centre	2009	210	11	5.24
WC-01-I-01	Local Shops - Kilcoole	Town Centre	2010	550	24	4.36
SC-01-I-01	Local Shops - Milford	Edge of Centre	2010	359	17	4.74
DV-01-I-01	Local Shops - Plymouth	Suburban Area	2012	470	17	3.62
Average Standard (space per 100m²)						4.49

Site Reference: CH-01-I-01
 Created: Version: 2009(a)v6.3.1 16/01/09
 Latitude/Longitude: 53.1905, -2.8666
 Land Use Type: 01 - RETAIL/I - SHOPPING CENTRE - LOCAL SHOPS
 Region/Area: NORTH WESTCHESHIRE
 Version/Creation Date: 2009(a)v6.3.1 16/01/09

Description: LOCAL SHOPS
 Street: CHRISTLETON ROAD
 District:
 Town: CHESTER
 Post Code: CH3 5UQ

Location: Neighbourhood Centre (PPS6 Local Centre)
 Location Sub Category: Residential Zone
 Use Class: A1

Population within 500m: 3200
 Population within 1 Mile: 20,001 to 25,000
 Population within 5 Miles: 100,001 to 125,000
 Car ownership within 5 Miles: 1.1 to 1.5

Public Transport Provision Summary

Day	Period	Total buses/trams within 400m	Total Trains within 1000m	Total Services
Monday-Friday	0700-1900	278	154	432
Monday-Friday	0700-1000	58	38	96
Monday-Friday	1600-1900	56	44	100
Saturday	0700-1900	274	154	428
Sunday	0700-1900	62	96	158

Is site associated with a travel plan: No
 If not, are there any plans to implement a Travel Plan in the future? No
 Is survey data available before the implementation of the Travel Plan?
 Is the location of the site hilly or flat: Flat
 Urban Regeneration: No

Next survey: CH-01-I-02
 Gross floor area: 210 sqm
 Retail floor area: 160 sqm
 Total Employees: 20

No. of developments for this Site: 4
 No. of survey Days for this Site: 1

Comments

This site is located in a suburb of Chester, to the east of the city centre. It is a parade of shops on Christleton Road, which heads west towards the city centre and east to the junctions with the A5115 and the A55. The site is mostly surrounded by residential development. The site is situated on one of the main routes accessing Chester, with all the potential this provides for passing trade.

Bus (or tram) site accessibility

3. Is there at least 1 bus (or tram) stop within the site frontage or within 400m of the site frontage? : Yes
5. If yes to question 3, are there at least 2 buses (or trams) per hour (per direction between 0700 and 1900) with routes serving significant areas of population within a 5 kilometre radius? (Mon-Sat): Yes
6. If yes to question 5, what are the service characteristics? (please complete the outline information below)

Destination (town/area)	Number per hour	Approx. journey time
Chester City Centre	3	5
Huntingdon	2	10
Nantwich	2	35
Waverton	2	20

Rail accessibility

7. Is there at least one railway station within 1 kilometre radius of the site?: Yes
 9. If yes to question 7, are there at least 2 stopping trains per hour (per direction between 0700 and 1900) with routes serving stations within a 10 kilometre radius (Mon-Sat)?: Yes
 10. If yes to question 9, what are the service characteristics? (please complete the outline information below)

Destination (town/area)	Number per hour	Approx. journey time
Crewe	4	25
Liverpool	2	45

11. Please enter general comments/views about the relevance, quality and importance of public transport services relating to this development.
 Bus service frequencies are higher during peak times than as specified in the individual services table.
 In addition to the train services shown, there are hourly services available to Birmingham and Manchester.

Design features encouraging non-car modes

12. Pedestrians
 The site is in close proximity to residential areas.
13. Pedal cycles
 There are local cycle paths available.
14. Public transport
 The site is in close proximity to local bus routes.

Design features encouraging non-car modes

Road Network Distance to Local Developments	
Year of Analysis	2009
Nearest Primary School	0.6 kilometres
Nearest Secondary School	0.6 kilometres
Nearest Local Shop/Corner Shop	0.2 kilometres
Nearest Main Supermarket	1.0 kilometres
Nearest Doctors Surgery	0.3 kilometres
Nearest Hospital with Minor Injuries/A & E	3.2 kilometres
Nearest Sports/Leisure Centre	1.8 kilometres

Census Data	
Year of Census	2001
Census Output Area/Data Zone	
Number of people employed within Census Output Area	60
Number of households within Census Output Area	107
Number of people living within Census Output Area	168
Area of Census Output Area (hectares)	2.00
Population density within Census Output Area (per hectare)	77.42

1

Site reference:	CH-01-I-01
Trade name:	THRESHER
Site area (h/a):	0.04
Gross floor area (sqm)	60
GFA not in use (sqm)	0
Retail floor area (sqm)	40
Open since	1960
Total Employees	6
Full Time Employees	1 20%
Part Time Employees	5 80%
Approximate % of total employees working standard 9-5 hours or similar	0%
Percentage Split of Employee Gender	
Male	50%
Female	50%
GFA per employee	10.000
Number of units	1
Name of nearest site	BRAHMS OFF-LICENCE
Distance to nearest similar site	1 Km
OPENING TIMES (24 Hour format)	
Mon to Thurs	10:00 to 22:00
Friday	10:00 to 22:00
Saturday	10:00 to 22:00
Sunday	10:00 to 22:00
Filling station	No
Cash card facilities	No

Comments

The site area shown is the total for the whole site.

Site reference:	CH-01-I-01
Trade name:	POST OFFICE
Site area (h/a):	0.04
Gross floor area (sqm)	50
GFA not in use (sqm)	0
Retail floor area (sqm)	40
Open since	1960
Total Employees	6
Full Time Employees	1 20%
Part Time Employees	5 80%
Approximate % of total employees working standard 9-5 hours or similar	0%
Percentage Split of Employee Gender	
Male	50%
Female	50%
GFA per employee	10.000
Number of units	1
Name of nearest site	HOOLE POST OFFICE
Distance to nearest similar site	1 Km
OPENING TIMES (24 Hour format)	
Mon to Thurs	08:30 to 17:30
Friday	08:30 to 17:30
Saturday	08:30 to 17:30
Sunday	00:00 to 00:00
Filling station	No
Cash card facilities	No

Comments

The site area shown is the total for the whole site.

Site reference: CH-01-I-01
Trade name: PHILIP SALT & CO (BUTCHERS)

Site area (h/a): 0.04
Gross floor area (sqm) 50
GFA not in use (sqm) 0
Retail floor area (sqm) 40

Open since 1960
Total Employees 6
Full Time Employees 1 20%
Part Time Employees 5 80%

Approximate % of total employees working standard 9-5 hours or similar 0%

Percentage Split of Employee Gender
Male 50%
Female 50%

GFA per employee 10.000
Number of units 1
Name of nearest site G VENABLES & SONS
Distance to nearest similar site 2 Km

OPENING TIMES (24 Hour format)
Mon to Thurs 08:30 to 17:30
Friday 08:30 to 17:30
Saturday 08:30 to 17:30
Sunday 00:00 to 00:00

Filling station No
Cash card facilities No

Comments

The site area shown is the total for the whole site.

Site reference:	CH-01-I-01
Trade name:	FARM SHOP
Site area (h/a):	0.04
Gross floor area (sqm)	50
GFA not in use (sqm)	0
Retail floor area (sqm)	40
Open since	1960
Total Employees	6
Full Time Employees	1 20%
Part Time Employees	5 80%
Approximate % of total employees working standard 9-5 hours or similar	0%
Percentage Split of Employee Gender	
Male	50%
Female	50%
GFA per employee	10.000
Number of units	1
Name of nearest site	MR FRUITY
Distance to nearest similar site	1 Km

OPENING TIMES (24 Hour format)

Mon to Thurs	08:30	to	17:30
Friday	08:30	to	17:30
Saturday	08:30	to	17:30
Sunday	00:00	to	00:00

Filling station	No
Cash card facilities	No

Comments

The site area shown is the total for the whole site.

On-Site parking

Total no. of parking spaces	9
Spaces Per 100m2 GFA	4.286
Spaces Per 100m2 RFA	5.625

Number of spaces

Employee	0
Disabled	0
Visitor/Customer	9
OGV parking bays	0
Cycle racks	0
OGV loading bays	0
Mother & Toddler	0
Motorcycle spaces	0

Parking charges No

Comments about the management of the site car park, along with enforcement measures

Parking consists of 9 on-street bays in a layby in front of the shops.

Site parking surface or non-surface (multi-storey/underground)
Surface

Site reference: CH-01-I-01 Survey date: 17/10/08 Day of week: Friday
 Survey type: Manual Count
 AM weather: Mild and Light Rain
 PM weather: Mild and Cloudy
 Initial car park occupancy: 1 Final car park occupancy: 0
 BRACKETED ACCUMULATION FIGURES ARE NOT ABSOLUTE

Data proportions in %
 Motor cars 90 Motor cycles 0 Public service 0
 Light goods 10 OGV (1) 0 OGV (2) 0
 Taxis 0

Time	Arr 419	Dep 420	Totals	Parking Accum
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00				
07:00-08:00	11	7	18	5
08:00-09:00	27	26	53	6
09:00-10:00	33	30	63	9
10:00-11:00	35	36	71	8
11:00-12:00	37	36	73	9
12:00-13:00	55	53	108	11
13:00-14:00	39	40	79	10
14:00-15:00	48	52	100	6
15:00-16:00	39	39	78	6
16:00-17:00	37	38	75	5
17:00-18:00	27	28	55	4
18:00-19:00	22	20	42	6
19:00-20:00	9	15	24	0
20:00-21:00	0	0	0	0
21:00-22:00				
22:00-23:00				
23:00-24:00				

Comments

No PSV's visited the site during this survey.
 OGV's visiting the site park in the general parking area, as there are no specified OGV spaces/bays available.
 The maximum parking accumulation exceeding the number of available spaces at the site can be explained by the fact that off-site parking for the site was also included in this survey.

Site reference: CH-01-I-01 Survey date: 17/10/08 Day of week: Friday

Vehicles surveyed: OGV

Data proportions in % OGV (1) 100 OGV (2) 0

1 occupant per OGV is assumed, and included in the vehicle occupants count

Time	Arr 1	Dep 1	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00				
07:00-08:00	0	0	0	(0)
08:00-09:00	0	0	0	(0)
09:00-10:00	0	0	0	(0)
10:00-11:00	1	1	2	(0)
11:00-12:00	0	0	0	(0)
12:00-13:00	0	0	0	(0)
13:00-14:00	0	0	0	(0)
14:00-15:00	0	0	0	(0)
15:00-16:00	0	0	0	(0)
16:00-17:00	0	0	0	(0)
17:00-18:00	0	0	0	(0)
18:00-19:00	0	0	0	(0)
19:00-20:00	0	0	0	(0)
20:00-21:00	0	0	0	(0)
21:00-22:00				
22:00-23:00				
23:00-24:00				

Site reference: CH-01-I-01

Survey date: 17/10/08

Day of week: Friday

Vehicles surveyed: Taxis

Time	Arr 2	Dep 2	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00				
07:00-08:00	0	0	0	(0)
08:00-09:00	0	0	0	(0)
09:00-10:00	0	0	0	(0)
10:00-11:00	0	0	0	(0)
11:00-12:00	0	0	0	(0)
12:00-13:00	1	0	1	(1)
13:00-14:00	0	1	1	(0)
14:00-15:00	1	1	2	(0)
15:00-16:00	0	0	0	(0)
16:00-17:00	0	0	0	(0)
17:00-18:00	0	0	0	(0)
18:00-19:00	0	0	0	(0)
19:00-20:00	0	0	0	(0)
20:00-21:00	0	0	0	(0)
21:00-22:00				
22:00-23:00				
23:00-24:00				

Site reference: CH-01-I-01

Survey date: 17/10/08

Day of week: Friday

Vehicles surveyed: Cycles

Time	Arr 19	Dep 19	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00				
07:00-08:00	1	0	1	(1)
08:00-09:00	3	3	6	(1)
09:00-10:00	3	3	6	(1)
10:00-11:00	2	1	3	(2)
11:00-12:00	1	2	3	(1)
12:00-13:00	2	2	4	(1)
13:00-14:00	2	2	4	(1)
14:00-15:00	0	0	0	(1)
15:00-16:00	1	1	2	(1)
16:00-17:00	2	2	4	(1)
17:00-18:00	0	1	1	(0)
18:00-19:00	1	1	2	(0)
19:00-20:00	1	1	2	(0)
20:00-21:00	0	0	0	(0)
21:00-22:00				
22:00-23:00				
23:00-24:00				

Site Reference: WC-01-I-01
 Created: Version: 2011(a)v6.7.2 08/12/10
 Latitude/Longitude: 53.1052, -6.0641
 Land Use Type: 01 - RETAIL/I - SHOPPING CENTRE - LOCAL SHOPS
 Region/Area: LEINSTERWICKLOW
 Version/Creation Date: 2011(a)v6.7.2 08/12/10

Description: LOCAL SHOPS
 Street: MAIN STREET
 District:
 Town: KILCOOLE
 Post Code:

Location: Town Centre
 Location Sub Category: High Street
 Use Class: A1

Population within 500m: 1700
 Population within 1 Mile: 1,001 to 5,000
 Population within 5 Miles: 25,001 to 50,000
 Car ownership within 5 Miles: 1.1 to 1.5

Public Transport Provision Summary

Day	Period	Total buses/trams within 400m	Total Trains within 1000m	Total Services
Monday-Friday	0700-1900	33		33
Monday-Friday	0700-1000	12		12
Monday-Friday	1600-1900	9		9
Saturday	0700-1900	16		16
Sunday	0700-1900	12		12

Is site associated with a travel plan: No
 If not, are there any plans to implement a Travel Plan in the future? No
 Is survey data available before the implementation of the Travel Plan?
 Is the location of the site hilly or flat: Flat
 Urban Regeneration: No

Gross floor area: 550 sqm
 Retail floor area: 385 sqm
 Total Employees: 27

No. of developments for this Site: 4
 No. of survey Days for this Site: 1

Comments

This site is the Willowbrook shopping centre. It consists of 4 active retail units. There are an additional 4 units at the site which were vacant at the time of the survey. These have been excluded from the development details. This site is located on Main Street in Kilcoole town centre. Main Street runs south towards Rathnew and the N11, and north towards Bray and the M11. Kilcoole is located near the east coast.

Bus (or tram) site accessibility

3. Is there at least 1 bus (or tram) stop within the site frontage or within 400m of the site frontage? : Yes
 4. If yes to question 3, where it is necessary to cross a road between the development and the stop, is there a conveniently placed crossing facility? : Yes

11. Please enter general comments/views about the relevance, quality and importance of public transport

services relating to this development.

There is 1 bus per hour to Newcastle, with an approximate journey time of 5 minutes.

There is also an infrequent bus service to Dublin city centre, with an approximate journey time of 75 minutes. This service only runs during peak commuter hours.

Design features encouraging non-car modes

12. Pedestrians

The site is located within close proximity to local residential areas.

13. Pedal cycles

There are cycle paths in the local area.

14. Public transport

The site is located within close proximity to local bus routes.

Design features encouraging non-car modes

Road Network Distance to Local Developments	
Year of Analysis	2010
Nearest Primary School	0.2 kilometres
Nearest Secondary School	0.7 kilometres
Nearest Local Shop/Corner Shop	0.3 kilometres
Nearest Main Supermarket	4.5 kilometres
Nearest Doctors Surgery	0.2 kilometres
Nearest Hospital with Minor Injuries/A & E	14.5 kilometres
Nearest Sports/Leisure Centre	3.5 kilometres

Census Data	
Year of Census	2006
County	WICKLOW
Number of people employed within County	61736
Number of households within County	42870
Number of people living within County	126194

SITE PHOTO



Site reference:	WC-01-I-01
Trade name:	BELLA`S BUBBLES
Site area (h/a):	0.50
Gross floor area (sqm)	90
GFA not in use (sqm)	0
Retail floor area (sqm)	70
Open since	2007
Total Employees	3
Full Time Employees	2 21%
Part Time Employees	1 79%
Approximate % of total employees working standard 9-5 hours or similar	100%
Percentage Split of Employee Gender	
Male	33%
Female	67%
GFA per employee	14.737
Number of units	1
Name of nearest site	BARRYS, GREYSTONES
Distance to nearest similar site	4 Km

OPENING TIMES (24 Hour format)

Mon to Thurs	09:30	to	18:00
Friday	09:30	to	18:00
Saturday	09:30	to	18:00
Sunday	00:00	to	00:00

Filling station	No
Cash card facilities	No

Comments

This site is a launderette, with dry cleaning services.
 The site area shown is for the whole site.

Site reference: WC-01-I-01
 Trade name: ENVY HAIR AND BEAUTY SALON

Site area (h/a): 0.00
 Gross floor area (sqm) 90
 GFA not in use (sqm) 0
 Retail floor area (sqm) 80

Open since 2007
 Total Employees 3
 Full Time Employees 2 21%
 Part Time Employees 1 79%

Approximate % of total employees working standard 9-5 hours or similar 100%

Percentage Split of Employee Gender
 Male 33%
 Female 67%

GFA per employee 14.737
 Number of units 1
 Name of nearest site CREATIVE TOUCH
 Distance to nearest similar site 1 Km

OPENING TIMES (24 Hour format)
 Mon to Thurs 10:00 to 17:00
 Friday 10:00 to 18:00
 Saturday 10:00 to 18:00
 Sunday 00:00 to 00:00

Filling station No
 Cash card facilities No

Comments

_____ This site is a launderette, with dry cleaning services.
 The site area shown is for the whole site.

Site reference:	WC-01-I-01
Trade name:	CLOTHES FOR YOU
Site area (h/a):	-1.00
Gross floor area (sqm)	90
GFA not in use (sqm)	0
Retail floor area (sqm)	85
Open since	2010
Total Employees	3
Full Time Employees	2 21%
Part Time Employees	1 79%
Approximate % of total employees working standard 9-5 hours or similar	100%
Percentage Split of Employee Gender	
Male	33%
Female	67%
GFA per employee	14.737
Number of units	1
Name of nearest site	MATTERS OF THE HEART
Distance to nearest similar site	4 Km

OPENING TIMES (24 Hour format)

Mon to Thurs	10:00	to	17:00
Friday	10:00	to	18:00
Saturday	10:00	to	18:00
Sunday	00:00	to	00:00

Filling station	No
Cash card facilities	No

Comments

This site is a launderette, with dry cleaning services.
 The site area shown is for the whole site.

Site reference:	WC-01-I-01
Trade name:	CENTRA
Site area (h/a):	-1.00
Gross floor area (sqm)	280
GFA not in use (sqm)	0
Retail floor area (sqm)	150
Open since	2007
Total Employees	3
Full Time Employees	2 21%
Part Time Employees	1 79%
Approximate % of total employees working standard 9-5 hours or similar	100%
Percentage Split of Employee Gender	
Male	33%
Female	67%
GFA per employee	14.737
Number of units	2
Name of nearest site	TESCO EXPRESS
Distance to nearest similar site	1 Km

OPENING TIMES (24 Hour format)

Mon to Thurs	07:00	to	22:00
Friday	07:00	to	22:00
Saturday	07:00	to	22:00
Sunday	07:00	to	22:00

Filling station	No
Cash card facilities	No

Comments

This site is a launderette, with dry cleaning services.
 The site area shown is for the whole site.

On-Site parking

Total no. of parking spaces	66
Spaces Per 100m2 GFA	12.000
Spaces Per 100m2 RFA	17.143

Number of spaces

Employee	59
Disabled	2
Visitor/Customer	0
OGV parking bays	0
Cycle racks	0
OGV loading bays	0
Mother & Toddler	0
Motorcycle spaces	0

Parking charges No

Comments about the management of the site car park, along with enforcement measures

Gates are locked overnight and CCTV is in operation.

Site parking surface or non-surface (multi-storey/underground)
Surface

General Comments on Parking

There are a further five "Residents Only" spaces, included in the total shown. Residents have key access outside of store opening hours.

Site reference: WC-01-I-01 Survey date: 15/10/10 Day of week: Friday
 Survey type: Manual Count
 AM weather: Cold and Cloudy
 PM weather: Cold and Cloudy
 Initial car park occupancy: 4 Final car park occupancy: 7
 BRACKETED ACCUMULATION FIGURES ARE NOT ABSOLUTE

Data proportions in %
 Motor cars 86 Motor cycles 0 Public service 0
 Light goods 12 OGV (1) 2 OGV (2) 0
 Taxis 0

Time	Arr 971	Dep 968	Totals	Parking Accum
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00				
07:00-08:00	35	32	67	7
08:00-09:00	98	93	191	12
09:00-10:00	81	75	156	18
10:00-11:00	60	63	123	15
11:00-12:00	53	58	111	10
12:00-13:00	75	68	143	17
13:00-14:00	91	84	175	24
14:00-15:00	62	70	132	16
15:00-16:00	60	60	120	16
16:00-17:00	78	79	157	15
17:00-18:00	75	76	151	14
18:00-19:00	76	66	142	24
19:00-20:00	56	67	123	13
20:00-21:00	45	47	92	11
21:00-22:00	26	30	56	7
22:00-23:00				
23:00-24:00				

Comments

No PSVs entered or exited the site during the survey.

Site reference: WC-01-I-01 Survey date: 15/10/10 Day of week: Friday

Vehicles surveyed: OGV

Data proportions in % OGV (1) 83 OGV (2) 17

1 occupant per OGV is assumed, and included in the vehicle occupants count

Time	Arr 18	Dep 18	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00				
07:00-08:00	3	2	5	(1)
08:00-09:00	4	5	9	(0)
09:00-10:00	1	1	2	(0)
10:00-11:00	3	1	4	(2)
11:00-12:00	1	3	4	(0)
12:00-13:00	1	1	2	(0)
13:00-14:00	2	2	4	(0)
14:00-15:00	2	2	4	(0)
15:00-16:00	0	0	0	(0)
16:00-17:00	1	1	2	(0)
17:00-18:00	0	0	0	(0)
18:00-19:00	0	0	0	(0)
19:00-20:00	0	0	0	(0)
20:00-21:00	0	0	0	(0)
21:00-22:00	0	0	0	(0)
22:00-23:00				
23:00-24:00				

Site reference: WC-01-I-01 Survey date: 15/10/10 Day of week: Friday

Vehicles surveyed: Taxis

Time	Arr 1	Dep 1	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00				
07:00-08:00	0	0	0	(0)
08:00-09:00	0	0	0	(0)
09:00-10:00	0	0	0	(0)
10:00-11:00	0	0	0	(0)
11:00-12:00	0	0	0	(0)
12:00-13:00	0	0	0	(0)
13:00-14:00	0	0	0	(0)
14:00-15:00	0	0	0	(0)
15:00-16:00	0	0	0	(0)
16:00-17:00	1	1	2	(0)
17:00-18:00	0	0	0	(0)
18:00-19:00	0	0	0	(0)
19:00-20:00	0	0	0	(0)
20:00-21:00	0	0	0	(0)
21:00-22:00	0	0	0	(0)
22:00-23:00				
23:00-24:00				

Site reference: WC-01-I-01 Survey date: 15/10/10 Day of week: Friday

Vehicles surveyed: Cycles

Time	Arr 19	Dep 19	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00				
07:00-08:00	0	0	0	(0)
08:00-09:00	2	2	4	(0)
09:00-10:00	2	2	4	(0)
10:00-11:00	1	1	2	(0)
11:00-12:00	1	0	1	(1)
12:00-13:00	1	2	3	(0)
13:00-14:00	1	1	2	(0)
14:00-15:00	1	1	2	(0)
15:00-16:00	2	2	4	(0)
16:00-17:00	0	0	0	(0)
17:00-18:00	0	0	0	(0)
18:00-19:00	2	2	4	(0)
19:00-20:00	5	5	10	(0)
20:00-21:00	0	0	0	(0)
21:00-22:00	1	1	2	(0)
22:00-23:00				
23:00-24:00				

Site Reference: SC-01-I-01
 Created: Version: 2011(a)v6.7.2 13/01/11
 Latitude/Longitude: 51.1713, -0.6435
 Land Use Type: 01 - RETAIL/I - SHOPPING CENTRE - LOCAL SHOPS
 Region/Area: SOUTH EASTSURREY
 Version/Creation Date: 2011(a)v6.7.2 13/01/11

Description: LOCAL SHOPS
 Street: CHURCH ROAD
 District:
 Town: MILFORD
 Post Code: GU8 5JB

Location: Edge of Town Centre
 Location Sub Category: Residential Zone
 Use Class: A1

Population within 500m: 257
 Population within 1 Mile: 1,001 to 5,000
 Population within 5 Miles: 100,001 to 125,000
 Car ownership within 5 Miles: 1.1 to 1.5

Public Transport Provision Summary

Day	Period	Total buses/trams within 400m	Total Trains within 1000m	Total Services
Monday-Friday	0700-1900	72	96	168
Monday-Friday	0700-1000	18	24	42
Monday-Friday	1600-1900	18	24	42
Saturday	0700-1900	72	96	168
Sunday	0700-1900	36	48	84

Is site associated with a travel plan: No
 If not, are there any plans to implement a Travel Plan in the future? No
 Is survey data available before the implementation of the Travel Plan?
 Is the location of the site hilly or flat: Flat
 Urban Regeneration: No

Gross floor area: 359 sqm
 Retail floor area: 352 sqm
 Total Employees: 32

No. of developments for this Site: 5
 No. of survey Days for this Site: 1

Comments

The total site area is 0.11 hectares and consists of 5 retail units.
 This site is located on Church Road, on the eastern edge of Milford town centre. Local roads run north-east towards Godalming and south towards the coast.

Bus (or tram) site accessibility

- 3. Is there at least 1 bus (or tram) stop within the site frontage or within 400m of the site frontage? : Yes
- 5. If yes to question 3, are there at least 2 buses (or trams) per hour (per direction between 0700 and 1900) with routes serving significant areas of population within a 5 kilometre radius? (Mon-Sat): Yes
- 6. If yes to question 5, what are the service characteristics? (please complete the outline information below)

Destination (town/area)	Number per hour	Approx. journey time
Guildford	2	30
Guildford	2	25

Rail accessibility

7. Is there at least one railway station within 1 kilometre radius of the site?: Yes
 9. If yes to question 7, are there at least 2 stopping trains per hour (per direction between 0700 and 1900) with routes serving stations within a 10 kilometre radius (Mon-Sat)?: Yes
 10. If yes to question 9, what are the service characteristics? (please complete the outline information below)

Destination (town/area)	Number per hour	Approx. journey time
London Waterloo	2	58

Design features encouraging non-car modes

12. Pedestrians

None

13. Pedal cycles

None

14. Public transport

None

Design features encouraging non-car modes

Road Network Distance to Local Developments	
Year of Analysis	2010
Nearest Primary School	0.3 kilometres
Nearest Secondary School	1.3 kilometres
Nearest Local Shop/Corner Shop	0.2 kilometres
Nearest Main Supermarket	3.2 kilometres
Nearest Doctors Surgery	2.1 kilometres
Nearest Hospital with Minor Injuries/A & E	3.2 kilometres
Nearest Sports/Leisure Centre	5.1 kilometres

Census Data	
Year of Census	2001
Census Output Area/Data Zone	43ULHJ0003
Number of people employed within Census Output Area	125
Number of households within Census Output Area	128
Number of people living within Census Output Area	289
Area of Census Output Area (hectares)	32.00
Population density within Census Output Area (per hectare)	9.07

SITE PHOTO



Site reference:	SC-01-I-01
Trade name:	CO-OP
Site area (h/a):	0.11
Gross floor area (sqm)	184
Retail floor area (sqm)	250
Open since	1997
Total Employees	15
Full Time Employees	11 83%
Part Time Employees	4 17%
Approximate % of total employees working standard 9-5 hours or similar	60%
Percentage Split of Employee Gender	
Male	40%
Female	60%
GFA per employee	5.000
Number of units	1
Name of nearest site	QUARRY HILL STORES
Distance to nearest similar site	1 Km

OPENING TIMES (24 Hour format)

Mon to Thurs	07:00	to	22:00
Friday	07:00	to	22:00
Saturday	07:00	to	22:00
Sunday	07:00	to	22:00

Filling station	No
Cash card facilities	No

Comments

The site area shown is for the whole site.

