

Redrow Homes Limited

265 Burlington Road, New Malden

Appendices to Proof of Evidence of
Mike Savage

Final | 9 November 2020

This report takes into account the particular instructions and requirements of our client.

It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 274852-00

Ove Arup & Partners Ltd
13 Fitzroy Street
London
W1T 4BQ
United Kingdom
www.arup.com

ARUP

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Appendix A

Alternative Trip Generation Methodology (Original Uses)

Subject 265 Burlington Road – Alternative Trip Generation Methodology (Original Uses)

Date 7 April 2020

Job No/Ref 602563-51

1 Introduction

- 1.1.1 This technical note has been prepared to inform the Public Inquiry relating to the redevelopment of 265 Burlington Road in the London Borough of Merton (LBM) planning application ref: 19P2387.
- 1.1.2 The trip generation methodology applied in the Transport Assessment (TA) dated May 2019 was agreed with LBM at that time and derived B1 office use travel demand from TRICS database with vehicular trip rates applied to the extant 3,880sqm GFA.
- 1.1.3 In developing a trip generation assessment methodology, pre-application discussions were held with LBM highways officers which established that to assess the impact of proposals, the proposed trip generation should be compared against the trip generation for the original land uses.

2 Trip Rates

- 2.1.1 The TRICS surveys used to derive the vehicular trip rates in the 2019 TA are set out in **Table 1**.

Table 1: Office TRICS Surveys Used to Derive Vehicular Trip Rates in the 2019 TA

Reference	Use	Town	Location	GFA	Parking	PTAL	Survey Type	Survey Date
BT-02-A-02	Office	Wembley	Suburban Area	4750	43	5	Multi-modal	Tuesday, 22/06/10
CI-02-A-03	Office	City of London	Town Centre	1951	0	4	Multi-modal	Friday 29/11/13
WH-02-A-02	Office	Battersea	Town Centre	1215	0	5	Multi-modal	Thursday, 10/05/12
WH-02-A-03	Office	Nine elms	Suburban Area	1400	3	4	Vehicle Only	Monday, 16/11/15

- 2.1.2 Three of the TRICS sites used to derive the vehicular trip rates in the 2019 TA are multi-modal, therefore these sites have been used to derive an all person trip rate to allow further consideration of the effective mode shares of trips set out in the 2019 TA.
- 2.1.3 The resultant vehicular and all person trip rates are set out in **Table 2**.

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Table 2: Office Trip Rates Per 100sqm GFA (2019 TA)

Land Use	AM Peak (0800-0900)			PM Peak (1700-1800)			Daily (0700-1900)		
	In	Out	Total	In	Out	Total	In	Out	Total
Office All Vehicle trip rates as used in the 2019 TA	0.60	0.10	0.70	0.17	0.59	0.76	3.66	3.39	7.06
Office All person trip rates for multi-modal sites used in the 2019 TA Vehicular trip rate	3.06	0.16	3.22	0.39	2.92	3.31	18.11	16.85	34.97

2.1.4 **Table 3** shows the resultant vehicular and all person trip generation. It should be noted that the all vehicles trip rates applied in the 2019 TA include Taxis, Other Goods Vehicles (OGVs), Public Service Vehicles (PSVs) and Cyclists.

Table 3: Office Trips Generation (2019 TA)

Mode	AM Peak (0800-0900)			PM Peak (1700-1800)			Daily (0700-1900)		
	In	Out	Total	In	Out	Total	In	Out	Total
Car/ LGV	23	3	26	5	22	28	136	125	261
Taxis	0	1	1	1	1	2	4	4	7
OGVs	0	0	0	0	0	0	1	1	3
PSVs	0	0	0	0	0	0	1	1	3
Cyclists	4	0	4	0	5	5	10	10	20
All Vehicles	23	4	27	7	23	30	142	132	274
Total People*	119	6	125	15	113	128	703	654	1357

*Not presented in the 2019 TA

2.1.5 Of the 4 sites that were used to assess vehicular demand, all the sites except Wembley had either zero or 3 parking spaces on site. Only the Wembley site had on site car parking (43 spaces), and whilst this is less than the Burlington Road site there was an adjoining multi story car park where employees could park.

2.1.6 The Wembley site is the largest site and roughly equal in floor area to the other 3 sites put together, so the weighted average trip rates presented in the TA were dominated by

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the Wembley site. Nevertheless, to reflect the TRICS travel demand for an outer London site with car parking the trips associated with this site alone have been considered.

2.1.7 The resultant vehicular and all person trip rates for the Wembley site are presented in **Table 4** , with the associated trip generation in **Table 5**.

Table 4: Alternative Office Trip Rates (Wembley Site Only)

Land Use	Calculation Factor	AM Peak (0800-0900)			PM Peak (1700-1800)			Daily (0700-1900)		
		In	Out	Total	In	Out	Total	In	Out	Total
Office Alternative All Vehicle trip rates (Wembley)	Per 100sqm GFA	0.90	0.13	1.03	0.23	0.82	1.05	5.75	5.24	10.99
Office Alternative All Person trip rates (Wembley)	Per 100sqm GFA	2.67	0.19	2.86	0.40	2.80	3.20	19.92	18.06	37.98

Table 5: Alternative Office Trips Generation (Wembley Site Only)

Mode	AM Peak (0800-0900)			PM Peak (1700-1800)			Daily (0700-1900)		
	In	Out	Total	In	Out	Total	In	Out	Total
Car	32	4	37	7	28	36	204	186	391
LGV	2	0	2	1	2	2	13	12	26
Taxis	0	0	0	1	1	2	1	1	2
OGVs	0	0	0	0	0	0	1	1	2
PSVs	0	0	0	0	0	0	2	2	5
Cyclists	1	0	1	0	0	0	2	1	2
All Vehicles	35	5	40	9	32	41	223	203	426
Total People	104	7	111	16	109	124	773	701	1474

2.1.8 Considering the data above, if an all person trip rate were required then the average of the three all person trip rates set out in **Table 2** would be the robust approach because it utilises the average from the