Site reference: SC-01-I-01
 Trade name: DAPPER DRY CLEANERS

Site area (h/a): -1.00
 Gross floor area (sqm) 49
 Retail floor area (sqm) 20

Open since
 Total Employees 15
 Full Time Employees 11 83%
 Part Time Employees 4 17%
 Approximate % of total employees working
 standard 9-5 hours or similar 60%
 Percentage Split of Employee Gender
 Male 40%
 Female 60%

GFA per employee 5.000
 Number of units 1
 Name of nearest site
 Distance to nearest similar site 0 Km

OPENING TIMES (24 Hour format)

Mon to Thurs	09:00	to	16:30
Friday	09:00	to	16:30
Saturday	10:00	to	15:00
Sunday	00:00	to	00:00

Filling station No
 Cash card facilities No

Comments

The site area shown is for the whole site.

Site reference:	SC-01-I-01
Trade name:	MEAT & FISH MARKET
Site area (h/a):	-1.00
Gross floor area (sqm)	49
Retail floor area (sqm)	27
Open since	
Total Employees	15
Full Time Employees	11 83%
Part Time Employees	4 17%
Approximate % of total employees working standard 9-5 hours or similar	60%
Percentage Split of Employee Gender	
Male	40%
Female	60%
GFA per employee	5.000
Number of units	1
Name of nearest site	
Distance to nearest similar site	0 Km

OPENING TIMES (24 Hour format)

Mon to Thurs	09:00	to	17:00
Friday	09:00	to	15:00
Saturday	09:00	to	15:00
Sunday	00:00	to	00:00

Filling station	No
Cash card facilities	No

Comments

The site area shown is for the whole site.

Site reference: SC-01-I-01
Trade name: MILFORD WINE CENTRE

Site area (h/a): -1.00
Gross floor area (sqm) 47
Retail floor area (sqm) 35

Open since
Total Employees 15
Full Time Employees 11 83%
Part Time Employees 4 17%
Approximate % of total employees working
standard 9-5 hours or similar 60%
Percentage Split of Employee Gender
Male 40%
Female 60%

GFA per employee 5.000
Number of units 1
Name of nearest site
Distance to nearest similar site 0 Km

OPENING TIMES (24 Hour format)
Mon to Thurs 10:00 to 18:00
Friday 10:00 to 18:00
Saturday 10:00 to 18:00
Sunday 00:00 to 00:00

Filling station No
Cash card facilities No

Comments

The site area shown is for the whole site.

Site reference:	SC-01-I-01
Trade name:	PINKS ESTATE AGENT
Site area (h/a):	-1.00
Gross floor area (sqm)	30
Retail floor area (sqm)	20
Open since	
Total Employees	15
Full Time Employees	11 83%
Part Time Employees	4 17%
Approximate % of total employees working standard 9-5 hours or similar	60%
Percentage Split of Employee Gender	
Male	40%
Female	60%
GFA per employee	5.000
Number of units	1
Name of nearest site	
Distance to nearest similar site	0 Km

OPENING TIMES (24 Hour format)

Mon to Thurs	09:00	to	17:30
Friday	09:00	to	17:30
Saturday	09:00	to	17:30
Sunday	00:00	to	00:00

Filling station	No
Cash card facilities	No

Comments

The site area shown is for the whole site.

On-Site parking

Total no. of parking spaces	18
Spaces Per 100m2 GFA	5.014
Spaces Per 100m2 RFA	5.114

Number of spaces

Employee	0
Disabled	0
Visitor/Customer	17
OGV parking bays	0
Cycle racks	0
OGV loading bays	1
Mother & Toddler	0
Motorcycle spaces	0

Parking charges	No
Site parking surface or non-surface (multi-storey/underground)	Surface

Site reference: SC-01-I-01 Survey date: 24/09/10 Day of week: Friday

Survey type: Manual Count
 AM weather: Mild and Clear
 PM weather: Mild and Light Rain

Initial car park occupancy: 2 Final car park occupancy: 1

BRACKETED ACCUMULATION FIGURES ARE NOT ABSOLUTE

Data proportions in %

Motor cars	90	Motor cycles	0	Public service	0
Light goods	9	OGV (1)	1	OGV (2)	0
				Taxis	0

Time	Arr 681	Dep 682	Totals	Parking Accum
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00	6	3	9	5
07:00-08:00	33	35	68	3
08:00-09:00	41	39	80	5
09:00-10:00	48	45	93	8
10:00-11:00	37	39	76	6
11:00-12:00	51	46	97	11
12:00-13:00	52	54	106	9
13:00-14:00	58	52	110	15
14:00-15:00	39	37	76	17
15:00-16:00	54	54	108	17
16:00-17:00	47	49	96	15
17:00-18:00	61	61	122	15
18:00-19:00	60	61	121	14
19:00-20:00	55	53	108	16
20:00-21:00	23	25	48	14
21:00-22:00	14	20	34	8
22:00-23:00	2	9	11	1
23:00-24:00				

Comments

No taxis or PSVs entered or exited the site during the survey.

Site reference: SC-01-I-01 Survey date: 24/09/10 Day of week: Friday

Vehicles surveyed: OGV

Data proportions in % OGV (1) 100 OGV (2) 0

1 occupant per OGV is assumed, and included in the vehicle occupants count

Time	Arr 4	Dep 4	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00	2	1	3	(1)
07:00-08:00	0	1	1	(0)
08:00-09:00	0	0	0	(0)
09:00-10:00	2	2	4	(0)
10:00-11:00	0	0	0	(0)
11:00-12:00	0	0	0	(0)
12:00-13:00	0	0	0	(0)
13:00-14:00	0	0	0	(0)
14:00-15:00	0	0	0	(0)
15:00-16:00	0	0	0	(0)
16:00-17:00	0	0	0	(0)
17:00-18:00	0	0	0	(0)
18:00-19:00	0	0	0	(0)
19:00-20:00	0	0	0	(0)
20:00-21:00	0	0	0	(0)
21:00-22:00	0	0	0	(0)
22:00-23:00	0	0	0	(0)
23:00-24:00				

Site Reference: DV-01-I-01
 Created: Version: 2013(a)v6.11.1 19/09/12
 Latitude/Longitude: 50.3888, -4.11
 Land Use Type: 01 - RETAIL/I - SHOPPING CENTRE - LOCAL SHOPS
 Region/Area: SOUTH WESTDEVON
 Version/Creation Date: 2013(a)v6.11.1 19/09/12

Description: LOCAL SHOPS
 Street: TORRIDGE WAY
 District: EFFORD
 Town: PLYMOUTH
 Post Code: PL3 6JG

Location: Suburban Area (PPS6 Out of Centre)
 Location Sub Category: Residential Zone
 Use Class: A1

Population within 500m: 3000
 Population within 1 Mile: 25,001 to 50,000
 Population within 5 Miles: 250,001 to 500,000
 Car ownership within 5 Miles: 1.1 to 1.5

Public Transport Provision Summary

Day	Period	Total buses/trams within 400m	Total Trains within 1000m	Total Services
Monday-Friday	0700-1900	118		118
Monday-Friday	0700-1000	30		30
Monday-Friday	1600-1900	28		28
Saturday	0700-1900	108		108
Sunday	0700-1900	38		38

Is site associated with a travel plan: No
 If not, are there any plans to implement a Travel Plan in the future? No
 Is survey data available before the implementation of the Travel Plan?
 Is the location of the site hilly or flat: Flat
 Urban Regeneration: No

Gross floor area: 470 sqm
 Retail floor area: 270 sqm
 Total Employees: 22

No. of developments for this Site: 5
 No. of survey Days for this Site: 1

Comments

The site is near the A38 which heads north joining with the A386 which continues north/west into Bristol. The A38 also runs east into Torquay.

Bus (or tram) site accessibility

- Is there at least 1 bus (or tram) stop within the site frontage or within 400m of the site frontage? : Yes
- If yes to question 3, are there at least 2 buses (or trams) per hour (per direction between 0700 and 1900) with routes serving significant areas of population within a 5 kilometre radius? (Mon-Sat): Yes
- If yes to question 5, what are the service characteristics? (please complete the outline information below)

Destination (town/area)	Number per hour	Approx. journey time
Plymouth City Centre	3	15
Devonport	2	15

Design features encouraging non-car modes

12. Pedestrians

The site is within close proximity to local residential areas.

13. Pedal cycles

None

14. Public transport

The site is within close proximity to local bus routes.

Design features encouraging non-car modes

Road Network Distance to Local Developments	
Year of Analysis	2012
Nearest Primary School	0.1 kilometres
Nearest Secondary School	1.4 kilometres
Nearest Local Shop/Corner Shop	0.8 kilometres
Nearest Main Supermarket	1.6 kilometres
Nearest Doctors Surgery	0.1 kilometres
Nearest Hospital with Minor Injuries/A & E	3.0 kilometres
Nearest Sports/Leisure Centre	1.0 kilometres

Census Data	
Year of Census	2001
Census Output Area/Data Zone	E00076057
Number of people employed within Census Output Area	35
Number of households within Census Output Area	176
Number of people living within Census Output Area	205
Area of Census Output Area (hectares)	5.00
Population density within Census Output Area (per hectare)	37.34

SITE PHOTO



Site reference: DV-01-I-01
Trade name: CO-OPERATIVE FOOD

Site area (h/a): 0.14
Gross floor area (sqm) 145
GFA not in use (sqm) 0
Retail floor area (sqm) 90

Open since 2010
Total Employees 8
Full Time Employees 3 75%
Part Time Employees 5 25%

Approximate % of total employees working
standard 9-5 hours or similar 0%

Percentage Split of Employee Gender
Male 50%
Female 50%

GFA per employee 18.750
Number of units 1
Name of nearest site Co-OP, PLYMOUTH
Distance to nearest similar site 1 Km

OPENING TIMES (24 Hour format)

Mon to Thurs 07:00 to 22:00
Friday 07:00 to 22:00
Saturday 07:00 to 22:00
Sunday 07:00 to 22:00

Filling station No
Cash card facilities No

Comments

The site area shown is the total for the whole site.

Site reference: DV-01-I-01
Trade name: ITS OUR PLAICE FISH & CHIPS

Site area (h/a): 0.14
Gross floor area (sqm) 65
GFA not in use (sqm) 0
Retail floor area (sqm) 35

Open since 2005
Total Employees 8
Full Time Employees 3 75%
Part Time Employees 5 25%
Approximate % of total employees working
standard 9-5 hours or similar 0%
Percentage Split of Employee Gender
Male 50%
Female 50%

GFA per employee 18.750
Number of units 1
Name of nearest site EGGBUCKLAND F & CHIPS
Distance to nearest similar site 2 Km

OPENING TIMES (24 Hour format)

Mon to Thurs 11:30 to 01:30
Friday 11:30 to 01:30
Saturday 11:30 to 01:30
Sunday 16:30 to 20:00

Filling station No
Cash card facilities No

Comments

The site area shown is the total for the whole site.

Site reference:	DV-01-I-01
Trade name:	CO-OP PHARMACY
Site area (h/a):	0.14
Gross floor area (sqm)	95
GFA not in use (sqm)	0
Retail floor area (sqm)	50
Open since	2007
Total Employees	8
Full Time Employees	3 75%
Part Time Employees	5 25%
Approximate % of total employees working standard 9-5 hours or similar	0%
Percentage Split of Employee Gender	
Male	50%
Female	50%
GFA per employee	18.750
Number of units	1
Name of nearest site	PHARMACY, PLYMOUTH
Distance to nearest similar site	1 Km
OPENING TIMES (24 Hour format)	
Mon to Thurs	09:00 to 18:00
Friday	09:00 to 18:00
Saturday	00:00 to 00:00
Sunday	00:00 to 00:00
Filling station	No
Cash card facilities	No

Comments

The site area shown is the total for the whole site.

Site reference: DV-01-I-01
Trade name: QUALITY FAYRE

Site area (h/a): 0.14
Gross floor area (sqm) 90
GFA not in use (sqm) 0
Retail floor area (sqm) 50

Open since 2006
Total Employees 8
Full Time Employees 3 75%
Part Time Employees 5 25%

Approximate % of total employees working standard 9-5 hours or similar 0%

Percentage Split of Employee Gender
Male 50%
Female 50%

GFA per employee 18.750
Number of units 1
Name of nearest site BLUE BEAR DELI
Distance to nearest similar site 3 Km

OPENING TIMES (24 Hour format)
Mon to Thurs 08:00 to 16:00
Friday 08:00 to 16:00
Saturday 08:00 to 16:00
Sunday 00:00 to 00:00

Filling station No
Cash card facilities No

Comments

The site area shown is the total for the whole site.

Site reference:	DV-01-I-01
Trade name:	POST OFFICE
Site area (h/a):	0.14
Gross floor area (sqm)	75
GFA not in use (sqm)	0
Retail floor area (sqm)	45
Open since	1960
Total Employees	8
Full Time Employees	3 75%
Part Time Employees	5 25%
Approximate % of total employees working standard 9-5 hours or similar	0%
Percentage Split of Employee Gender	
Male	50%
Female	50%
GFA per employee	18.750
Number of units	0
Name of nearest site	POST OFFICE,PLYMOUTH
Distance to nearest similar site	1 Km
OPENING TIMES (24 Hour format)	
Mon to Thurs	06:00 to 17:30
Friday	06:00 to 17:30
Saturday	06:00 to 17:30
Sunday	06:00 to 12:00
Filling station	No
Cash card facilities	No

Comments

The site area shown is the total for the whole site.

On-Site parking

Total no. of parking spaces	13
Spaces Per 100m2 GFA	2.766
Spaces Per 100m2 RFA	4.815

Number of spaces

Employee	0
Disabled	0
Visitor/Customer	12
OGV parking bays	1
Cycle racks	0
OGV loading bays	0
Mother & Toddler	0
Motorcycle spaces	0

Parking charges No

Comments about the management of the site car park, along with enforcement measures

No parking enforcement was observed at the site.

Site parking surface or non-surface (multi-storey/underground)
Surface

General Comments on Parking

The shops have a small parking area. There is also on-street parking available.

Site reference: DV-01-I-01 Survey date: 17/07/12 Day of week: Tuesday
 Survey type: Manual Count
 AM weather: Mild and Light Rain
 PM weather: Mild and Cloudy
 Initial car park occupancy: 0 Final car park occupancy: 3
 BRACKETED ACCUMULATION FIGURES ARE NOT ABSOLUTE

Data proportions in %
 Motor cars 84 Motor cycles 1 Public service 0
 Light goods 11 OGV (1) 0 OGV (2) 0
 Taxis 4

Time	Arr 429	Dep 426	Totals	Parking Accum
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00				
07:00-08:00	25	23	48	2
08:00-09:00	16	16	32	2
09:00-10:00	30	27	57	5
10:00-11:00	41	40	81	6
11:00-12:00	40	42	82	4
12:00-13:00	39	37	76	6
13:00-14:00	37	33	70	10
14:00-15:00	36	34	70	12
15:00-16:00	26	25	51	13
16:00-17:00	42	38	80	17
17:00-18:00	32	42	74	7
18:00-19:00	26	27	53	6
19:00-20:00	21	22	43	5
20:00-21:00	12	13	25	4
21:00-22:00	6	7	13	3
22:00-23:00				
23:00-24:00				

Site reference: DV-01-I-01 Survey date: 17/07/12 Day of week: Tuesday

Vehicles surveyed: Taxis

Time	Arr 17	Dep 17	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00				
07:00-08:00	2	2	4	(0)
08:00-09:00	1	1	2	(0)
09:00-10:00	3	3	6	(0)
10:00-11:00	2	2	4	(0)
11:00-12:00	4	4	8	(0)
12:00-13:00	3	3	6	(0)
13:00-14:00	0	0	0	(0)
14:00-15:00	0	0	0	(0)
15:00-16:00	0	0	0	(0)
16:00-17:00	1	1	2	(0)
17:00-18:00	1	1	2	(0)
18:00-19:00	0	0	0	(0)
19:00-20:00	0	0	0	(0)
20:00-21:00	0	0	0	(0)
21:00-22:00	0	0	0	(0)
22:00-23:00				
23:00-24:00				

Site reference: DV-01-I-01

Survey date: 17/07/12

Day of week: Tuesday

Vehicles surveyed: Cycles

Time	Arr 9	Dep 9	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00				
07:00-08:00	0	0	0	(0)
08:00-09:00	0	0	0	(0)
09:00-10:00	0	0	0	(0)
10:00-11:00	0	0	0	(0)
11:00-12:00	0	0	0	(0)
12:00-13:00	0	0	0	(0)
13:00-14:00	0	0	0	(0)
14:00-15:00	0	0	0	(0)
15:00-16:00	0	0	0	(0)
16:00-17:00	0	0	0	(0)
17:00-18:00	0	0	0	(0)
18:00-19:00	0	0	0	(0)
19:00-20:00	7	7	14	(0)
20:00-21:00	2	2	4	(0)
21:00-22:00	0	0	0	(0)
22:00-23:00				
23:00-24:00				

South Bucks District Council: Building Performance Analysis

Final Version 28 November 2013



Client: Prepared for
Jo Faul

Prepared by
Alan Asbury of Alan Asbury Associates
Operating on behalf of
Aylesbury Vale District Council
With the assistance of Robert Smart of Aylesbury Vale District Council

Aylesbury Vale District Council
Sustainability and Energy Team
Gateway
Gatehouse Road
Aylesbury
Bucks
HP19 8FF

Tel: 01296 585112

E-mail: Aasbury@aylesburyvaledc.gov.uk

This report has been prepared with the invaluable assistance of Andy Crow (FM Manager), Jo Faul (Planning and Sustainability Officer), Keith Simpkin (Leisure Client Manager), Linda Grange and John Harwood.

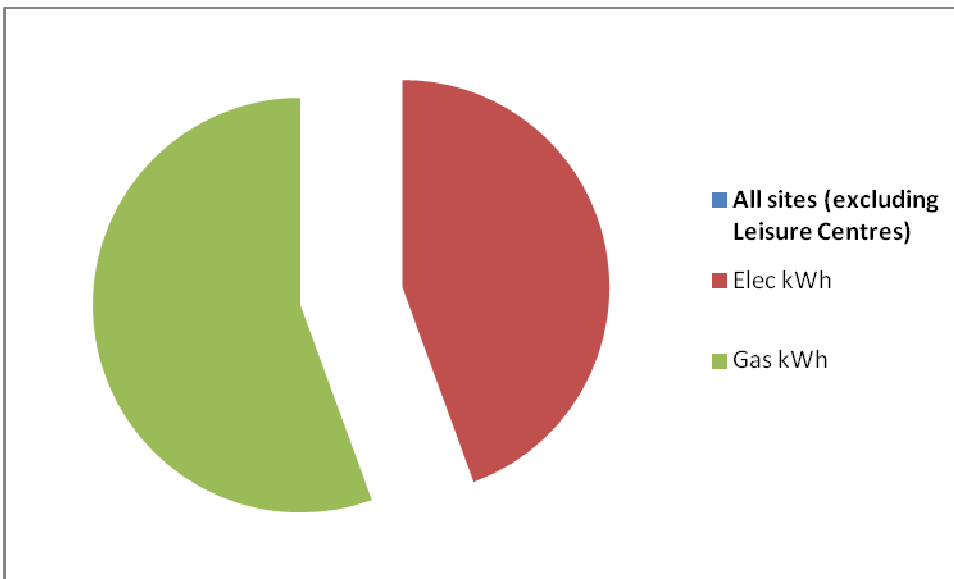
Many thanks also for the assistance of GLL staff including Steve O'Reilly (Leisure Contracts Manager), Jeremy Gould, Jacqui Griggs and Chinazo Anaele.

Summary

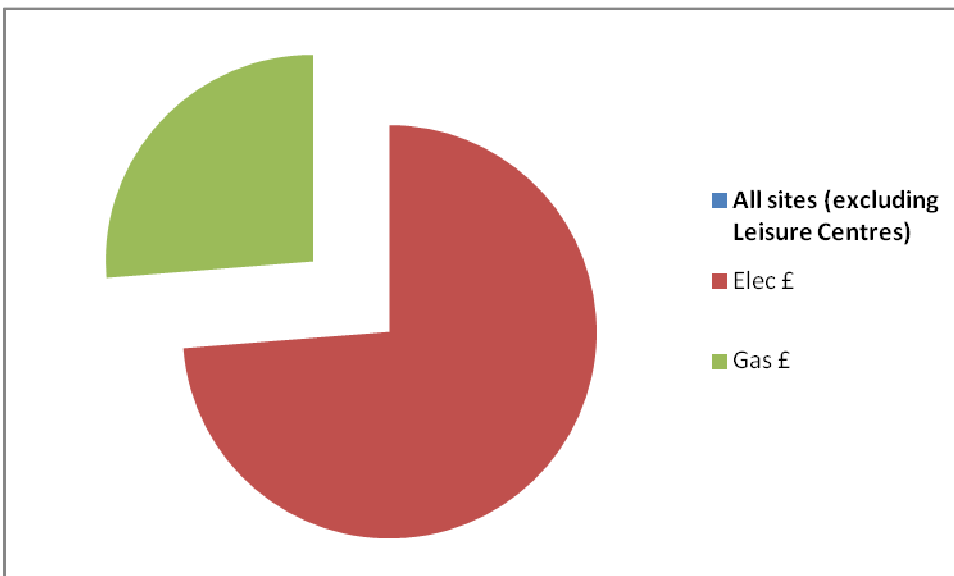
A review of the energy consumption and costs throughout South Bucks District Council portfolio was undertaken with the view of identifying potential energy and cost saving opportunities, selecting sites where energy surveys would be best directed.

As anticipated, energy consumption varies significantly across the portfolio due to the contrasting nature of many of the properties. A summary of the total annual electricity and gas costs across the portfolio (excluding Beacon and Everham Leisure Centres) is estimated at £91,000 with a combined (electric and gas) energy use of 1,384,740 kWh.

As can be seen from the graphs below, the kWh usage of electricity and gas are similar, the costs differential is significantly higher with electricity, the focus of the study therefore concentrates on this area.



Usage split by kWh



Usage split by financial cost to operator

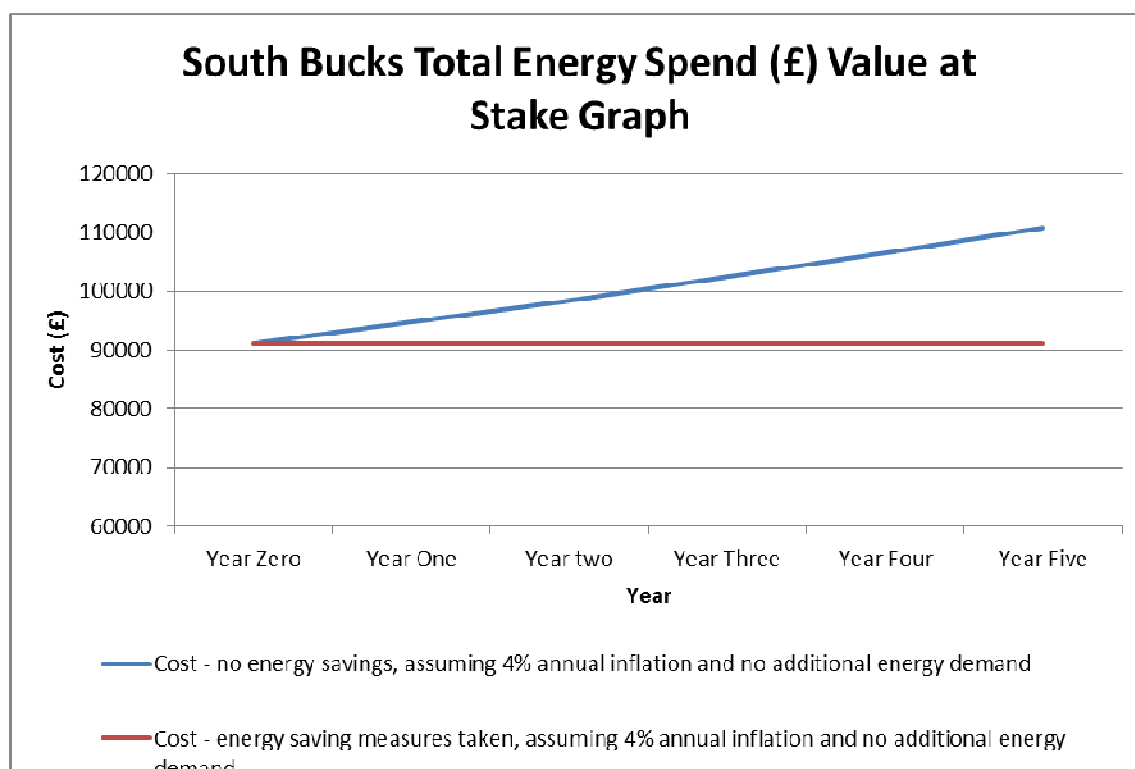
Appendix

The Beacon Centre has an electricity consumption of 157,973kWh and a gas use of 147,931 (305,904kWh). Costs for these are £15,923 and £5,721 respectively. By contrast Everham Centre has no gas costs, as these are funded by Bucks CC and so no detail has been provided. Electricity consumption at Everham Centre is 115,280kWh with annual costs of £11,686.

By way of context, the two centres represent a little less than ¼ of all energy consumed, and 1/3 by way of costs.

It is recognised that energy price inflation is difficult to forecast with any degree of accuracy. Even with expectation of available and rapidly exploited shale gas extraction in the UK, it is not anticipated that energy prices increases will be abated. Credible analysts are proposing figures between 3% and 8.7% year-on-year for the next 5 years. For the purposes of our recommendations, we have assumed a conservative 4% per year for energy inflation over the next 5 years (using a baseline year of 2012/13).

A *Value at Stake* graph (below) illustrates the indicative potential financial savings available to South Bucks. The blue line indicates the cost of doing nothing to address energy consumption. The triangle formed between the red and blue lines forms the potential for on-going losses should no action be taken.



Below is a summary table of the measures that have been recommended for the South Bucks District Council estate. Alongside these are indicative savings for same. Savings along with paybacks/ROI are included, where ROI is taken as a performance measure used to evaluate the efficiency of an investment or to compare the efficiency of a number of different investments. To calculate ROI, the benefit (return) of an investment is divided by the cost of the investment; the result is expressed as a percentage or a ratio.

Summary table for Council Buildings (excluding Leisure Centres):

Location	Section	Description	Saving per year	Payback Years/ ROI	Cost £
Capswood Offices	Vending machines (4 units)	Install a 24/7 digital time spur. These cost £66 each including fitting.	200	1.32	264
Capswood Offices	Capswood printer/ photocopiers	Install ELIMINATA units costing £24 each to the 6 older units at 60W they pay back a little under 11.5 months	150	0.96	144
Capswood Offices	Remaining electrical kit.	ELIMINATA offer a solution costing £32 which, for water chillers at 80W would pay back within 11.3 months.	50	1.28	64
Capswood Offices	Hand dryers, (Capswood 1)	Install (6#) replacement efficient hand dryers (Mitsubishi air blades at 560W per unit and at a cost of £470/unit.) This particular replacement would pay back within 10 years. An additional £200/year is available with elimination of hand towel provision.	283.8	9.94	2820
Capswood Offices	Hand dryers (Capswood 2)	Install (6#) replacement efficient hand dryers (Mitsubishi air blades at 560W per unit and at a cost of £590/unit.) This particular replacement would pay back within 5/6 years. An additional £200/year is available with elimination of hand towel provision.	283.8	9.94	2820

Appendix

Capswood Offices	Available Supply Capacity Capswood 1	Write to the utility company (in this case Npower) and request that kVa for the site MPAN 20 0005 1091 748) be reduced from 220kVA to 96kVA. (Suggest this is done say 3 months after Server Room is removed as there will be a change).	1128	0.00	0
	Available Supply Capacity Capswood 2	Write to the utility company (in this case Npower) and request that kVa for the site MPAN 20 0005 1091 757) be reduced from 220kVA to 50kVA.	1592	0.00	0
Capswood 1	TREND BMS Electricity	Possible set point daytime savings and control over set points at bank holidays. Consultant cost (2 days)	1400	0.36	500
Capswood 1	TREND BMS Gas		350	1.43	500
Capswood 2	TREND BMS Electricity	Correcting set points on the TREND BMS to come on and off at the correct times. Consultant cost (1 day)	450	1.11	500
Capswood 2	TREND BMS Gas	Correcting set points on the TREND BMS to come on and off at the correct times. Consultant cost (1 day)	375	1.33	500

Capswood 1	Underground Car Park plant room	A new TREND front end schematic system would be an excellent investment if staff trained up to understand how to control heat and cooling. On removal of server room, consider removal of chiller units.	1000	5.00	5000
Capswood 1 and 2	Dynamic Burner Management Units (DBMUs)		1647	4.86	8000
Capswood 1 and 2	Lighting - Circular PL general	Replace circular recessed downlighter lamps and fittings with LED lights (such as sample).	£3,648	2.41	8800
Capswood 1 and 2	Temperature set points.	Turn heating down in winter, or the air conditioning set point up in summer, the annual saving is based on a 1C reduction over both Capswood sites. (Should be factored into BMS adjustment above). Recommend set points reduced 1C in winter and increased 1C in summer.	1140	0.00	0
Capswood 1 and 2	PC control	Suggest trial of system such as 1E Nightwatchman. This needs to be investigated by site visit with such a provider to provide accurate savings. Assumed 10%. Initially place energy meter on say 3 representative PCs and run for a week to test energy use night and day and scale up for savings.	£450	4.00	1800

Appendix

Capswood 1	Shower room	Place hot water cylinder on a 24/7 digital timer so it's turned off for 13 hours at night and at weekends, this would cost £100 and pay back in 2 months.	526	0.19	100
Capswood 1 Kitchen	Vending	Install digital spur timers into existing sockets to two vending machines costing no more than £100 per unit supplied and installed. These could then be turned off for 13 hours per night and at weekends.	556	0.36	200
Capswood 1 Kitchen	Water chiller	Turning the water chillers off each night at an investment of £35 would save £50/year.	50	0.70	35
Capswood 1	Renewables	Following structural survey; Installation of c 80 panels providing 20kWp PV array to Capswood 1. This would generate 19,600kWh/ annum (equivalent to c 4 homes worth of electricity).	4486	6.27	28149
Capswood	Lighting- Foyer reception area (Capswood 2).	15 x 50 Watt GU10 halogen spotlights over reception should be replaced with 6W LEDs at £8/unit, the payback would be 2.15 years.	230.4	2.15	495
Capswood 1	Capswood 1 Server Room	Check night time energy use against Capswood 2 following removal of server room. Need to address A/C in server room following server removal.			
Capswood 1	Capswood 1 with server room	Figures from sub meters do not mesh with those of Half Hourly meters. Ask sub meter providers to check and recalibrate.			

Capswood 1 and 2	Corridors, toilets and stairwells circular downlighters	Replace circular downlighters with LED (first test acceptance with sample provided)	3600	2.50	9000
Capswood 1 and 2	Office Lighting Capswood 1 and 2	Look into installing LED light alternatives following trial. Sample provided with 5 year life 23.8.13. These could be installed a cost of no more than £20 per unit, and could payback within 6 years.	9266	6.03	55875
Capswood 1	Plant Room	Investigate installation of inverter to 2.2kW Calpeda pumps or replacement of Pumps. Contact ERIKS, ABB or similar for recommendation.			
Capswood 2	Legal	Heat loss issue in this area due to lack of installed insulation above. It is recommended that, this should be inspected and rectified .	200	3.00	600
South Bucks Academy Golf Driving Range	Club Building		300	1.67	500
South Bucks Academy Golf Driving Range	Club Building	Cavity wall Insulation	200	2.00	400
South Bucks Academy Golf Driving Range	Club Building	Implement foil backing to radiators	37.5	1.07	40
South Bucks Academy Golf Driving Range	Club Building	Install timer to drinks vending machine and look at reorientation away from radiator	50	1.32	66
South Bucks Academy Golf Driving Range	Driving Range	Remove heaters or place these on timers	443	0.23	100

Appendix

South Bucks Academy Golf Driving Range	Driving Range	Ensure spotlights are on timers. Consider LED alternative in around 12 months when the right technology should be available			
SPMG	SPMG offices and museum	Affix foil insulation to the wall behind the radiator to reflect heat back into the building. It would cost £40 to supply this material.	37.5	1.07	40
SPMG	SPMG offices	Install 600mm2 LED solution in place of existing switch start light units. £15 installation per unit and would pay back in 7.14 years.	194	7.14	1385
SPMG	Portable equipment (Offices)	Place timers on these for a week to ascertain energy use. If regularly being left on, educate and then timers if no change.			
SPMG	Central heating and hot water boiler.	Replace the boiler with an efficient condensing boiler at a cost of £4000, pay back would be around 10.5 years. Given age of boiler this would be something that ought to be considered a priority.	379	10.55	4000
SPMG	Ladies Toilet	Install timer to 2.2kW water heater for occasions when not turned off. (NB if boiler in offices is to be replaced, it may be worth quoting for insulated piping to these toilets and removal of electric heaters). Alternatively, hot water hand wash could be considered a luxury and removed.	105.2	0.95	100
SPMG	Insulation	Installing 270mm of glass fibre insulation above this ceiling would cost around £400 and pay for itself	265	1.51	400

		within 18 months.			
SPMG	Relamping	Install 6W LEDs to replace the current spotlights at a cost of c £8 each, paying back in less than 2 months.	76	1.03	78.3
SPMG	Fountain pumps	Switch of off fountains for 20 minutes per hour.	1085.5	0.46	500
SPMG Gardeners	Works building	Change the fluorescent tubes to LED lights. (NB Savings here go to Gavin Jones).	529	3.89	2060
SPMG Gardeners	Renewables	Affixing Solar PV array to this roof would not require penetrations as the roof is designed to allow clamping of panel frames to the roof, pay back would be just over 6 years. Energy saving to Gavin Jones	1764.03	6.24	11,000
SPMG House	House	Connect to mains gas at no cost, due to proximity of the gas mains.	Upto 50% of the current energy bill (no billing data made available)		
SPMG Greenkeepers Compound office	Timers	Plug timers into water chillers and radio battery charger	70	0.94	66
Parkside Cemetery	Remembrance buildings and toilets.	Put the heater and water heaters on integrated timers. Both toilets in this building housed 9 litre cisterns and hippo water saving devices should be installed in these to reduce water use.	210.4	0.95	200

Appendix

Parkside Cemetery House	Oil to Gas	Investigate through Transco (up to 50% saving on house gas bill). If as believed, less than 23metres from Mains.			0
Parkside Cemetery House	PV to copper roof	Assume 3kWp array for 2500kWh/year. Assuming only FIT would be paid to the Council and energy savings retained by the house. (hence long payback).	400	15.00	6000
Parkside Cemetery Memorial Building	PV to copper roof	Assume 1kWp array with all energy savings and FIT to Council	362.92	5.51	2000
Parkside Cemetery Memorial Building	Timers to Hot water boilers in memorial building toilets	Recommend that these heaters and the hot water heater be placed in integrated timers set to go off 1 hour before site closes to the public and on one hour before opening	105.2	2.85	300
Parkside Cemetery House	Insulation to roof		200	2.50	500
Farnham Common	Greenkeepers Compound	Consider disconnecting air compressor for shoe cleaning if it can be shown to be being left turned on. Alternatively have connected to a time switch to give say 3 minutes of power and then switch off	Not connected at time of visit. Therefore only saving if it is.		
Estate (excluding Leisure Centres)	Behaviour Change. Conservative 5% saving used. Likely 10%+.	Graduate student and limited publicity budget. Agree heating and cooling set points corporately. Install digital thermometers around the building to justify levels of heat and cooling. Ensure that when heat or cooling is on, windows are always closed. Staff guidance on lighting and	4500	0.11	500

		heating etc.			
		Total annual saving			
Total Potential Savings			44376.25	3.5	156401
<i>NB: Whilst saving shows:</i>	44376.25	<i>Suggesting a 42% saving against the £91,000 total energy cost/year; The figure is more accurately measured against energy cost and capital cost.</i>			

¹ In using the bills provided, two sites were identified as having an available supply capacity in excess of what seems to be required. Available Supply Capacity is a pre-agreed figure confirmed with the energy supplier of the highest amount of power that is required when the at the greatest need for the building. It carries a cost and so should be set at a point where it is sufficiently high to meet peak periods but not so high that it simply costs the organisation to have this supply, just in case. By reducing the available supply capacities at these sites savings of over £2,700 would be realised. These savings could be achieved with immediate effect once the utility supplier is notified by letter.

By instigating all of the measures set out in summary table above (and in detail below) , savings of £38,000 can be achieved with an overall payback of 3.5 years. These savings are based against a £91,000 energy bill for the Council which does not include savings or costs at the Council's Leisure centres (these are set out separately at Annex 2a and 2b). Naturally all of these savings are annual savings and most would be expected to continue year on year against rising energy costs for several years to come.

In using the bills provided, two sites were identified as having an available supply capacity in excess of what seems to be required. By reducing the available supply capacities at these sites savings of over £2,700 would be realised. These savings could be achieved with immediate effect once the utility supplier is notified by letter.

Further savings could be made through the implementation of automatic meter reading. However, on discussion with Facilities Management (FM) at the Council, we would agree that there are insufficient resources in-house to manage this data at this time. This is something that could be considered in the future, perhaps through use of a student or intern.

Appendix

It is therefore recommended that this report is actioned in a comprehensive programme over the next three years linking with the Council's Carbon Management Plan. In order to achieve this, the following should be implemented:

- Act upon survey findings at all highlighted sites within this report
- Carry out an appraisal of the TREND BMS and implement adjustments.
- Trial various proven LED solutions at viable sites
- Work with staff across the portfolio to promote awareness, challenge and change behaviour and implement good housekeeping practices.
- Establish an 'invest to save' programme with internal budget

The figures (see appendix 1a) have been assessed against a 3 and 5 year spend plan. These from a cost, energy perspective and a CO2 emissions perspective.

3 Year Costs £:

	Yr 1	Yr 2	Yr 3	Total Cost
Capital Cost	55,780	44,746	55,875	156,401

3 Year kWh:

	Yr 1	Yr 2	Yr 3	Total Saving
kWh reduction (t)	175,195	139,152	92,660	407,007
kWh reduction (%)	12.65%	10.05%	6.69%	29.3%

3 Year CO2:

	Yr 1	Yr 2	Yr 3	Total Saving
CO2 reduction (t)	76.779	59.271	41.278	177.328
CO2 reduction (%)	5.54%	4.28%	2.98%	12.8%

If investment is stretched over 5 year, the following is given (However, it is worth pointing out that delaying some of these projects for 5 years is irrational given the benefits of implementation). A sensible invest to save plan is therefore recommended to be a 3 year plan in this instance:

5 Year Costs £:

	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Total Cost
Capital cost	32,780	26,106	23,000	38,578	35,938	156,401

5 Year kWh:

	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Total Saving
kWh reduction (t)	146,933	119,647	26,407	62,006	51,271	405,869
kWh reduction (%)	10.61%	8.64%	1.9%	4.48%	3.7%	29.3%

5 Year CO2:

	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Total Saving
CO2 reduction (t)	65.015	51.378	11.764	27.622	21.548	177.328
CO2	4.69%	3.71%	0.85%	1.99%	1.56%	12.8%

reduction (%)						
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Energy Performance Certificate (EPC) Data

Site	kWh (Year to 31 March 2013)	M2	CIBSE TM46 Recommendation	Actual kWh/m2
Capswood 1	319,557	1142	95	280
Capswood 2	93,402	1444	95	65

From table above it can be seen that whilst Capswood 2 has been showing improvements in its EPC rating, Capswood 1 has some way to go. However, it is expected that removal of the server room will make significant reductions to the current high figure. EPC's are situated at the entrance of Capswood 1 and 2.

Introduction

This report follows an energy assessment exercise carried out by Aylesbury Vale District Council (AVDC) on behalf of South Bucks District Council "the Council"). The aim of the report is to analyse the energy performance across the portfolio, identifying where immediate savings can be generated through tariff and profile changes, instigating a selection of potential measures and by conforming to various performance benchmarks for specific building types and uses.

It is recommended that the projects that come out of this report are considered for a *ring-fenced energy efficiency fund* that can be utilised and reinvested from energy savings to deliver on-going year on savings for the Council.

South Bucks District Council currently operate 37 buildings in the South Buckinghamshire area, all with different uses and times of opening, along with two leisure centres which are managed by contractors that take responsibility for utility costs but not maintenance. Gas and electricity consumption data for all sites is available with varying degrees of quality, due to a range of profile types. Two sites (Council Offices referred to as Capswood 1 and Capswood 2) have automatically read half-hourly consumption data available, whilst others have monthly and or quarterly billed rates, where both estimated and manual meter readings are common. Contracts for electricity are predominantly with NPower and British Gas (gas), with gas supplied by Total and Eon and NPower.

The sites all have different utilities and different start and finish dates and there is potential to make savings from rationalisation of these contracts. Much of the energy data is provided by manual reads from officers at the non half hourly sites (those other than Capswood 1 and 2).

Procurement

By rationalising energy providers, savings would be expected through:
 Enhanced buying power through the offering up of all available sites to single utility.
 Freeing up of the time of the FM Manager to allow him the freedom to implement further energy efficiency measures on Council sites.

Whilst FM have secured some very good kWh energy rates for the Council, it might be worthwhile for the Council to consider letting a tender for all sites electricity and gas or contemplating jointly contracting these prices with its Leisure contractor. Whilst flexible contracting is an option for the Council, this would add additional risk to the purchase of energy, and given the current energy rates

Appendix

are better than average, it would not be advisable.

Generation

The Council has already, to its credit, embarked upon a journey towards renewable energy generation with the installation of a 10kWp solar Photovoltaic array on the south facing roof of its Capswood 2 building. In a time of increasing energy prices and issues over national energy security, the generation of energy by a public body, which is able to benefit from the majority of energy produced during working hours, is a sensible action. This opportunity comes at a time of solid financial incentive from central government and reducing hardware costs. There are additional locations on the Council's estate where such technology would be viable, and these will be discussed in more detail later.

The scope of the assessment was defined by the council as to address gas and electricity use at 10 sites. As such, assessments have been conducted at the following sites and these represent the scope of this report:

Capswood 1

Leased until 2026 (13 years). Council pays for building maintenance and electricity, gas and water. Landlord pays for external lighting bills.

Capswood 2

Leased until 2026 (13 years). Council pays for building maintenance and electricity, gas and water. Landlord pays for external lighting bills.

The South Bucks Academy

Stoke Poges Memorial Gardens (SPMG)

This site (office, museum and pumps) is owned by the Council who also pay the bills. However, energy billing for the workshop is paid for by the contractor Gavin Jones. The on site house is owned by the Council but leasee pays the energy bills.

Farnham Park Sports Field – Operated by South Bucks District Council Trust. The Council pays for energy, building and sports lights. Council also pays for house on-site energy use and recharge the tenant. The Energy Assessors were unfortunately unable to access house on any of their visits.

Greenkeepers Compound - This is a new building located at Farnham Charity Sports Field.

Farnham Park Golf Course – was visited by assessors who were advised that the building was about to be demolished and rebuilt to a higher specification. Assessors have offered to look over this specification and provide a set of energy related recommendations at no additional cost.

Beacon Leisure Centre* - is a Council owned building for which the Council have responsibility for maintenance costs. The leisure contractor pays energy bills. There is some potential for capital/revenue share from retrofit works that are likely to make energy savings.

Everham Leisure Centre* - is a Bucks CC owned building. The leisure contractor pays energy bills. Heating is provided from adjacent youth centre and is paid for (*at both centres*) by Bucks County Council. There is some potential for capital/revenue share from retrofit works that are likely to make energy savings.

Parkside Cemetery

This is the only cemetery site that assessors were shown. Billing is electric plus water. There is oil central heating on site at the house. The Chapel building has lighting and electric heating. The house is owned by the council and rented out. The leasee pays the energy bills.

Sites not considered were as follows:

Holtspur Cemetery – No energy use, just water.

Shepherd Lane Cemetery – No energy use, just water.

Dropmore Road depot – SBDC owned but Biffa pay utility bills

Bath Road depot – SBDC owned but energy and water have been cut off. **It is recommended that this is checked with the utility company** to ensure that this site has been properly disconnected and any such communication with the utility recorded and held on file.

Shreding Green Store – Single electric light, we **would recommend checking the annual bills.**

Assuming a 60W bulb if operating 24/7, this would use 526kWh of electricity and the bill for energy consumed should therefore not exceed £48/annum. If easily accessible, it may be worth replacing the bulb with a compact fluorescent or LED.

Toilets (W/Cs)

Farnham Common

River Road

Open Spaces (Various)

Littleworth Common – Only open space

10~ Surface Car Parks – all electric lighting but not all lighting owned by the Council, as some are Highways, or Parish owned. SBDC pay for energy on payment machines. It is understood that two of these car parks have been earmarked for OLEV granted rapid EV charge points. In order to ensure that there is adequate capacity at these sites, the **bills for the past 12 months should be assessed for highest maximum demand over that period and checked against available supply capacity for these sites.**

Recycling Sites – No energy use at these sites.

Dropmore Road Waste Transfer Depot. Owned by Council but Biffa pay energy bills

Bath Road Waste Transfer Depot. Owned by Council but energy and water cut off as site is unused.

Specific Meters not covered because of requests not to cover them by FM are as follows:

Public Convenience The Broadway	£63
Store Area Langley	£23
Station road car park GX	£50
GX Cemetery	£66
Burnham Sewage works	£27
Street lighting	£574**
Unmetered	£25

It would be **worthwhile to look at these streetlights given the energy use and establish what lamp fittings are currently installed, with a view to changing to LED or Induction lamp technology. Early hours switch offs could also be considered to reduce this annual cost.

The Council felt that any remaining sites (predominantly surface car parks) were not appropriate for such inspections at this time.

Detail

Capswood 1 and 2:

The site was built around 2004 and the Council was its first occupant. The Council inhabit it on a

Appendix

leasehold tenancy until 2026. The Council is responsible for maintenance, electricity, gas and water on site but not for electricity costs associated with the street lighting around the surface car park. These are built to a high specification, which includes good wall insulation, Bris Soleil (solar shading) to upper floors and tinted windows to all floors to reduce solar gain and glare.

Floor Equipment

Vending Machines

There are 4 machines in the two buildings, 2 for drinks and 2 for chocolate and crisps. These machines are well insulated to retain cold air and as such, there would be no dis-benefit to products by being powered down overnight. They are currently directly plugged to mains and so could be turned off 13 hours per night via an Eliminata SAVER at £27 (with no install cost) or the installation of a 24/7 digital timer spur wired in place of socket. The digital timer spur would cost £36 plus fitting at around £30. The lightest user of these machines operates at 120W (the rest are the same or higher energy users). As such, installing this technology would pay back in 14.4 months and from then on **save £50/year** per unit in energy costs at today's rates. Savings for the 4 units would therefore be £200/annum.

Capswood Printer/Photocopiers

Photocopiers around the building consist of OKI, Ricoh and Gestetner. Ricoh now own the Gestetner brand. There is a copier station at each floor of each building, each housing two copiers. There are additional copiers at the Members area on 2F Capswood 2 and at reception GF Capswood 2.



There are 4 relatively new Ricoh printer/copiers. All are Ricoh MPC4000 and have an 'Energy Saver' Mode of 137W (particularly high energy use) – and an 'Auto Off' Mode (which has very low energy use). Our understanding is, that the low energy use mode is turning the machine off (albeit still trickling power), the copier would therefore need to be turned on again each time it is needed. Experience suggests that most people don't bother with this mode, so there is no waiting time when they actually want to use the copier. It is therefore recommended that this 'Auto Off' Mode feature is set on the 4 Ricoh copiers so as to keep energy use to a minimum. This is a no cost solution.

The 5 Gestetner DSC332 printer/copiers and 1 Oki copier are older technology. The Gestetners are pre 2006 and are thought to have been around since shortly after moving into the buildings in 2004. Since Gestetner were bought out by Ricoh, the specifications now all relate to Ricoh. However, we have located the specification for these old Gestetner DSC332 copiers for 2006 and they have an Energy Saver Mode of 60W but no Sleep Mode or Auto Off Mode. Since they are all mains plugged and are believed to be on 24/7, it is recommended that a timer be used so they can be timed out. The simplest solution for this would be the use of ELIMINATA units between socket and appliance plug. These cost between £24 each and can be installed in seconds by anyone. At 60W assuming no use 13 hours per day, these would pay back in a little under 11.5 months. and from then on save £25/year in energy costs (assuming current energy costs).

Remaining Electrical Kit

The remaining electrical kit is either very small and only used infrequently or (in the case of water boilers) has already been installed with 24/7 digital timers. It is assumed water coolers had been installed without timers. ELIMINATA offer a solution for these at £32 that reputedly avoids concerns about legionella. At 80W, these units would pay back in 11.3 months saving £30/year per unit

Given presence of electric boilers on timers, any other hot water boiling devices should be removed from site.

Hand Dryers



Given assumed usage of 80 visits to each toilet hand dryer per day in the Capswood buildings, and taking into account discount for 3 or more units purchased, payback would be 10 years. This is a fairly long payback but does not factor paper towel costs to supply and regularly replace. The cost to supply and replace paper towels per annum across both buildings is £400. If this cost is factored in, then payback will be 5.83 years.

For this scenario, replacement is based on replacement to Mitsubishi air blades at 550W per unit and at a cost of £590/unit. Figures assume discounted rate (purchase of 3 or more) plus an element for installation into existing location.

This www.jettowel.co.uk JT-SB216GSN-W-CE calculation is based on a single unit replacement. Costs are likely to be reduced for orders over 3 units.

Cost/Energy Savings

- Fill in the yellow cells.
- The result is automatically calculated.



		JET TOWEL	HOT AIR	PAPER TOWEL	ROLLER TOWEL	
INPUT	Capital Cost	£	470	0	-	-
	Rental Cost per week	£			-	-
	Power	W	550	2200	-	-
	Standby	W	1	2	-	-
	Drying Time	Seconds	13	40	-	-
	Paper Towel Cost	Pence/Towel	-	-	0.4	0.3
	Electricity Charge	Pence/kWh	10		-	-
	Frequency of Use	Times/Day	80			
	Working Day	Days/Year	260			
	RESULT	Running Cost	£/Day	£0.02	£0.20	£0.64
		£/Year	£4.75	£52.05	£166.40	£93.60
Energy		kWh/Day	0.2	2.0	-	-
		kWh/Year	48	520	-	-
CO ₂		kg/Day	0.1	0.9	-	-
		kg/Year	20	224	-	-

Tariffs

The tariffs for the two Capswood offices (00 Half Hourly) are appropriate for the office type and energy use.

Available capacities

The Available Supply Capacity (ASC) refers to the amount of electricity that the Distribution Network Operator (DNO) is required to make available for any commercial site. Essentially, it is the maximum electricity you can draw from the grid at any one moment and can be found on your electricity bill. Organisations pay according to the value they believe they will require, with allowances for site development.

Available Supply Capacity is measured in Kilo Volt Amperes (kVa), and for half-hourly metered sites is charged on a monthly basis as a standing charge. Any site with a requirement of 100 kVa should be half-hourly metered and both Capswood 1 and 2 are.

Reducing Available Supply Capacity

Distribution costs make up between 25-30% of overall electricity costs. They are often passed on through costs invoiced by your Electricity Supplier and depend on the location and size of the site, as well as the Available Supply Capacity (ASC).

If a business or organisation consumes more electricity than its ASC there may be an excess capacity charge. However, if a site uses less than the ASC they will still be charged for the full supply amount each month (whether or not it is needed). There is therefore a potential saving which can be made on all sites where annual maximum demand is around 25% less than the ASC.

At **Capswood 1** this is set at 220kVa. Maximum Demands (MD) taken from billing over the 12 month period July 12 to July 13 show highest demand at Capswood 1 of 76.2 in July 2012.



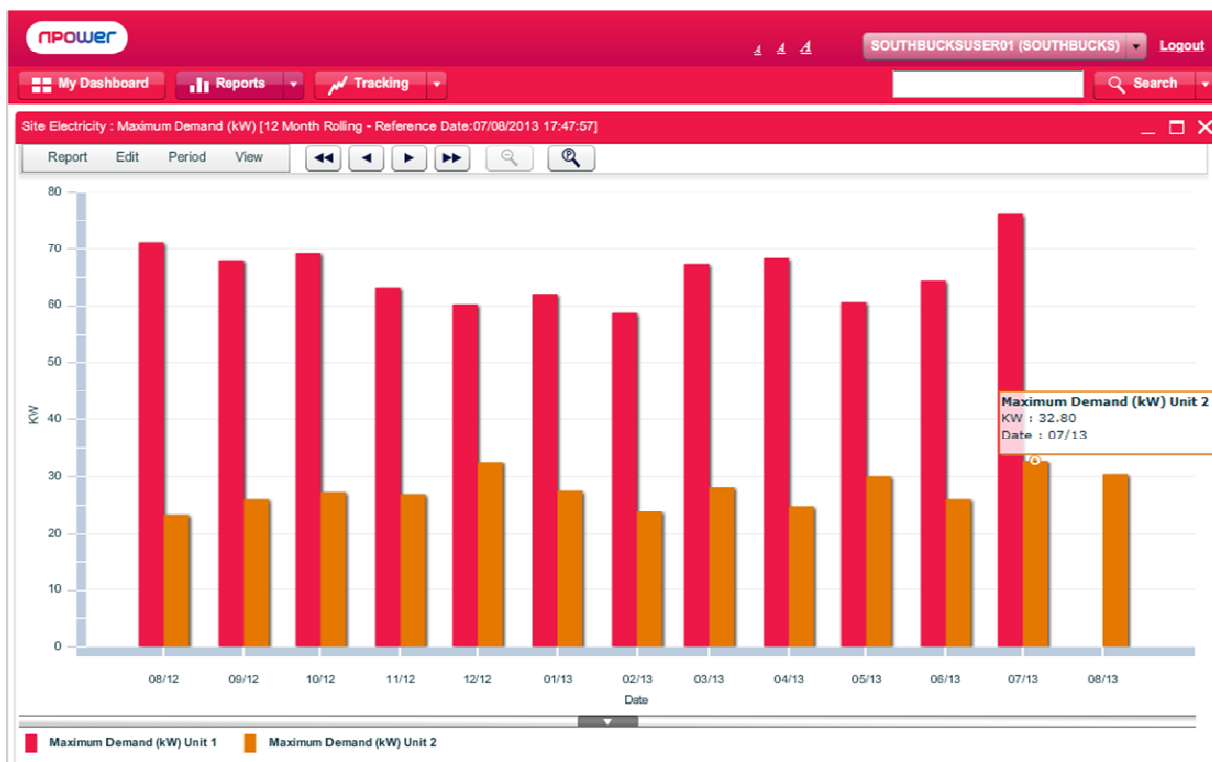
Having assessed this data back as far as NPower have data, the site last came close to this figure in October 2011 (74) and the highest MD has only been 84.4 in June 2011. Capswood 1 presently incorporates a server room and as a result, of the removal of the server room, at some point (date yet to be determined), the maximum demand might be expected to reduce at this site to something similar to Capswood 2. Using figures from the last 12 months of billing period, kVA could be reduced to 100kVA from 220kVA at Capswood 1. This will provide a saving of £0.758/KVA/per month at this site.

However, given the removal of the server room, it is recommended that this change is delayed for 3-4 months and the MD assessed at the end of that period to establish the new MD. Reducing kVa from 220 to 96 will result in a saving of 125kVa: £1,128/year.

We recommend that the Council write to the utility company (in this case Npower) and request that kVa for the site MPAN 20 0005 1091 748) be reduced from 220kVA to 96kVA at Capswood 1 with immediate effect.

There is no cost in carrying out the above and the financial savings commence upon utility acceptance. However, there will be a penalty charge levied by the energy supplier to change kVA on a regular basis. As such, in the case of Capswood 1, it would be worth looking at 3-4 months billing following the removal of the server room so as to assess the MD after this and base future kVA on 25% of the highest MD figure.

At **Capswood 2**, kVA is also set at 220kVa. Maximum demands taken from billing over the 12 month period July 12 to July 13 show highest demand at Capswood 2 of 32.8 in July 2013. Having assessed this data back as far as NPower have data, the site last exceeded the 32.8figure in June 2012 (56.8), The highest MD has only been 61.6, and this was in June 2011.



kVA could be reduced to from 220kVA to 45kVA at Capswood 2. This will provide a saving of £0.758/KVA/per month at this site.

Reducing kVa from 220 to 45 will result in a saving of 175kVa: Capswood 2: **£1,592/year**. Given highest MD on record was 61.6.

The Council should write to the utility company (in this case Npower) and request that kVa for the site MPAN 20 0005 1091 757) be reduced from 220kVA to 50kVA at Capswood 2 with immediate effect.

As outlined, there is no cost in carrying out the above changes, with financial savings commencing upon utility acceptance.

Note of caution. If the Council has plans to introduce rapid electric vehicle charging to either site, then, dependant upon the technology to be employed, it will need to retain 50kW of power (retain 50kVa in addition to the reduced figure recommended above) per charging point.

Reactive Power

Reactive Power for these two sites is 0.94 and 0.98 respectively. As such there is no incentive to invest in reactive power correction at either site.

Renewables and Low Carbon Technology

The South facing roof of Capswood 1 is ideally oriented to a Solar PV array and this roof could accept an array, even assuming conservative use of 250Wp panels of 14kWp to 15kWp rising to 20kWp if 300Wp panels were to be utilised. Capswood 1 is a rectangular building of approximately 36m x 15m with an apex roof and a rectangular vented area to this apex. The roof space in this building (access as it is through a roof door in the disabled toilets) is more than sufficient to house the inverter required for PV array.

Server Removal

The relocation of the server room from Capswood 1 to Welwyn and Hatfield Council in July 2013 will make a significant difference to the energy consumed to both operate and to cool this equipment. It should be ensured that air conditioning within this room is switched off and removed or (if the room is to be utilised for office space) the DX units are carefully controlled by the Council's TREND unit and reset in line with the remainder of the office area.

Recommendations

Requiring Further Investigation: Baseloads and Day/Night Usage

The electrical energy consumed between the 12 month period 12 July 2012 and 11 July 2013 (period used because it relates to the most up to date data available from sub meters), shows the following:

	Total Elec kWh	Server Room Sub Metered Elec kWh	Day	Night	%age Day	%age Night
Capswood 1 Meter:	310,923.1		235608.3	75314.8	75.78	24.22
Meter 40807792		57972.7				
Meter 38543418		296683.9				
Capswood 2:	76,241	N/A	63607.8	12633.2	83.43%	16.57%

The data above reveals some concerns which should be looked into once the removal of the server room has taken place and sufficient time (3 months minimum) has elapsed so as to provide sufficient reliable data.

Concerns:

1. The total electrical energy usage for Capswood 1 (with server room) is 311MWh. The combined sub meter readings for the same period show figures of 58MWh and 297MWh. A combined total of 355MWh. The question then is if Npower are billing on 311MWh, how can it be that energy showing in the two sub meters (which we are given to understand are to serve the server room and cooling plant show a figure, for the same period, at 44MWh greater than the total energy at the site. It would be recommended that the sub meter providers be asked to check and recalibrate
2. It highlights the energy use difference between the two sites which amounts to a 4 fold difference. This further justifies (on energy costs alone) the already agreed case for relocation of server room off site.
3. Whilst Capswood 2 is performing well against national electricity benchmarks, Capswood 1 is not. Whilst 24.22% of night-time energy use may well be related to the server room, it will be worthwhile checking this against Npower Half Hourly (HH) data (2-3 months) after Server Room has been removed.

	Electrical energy	Square metres	EPC Actual	EPC TM46	Actual kWh/m ² For year to 11 July 2013	Assumed kWh/yr from DEC
Capswood 1 (G-262)	310,923.1	1142	298	95	272	340,316

Appendix

Capswood 2 (E-104)	76,241	1444	94	95	53	135,736
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The table above demonstrates that the most appropriate index for assessing the site (kWh used per meter squared) is on the downward trend for both sites.

From data above, to meet expected consumption:

Capswood 1 should be consuming no more than 108,490kWh/annum. The removal of the server room should bring Capswood 1 closer to this ideal, provided what remains of the server room is properly decommissioned and air conditioning in the section is adjusted to meet office needs rather than server room needs.

Capswood 2 should be consuming no more than 137,180kWh/annum. **As can be seen, Capswood 2 is already achieving a 44% reduction on the national benchmark for electricity.** The focus for Capswood 2 will be improved further with better control of heating and gas use.

We have run a variety of reports on Npower's Encompass HH data site, we note the kWh figure for Capswood 1 for the year to 11 July 2013 is 310,923.1kWh, with the figure for Capswood 2 being 76,241kWh.

Having assessed the NPower HH data for the period 1 April 2012 to 31 March 2013, the figures are Unit 1: 319,557.6 and Unit 2: 93,402.2.

The most recent DEC report (due again Dec 2013) uses electrical data of 340,316kWh for unit 1 and 135,736 for unit 2. As such, energy use at Capswood 1 has reduced over that year by 6% (20,759kWh) with Capswood 2 decreasing from 135,736kWh to 93,402kWh over the same period. A reduction of 31% (43,334kWh).

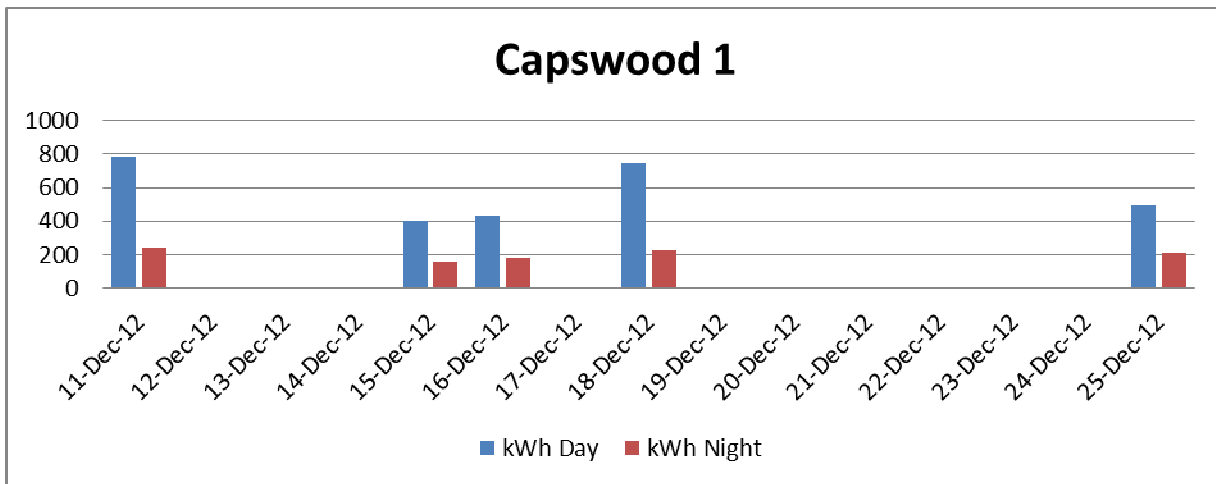
TREND BMS Control

Implementation of a heating/cooling policy is recommended to be supported by a review of the Trend BMS. Having the policy in place would mean that these changes would be much more likely to "stick" and saving secured in the long term. An indication of the potential savings has been made by benchmarking the energy consumption data in the following sections. See 'Temperature Set Points'.



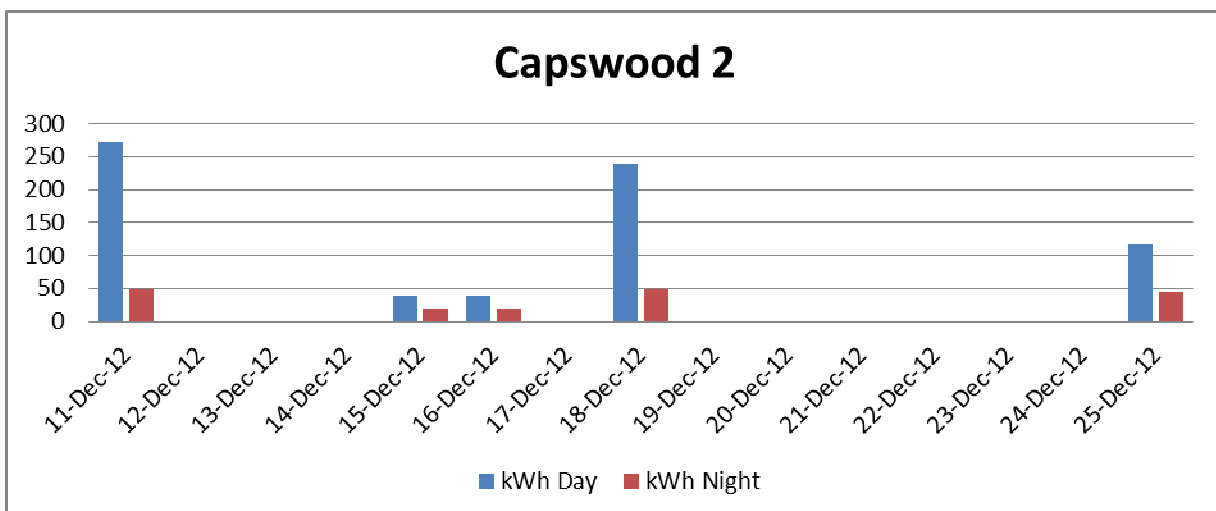
It is always worth noting energy use in a building at times when the building is closed. The following sets out data for the period over Christmas 2012.

Capswood 1



It is worth noting that the offices were closed on 25th December (Christmas day) and yet night-time energy use at 211.8kWh is only 16,9kWh, (7%) less than the same period the week before on 18 Dec. Also of some concern is that daytime energy use for Christmas day is higher (492.6kWh) than typical weekends (for this exercise Saturday 15th (400.9) and Sunday 16th (425.4). Assuming the TREND BMS system can be adjusted to take into account these evening base-load savings, together with possible set point daytimesavings and control over set points at bank holidays, conservative savings of 5% electrical energy and gas are likely to be available. These would amount to 15,585kWh or **£1,400/annum** for electricity and 12,958kWh or **£350/annum** for gas.

Capswood 2



Capswood 2 is a smaller energy user but it is easy to see (above) that a similar situation prevails. Night time energy use at weekends at 19kWh and 20kWh and at Christmas day more than double at 43.8kWh. Whilst daytime energy use on Christmas day is around half that of the days preceding (116.2kWh against 272.2 (11 Dec) and 239.1kWh 18 Dec), this is still high and suggests a great

Appendix

deal of equipment is left on. Of more concern is that daytime energy on Christmas day at 116.2kWh is almost 3x that at weekends (38.8kWh on Saturday and on Sunday).

By correcting set points on the TREND BMS to come on and off at the correct times, significant savings can be made. As well as this, it is recommended that an impromptu evening walk around the building be undertaken on a bank holiday. If this is undertaken with a member or senior member of staff it will highlight the issues raised above. It might also be worth leaving a 'thank-you' chocolate or sweet on desks that have turned off equipment (fans, PCs, monitors, desk laps etc) to let staff know you are watching and are grateful for their attention.

Assuming the system can be adjusted to take into account these evening base-load savings, possible set point daytime m savings and control over set points at bank holidays, conservative savings of 5% electrical energy and gas are likely to be available. These would amount to 4,981kWh or £450/annum for electricity and 14,490kWh or £375/annum for gas.

Fabric Insulation



There is potential for roof rafter insulation to be installed in the roof space of both the Capswood 1 and 2 buildings. However, as insulation is already in place in the ceilings, there would be limited benefit to what would be a warm roof. There are areas of Capswood 2 roofspace that would benefit from ceiling insulation.

Pipe Lagging



Piping and flanges/valves around the building have been well insulated and maintained.

Dynamic Burner Management Unit DBMU



Image a. Capswood 1 underground. Image b. Capswood 2 Roof plant room

There are a variety of Dynamic Burner Management Units DBMUs on the market. Sabien provide a boiler optimisation unit which they claim as a unique solution that doesn't impact on set points (unlike others that can cause thermal shocking and other issues). The retrofit unit records inflow and outflow temps and holds off boiler firing if the system doesn't need it - to eliminate dry cycling - it constantly recalculates flow/return temperatures based on operating conditions.

Dry cycling is more prevalent in the low load times of the year. When a boiler is in standby, or off at its set point, there can be a temperature differential of as much as 60°C between the boiler and the surrounding air. Inevitably, heat moves down this thermal gradient so that, the boiler experiences standing losses as it radiates heat to its surroundings (1-2% in a well insulated boiler). In addition, there will be further heat losses from the flue system.

Expectation would be around a 9-12% savings could be made if South Bucks employed such technology, based on an average achievable. We would recommend looking at www.sabien-tech.co.uk and perhaps invite them and others to discuss options.

Sabien's selling point is that their technology is available at a fixed price £2k retrofit solution (regardless of capacity of system – apart from not being viable on lower than 50kW capacity boilers) versus c £10k adaptation to BMS with installing relevant temp sensors etc.

Given assumed 10% saving on gas (548,764kWh) over all 4 boilers at both Capswood 1 and Capswood 2, the capital cost would be £8,000 with gas energy savings per annum of 54,896kWh and financial savings of **£1,647/year**, with a payback of 4.86 years.

Lighting – General (Capswood 1 and 2)

Lux levels were taken around the building at a variety of desks and readings of between 500 and 700 were achieved. Lux levels for offices should be between 350 and 500 but these levels found are not greatly excessive given that they were taken during peak daylight hours.

It is recommended that all Cat 2 T8 fittings that were installed with daylight and presence sensors around 4-5 years ago be replaced with LED. In order to deliver this, and given the cost of this work, 3 or more quotes should be sought (and local contracts framework procedures followed). We would recommend samples of high quality LED replacement panels be sought and trialed in areas of the building to seek staff views on light quality and intensity. Dimmable LED panels would be recommended, linked to the existing daylight sensors as this will further reduce energy load.

Furthermore, the circular 200mm down-lighters found predominantly in corridor areas should be replaced with an LED alternative. A sample was provided to the Council on 10 July 2013 to trial

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and seek views from staff. Lux levels in corridors are not nearly as stringent, and the level of natural light in the building from glazed walls is very good. As such, dimmable and daylight/presence links should be installed with these to improve energy saving and reduce lights being left on when they are unnecessary. This will also serve to encourage staff in their suggestions.

The sample provided has a 50,000 hour lamp life and is guaranteed for 3 years. There are a variety of LED products on the market but as yet, there is no international industry standard for LED. Products should be assessed against a strict criteria which we can assist you with in future if you so wish.



Calculations for use of the lamps featured above are set out below*. With use of presence sensors, the payback comes in at under 2.5 years. It is recommended that a small trial be instigated with the sample provided in order to seek views of users. Capital expenditure for such a project would be of the order of £9,000 with annual savings of £3,600 (see below).

Customer	SBDC								
Project	Energy saving								
Area	Capswood 1 GF and 1F and 2 GF and 1F								
Contact									
200mm PL 60W downlighters			200mm LED 30W Downlighters						
Lights On		Load		Lights On		Load			
Hours/Day	13	Lamp wattage	80	Hours/Day	8	Lamp wattage	30		
Days/Week	5	No. of lamps	1	Days/Week	5	No. of lamps	1		
Weeks/Year	52	No. of fittings	100	Weeks/Year	52	No. of fittings	100		
Hours/Year	3380	Total Load W	8000	Hours/Year	2080	Total Load W	3000		
		Total Load kW	8.00			Total Load kW	3.00		
Total Kw.hrs/year	27040.0			Total Kw.hrs/year	4742.4				
Tariff				Tariff					
	p/kw.hr	0.13			p/kw.hr	0.13			
Cost per year for HF T8				Cost per year for LED				50000 hrs life	
	£	3515.20			£	616.51		2080 hrs/year	
								24.03846 Years	
								But! 13 Yr bldg life	
Maintenance per year		1040.00		Maintenance per year		290.82			
Cost /Year When Occupied				Cost /Year When Occupied					
	£	4555.20			£	907.33			
Installation	LED light fittings	£	68	Sensors	100		2000	Plus cost of EM fittings	at 229.27 +25
	No of fittings		100	No. Sen	20				
Savings per Month £		£	303.99	Capex			8800		
Total Cost (S&F)			8800	Saving/Yr			3648		
Pay Back Period - Months			28.95						
Pay Back Period -Years			2.41						

*Figures above assume 100# lamp replacements

Temperature Set Points

Many public sector organisations now have a policy which sets the maximum temperature that the heating should be required to reach (typically choosing 19 or 20⁰C), as well as covering the legal requirements for heating (minimum of 18⁰C). They then police this with the use of wall mounted thermometers. If a temperature related complaint is received, the staff responsible for dealing with the complaint must check the temperature in the location and if it is at or above the chosen set point, then the person is advised that the building is operating in accordance with policy and no further action is taken.

The policy would then be communicated to staff together with information about the need to save money, energy and CO₂ by not overheating the building, and including the need for seasonally appropriate clothing. It is recommended that the Council set a similar policy, policing and opportunity for behavioural change.

Similarly, it is important that the building is not overly cooled in summer. Typically a set point of about 24⁰C for the minimum temperature at which air conditioning will commence operation is chosen, although some public sector organisations are much stricter and endeavour to resist entirely requests for comfort cooling.

If the building is heated and air conditioned, the heating maximum temperature should then be 19⁰C; (it may be that a compromise is struck with staff at say 20 or 21C). There then needs to be a minimum 4⁰C dead band in which neither heating nor air conditioning operates. The temperature set point at which the air conditioning starts to operate should then be set to 24⁰C. This avoids the heating and air conditioning systems competing with one another which wastes energy. Ideally office temperatures should be maintained at around 21C.

As a rule of thumb 8% of the energy related to heating can be saved for each degree by which the heating is turned down in winter (or the air conditioning set point turned up in summer). Heating and air conditioning an office typically consumes over half the energy used in the building; therefore there is the potential for significant savings. Assuming then only a 1⁰C reduction to both heating and cooling over both Capswood sites, this would amount to a saving of 43,900kWh or **£1,140/annum** (assumes conservative £0.026/kWh)

Heating a building to 24⁰C rather than 19 or 20⁰C is likely to be using a significant amount (maybe as much as 15%) of extra energy over a year, resulting in extra CO₂ emissions and costs. These savings could easily be invested to offset any local remediation works required within the building such as well controlled additional heaters for persistently cold locations with very short payback periods.

Making a policy decision at a senior level is critical to successful temperature control, as this will enable a consistent approach to be deployed across the council. It will also need to be clear as to how the procedures for the inevitable temperature related complaints will be managed. Ideally the same procedures would apply to all sites.

It is notable that at least one of the thermometers on the wall of building 2 was adjacent to the window and so readings were being affected by sunlight.

Appendix



Digital thermostats would be recommended to be placed around the buildings (away from windows and heat and cold sources). This will allow the FM manager to better justify any decisions based on a change to set points as discussed above.

Fan Coil Unit Controls

Fan Coil Unit Controls (FCUs) around Capswood buildings are over 12 years old with tiring motors. Gas heats and electricity cools with some additional electric heat when local weather is very cold. Vents around windows lead to drafts and complaints – air movements. Whilst consideration could be given to centralised BMS control of the FCUs in both buildings, it is recognised at this time that this will be an expense that will be difficult to recover and as such, the recommendation would be to place a heavy behavioural focus on staff understanding that ‘when air con and heating are on, windows should ALWAYS be closed’. This as part of Energy Policy for the Council (see later).

PCs

We recommend a proprietary energy switch off company such as 1E Night-watchman which would allow auto switch off of all computers. We would suggest that around 3 representative PCs have an energy meter placed between base unit and plug socket and kWh readings be taken for day and night periods over a representative week.

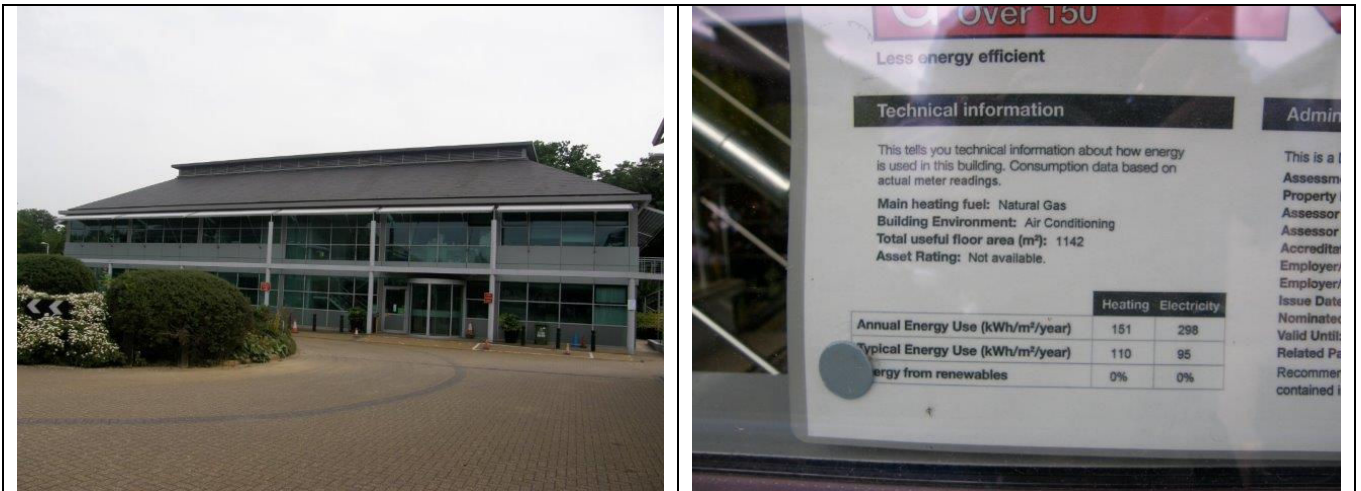
Printers

There are a number of ‘personal’ laser jet printers around the Office, most Council owned and some owned by third parties., In all cases, however, energy costs fall to the Council. Where possible, these printers should be removed. Otherwise they should have Eliminata or similar timers installed to reduce night time energy burden.



Capswood 1 (Rear building containing server room)

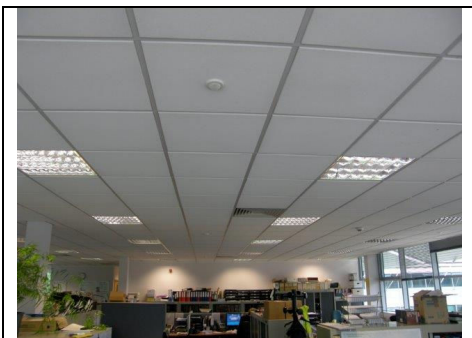
MPAN	20 0005 1091 748	Square Metres	1142m2
MPRN	8907634903	Elec kWh/annum/m2	298 (ave 95)
Supplier (Elec/Gas)	NPower/Total	Gas kWh/annum/m2	151 (ave 110)
Opening Hours	7am to 7pm	TM48 Benchmark	94
Age	9 years	Expected Life	13 years +
Ownership	Lease until 2026	EPC or DEC	G 262



Capswood 1

The building has 2 floors and lighting on upper floor amounts 7 rows x 16 rows or approximately 112 units per floor. All 4x 18W (L18W/840 Osram T8 Cat 2).

Based on these figures, total GF Cat 2 Fittings: 112 each with 4# 18W tubes = 452 tubes plus ballast losses = circuit wattage for these fittings of: 8788W or 8.8kW Given office is in use 13 hours per day and 5 days per week but daylight and presence sensors are in place in most areas, lights are likely to be operating for 8 hours per day. This is using 18,304kWh/year at a running cost of £1,647/year.



Reception 21 x 200mm PL's (including three toilets)

Ground Floor

- ICT x12
- Photocopy Room x 4
- Mail room x 9
- Meeting rooms:

 - One x 4
 - Two x 4
 - Three x 4

- Finance x 17
- Rest Room x 9
- Corridor x 15

Server Room



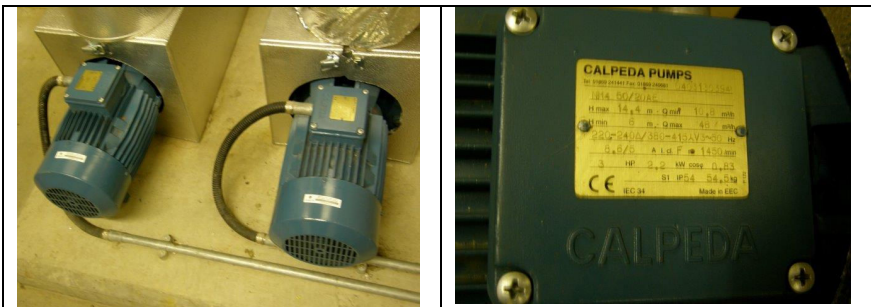
There is a disparity between the A/C readings on the trend front end compared to the sensor in the server room. This suggests a calibration issue and should be resolved when the server room is evacuated.

The server room has two sub meters which provide data for the A/C and consumption in this part of the building.

Lower Ground Floor

Plant Room

It is noted that Calpeda pumps run at 2.2kW. These could be connected to an inverter. This is something that should be investigated with a suitable manufacturer such as ABB.

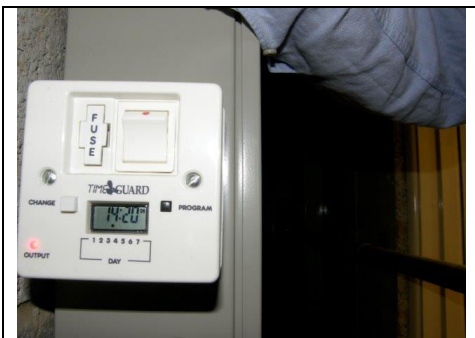


Shower Room

The hot water cylinder in this room is rated at 2.2kW. It is on 24/7 and should be placed on a 24/7 digital timer. This would cost £100 and by switching off for 13 hours per night and at weekends, would save half of 11,697kWh (10,439 1,258) or £526 and pay back in less than 4 months.

Electricals

The hot water boilers have been connected to 24/7 timers to good effect.



Appendix

It is recommended that similar technology is installed on other ring main items as set out below:

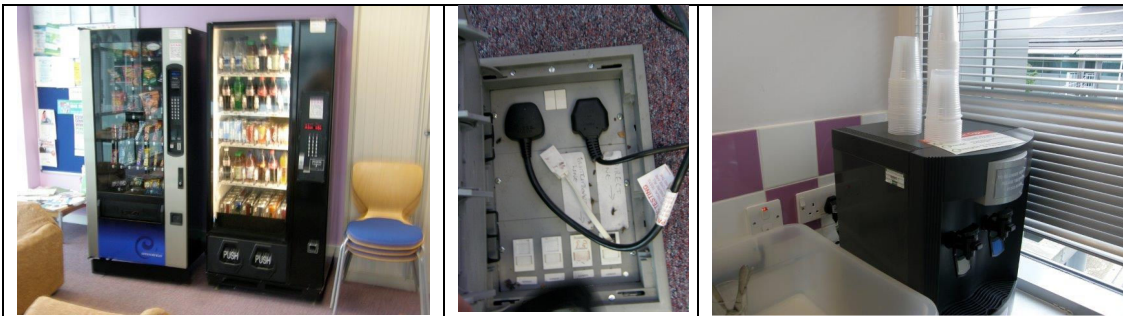
Controls

Plant room at end of underground car park

Trend control panels operates Capswood 1 building via the FM. There is currently no PC system or schematics. A TREND new front end would be an excellent investment (the organisation should be aware of becoming over dependent on a single member of staff, particularly where their loss results in redundancy of technology investment).

Chiller when it is 1⁰C outside turn the heat off at 14⁰C.

Vending



The vending machines, manufactured 17 August 2005, operate on 950W and 1,150W respectively and do not appear to reduce energy use significantly when they are operating in stand-by mode. Installation of digital spur timers into existing sockets would cost no more than £100 per unit supplied and installed. The saving from turning these off for 13 hours per night and at weekends would be: $.95\text{kW} \times 13\text{hrs} \times 365 \text{ days} (4,507\text{kWh}) + 52\text{weeks} \times 2\text{w/e days} \times 11\text{hrs} (1087) = 5594\text{kWh}$ – a 50% saving from the 950W unit of £251.50 per year and a payback of 4.8 months. For the 1,150W unit, this equates to 50% of 6,772kWh or a saving of £304.50/annum.

Water Chillers

It might be worth considering removal of the water chillers from the kitchen in favour of mains fed tap water. Such an action would require no cost and save the energy costs of chilling tap water which is expensive. The Wonbong unit pictured above (manufactured 23 April 2005) is a 120W chiller unit on 24/7 (these units are not timed out). This equates to 1,051kWh per unit per year at a cost to run of £95/year. If turned off each evening they would save £50/year with £35 investment.

Mechanical Ventilation



It is considered that a viable alternative could not be offered with a credible payback given capital cost and disruption.

Power Perfector



There is a Voltage Optimisation unit in the underground car park. It has been suggested that it is not providing the energy savings that were anticipated at installation. Voltage optimisers are at their most effective when operating on static constant energy loads; For example 24 hours car park lighting loads.

Underground car park houses a large chiller unit. Suggest agreement of heat and cool policy and reset set points on BMS control of chillers – particularly after removal of server room.

Underground Car park Lighting

The underground Car Park has T5 adaptors fitted and one LED 25W on trial “One-line”.

The underside of car park ceiling (beneath office building) has been sprayed with compressed newspaper insulation.

Renewables



Capswood 1 is very well placed to accept a Solar Photovoltaic Array and there is sufficient space and access in the loft area to house an appropriate single inverter. It is recommended that the Council seeks three quotations from installers.

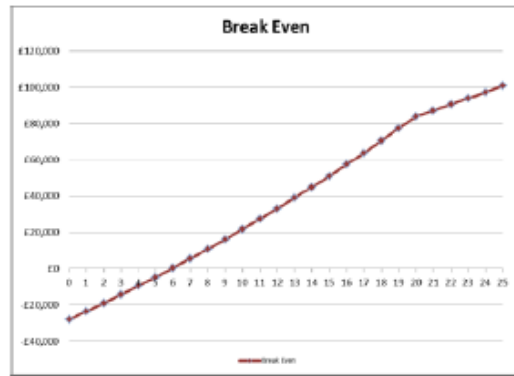
The south facing rectangle facing front entrance would support an array of a little over 20kWp peak. Assuming 260Wp panels, this would equate to 80# panels on 718m² of roof.

The indicative cost to supply and install at current prices would be approximately £30,000 giving a payback period of 6 years. An annual energy generation of 19,600kWh, which, if installed and commissioned before 1 January 2014, would benefit the Council financially through the following:-

FIT Generation payment:	£2,463.72
FIT Export payment (no export meter and 100% energy utilised on site):	£454.72
Energy Saving (assuming 8p/kWh):	£1,568
Total (first year):	£4,486.44

It is recommended that a structural survey be conducted as would have taken place on Capswood 2. FIT payment can be arranged to be granted to South Bucks DC, so that should the Council elect to leave the building in 2026, it may take the generation payments with it until the conclusion of 20 years (c 2034).

The Council should be mindful that the EU has recently imposed a tariff on Chinese produced PV, and should seek to ensure this will not be passed onto them – much of Chinese manufacture is being relocated outside of China, and there are many high quality panels available in countries such as Poland, Taiwan and Malaysia.

**PROJECT SUMMARY****Aylesbury Vale District Council**

Aylesbury Vale District Council-Capswood	First 12-Months	Over 25-years
System Size (kWp)	20.80	
Yield Production (kWh's / kWp)	947	
Retail Price Index inflation	2.00%	
Electricity Price Inflation	4.00%	
System Cost		
Capital costs	£28,149	
Cost / kWp	£1,353	
Operation & Maintenance Costs	£0.00	£0.00
FIT Subsidy:		
Total kWh's Generated	19,698	463,996
Generation Tariff FIT (£/kWh)	£0.1257	
Revenue from Generation	£2,476	£57,198
Energy Savings		
Percentage of kWhs used on site (%)	100%	
Total kWh's Used Onsite	19,698	463,996
Electricity Cost (£/kWh)	£0.080	
Savings from Onsite Usage	£1,576	£61,214
FIT Export		
Total kWh's Exported	9,849	231,998
Export Tariff / kWh	£0.0464	-
Revenue from Export	£457	£10,557
Total Revenue & Savings	£4,509	£128,969
Returns on Investments		
Project IRR		17.1%
Gross Profit	£4,405	£97,488

Appendix

Capswood 2 (front building containing cabinet rooms)

MPAN	20 0005 1091 757	Square Meterage	1444
MPRN	8907635501	Elec kWh/annum/m2	94 vs poss 95
Supplier (Elec/Gas)	NPower/Total	Gas kWh/annum/m2	128 vs poss 110
	6.9% PV elec		
Opening Hours	6:30 to 19:30 (22:00)	TM48 Benchmark	94
Age	9 years	Expected Life	13 years+
Ownership	Lease til 2026	EPC or DEC	E 104



Lighting

Ground Floor Public Area

Reception Hours 6:30 am to 7:30 pm

Foyer reception area

It is recommended that the 15# x 50 Watt GU10 halogen spotlights over reception should be replaced with 6W LEDs at £8/unit. These lamps are on a minimum 12 hours per day 5 days a week. Even with no controls to the new LED lamps, the payback would be 2.15 years (without allowing for savings made in less frequent maintenance and lamp replacement).

Customer	SBDC								
Project	Energy saving								
Area	Capswood 2 GF over Reception Halogens								
Contact	Jo Faul								
Compiled	Alan Asbury	AVDC							
600 x 600 T8 HF FITTINGS (cat 2 Louvres)									
Lights On				Load					
Hours/Day	13			Lamp wattage	50				
Days/Week	5			No. of lamps	1				
Weeks/Year	52			No. of fittings	15				
Hours/Year	3380			Total Load W	750				
				Total Load kW	0.75				
6W LED Spotlight									
Lights On				Load					
Hours/Day	13			Lamp wattage	6				
Days/Week	5			No. of lamps	1				
Weeks/Year	52			No. of fittings	15				
Hours/Year	3380			Total Load W	90				
				Total Load kW	0.09				
Total Kw.hrs/year	2535.0			Total Kw.hrs/year	231.2				
Tariff				Tariff					
	p/kw.hr	0.1			p/kw.hr	0.1			
Cost per year for current 50W halogens					Cost per year for 6W LED				
	£	253.50			£	23.12			
Maintenance per year				Maintenance per year					
Cost /Year When Occupied					Cost /Year When Occupied				
	£	253.50			£	23.12			
Installation	LED light fitting	£	33	Sensors	100	0			
	No of fittings		15	No. Sen	0				
Savings per Month £	£ 19.20								
Total Cost (S&F)	495								
Pay Back Period - Months	25.78								
Pay Back Period -Years	2.15								

Front of reception (public area)

There are 15 x T8 Cat 2 600 x 600mm units in the public area in front of Reception but with only wall switch controls (on same hours in Cap 2 as 15 halogens), and in the stairwells are circular recessed down lighters dual 26W again with no controls. Both Ladies and Gents toilets each have 4 circular recessed down lighters dual 26W with controls.



Northgate and CAB use the Councils power and repay via invoice so the electrical use in this part of the building is included in all lighting calculations.

Appendix

Northgate Revenue and Benefits

There are 22 T8 Cat 2 600 x 600mm units

CAB

There are 4 x T8 Cat 2 600 x 600mm units

Store to rear of reception desk

There are 3 x T8 Cat 2 600 x 600mm units

Planning/Building Control

There are 61 T8 Cat 2 600 x 600mm units (Current light level measured at 620 Lux)

Kitchen/Copy room

There are 8 x T8 Cat 2 600 x 600mm units

Stairwell and toilets

There are 12 recessed down lighters dual 26W again with no controls. Gents and Women's toilet have 4 (8 total) recessed down lighters dual 26W circular, recessed down lighters dual 26W with controls.

Total GF Cat 2 Fittings: 113 each with 4# 18W tubes = 452 tubes plus ballast losses = circuit wattage for these fittings of: 8788W or 8.8kW Given office is in use 13 hours per day and 5 days per week but daylight and presence sensors are in place in most areas, lights are likely to be operating for 8 hours per day. This is using 18,304kWh/year at a running cost of £1,647/year.

First Floor:

Council Chamber Hallway

There are 8 (T8 Cat 2 600 x 600mm units)

Council Chamber

Meeting room 5 – 6

There are 6 T8 Cat 2 600 x 600mm units

Meeting Rooms 7, 8 & 9

These have 14W 4 tube T5 fittings with directional luminaire. These are a much higher quality fitting with presence sensors for both the lights and the independent AC cassettes within these rooms and as such, it is recommended that these need not be changed.



Kitchen

There are 4 (T8 Cat 2 600 x 600mm units)

Legal

There are 18 (T8 Cat 2 600 x 600mm units). There is a heat loss issue in this area due to lack of installed insulation above. It is recommended that, this should be inspected and rectified.

Communications Room

There are 4 (T8 Cat 2 600 x 600mm units)

Democratic Services & Personnel

There are 36 (T8 Cat 2 600 x 600mm units)

Leader & Cabinet

There are 4 (T8 Cat 2 600 x 600mm units)

Meeting Room

There are 4 (T8 Cat 2 600 x 600mm units)

CEO

There are 4 (T8 Cat 2 600 x 600mm units)

Total 1F Cat 2 Fittings: 88 each with 4# 18W tubes = 352 tubes plus ballast losses = circuit wattage for these fittings of: 6843W or 6.8kW Given office is in use 13 hours per day and 5 days per week but daylight and presence sensors are in place in most areas, lights are likely to be operating for 8 hours per day. This is using 14,144kWh/year at a running cost of £1,273/year.

To replace these fittings with an LED alternative would be worth consideration. We would recommend a small trial area be installed to gauge officer opinion using the 5 year warrantied 38W 600mm x 600mm LED sample panel sourced for the Council by AVDC. If agreeable, companies should be asked to run a Relux assessment on the floors (although given current spacing, it is likely that the fittings could replace the existing fittings like for like). For financial savings we have used two companies that both carry 5 years warranties on their LED products. Both would provide no cost samples for trials and these could be quickly installed by a qualified electrician at a cost of no more than £20/unit.

Payback on this option (because controls are largely already in place) comes out at 6 years. As such it may be worth waiting a few months for prices to reduce or accepting this payback period. Philips offer options that are office lux compliant and may be worth consideration. The Coreline is slightly cheaper than the option set out below, with the Coreview a little more expensive. Other options to consider would be Thorlux, GE, Osram, MJ Quinn, UK LED Lighting Direct. All will willingly provide free samples to trial.

On the calculations below, capital expenditure would be approximately £56,000 with annual savings of around £9,200.

Appendix

Customer	SBDC								
Project	Energy saving								
Area	Capswood 1 GF and 1F and Capswood 2 GF and 1F								
Contact									
600 x 600 T8 HF FITTINGS (cat 2 Louvres)					600 x 600 LED 38W panel 5year				
Lights On		Load			Lights On		Load		
Hours/Day	8	Lamp wattage	80	Hours/Day	7.5	Lamp wattage	38		
Days/Week	5	No. of lamps	1	Days/Week	5	No. of lamps	1		
Weeks/Year	52	No. of fittings	425	Weeks/Year	52	No. of fittings	425		
Hours/Year	2080	Total Load W	34000	Hours/Year	1950	Total Load W	16150		
		Total Load kW	34.00			Total Load kW	16.15		
Total Kw.hrs/year		70720.0			Total Kw.hrs/year		23934.3		
Tariff		p/kw.hr 0.13			Tariff		p/kw.hr 0.13		
Cost per year for HF T8					Cost per year for LED				
	£	9193.60				£	3111.46		
Maintenance per year		4420.00			Maintenance per year		1235.99		
Cost /Year When Occupied					Cost /Year When Occupied				
	£	13613.60				£	4347.45		
Installation	LED light fittings	£	131	Sensors	100		200	Plus cost of EM fittings	at 229.27 +25
	No of fittings		425	No. Sen			2		
Savings per Month £		£ 772.18			Capex		55875		
Total Cost (S&F)		55875			Savings/Year		9266		
Pay Back Period - Months		72.36							
Pay Back Period -Years		6.03							

Figures above based on 425# tubes (from 88 to 113 fittings/floor) across the Capswoods 1 and 2 buildings.

Motors

It would be worth the Council considering inverters for its larger pumps. The pump in the Air Handling unit is 2.2kW. We would recommend conversation with reliable inverter manufacturer such as ABB.



Renewables and Low Carbon Technology

Capswood 2 has a 10kWp Solar Photovoltaic Array mounted on its south facing roof amounting to 54# 185Wp solar panels. At time of visit (almost 2 years after install) the array had produced 19,240kWh from display (and 19,714kWh from inverter display) of electricity, **equivalent to the electricity demands of two average UK homes per annum.** Appropriate technology for other estate buildings. (see relevant sections under building).

Since installation 2 years ago, the Solar PV has generated 19,240kWh or 9,620kWh per annum, which is an improvement on expected generation.

The underground Car Park at Capswood 1 has T5 adaptors fitted and one LED 25W on trial “Online”.

The Plant room at the end of the underground car park has T5 technology which is very efficient and cost effective to operate. At this stage it would not be cost effective to replace these lamps with an LED alternative.

Behaviour Change

The Capswood site with two units houses around 130 Staff. On visit during July 2013, it was noted that the post room windows were wide open with air conditioning wall mounted DX units operating on full power. This is symptomatic of sites that do not make staff aware of the Energy Policy. It is recommended that it should be made clear to staff that not only in very hot weather, windows should not be opened when air conditioning is operating. Such practices render A/C at best ineffective and at worst, pointless.

The council may wish to consider re-investment of potential energy savings into an employer engagement programme (in-house Energy Champions or the employment of an employee behavioural change programme for key staff). The savings that can be made to a premise or estate through well run and sustained behavioural change can be up to 10% of energy costs. Even assuming a conservative 5%, with an energy cost (excluding leisure centres of £91,033 last year, the council could be looking at savings across their estate of £4,500/annum. If supported by senior management, this may be a role for a local graduate or grammar school student on work experience to head up.

We recommend a programme of measures that develop a “story” or dialogue for Members/staff/public and others visiting Capswood. The Story would be told via use of audio visuals (perhaps using the screen in the Capswood 2 foyer, Tours (opportunity to relate to commerce and households, as Green Deal Measures) and publications; Setting an example of South Bucks Council cost efficiencies.

There are PCs and monitors on each desk, and some people switch these off after use but it appears that IT want PCs to be left on overnight for backing up and updating purposes. It is recommended that the council should consider a review of the IT Policy following the Server room equipment removal. There are a variety of proprietary solutions and software available for automated PC switch off and updates and patches can generally be installed daily at start up. If auto-switch off is not implemented for monitors, then publicity and encouragement should be implemented with members doing ‘walk- arounds’ with the FM to reward those that switch off their screens by choice.

There is some evidence of the use of desk-based fans. We would recommend the introduction of formal Staff Guidance re-energy use.

Remaining Sites

1. South Bucks Academy
2. Stoke Poges Memorial Gardens
3. Farnham Park Sports Field – Operated by South Bucks District Council Trust. The Council pay's for energy, building and sports lights. It also pay's for house on site energy use and recharges the tenant. Assessors were unfortunately unable to access house on any of their visits.
4. Greenkeepers Compound
5. Farnham Park Golf Course – was visited by assessors and were advised that the building was about to be demolished and rebuilt to a higher specification. Assessors have offered to look over this specification and provide a set of energy related recommendations at no additional cost.
6. Beacon Leisure Centre*
7. Everham Leisure Centre* - The Leisure contractor pays energy bills. Heating is provided from the adjacent youth centre and is paid for (at both centres) by Bucks County Council. There is some potential for capital/revenue share from retrofit works that is likely to make energy savings.
8. Parkside Cemetery

South Bucks Academy Golf Driving Range



The site is Council owned and run with energy bills paid by the Council. The on site building which contains a shop and function room, toilets and showers is for use by members and visitors to the club.

Lighting

The lighting in the building is predominantly old style 24W 4 pin 2D lamps and these could be replaced for more efficient LED lamps. However, the usage of this venue and the length of time lamps are on would make such an exercise slow to pay back.



Insulation

Roof

A visual inspection of the loft space showed a loft with minimal glass fibre insulation at approximately 60-70mm. This should be replaced with a layer of 270mm thick which would provide excellent thermal insulation and reduce the loading required on the gas fire radiators. The cost to install insulation in the venue would be approximately **£500** and would pay for itself in energy savings in around **18 months**. It is therefore recommended that the Council insulates the roof space.

Wall

The building itself looks to be a cavity constructed brick wall and to insulate this would carry a cost of **not more than £400**. This could likely be funded through the Green Deal. It is therefore recommended that the Council insulates the wall cavities of the building



It is recommended that the radiators (which have thermostatic radiator valves fitted) have foil insulation affixed to the walls behind them to reflect heat back into the building. Such a simple measure can be very easily installed by staff with basic maintenance skills and would cost around **£30-40** to supply such material for every radiator in the building. The reduced heat savings from such an installation are of the order of 125kWh/m²/year so assuming say 10m² of foil applied, and 1,250kWh of gas heating saved, this would equate to c £37.50 per annum saving payback would be a little over 12 months. For detail on product efficacies see: http://www.radflek.com/downloads/Radflek_FinalReport.pdf

Appendix



Vending



It is recommended that the vending machine be connected to a timer as discussed regards Capswood 1. This would make savings of around £50/year.

Toilets

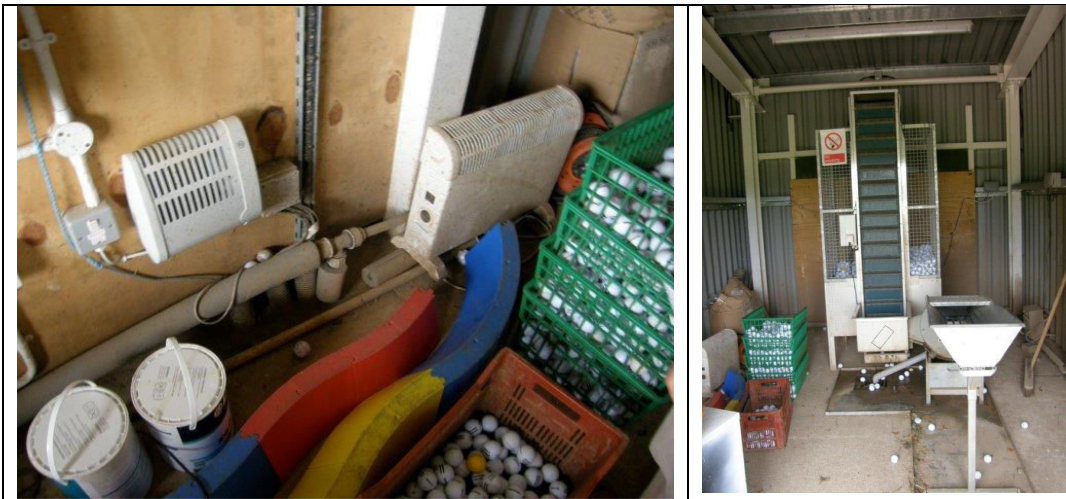
The toilets in this building are lit with 24W 4Pin2D lamps. There are 3 hot air hand dryers in the building. However, given the usage, it is unlikely that the usage levels of more efficient dryers would justify their capital cost. Similarly the lighting ought only to be addressed if a suitable LED fitting can be found that can deliver lux levels similar or better than current and cover marks left by existing fittings.



Driving Range

Behaviour Change

On the date of the first visit, the two electric heaters in the golf ball wash and delivery shed were found to be switched on with heating at maximum temperature and the front roller shutter door wide open. The temperature on the day was around 20C. It would be recommended that these heaters be removed unless absolutely necessary to the functioning of the ball wash which appears to operate using two units at 200W and 550W. Otherwise they should be plugged into 7 day electronic integrated timers and set accordingly. It is unclear how often these heaters are left on (or indeed why they are there) but since both are 2kW; Even if they are only left on for a day per week, the cost would be $24 \times 4\text{kW} \times 52 \times \text{£}0.0887 \text{ rate} = \text{£}4,992\text{kWh/annum}$ or **£443/annum**. The cost of 7 day timer installed would be less than £100 supplied and fitted.



The driving range has 4 flood lamps that light up to 230 metres across the length of the driving range. These lamps are mounted at approximately 4.5m height and controlled by 4 separate switches. Given that these are said to be on for only 4 hours per night in the winter, it would be beneficial to set the switches to timers to avoid the need for human error. There is as yet no proven cost effective LED technology that would replace these lamps given the range they have. However, it is expected that there will be a solution in the next 12-18 months.

Appendix



Stoke Poges Memorial Gardens (SPMG), Church Lane SL2 4PB

SPMG House

MPAN		Square Metreage	
MPRN	3324643110	kWh/annum/m2	
Supplier	/Eon		
Opening Hours		TM48 Benchmark	
Age		Expected Life	
Ownership	SBDC	Bill payer	



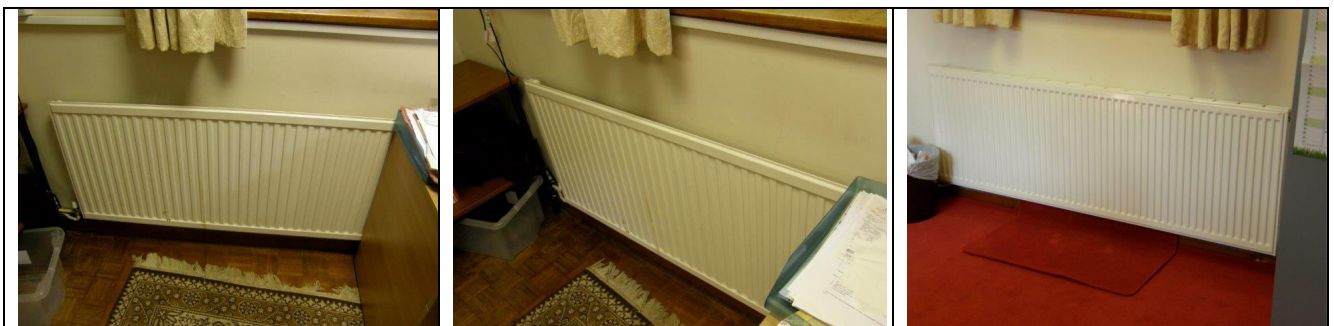


During the three visits conducted, access was not available to this building. However, a visual inspection of the exterior led to the following findings. The walls are solid 9 inch walls with no cavity. The building is listed and so solar arrays to the roof would be unlikely to be acceptable and similarly both internal and external cladding would be out of the question. There may be consideration for an internal coating such as ‘Sempatap’ to be applied to internal walls. This is effectively a 10mm wallpaper that provides the insulating u values of an unfilled cavity. However this would be subject to the views of planners and at around £170/roll, would not be a cheap solution. Foil backing to all external walled radiators would be a cheap and simple aid to reduce heat loss.

It was noted that the damp proof course of the house only extends around 80mm from the ground (a single brick height). This should be a minimum of 150mm (2 brick height) to reduce rainwater splash-back and dampness entering the walls of the property. There are a variety of nanotechnologies available for waterproofing of external walls and some of these have good thermal insulation properties. If acceptable to planners, a product such as www.seasolutionsnano.com, <http://www.nanoshell.co.uk/protective-coatings/stone-sealer> or <http://www.treatexwall.com/insulating-external-wall-masonry-paint.asp> might be worth trialling in a small area of the wall. Note, as with rest of report, mention of these companies carries no recommendation.

SPMG Offices

The offices to the site are again listed and the walls are 9 inch solid brick with no cavity. It is recommended that a product such as Sempatap be applied to these walls internally if acceptable to planners and in any event that foil be applied behind all external wall radiators.



The lighting in the offices comprises Cat 2 600 x 600mm ceiling mounted units with 4 x 18W T8 lamps and switch start ballasts. Lamps are 3500K and as such a rather warm light. We would recommend replacement with a cooler ‘daylight’ 4000K lamp. There are 3 in the back office and 2 in the front, with 2 in the corridor (7 in total). All are controlled manually by switches, and amount to circuit wattages of 80W per unit. If, as it appears, they are on 7 hours per day, 5 days per week,

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then they will be using $560W \times 7 \times 5 \times 52 = 1,019kWh$ costing $\pounds 92/\text{annum}$. A LED solution (with a 5 year warranty such as that provided by UK LED Lighting Direct would cost $\pounds 1,280$ plus $\pounds 15$ per unit installed and pay back in 7.14 years and would include 3 sensors for offices and corridor. By replacing these with LED panels and presence sensors, the savings would be $\pounds 194/\text{year}$ at a capital cost of $\pounds 1,385$. The quality of light would be greatly improved. See calculations below:



Customer	SBDC										
Project	Energy saving										
Area	SPMG Offices										
Contact											
600 x 600 T8 HF FITTINGS (cat 2 Louvres)						600 x 600 LED 38W panel 5year					
Lights On			Load			Lights On			Load		
Hours/Day	8		Lamp wattage	88		Hours/Day	5		Lamp wattage	38	
Days/Week	5		No. of lamps	1		Days/Week	5		No. of lamps	1	
Weeks/Year	52		No. of fittings	7		Weeks/Year	52		No. of fittings	7	
Hours/Year	2080		Total Load W	616		Hours/Year	1300		Total Load W	266	
			Total Load kW	0.62					Total Load kW	0.27	
Total Kw.hrs/year		1281.3			Total Kw.hrs/year		262.8				
Tariff					Tariff						
	p/kw.hr	0.13				p/kw.hr	0.13				
Cost per year for HF T8		£ 166.57			Cost per year for LED		£ 34.17				
Maintenance per year		72.80			Maintenance per year		11.01				
Cost /Year When Occupied		£ 239.37			Cost /Year When Occupied		£ 45.17				
Installation	LED light fittings	£ 155	Sensors	100	300	Plus cost of EM fittings		at 229.27 +25			
	No. of fittings		7	No. Sen	3						
Savings per Month £		£ 16.18			Capex	1385					
Total Cost (S&F)		1385			Savings/Year	194					
Pay Back Period - Months		85.59									
Pay Back Period -Years		7.13									

Central Heating and Hot Water Boiler

The on site boiler is a very old Glow Worm model aged over 20 years and is likely to fail in the coming year or two. We would recommend replacing this with an efficient condensing boiler at a cost of around $\pounds 4,000$. Given the efficiency of the current boiler gas savings are likely to be around 60%, , assuming a 95% efficient new boiler would be $9,059kWh$ at $\pounds 0.041$ (**$\pounds 379/\text{year}$**). As such, payback would be 10.5 years but since the current boiler is likely to be close to catastrophic failure due to its age, it would be prudent to plan for its replacement before the winter so as to avoid site closure and loss of staff hours.



Portable Equipment



If the equipment above is regularly found to have been left on, then we recommend installing simple plug in timers which would close down the equipment shortly after building closes so as to ensure that power is not consumed throughout the night. These could be switched on manually in the morning to avoid equipment coming on when staff are away or simply not in the office to use it.

SPMG Toilets

The ladies toilet contains a locking loft hatch that provides access to the loft space. Key for access was not available at time of visit. However, it would be fair to presume that the insulation above this area and the offices is similar to that over the museum.

There is a hot water heater in this toilet and we would recommend installing an integrated 7 day timer to this unit to minimise energy use since this heater is rated at 2.2kW. Assuming this boiler is generally turned off, it would be reasonable to assume a 1 in 5 day operation for which a saving of £105/annum could be seen. Alternatively, remove the existing water heater and plumb the hot water into the new boiler in the offices.

The gents toilet houses only two exterior standard IP65 CFL lamps and as such there would be nothing to change here.

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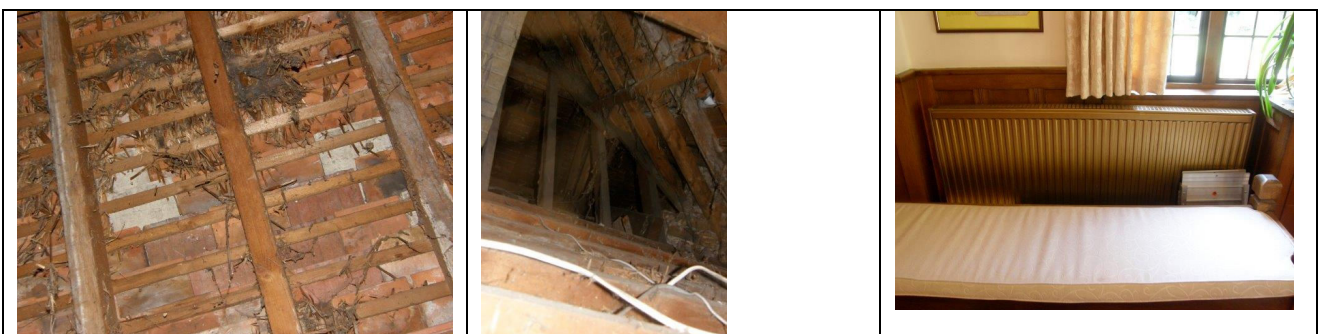
SPMG Museum

This room is split into two parts, - a preparation room and a room to house artefacts. The former room has chandeliers with 15mm Edison incandescent candle lamps of 60W each. Many of these have blown and there are questions as to the age of the wiring in this building which we would recommend to be investigated. An LED solution such as a Toshiba candle lamp would improve the light levels and at around £9 per lamp and would not be expensive but would be unlikely to pay for installation in under 5 years because of the apparent limited usage of lighting the room and the sensible use of switches by staff.



Insulation

An inspection to the loft space showed a minimal level of glass fibre insulation of maximum 60mm. The installation of 270mm of insulation above this ceiling would cost around £400 and pay for itself within 18 months. Thus saving **£265/year**. We would recommend therefore that the roof space is insulated to the suggested levels.



Similarly we recommend the installation of foil behind radiators in this room, as this would make a significant gas saving and pay for itself in weeks/months.

The artefacts room has a dehumidifier which appears to be set to sense when levels fall outside of a threshold. Given the nature of the artefacts in this room, it would be inadvisable not to make any changes to this. The 8# 50W GU10 spotlights housed on the beam in this room which appear to be

on much of the time (assumed 7 hours /day/ 5 days/week). We recommend that these are replaced with 6W LEDs at a cost of c £8 each. These would cost £8.70/annum to run against current £87/year so would pay back in around 12 months and save around **£76/year**.

SPMG Pump Room

These are two pump rooms onsite, one serving the large Cherub fountain and the Quad garden operating 32 small fountains in blocks of 4 around the perimeter, and 1 large fountain in the centre. The second pump room operates waterfalls around the gardens sourced and pumped from a small lake adjacent to a small wooden bridge.



There is one additional fountain near an oak tree gardens which is metered from the Greenkeeper's compound (see below).



Fountains were switched off in Oct 12 until June 2013 because of a control panel fault. During this time, the system was refurbished and the small motor replaced.

Fountains operate on timers which start at 10am and go off at 5pm. 7 hours per day including weekends.

Appendix

There are two pump rooms on this site that operate the water fall and over 30# fountains. It is recommended that the overall efficiencies here are increased by optimising the pumps performance using an inverter to provide the flows and pressures to achieve the fountain performance acceptable to all.



The centrifugal pump is a dynamic device with the head generated from a rotating impeller. There is therefore a relationship between impeller's peripheral velocity and the generated head. For a fixed impeller diameter, peripheral velocity is directly related to shaft rotational speed, and so varying the rotational speed has a direct effect on the performance of the pump. All the parameters will change if the speed is varied and it is important to have an appreciation of how these parameters vary in order to safely control a pump at different speeds. The equations relating roto-dynamic pump performance parameters of flow, head and power absorbed to speed are known as the Affinity Laws.

According to the Affinity laws, doubling the speed of the centrifugal pump will increase the power consumption by 8 times. Conversely a small reduction in speed will result in considerable reduction in power consumption. This forms the basis for energy conservation in centrifugal pumps with varying flow requirements. You will also see a reduction in the discharge head which will certainly affect the fountains performance coupled with a reduction in flow

The nozzles for each fountain would have been sized/selected based on a certain flow and pressure requirement to give the effect desired by the fountain manufacturers/designers.

The difficulty will be whether the pumps have been sized correctly in the first instance. From our experience these things can pass through several engineers' hands and all add a safety margin resulting in the pumps being oversized from day one.

We would recommend installing an inverter on site as a test solution. The other thing to bear in mind is if the desired effect is not achieved at 50Hz, the motors could be run up to 60Hz if there is sufficient power available, and this would improve the fountains' performance.

As a free alternative, adjusting the timers on the motors to go off over winter and be off for longer periods throughout the day will result in a reduced energy use. Fountains could be timed to start up on the hour for say 30-40 minutes. This would reduce energy use (22,510kWh/annum at £3,256.50) by one third to one half. This would save £1,085.50 with with say max £500 cost for timers.

We would not consider rewinding the motors. Since June of last year IE2 motors (above 0.55kW) have been introduced which are high efficiency motors which must be supplied by all motor manufacturers for 3 phase non-hazardous applications.

We are conscious that any change to fountains must take into account the need to keep the Gardens' Grade 1 listing.

Works Building

MPAN	Gavin Jones	Square Metres	
MPRN	Gavin Jones	kWh/annum/m2	
Opening Hours		TM48 Benchmark	
Age		Expected Life	
Ownership	SBDC	Bill payer Elec/Gas	Gavin Jones
Contract duration		Potential for extending	



The workshop is 16 metres long and 4 metres wide. It is lit with 12#1800mm 70W dual T8 switch start 3500K fluorescent tubes. Given that this is a workshop with operating machinery, we would recommend changing these to LED so as to avoid synchronisation. Moreover, given that these tubes are 70W each delivering a circuit loading per fitting of 154W, a 1500mm LED alternative would provide better and more appropriate light at a combined wattage per fitting of around 50W. With a cost of around £140/unit for a good LED solution and presence sensors installed, this would be expected to pay back in less than 3 years. It must be noted that any works at this building will be to the direct energy cost benefit of Gavin Jones Ltd and as such any such procedures should be actioned in concert and funded accordingly. These figures are therefore not covered in summary. Savings in using good quality LED tubes and fittings with 2 sensors would be £529/year with

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payback under 4 years.

Customer	SBDC/Gavin Jones																																					
Project	Energy saving																																					
Area	SPMG Gardeners Workshop																																					
Contact																																						
600 x 600 T8 HF FITTINGS (cat 2 Louvres)				600 x 600 LED 38W panel 5year																																		
Lights On		Load		Lights On		Load																																
Hours/Day	8	Lamp wattage	154	Hours/Day	5	Lamp wattage	50																															
Days/Week	5	No. of lamps	1	Days/Week	5	No. of lamps	1																															
Weeks/Year	52	No. of fittings	12	Weeks/Year	52	No. of fittings	12																															
Hours/Year	2080	Total Load W	1848	Hours/Year	1300	Total Load W	600																															
		Total Load kW	1.85			Total Load kW	0.60																															
Total Kw.hrs/year				Total Kw.hrs/year																																		
3843.8				592.8																																		
Tariff				Tariff																																		
p/kw.hr 0.13				p/kw.hr 0.13																																		
Cost per year for HF T8				Cost per year for LED																																		
£ 499.70				£ 77.06																																		
Maintenance per year				Maintenance per year																																		
124.80				18.87																																		
Cost /Year When Occupied				Cost /Year When Occupied																																		
£ 624.50				£ 95.94																																		
<table border="0"> <tr> <td>Installation</td> <td>LED light fittings</td> <td>£</td> <td>155</td> <td>Sensors</td> <td>100</td> <td>200</td> <td>Plus cost of EM fittings</td> <td>at 229.27 +25</td> <td colspan="4"></td> </tr> <tr> <td></td> <td>No. of fittings</td> <td></td> <td>12</td> <td>No. Sen</td> <td>2</td> <td></td> <td></td> <td></td> <td colspan="4"></td> </tr> </table>													Installation	LED light fittings	£	155	Sensors	100	200	Plus cost of EM fittings	at 229.27 +25						No. of fittings		12	No. Sen	2							
Installation	LED light fittings	£	155	Sensors	100	200	Plus cost of EM fittings	at 229.27 +25																														
	No. of fittings		12	No. Sen	2																																	
Savings per Month £		£ 44.05		Capex		2060																																
Total Cost (S&F)		2060		Savings/Year		529																																
Pay Back Period - Months		46.77																																				
Pay Back Period -Years		3.90																																				

There are two electric vehicles powered from this site, one for grounds maintenance (1,251W) and one (golf buggy ‘Club Car’ which charges at 1,5W) for taking visitors around the site.



There is also an infrequently used air compressor in the workshop used for cleaning shoes etc. Only one lone fountain is metered from this building.

Renewables

The south facing steel framed roof of the building lends itself very well to a Solar PV array. Affixing to this roof would not require penetrations as the roof is designed to allow clamping of panel frames to roof. The site is very physically secure and whilst the roof is currently a little shaded by trees over the external boundary of the site, the gardeners have assured us that these could be easily trimmed down to 6 foot and this shading issue would effectively go away for all but low winter sun months. As such, assuming two modules of PV at 16m long, the site could accept an array of around 8.32kWp. It is possible with appropriate layout that the roof could accept a larger array than this if the entirety of its 20 metre length can be utilised. However, we have made

conservative reductions for shading delivered by the chimney and unavoidable winter tree shade. These figures are provided to give an indication of payback. This would amount to 32 panels (assuming 260Wp panels). These would provide around 7,870kWh/kWp/ of electricity per annum. Assuming capital expenditure of around £11,000, payback would be c 6.2 years:

Because the site energy bills are paid for by the Contractor Gavin Jones, the use of this roof for a Council array will need to be agreed between both parties and some arrangements for payments made. The FIT payment can be made direct to the Council for the next 20 years if that is deemed appropriate. The energy not purchased should be used on site and an agreement for this to be sold to Gavin Jones should be set up.

Assuming FIT to Council at £.01257/kWh:	£990.39
Assumed 50% stated (no export meter) export:	£182.79
Assumed energy sold to Gavin Jones at £0.075/kWh	£590.85
Total Income first year:	£1,764.03

As with Capswood, It would be recommended that a structural survey be conducted. FIT payment can be arranged to be granted to South Bucks DC so that should the Council elect to leave the building in 2026, it may take the generation payments with it until the conclusion of 20 years (c 2034)

The site electrical usage (EV charging, lighting, pump, hot water heater and compressor would lend themselves well to an array of this size and the presumed export of 50% would not frequently likely be met. We have been informed that the Gavin Jones contract only has just over a year to run so it would not be worth their while. However if SBDC offered them a contract extension, which we understand is a possibility, then the Council could ask them to contribute.

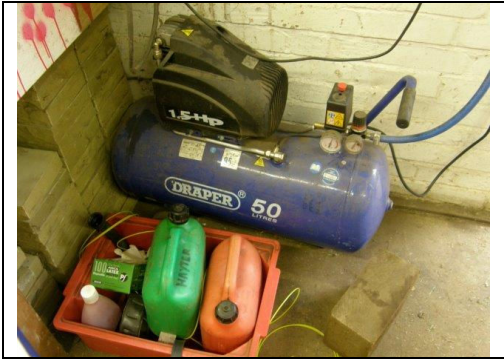


The Draper 1.1kW compressor on site appears to be used infrequently and is switched off when not in use.

Biomass

Wood from the site was chipped for site use and sold to Slough Heat and Power (before it closed). However, there is insufficient regular supply to provide fuel for localised biomass.

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Office to Works Building

This houses a gas fire (the only form of space heating on the site) and an electric Heatrae Sadia 15 litre hot water cylinder rated at 3.0kW. The office is lit with 1800mm T8 lamps and these could be changed along with the lamps in the workshop with similar payback potential if provided at the same time.



Farnham Park Sports Field

The sports field is operated by South Bucks District Council Trust. The Council pay's for energy, building and sports lights. The Council also pay for house on site energy use and recharges the tenant. Assessors were unfortunately unable to access house on any of their visits.

Basketball Pitch

The basketball pitch at the edge of the grounds has 12# floodlights in place on posts at approximately 7m height. Every one of the lamps in these fittings has been smashed by vandals and none are now working. We are happy to provide a solution for replacing these but as there is currently no energy cost from these fittings. As such, any installation (which would require scaffold

and addition of security mesh) would result in an increased energy cost and consequential financial cost.



Changing and Dressing Rooms

Changing rooms (Farnham Park Playing Fields (same site as Greenkeepers new building))

All electric and no gas (appears to have gas radiators)

Some have two round lamps in.

8 x 2Ds in corridor

8 x with 2 x 2D in each

3 x 2D in toilet

6 x 2D in larger toilet

3 x 2D in referees room

Only one side of the 'L' shaped building. Site is a wooden build and very old. It is unlikely that its remaining life would be conducive to expenditure on fittings. Particularly as the existing 2D fittings are max 28W and the LED alternative would not reduce this significantly enough to warrant the expenditure.





House

No access to the house was available during visits.

Greenkeepers Compound

Greenkeepers Compound (2nd visit) Farnham Charity Sports Field (Farnham Common)
Green steel frame outer with breeze block inner skin in workshops and office area.
Pallisade fencing around half of perimeter (North gate entrance side)

Mess room and office

Mess room 6 x 600 x 600 LG7 40W twin T5 Tubes. Recommendation to leave as is.
Office 5 x 600 x 600 LG7 40W twin T5 Tubes. Recommendation to leave as is.

Mower storage room

6 x 6ft single T8 tubes on switch
1st workshop 6 x dual 6ft T8s on switch. Insulated roller shutter door and well insulated building.
Same next door – roller shutter not working so couldn't access.
Believed to be 58W single non corrosive IP65 T8s

Corridors around offices and showers, storage and toilets

70W/835 Sylvania T8 lamps in 6fts
External lighting PIR LED spotlighting. Leave.

Air compressor salvaged from old building and electrically connected up for shoe cleaning installed but not yet operating at time of visit. Recommended that this be uninstalled and removed from site as it will use significant power if left turned on (which is likely to happen). Alternative boot cleaning or more simple shoe cleaning equipment solutions should be provided. As an alternative to this, the unit should be set up with a simple timed off-switch so that it runs for only say 2 minutes

from switch on before closing down. Recommend that this is removed

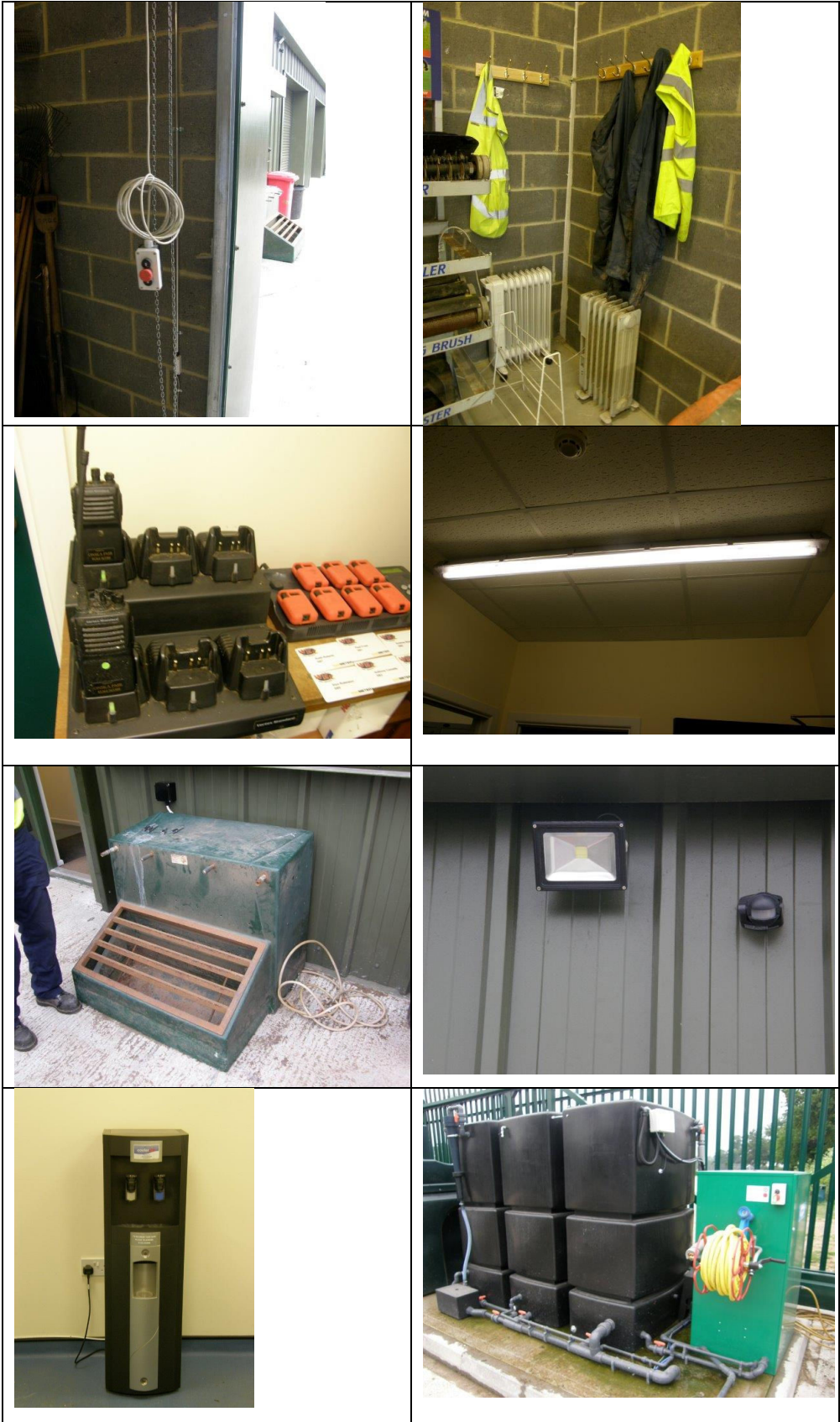
Observed 2,500lt bunded diesel tank.

Machine wash down captures used water for 5 minutes after use and returns to grey water. The unit is on 24/7 for aeration (oxygenation) of microbes to clean water. Suggest contact manufacturer for data sheet on standby wattage. Marked up max 1.5kW.

Consideration was given to PV on this roof but it was agreed that the location would not be possible to adequately secure against random acts of vandalism (see notes on basketball pitch at same site above).



Appendix





Lighting

Lighting is very good in mess room and externally. It serves its purpose in store areas and is not viable to retrofit at this time.

Water chillers

We recommend that an Eliminata Timer (or similar) should be connected between chiller and socket so as to remove energy use overnight and at weekends. This should also be applied to socket to radio battery station and set to go off during the night once batteries have received appropriate stated charge required.

Parkside Cemetery

Office

MPAN		Square Metreage	
MPRN		kWh/annum/m2	
Opening Hours		TM48 Benchmark	
Age		Expected Life	
Ownership			

The Office on site which is connected to the house is single glazed and unheated. It has a flat roof last felted around 15 years ago and is largely un-insulated. However, since it emits no heat, the cost benefit to insulate this aspect of the building would be negative.

Separate Meters:



Windows



The windows to the office building are single glazed crittall windows with single glazed wooden door. This part of the building is un-insulated but is also not heated and as such, any renovation would not make any financial savings from energy (since none is used other than for lighting).

House



The oil fired boiler on-site is (perhaps 15-20 years) old and there is an option that given close proximity to gas main, the house could now be connected to mains gas at no cost. It is recommended that this should be investigated through Transco who will connect any house within 25 metres of a gas main at no cost. The energy costs to heat the building via mains gas against oil would be expected to provide a saving of around 50% of the current energy bill.



Insulation

The house itself has been built with a cavity wall of c 50mm and the cavity has been filled with a form of free-flowing styrene or Rockwall insulation. However, over time this material has slumped and fallen out of areas of the building leaving cold wall areas. The cost to address this would involve the pumping out of the existing insulation at a cost of around £2,000 and the replacement of new expanded foam cavity fill c £500. The payback period for such an endeavour would be of the order of 12 years and as such would not be recommended at the present time.



The roof space to the house is inadequately insulated (see image above). Current insulation levels are at around 75mm. It is recommended that this property be reinsulated to a level of 270mm at a

Appendix

cost of around £500. This would return the leasee within 18 months and could be funded through Green Deal with the agreement of the Council as landlord.

The roof of the house is a very attractive copper pitch which has oxidised and blends very nicely with the local greenery. It would be possible to install a solar photovoltaic array on this roof as the location itself is very secure. A 3-4 kWp array could be installed on east/west roof which would be expected to generate 2,500 to 3,000kWh of energy per year, similar to the needs of the house. Capital cost for supply and install would be of the order of £5,000 to £6,000 with paybacks under 7 years. However, the aesthetics of this may not be deemed acceptable. Similarly the south facing copper roof of the remembrance building could accept around 2kWp which could be expected to generate 1,800kWh per annum. If an array were to be considered on the felt roof to the office, then this roof would need to first be re-felted. If this were something of interest, then as before mentioned, 3 or more quotes should be sought.

There are two electricity meters on this site, one serves the house, and the other serves the remembrance building/office.

Remembrance Building and Toilets



There are two toilets housed within the remembrance building. One unisex and one disabled. The former has 2 x 4Pin2D lamps and an electric tube heater. The latter has 2 x 4Pin2D lamps, 2 electric tube heaters and a Heatrae Sadia electric hot water heater that is controlled by switch and was on during the visit on 10 July 2013.



We recommend that these heaters and the hot water heater be placed in integrated timers set to go off 1 hour before site closes to the public and on one hour before opening.



The cost of the timers would be under £100, and they could be expected to pay back in around a year. It was noted that both toilets in this building housed 9 litre cisterns and hippo water saving devices should be installed in these to reduce water use. Hippos are free of charge from all water companies.

Whilst every effort has been made to ensure the accuracy and of this report, it has been compiled with best available information and understanding of the Council's operations. There are a large number of areas where more information should be sought, trials conducted and analysis undertaken. This report serves as a detailed guide to locating these savings. As such, neither the author nor AVDC accepts any responsibility for any omissions recommendations or suggestions.

Annex 1

Energy Consumption and Costs: All Sites (Excludes two leisure centres)

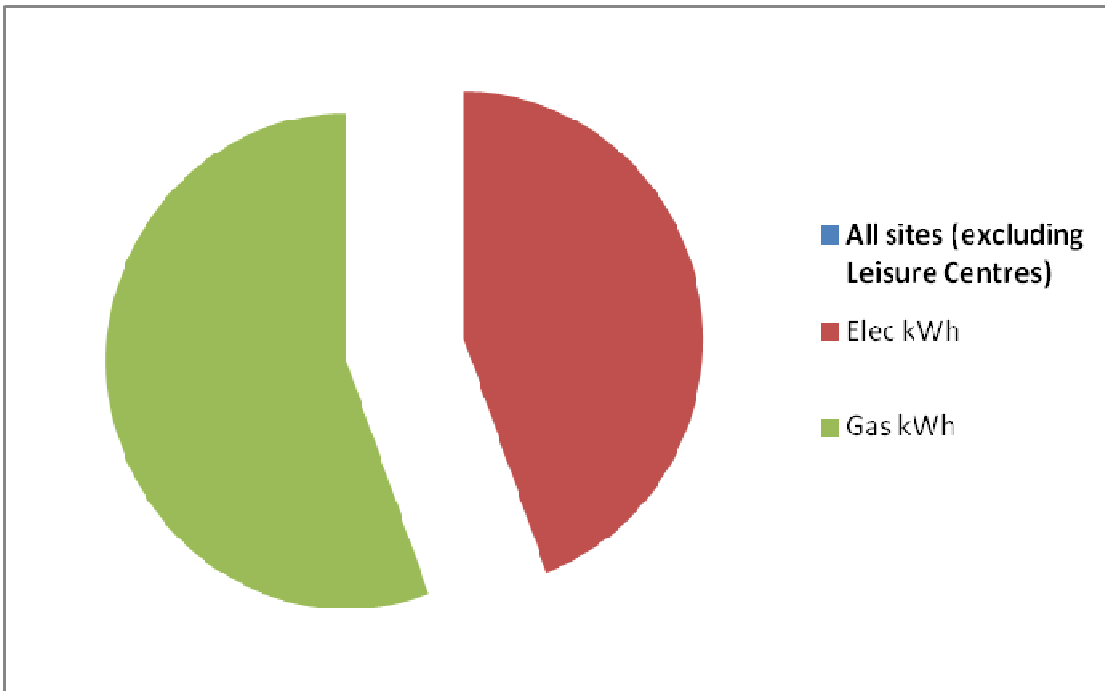
Electricity		
Site	kWh (most recent year billing)	Cost £/Year
Capswood 1	311496.7	31001.18
Capswood 2	99630.8	11259.65
Farnham Pk Golf Course	70136	8610.25
The LANES Golf Course	37605	3337.25
Farnham Pk Dressing Rooms	19180	2707.34
Memorial Gdns Offce/Museum	3398	920.4
Memorial Gdns Pumps	22510	3256.5
Unmetered		828
Farnham Pk Sport and Social	29147	4072.04
Muddy Lane Golf Course	22005	1133.57
	615108.5	67126.18

Gas Consumption and Costs: All sites (Excludes two leisure centres)

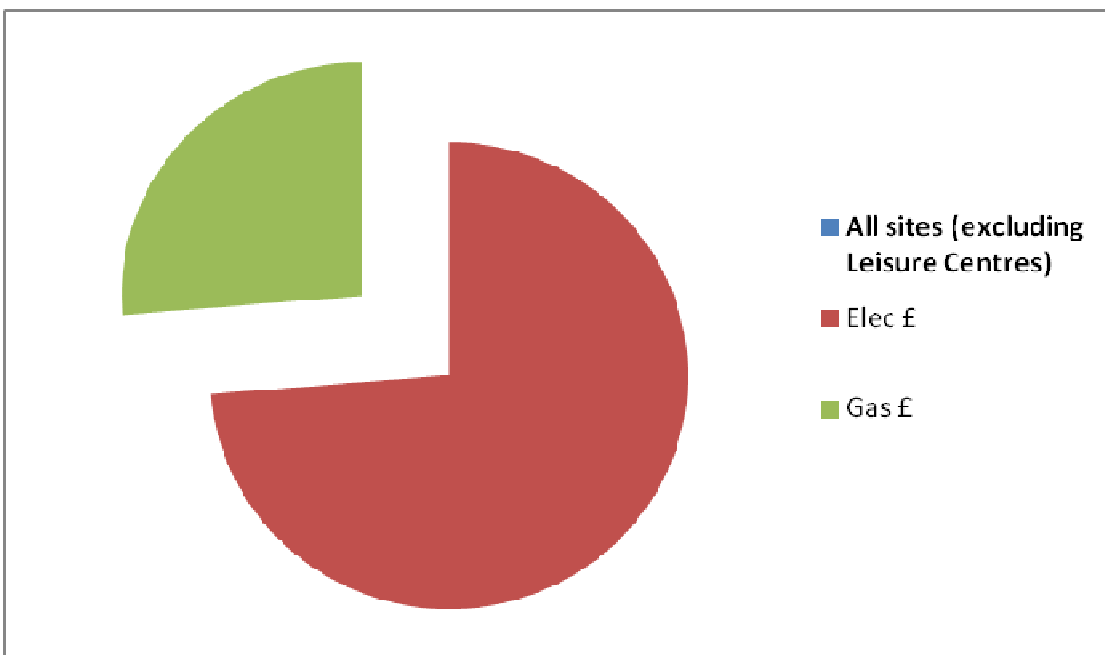
Gas		
Site	kWh (most recent year billing)	Cost £/Year
Capswood 1	259164	7606.23
Capswood 2	289800	8521.28
Farnham Pk Golf Course	116930.2	4043.8
The LANES Golf Course	22092	
Farnham Pk Dressing Rooms	57061.2	2705.964
Memorial Gdns Offce/Museum	24587	1030.03
Memorial Gdns Pumps	N/A	
Unmetered	No data	
Farnham Pk Sport and Social	No data	
Muddy Lane Golf Course	No data	
	769634.4	23907.304

Total energy costs for the two sites amount to around £91,000 for the year consuming 1,384,733kWh of energy.

As can be seen from the graphs below. Whilst kWh usage of electricity and gas are similar, the costs differential is significantly higher with electricity hence focus of the study on this area.



Usage split by kWh



Usage split by financial cost to operator

Annex 2a

Sites operated for the Council by Greenwich Leisure Limited (GLL)

Leisure Centres (Beacon and Everham)

		From EPC			
	kWh (year to 31 March 2013)	M2	kWh/m2	TM46 Recommendation	Actual kWh/m2
Beacon	157,973	1607.6	98	145	98.26
Everham	115,280	1271	84	95	90.7
Beacon (Gas)	147,931	1607.6	119	380	92.02

As can be seen from the table above, the energy use at these sites is significantly less than benchmark for similar such sites. That said, benchmarking such sites is notoriously difficult as 'Leisure Centre' is a very generic term for a wide variety of facilities (the lack of swimming facilities is likely the reason, and not necessarily high performance).

Summary Beacon Centre:

Location	Section	Description	Saving per year	Payback Years/ROI	Cost £
Beacon Lesiure Centre	Around Building	The 50# 4Pin 2D lamps be replaced with an LED alternative and install controls.	1747	4.29	7500
	Around Building	Replace 45# circular downlighters with LED downlighters (trial as per sample given to SBDC). Install controls.	1203	3.30	3975
	Around Building	Replace 50# 50W Halogen lamps in reception with LED alternative. Install controls.	1217	0.66	800
	Around Building	Replace c 100# Cat 2 600mm x 600mm lamps with LED panels. Install controls.	3493	4.87	17000
	Badminton Courts	Replace 20 High bay lamps in Badminton Courts with LED alternative. Install controls.	3242	4.19	13600
	Toilets and Changing	Replace 8# Hand dryers with Air Blades	715.44	5.26	3760
	Plant Room	Insulate flange and valves where unprotected			
	External wall radiators	Install foil to rear of radiators	75	1.07	80
	Solar Array	Quotes can be assessed for quality.			
	Available Supply Capacity	The maximum demand for the site was 50kVa in Sep 2012. The Available Supply Capacity allocated for the site is 150kVA. Look at renegotiating tariffs	1579.73	0.00	0
	Day Night Tariff	Recommend the installation of sub metering to the site so as to gather accurate half hourly data.	1592.304	1.26	2000
	Siemens BMS	Consider including cooling and lighting control via BMS. Investigate via BMS assessor (day rate).	0		500

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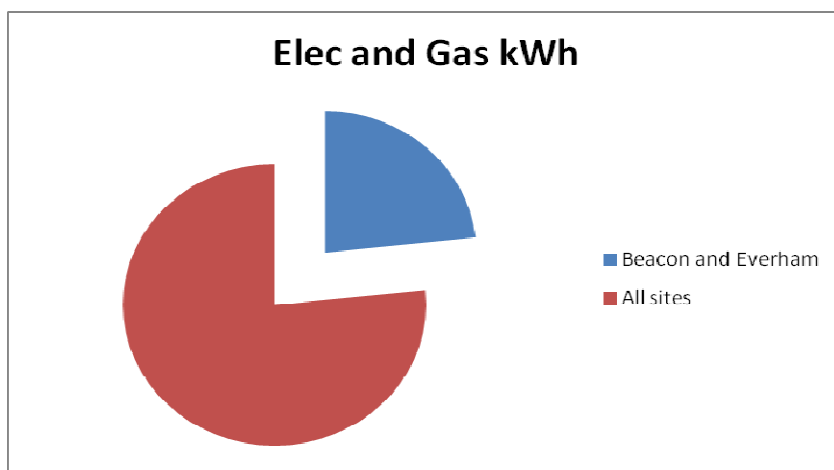
	A/C Cassettes	If refurb, consider replacement with say 8 Heat Pumps to move (warm/cold) air around buolding as required.	6000	5.33	32000
	Gas billing anomalies	Installation of gas logger. If meter does not have pulse log outlet, a replacment meter can be provided FOC by gas provider	286.03	1.05	300
Totals			21150.50	3.85	81515

These buildings have been addressed separately because, the Beacon Centre is owned by SBDC and the Everham Centre is Bucks CC. owned until 2020/1, on a lease to SBDC (6 years). It is likely to be sold off thereafter.

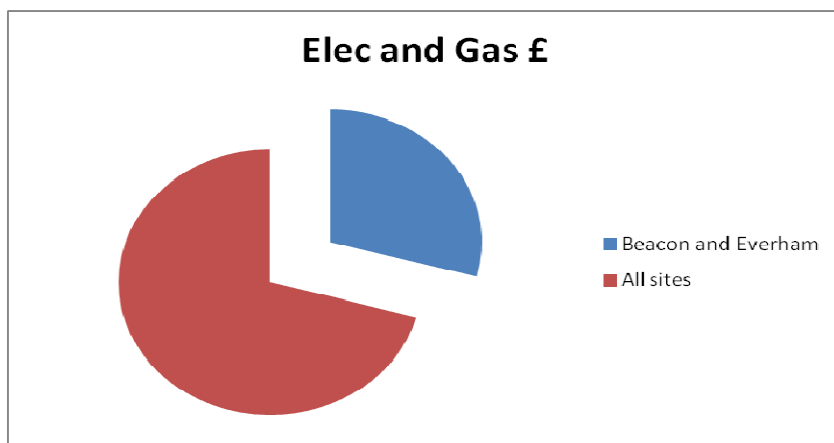
More importantly, both sites are operated by GLL leisure who pay the electricity bills at both sites and the heating fuel bill for the Beacon Centre which is supplied at Everham from the adjacent Youth Centre and paid for by Bucks CC).

The Beacon Centre has an electricity consumption of 157,973kWh and a gas use of 147,931 (305,868kWh). Costs for these are £15,923 and £5,721 respectively. By contrast, Everham Centre has no gas costs as these are funded by Bucks CC and so no detail has been provided. Electricity consumption at Everham Centre is 115,280kWh with annual costs of £11,686. These figures are in addition to the £91,000 costs of energy consumed by the remainder of the Council estate.

By way of context, the two centres represent a little less than ¼ of all energy consumed across the Council's estate.



And by costs for energy consumed, the two sites would represent approximately 1/3 of the energy consumption:



Beacon Leisure Centre

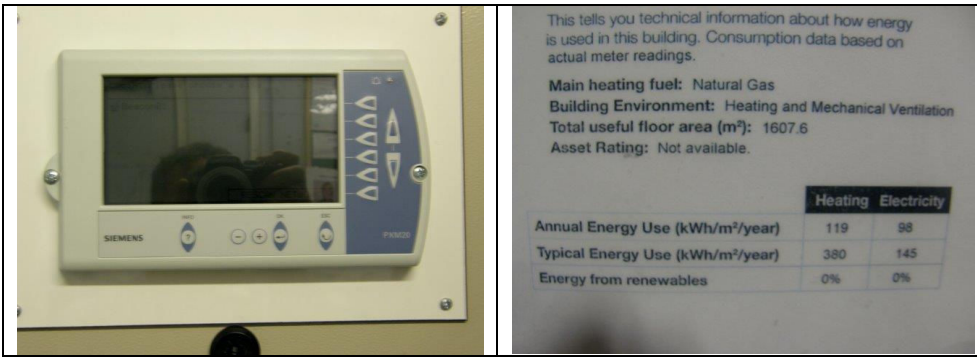
MPAN		Square Metreage	1607.6m2
MPRN		Elec kWh/annum/m2	98 (Ave 145)
Postcode	HP9 1RJ	Gas kWh/annum/m2	119 (380)
Opening Hours	15 hours 24/7	TM48 Benchmark	
Age		Expected Life	C 20 years
Ownership	SBDC	Bill payer Elec/Gas	GLL
Contract duration	6 years	Potential for extending	
		EPC	B 50

Site is owned by the Council and they are responsible for the building and its maintenance. The Leisure provider GLL pay all of the energy bills. Given works to take place to gymnasium, there is scope at this site for some shared capital investment and shared savings if these can be negotiated with GLL.

The site was visited on 3.7.13 escorted by site manager for leisure contractor Mr Steve O'Reilly. The site is open to the public Monday to Friday 6:30am to 10:00pm, Saturdays 9am to 7pm, Sundays 9:00am to 8:00pm and bank holidays 9:00am to 5:00pm.

A Siemens BMS was located on site but not in use other than for boilers.

Appendix



There are around 50# 4 pin2Ds lamp fittings and it would be recommended that these be replaced with LED alternatives.

Customer	SBDC														
Project	Energy saving														
Area	Beacon Centre														
Contact															
4Pin 2D				LED Gondola											
Lights On				Load			Lights On			Load					
Hours/Day	15			Lamp wattage	88			Hours/Day	8			Lamp wattage	38		
Days/Week	5			No. of lamps	1			Days/Week	5			No. of lamps	1		
Weeks/Year	52			No. of fittings	50			Weeks/Year	52			No. of fittings	50		
Hours/Year	3900			Total Load W	4400			Hours/Year	2080			Total Load W	1900		
				Total Load kW	4.40							Total Load kW	1.90		
Total Kw.hrs/year				17160.0			Total Kw.hrs/year				3003.5				
Tariff				p/kw.hr 0.1			Tariff				p/kw.hr 0.1				
Cost per year for 2D				£ 1716.00			Cost per year for LED				£ 300.35			50000 hrs life	
														2080 hrs/year	
														24.03846 Years	
Maintenance per year				520.00			Maintenance per year				189.03			But! 10 Yr bldg life	
Cost /Year When Occupied				£ 2236.00			Cost /Year When Occupied				£ 489.39				
Installation	LED light fittings	£	120	Sensors	100	1500	Plus cost of EM fittings		at 229.27 +25						
	No of fittings		50	No. Sen	15										
Savings per Month £		£	145.55	Capex		7500									
Total Cost (S&F)			7500	Savings/Year		1747									
Pay Back Period - Months			51.53												
Pay Back Period -Years			4.29												



45# PLs (2 x 26W CFL down-lighters) in gym. It would be worthwhile trialling LED solutions for these. With suitable controls, paybacks would be of the order of 3 ¼ years.

Customer	SBDC									
Project	Energy saving									
Area	Beacon Centre									
Contact										
Recessed PL Downlighters			LED Recessed downlighters							
Lights On		Load		Lights On		Load				
Hours/Day	15	Lamp wattage	60	Hours/Day	7	Lamp wattage	30			
Days/Week	5	No. of lamps	1	Days/Week	5	No. of lamps	1			
Weeks/Year	52	No. of fittings	45	Weeks/Year	52	No. of fittings	45			
Hours/Year	3900	Total Load W	2700	Hours/Year	1820	Total Load W	1350			
		Total Load kW	2.70			Total Load kW	1.35			
Total Kw.hrs/year	10530.0			Total Kw.hrs/year	1867.3					
Tariff				Tariff						
	p/kw.hr	0.1			p/kw.hr	0.1				
Cost per year for HF T8				Cost per year for LED						50000 hrs life
	£	1053.00			£	186.73				2080 hrs/year
										24.03846 Years
										But! 13 Yr bldg life
Maintenance per year	468.00			Maintenance per year	130.87					
Cost /Year When Occupied				Cost /Year When Occupied						
	£	1521.00			£	317.60				
Installation	LED light fittings	£	75	Sensors	100	600		Plus cost of EM fittings		at 229.27 +25
	No of fittings		45	No. Sen	6					
Savings per Month £		£	100.28				Capex	3975		
Total Cost (S&F)			3975				Savings/Year	1203		
Pay Back Period - Months			39.64							
Pay Back Period -Years			3.30							

There are around 50# 50W Halogen lamps in reception should be replaced with an LED alternative such as a Toshiba 6W. With no controls, these would pay back in under a year.

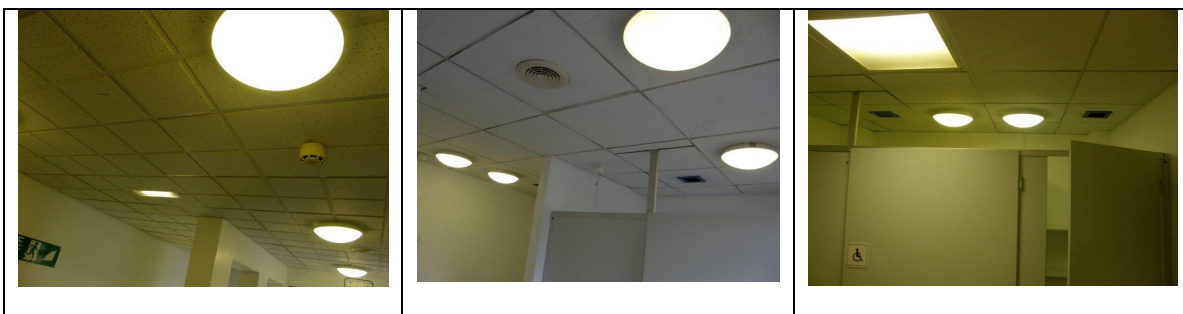
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Customer	SBDC									
Project	Energy saving									
Area	Beacon Centre									
Contact										
Recessed PL Downlighters					LED Recessed downlighters					
Lights On				Load				Lights On		
Hours/Day	15			Lamp wattage	50			Hours/Day	15	
Days/Week	5			No. of lamps	1			Days/Week	5	
Weeks/Year	52			No. of fittings	50			Weeks/Year	52	
Hours/Year	3900			Total Load W	2500			Hours/Year	3900	
				Total Load kW	2.50			Total Load W	300	
								Total Load kW	0.30	
Total Kw.hrs/year	9750.0							Total Kw.hrs/year	889.2	
Tariff								Tariff		
	p/kw.hr				0.1				p/kw.hr	
Cost per year for PL								Cost per year for LED		
	£ 975.00							£ 88.92	But!	
									50000 hrs life	
									2080 hrs/year	
									24.03846 Years	
									10 Yr bldg life	
Maintenance per year	520.00							Maintenance per year	189.03	
Cost /Year When Occupied								Cost /Year When Occupied		
	£ 1495.00							£ 277.95		
Installation	LED light fittings			£	16			Sensors	100	
	No of fittings				50			No. Sen	0	
								Plus cost of EM fittings	at 229.27 +25	
Savings per Month £	£ 101.42							Capex	800	
Total Cost (S&F)	800							Savings/Year	1217	
Pay Back Period - Months	7.89									
Pay Back Period -Years	0.66									

4# A/C Cassettes in Gym would benefit from a replacement with Heat Pumps so as to better move cool air from cooler parts of the building and relocate it in warmer parts. Suitable manufacturers would include Mitsubishi and Daikin.



2D lamps and Cat 2 600mm fittings in corridors and toilet/changing areas



With the proposed retrofit of this building, it might be worthwhile proposing a more advanced LED solution than might otherwise be envisaged, as good quality LED provision can provide up to 50,000 hours of lighting (compared to 8,000 to 12,000 from fluorescent lamps). This means that maintenance costs (those costs picked up by the Council) would be expected to be reduced by around a factor of 4. Assuming 100 fittings complete with 15 sensors, a payback below 5 years would be expected – this includes for maintenance savings of perhaps £600/annum.

Customer	SBDC									
Project	Energy saving									
Area	Beacon Centre									
Contact										
600mm cat 2 panels					LED Cat 2 panels					
Lights On		Load		Lights On		Load				
Hours/Day	15	Lamp wattage	88	Hours/Day	8	Lamp wattage	38			
Days/Week	5	No. of lamps	1	Days/Week	5	No. of lamps	1			
Weeks/Year	52	No. of fittings	100	Weeks/Year	52	No. of fittings	100			
Hours/Year	3900	Total Load W	8800	Hours/Year	2080	Total Load W	3800			
		Total Load kW	8.80			Total Load kW	3.80			
Total Kw.hrs/year	34320.0			Total Kw.hrs/year	6007.0					
Tariff				Tariff						
p/kw.hr	0.1			p/kw.hr	0.1					
Cost per year for Halogen				Cost per year for LED				50000 hrs life		
£	3432.00			£	600.70			2080 hrs/year		
								24.03846 Years		
								But!		10 Yr bldg life
Maintenance per year	1040.00			Maintenance per year	378.07					
Cost /Year When Occupied				Cost /Year When Occupied						
£	4472.00			£	978.77					
Installation	LED light fittings	£	155	Sensors	100		1500	Plus cost of EM fittings		at 229.27 +25
	No of fittings		100	No. Sen	15					
Savings per Month £		£	291.10					Capex	17000	
Total Cost (S&F)			17000					Savings/Year	3493	
Pay Back Period - Months			58.40							
Pay Back Period -Years			4.87							

Badminton courts

Controls required.

20 high bays (o/w 19 working) all on 9 hours 7 days per week. These are likely to be high pressure mercury discharge lamps believed to be 500W each. Assuming operating hours above, a 50,000 hour LED replacement could be expected to offer 15 years of life with only minimal maintenance for cleaning, this should be compared against current maintenance regime.

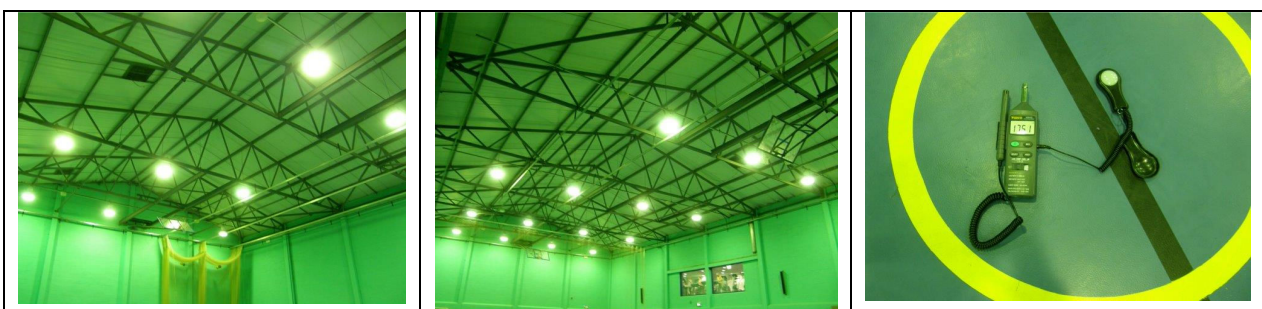
Lux levels in this area were between a low of 85 and a high of 175 at around 5m. There are no windows in this hall. It is recommended that these 20 lamps be replaced with 220 to 250W* induction lamps at a capital cost of £13,600 paying back in 4.2 years and saving £3242 per year. *We have assumed 250W lamps for the purposes of this exercise. The items quoted for are guaranteed for 5 years and the benefits of induction over LED would be the colour render and quality of light for this purpose. Warm up times are around 16 seconds as opposed to 15 minutes for

Appendix

current lamps. The life of these lamps is stated at 100,000. We have included for dimmable lamps and included an extra over for £200/ballast (x 20 lamps) for this. Clearly capital price reduces by £4,000 and payback by around a year if dimming is not required. Included in these figures is £100/unit for installation which includes for scaffold at c £350. It is likely these installation figures could be brought down significantly.

Customer	SBDC								
Project	Energy saving								
Area	Beacon Centre Badminton								
Contact									
High Bays (assumed 450W)					Induction Replacements				
Lights On		Load			Lights On		Load		
Hours/Day	15	Lamp wattage	500		Hours/Day	8	Lamp wattage	250	
Days/Week	5	No. of lamps	1		Days/Week	5	No. of lamps	1	
Weeks/Year	52	No. of fittings	20		Weeks/Year	52	No. of fittings	20	
Hours/Year	3900	Total Load W	10000		Hours/Year	2080	Total Load W	5000	
		Total Load kW	10.00				Total Load kW	5.00	
Total Kw.hrs/year	39000.0				Total Kw.hrs/year	7904.0			
Tariff					Tariff				
	p/kw.hr	0.1				p/kw.hr	0.1		
Cost per year for High Bays					Cost per year for LED				
	£	3900.00				£	790.40		
Maintenance per year		208.00			Maintenance per year		75.61		
Cost /Year When Occupied					Cost /Year When Occupied				
	£	4108.00				£	866.01		
Installation	LED light fittings	£	650	Sensors 100	600				
	No of fittings		20	No. Sen	6				
Savings per Month £		£	270.17			Capex	13600		
Total Cost (S&F)			13600			Savings/Year	3242		
Pay Back Period - Months			50.34						
Pay Back Period -Years			4.19						

100,000 hrs life
2080 hrs/year
48.07692 Years
But!
10 Yr bldg life
5 Year warranty



General - Exterior building glass has film but needs additional shading.

In the WCs there are Air blowers all rated at 2.6kW. Given the amount of usage in these areas and the proposals for retrofit in the gym area, it would be worthwhile considering their replacement in favour of a jet dryer such as the Mitsubishi 560W units – At £590 per unit less discounts, these could be expected to pay for themselves in 5.3 years. The Mitsubishi unit is one of the more efficient units available and is very popular with cleaning staff when compared with say Dyson alternatives.



Cost/Energy Savings

- Fill in the yellow cells.
- The result is automatically calculated.



		JE T TOWEL	HOT AIR	PAPER TOWEL	ROLLER TOWEL
INPUT	Capital Cost	£ 470	0		
	Rental Cost per week	£			
	Power	W 550	2000	-	-
	Standby	W 1	2	-	-
	Drying Time	Seconds 13	40	-	-
	Paper Towel Cost	Pence/Towel -	-	0.4	0.3
	Electricity Charge	Pence/kWh 10			
	Frequency of Use	Times/Day 120			
	Working Day	Days/Year 365			
RESULT	Running Cost	£/Day £0.03	£0.27	£0.96	£0.54
		£/Year £9.56	£98.99	£350.40	£197.10
	Energy	kWh/Day 0.3	2.7	-	-
		kWh/Year 96	990	-	-
	CO ₂	kg/Day 0.1	1.2	-	-
		kg/Year 41	426	-	-

Plant room areas

It would be recommended that flanges and valves and small areas of exposed pipework be insulated as per the remaining levels of pipe insulation to avoid large heat losses.



Appendix

Pumps

Pumps are new and were serviced on 19 June 2013. No action recommended.



Radiators and Pipes

It is recommended that where radiators are on external walls, foil backing be applied. Similarly, any flanges, valves and small areas of exposed pipework should be insulated as per the remaining levels of pipe insulation to avoid heat losses.



Vending (radiators)



It is noted that there is a radiator behind the vending machine in the centre lobby. Whilst we were assured that it is not turned on, it would be advisable to confirm this as heat delivered to the rear of these refrigerator units will result in them working a great deal harder and consuming a good deal more electricity to expel heat from their contents to the outside via the heat coils adjacent the radiator.

PV Roofs (Ardenham Energy quoting – shading from rails) 2 x flat and E/W roof.



Given the significant amount of shading on site from recently installed edge railings and adjoining buildings and roof mounted plant, it is recommended that this site be assessed directly by at least 3 PV installers. We would be happy to assess these quotes for quality once they have been submitted.

The Theatre was unavailable to us at time of visit.

Theatre changing room has 12# 60W long bulbs that could be changed to LED strips.





Electricity Billing

The electricity billing for the site has been reviewed and is set out for the year to March 2013 below. The 12 months (to March 2013) bills that we have seen suggest that Available Supply Capacity has been agreed and that there is no charge.

In fact, Npower state that GLL are not being charged separately for this. As such, with 100kVA spare capacity on site, a rapid charge EV post could be installed which might expect around £7-8/charge (at a cost to GLL of max £2/full charge). Whilst this seems most generous of the energy company, the reality is that this ASC is being paid for within the kWh rate. If there are no plans to further increase maximum demand, it would be worthwhile renegotiating this tariff based on the fact that current ASC need only be 62.5kVA (and not the 150kVA in place). Neither the Beacon or Everham Centre site has exceeded 50kVa in the 12 months to March 2013. We would therefore recommended that the tariffs be reviewed and either changed to HH meters (as both have current ASC of 150kVa) or assessed in terms of the real cost for carrying a capacity that GLL simply don't appear to need. Whilst not made clear on billing, it is likely that the provision of this additional supply capacity above and beyond what is needed is being charged as a hidden cost within the existing billing structure.

The tariff for the site is set at 07. It would be recommended that given the regular late opening hours of the site, this should be adjusted to a day/night tariff. The KWh rate is 9.043p/kWh. Given the similar nature of the site and the Everham, it would be worthwhile reviewing all GLL sites to ensure tariffs are appropriate.

This particularly as Everham is an 06 tariff and has a rate of 9.071p/kWh. Whilst these are reasonably good rates, there is significant room for improvement, particularly given the size and scale of the GLL estate (including and beyond SBDC) and its buying power with NPower (current provider) or alternate utility.

We would recommend the installation of electric sub meters and gas loggers to provide for a more accurate understanding of the building's energy use. Typically one could expect a 10% to 15% saving in billing from such monitoring and control and this saving would be augmented by use of a more appropriate tariff. It would be worthwhile investigating provision of sub meters and platform with energy provider. Indeed, given the scale of the GLL holding and the need to provide carbon data for the CRC-EES, it would be worthwhile considering sub-metering and AMR for all sites of this size and above. With good energy data, it would be much easier to assess the benefits of moving to an 04 (day/night) tariff.

Month	Units/kWh	Cost
Apr-12	12471	£1,282.86
May-12	12891	£1,326.06
Jun-12	12390	£1,274.64
Jul-12	14272	£1,465.99

Aug-12	14171	£1,455.77
Sep-12	12680	£1,304.03
Oct-12	13415	£1,325.28
Nov-12	11728	£1,158.55
Dec-12	13828	£1,367.32
Jan-13	13893	£1,371.83
Feb-13	12850	£1,268.45
Mar-13	13384	£1,322.26
	Total kWh	157973
	Total cost	£15,923.04

Gas Billing

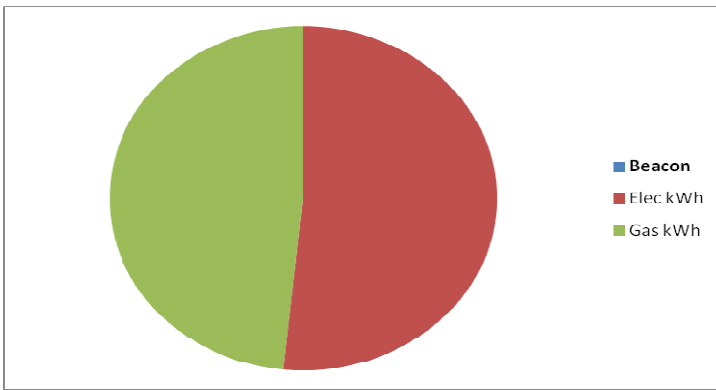
Gas for the site is set out below. It is recommended that given the years worth of bills reviewed, these should be assessed thoroughly for a further 6 years past (as all billing anomalies can be retrospectively claimed for up to that period). This particularly as invoice for February of the year has not been received. There is much estimation and inaccuracy in the data provided and it would be worthwhile installing a gas logger to the meter, so as to provide accurate pulse data. This will allow GLL to better address any billing queries in future.

The meter readings over this 12 month period 160,365 to 165,670 amounts to 5305. This loosely equates to a kWh gas use of 164MWh and yet billing amounts to 148MWh...

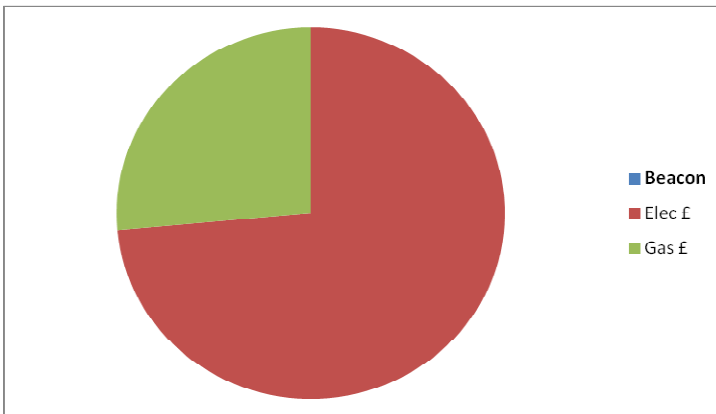
Month	Meter readings		Calorific value	Energy /kWh	Cost per metre	Total
	Previous	Present				
Jun-12	160365	160698	38.9	10414		£1,505.18
Jul-12	160698	160807	38.6	3382		
Aug-12	160807	161142	38.4	10341	£851.79	£851.79
Aug/Sep-12	161142	161347	39.4	-6493	-£609.37	-£609.37
Oct-12	161142	161202	39	1881	£910.84	£910.84
Nov-12	161202	161804	38.98667	18879	£450.21	£450.21
Dec-12	161804	162659	38.96333	26797.2	£639.03	£639.03
	162659	162975	39.07037	9931.2	£236.83	£360.66
Jan-13	162975	163140	39.125	5192.8	£123.83	
Mar-13	163140	164287	38.99677	35979.8	£858.01	£858.01
	164657	165506	38.82963	26517.8	£632.37	£754.20
	165506	165670	38.725	5108.6	£121.83	
					Total kWh	147931.4
					Total cost	£5,720.55

kWh figures are similar at c 150,000kWh/annum for both gas and electricity. However, there is a large difference in the price per kWh for each. Consequently, the focus of investigation has been primarily on electricity, see split below for justification:

Appendix



Usage split for kWh



Usage split by financial cost to operator

The figures (see appendix 1b) have been assessed against a 3 year spend plan. A 5 year plan is not workable at this site because it involves splitting the implementation of individual specific projects over extended time periods.

Details from a cost, energy and a CO2 emissions perspective.

3 Year Costs £:

	Yr 1	Yr 2	Yr 3	Total Capital Cost £
Capital Cost	18,540	11,475	19,000	49,015

3 Year kWh:

	Yr 1	Yr 2	Yr 3	Total Saving
kWh reduction (t)	52,828	45,297	50,853	148,960

3 Year CO2:

	Yr 1	Yr 2	Yr 3	Total Saving
CO2 reduction (t)	2.37	2.02	2.27	6.7

Annex 2b

Everham Centre

The site was visited on 3.7.13, escorted by Duty Manager Charlie.

Public opening hours for the site are as follows: Monday, Wednesday, Friday 7:00am to 10:00pm, Tues and Thursday 9:00 to 10:00pm, Saturday and Sunday 9:00am to 6:00pm.

MPAN		Square Metreage	1271m2
MPRN	N/A	Elec kWh/annum/m2	84 (Ave 95)
Postcode	SL6 0HS	Gas kWh/annum/m2	186 (321)
Opening Hours	9 to 10pm (6:00pm S/S)	TM48 Benchmark	
Age	c1980s	Expected Life	6-7 Years
Ownership	SBDC	Bill payer Elec/Gas	GLL
Contract duration		Potential for extending	Unlikely
		EPC	C 71

Summary (Everham Centre):

Location	Section	Description	Saving per year	Payback Years/ROI	Cost £
Everham Centre	Lighting - Basketball Court	Replace with 100,000 hour Induction lamps	3192	3.01	9600
	Lighting - Gymnasium PL downlighters	Replace with LED circular recessed downlighters	455	4.62	2100
	Lighting - Dance Room Halogens	Replace 50W halogens with 6W Toshiba (or similar) LED lamps	365	0.66	240
	Gym - Cooling (A/C)	Vents should be replaced with open and closing sealable vents so that in winter when A/C should, be off, the vents can be opened and when A/C is on in the summer they are maintained closed. Assuming 1.2kW DX unit.	264.87	1.89	500
	Toilet - Hand dryers	Replace 4# Hand dryers with Air Blades	357.72	5.3	1880
Totals			4634.59	3.09	14320

Appendix

NB There is no gas data set out above as all savings would be to the benefit of Bucks County Council and as such this fell outside the scope of our remit.

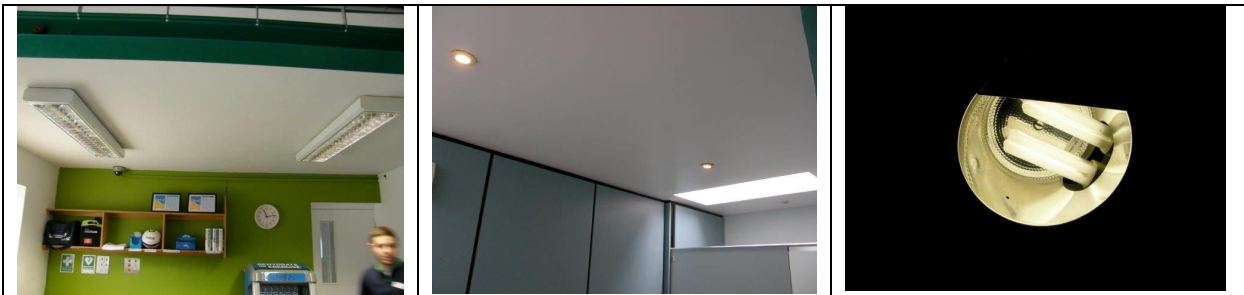
Lighting

Basketball and badminton court is max 200 lux to min 100 lux and has no windows or skylights.

There are 20 high bays all on 9 hours 7 days per week. Controls are required. These are likely to be high pressure mercury discharge lamps at around 450W each. Assuming operating hours above, a 50,000 hour LED replacement could be expected to offer 15 years of life with only minimal maintenance for cleaning, this should be compared against current maintenance regime/cost.

Lux levels in this area were between a low of 85 and a high of 175 at around 5m. There are no windows in this hall. It is recommended that these 20 lamps be replaced with 20# 220W to 250W Induction lamps at a capital cost of £9600 paying back in three years and saving £3,192 per year.

Office

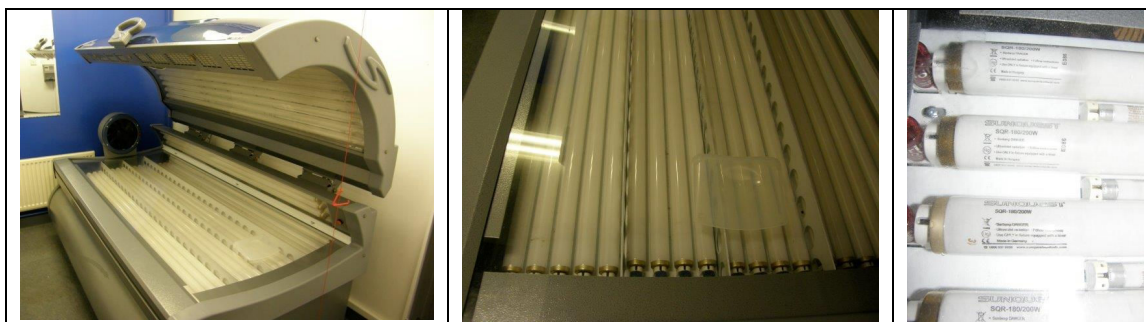


External Lighting

It is our understanding that this is a landlord responsibility.



Sunbed Room



The sun bed operates using c 30# 200W tubes. As such, the power consumption is equivalent to 3 kettles. Charging for the use of this unit should ensure that the centre is adequately compensated for use of this.

Gymnasium



There is potential for changing around 20# PL light units here for LED. Paybacks would be around 4 – 5 years and there would be maintenance savings for the Council. However, given low ceiling heights and ease of changing these current relatively inexpensive fittings, there is unlikely to be sufficient incentive for Council to subsidise this. We would recommend that current maintenance costs for the year are assessed for this site.

Appendix

Customer	SBDC								
Project	Energy saving								
Area	Everham Centre								
Contact									
Recessed PL Downlighters					LED Recessed downlighters				
Lights On		Load			Lights On		Load		
Hours/Day	15	Lamp wattage	60	Hours/Day	8	Lamp wattage	30		
Days/Week	5	No. of lamps	1	Days/Week	5	No. of lamps	1		
Weeks/Year	52	No. of fittings	20	Weeks/Year	52	No. of fittings	20		
Hours/Year	3900	Total Load W	1200	Hours/Year	2080	Total Load W	600		
		Total Load kW	1.20			Total Load kW	0.60		
Total Kw.hrs/year	4680.0	Total Kw.hrs/year	948.5						
Tariff		Tariff							
	p/kw.hr	0.1			p/kw.hr	0.1			
Cost per year for PL		Cost per year for LED							
	£ 468.00		£ 94.85					50000 hrs life	
								2080 hrs/year	
								24.03846 Years	
								But! 6 Yr bldg life	
Maintenance per year	208.00	Maintenance per year	126.02						
Cost /Year When Occupied		Cost /Year When Occupied							
	£ 676.00		£ 220.87						
Installation	LED light fittings	£ 75	Sensors 100	600	Plus cost of EM fittings	at 229.27	+25		
	No of fittings	20	No. Sen	6					
Savings per Month £	£ 37.93	Capex	2100						
Total Cost (S&F)	2100	Savings/Year	455						
Pay Back Period - Months	55.37								
Pay Back Period -Years	4.61								

Dance Room



The c 15# 50W halogen lamps in this room should be replaced with 6W LED lamps which at around £8/unit capital costs would be expected to pay for themselves in less than a year.

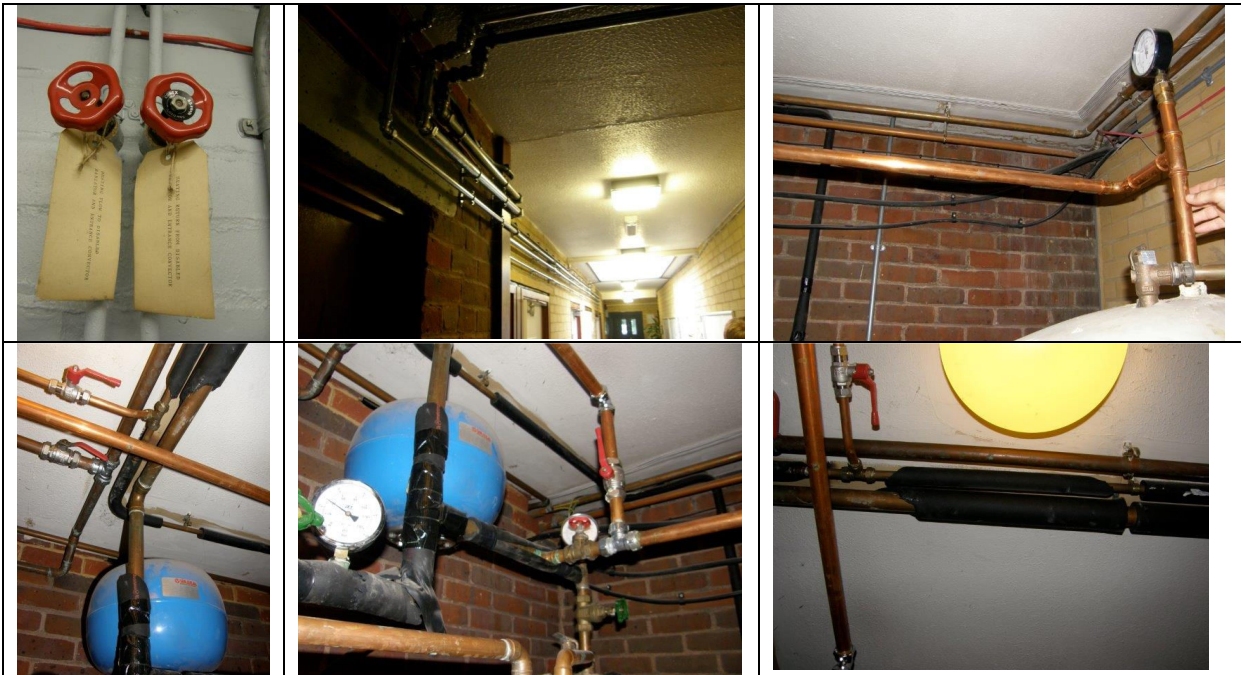
Appendix

activity (akin to leaving two operating fridge doors open 24/7). If the gym is open daily for a conservative for 10 hours, then each unit over a year will consume 4,380kWh/annum. As such the two units above the open vents will consume 8,760kWh/annum and the losses to the outside will result in a minimum 1/3 losses or 2,920kWh/annum which equates to £264.87/annum. Assuming adaptations to vents at a cost of £500, this would pay back in under 2 years.

According to John Harwood, there is a major issue with the controls on the roof etc and in winter there is a major issue with condensation on the underside of the roof, when the Contractor GLL do not manage the heating and vents correctly. It is recommended that these vents should be replaced with open and closing sealable vents so that in winter when A/C should, be off, the vents can be opened and when A/C is on in the summer they are maintained closed.

Heating

Pipes in corridors and plant room need insulation and flange and valve insulation as appropriate. However, it is understood that gas is supplied to this centre from the adjacent Youth Centre. Bucks CC pick up bills for heating of both sites. Therefore there is at present no financial incentive for either SBDC or the Contractor to insulate or carry-out any works on their gas and heating load.



Showers

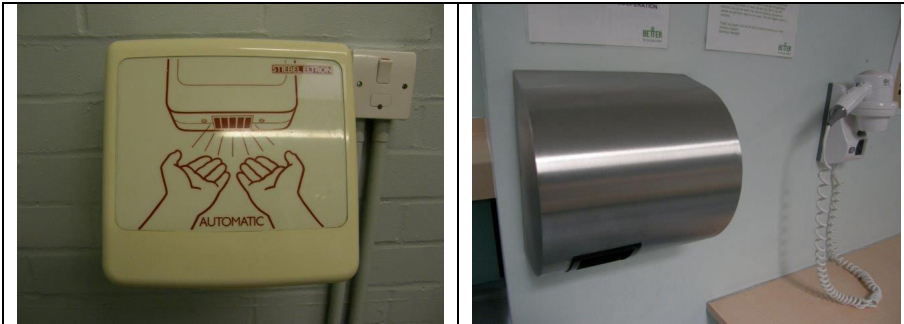


Showers are push button and so appropriate to task.

Electrical

Given the relationship between the Contractor and SBDC, there is potential to address electricity if payback less than 5 year life of building and if in partnership with Leisure contractor.

Hand Dryers



Given significant usage, it is recommended that these be replaced with Jet towels or similar. Given the high usage in these areas, it might be worthwhile considering their replacement in favour of a jet dryer such as the Mitsubishi 560W units – At £590 per unit, less discounts, a capital cost of around £470/unit including an element for installation into existing cabling and an assumed usage of 120 visits to each hand dryer per day and operation of 365 days of the year, payback would be 5.3 years. The Mitsubishi unit is one of the more efficient units available and is very popular with cleaning staff when compared with say Dyson alternatives.

Cost/Energy Savings

- Fill in the yellow cells.
- The result is automatically calculated.



			JET TOWEL	HOT AIR	PAPER TOWEL	ROLLER TOWEL
INPUT	Capital Cost	£	470	0		
	Rental Cost per week	£			-	-
	Power	W	550	2000	-	-
	Standby	W	1	2	-	-
	Drying Time	Seconds	13	40	-	-
	Paper Towel Cost	Pence/Towel	-	-	0.4	0.3
	Electricity Charge	Pence/kWh		10	-	-
	Frequency of Use	Times/Day			120	
	Working Day	Days/Year			365	
	RESULT	Running Cost	£/Day	£0.03	£0.27	£0.96
		£/Year	£9.56	£98.99	£350.40	£197.10
Energy		kWh/Day	0.3	2.7	-	-
		kWh/Year	96	990	-	-
CO ₂		kg/Day	0.1	1.2	-	-
		kg/Year	41	426	-	-

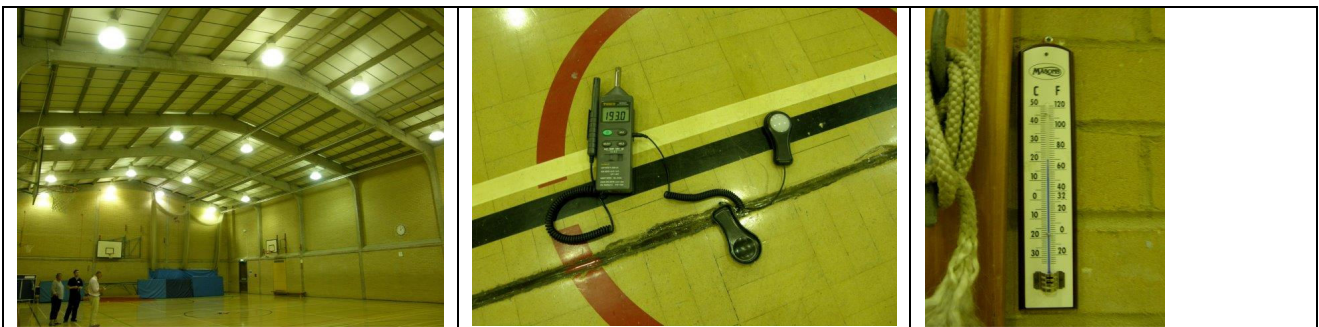
Electricity Use and Costs

Month	Units /kWh	Cost
Apr-12	8916	£922.67
May-12	9661	£998.82
Jun-12	8425	£872.91
Jul-12	8998	£931.62

Appendix

Aug-12	9586	£991.22
Sep-12	8731	£903.92
Oct-12	9312	£928.26
Nov-12	8061	£803.63
Dec-12	11436	£1,137.54
Jan-13	10800	£1,073.59
Feb-13	10478	£1,040.34
Mar-13	10876	£1,081.03
	Total kWh	115280
	Total cost	£11,685.55

Basketball/Badminton Hall



Lux levels range in this hall from 191 to around 100 lux.
It would be prudent to install presence sensing controls in the badminton courts.

Customer	SBDC																														
Project	Energy saving																														
Area	Everham Centre Badminton																														
Contact																															
High Bays (assumed 450W)											Induction Replacements																				
Lights On					Load					Lights On					Load																
Hours/Day	15			Lamp wattage	500			Hours/Day	8			Lamp wattage	250																		
Days/Week	5			No. of lamps	1			Days/Week	5			No. of lamps	1																		
Weeks/Year	52			No. of fittings	20			Weeks/Year	52			No. of fittings	20																		
Hours/Year	3900			Total Load W	10000			Hours/Year	2080			Total Load W	5000																		
				Total Load kW	10.00							Total Load kW	5.00																		
Total Kw.hrs/year					39000.0					Total Kw.hrs/year					7904.0																
Tariff					p/kw.hr 0.1					Tariff					p/kw.hr 0.1																
Cost per year for High Bays											Cost per year for LED																				
	£ 3900.00								£ 790.40								100,000 hrs life														
																	2080 hrs/year														
																	48.07692 Years														
																	6 Yr bldg life														
																	5 Year warranty														
																	Non Dimming														
Maintenance per year											208.00					Maintenance per year											126.02				
Cost /Year When Occupied											£ 4108.00					Cost /Year When Occupied											£ 916.42				
Installation											LED light fittings £ 450					Sensors 100 £ 600															
											No of fittings 20					No. Sen 6															
Savings per Month £											£ 265.96					Capex											9600				
Total Cost (S&F)											9600					Savings/Year											3192				
Pay Back Period - Months											36.10																				
Pay Back Period -Years											3.01																				

20 high bays lights, all on 9 hours 7 days per week. These are likely to be high pressure mercury discharge lamps at around 450W each. Assuming operating hours above, a 100,000 hour Induction lamp replacement could be expected to offer 20 years of life (on a 6 year life building) with only minimal maintenance for cleaning, this should be compared against current maintenance regime. Paybacks for an Induction lamp replacement would be 3 years (so inside the scope of the 6 year lease) and moreover, provide a much better quality of light and colour render. We have taken these to be non dimming to bring payback down and included a conservative cost of £100 per unit to install (this includes scaffold costs). As can be seen, these induction lamps are marked as 100,000 hours and are warranted for 5 years. Capex would be £9,600 with savings of £3,192/annum. This pays back in 3 years.

Room Temperatures

The stated temperatures for the building are displayed in the badminton Hall as follows:

Sports Hall: 16 to 19C (Ref Badminton Association)

Reception, Corridors and Offices: Minimum recommended room temperature 21C

Fitness Suite: 16 to 19C (YMCA).

Given that the readings taken on the gym (fitness suite) were 25C on the day of our visit and the reading for the badminton Courts (sports hall) was showing 21C, it is recommended that thermostats be reduced. This would expect to produce savings (However, given that gas is paid for by Bucks CC, there is no financial benefit to the Council or the centre. 1oC energy saving here equates to 8%.

Outdoor Pitch

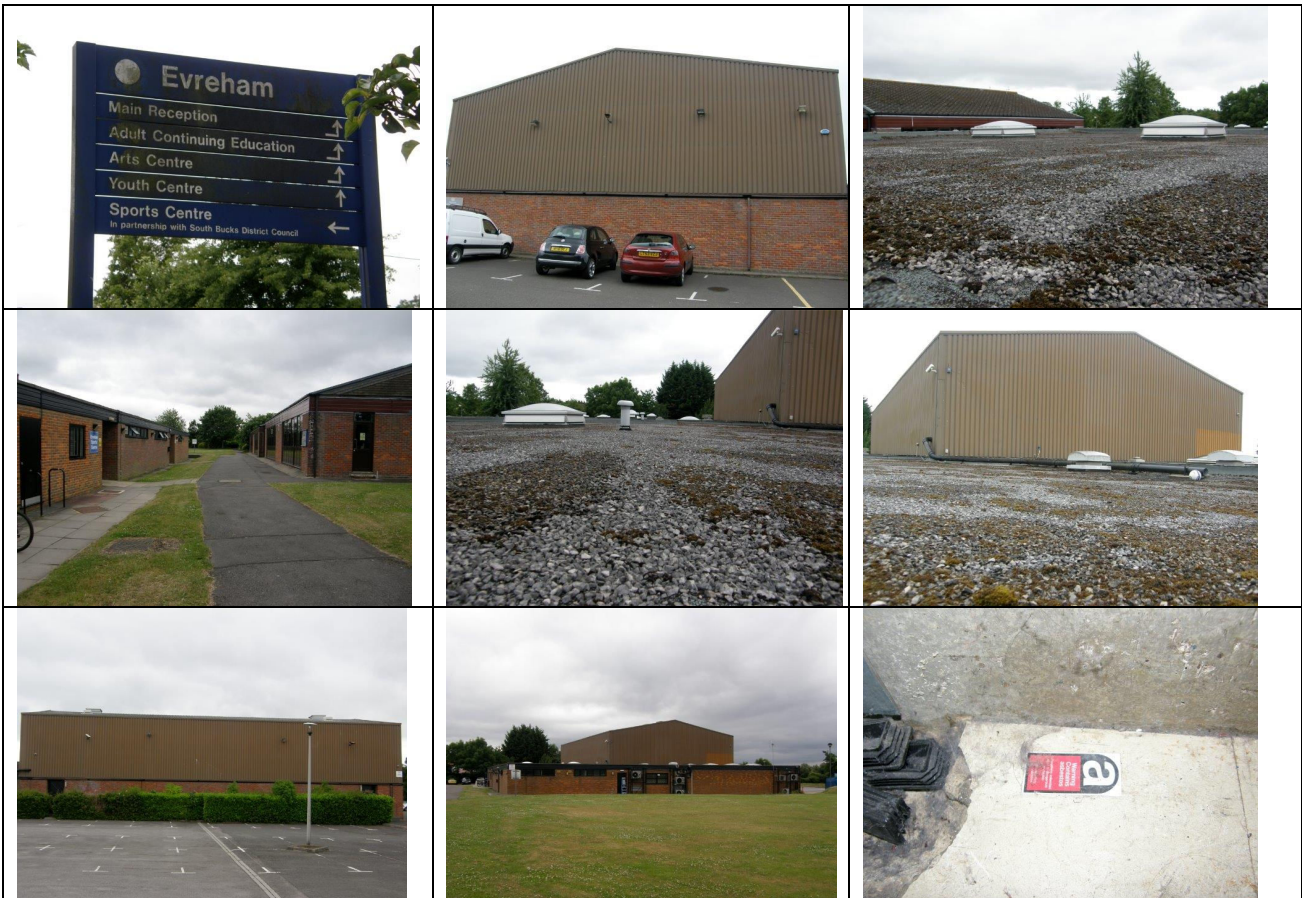
The Lighting on this pitch is SON lighting and on posts of around 7.5 metres.



There are solutions for this in LED and it is recommended that these be investigated with companies including Philips, Thorlux and Elite Renewables. Contact details can be provided. However, given the need for tower scaffold (unless a winch is available to the site*), the paybacks for this may potentially go beyond the anticipated life of the centre. * AVDC Leisure department have invested in a winch and it may be possible to hire this assuming correct fittings.

Renewables

The flat roofs to the building are extensive but will need re-felting/re-laying in the next few years. The pitched roof has a large south facing façade but is a corrugated asbestos roof. Given these facts and the expected life expectancy of the building, we would not advise serious consideration of PV, even with a south facing orientation.



There is also lots of asbestos in the building. The asbestos register has not been inspected (for this or any building in the entirety of this assessment). We understand that an asbestos survey has been undertaken here. An Asbestos Refurbishment and Demolition Survey will be required prior to any future upgrading, refurbishment or demolitions and this will apply to several of the SBDC sites.

Summary Findings; Everham Centre

The figures (see appendix 1c) have been assessed against a 3 year spend plan. A 5 year plan is not workable at this site because it involves splitting the implementation of individual specific projects over extended time periods.

Details from a cost, energy and a CO2 emissions perspective.

3 Year Costs £:

	Yr 1	Yr 2	Yr 3	Total Capital Cost
Capital Cost	4,720	4,800	4,800	14,320

3 Year kWh:

	Yr 1	Yr 2	Yr 3	Total Saving
kWh reduction (t)	14,426	15,960	15,960	148,960

3 Year CO2:

	Yr 1	Yr 2	Yr 3	Total Saving
CO2 reduction (t)	0.643	0.711	0.711	2.1

END.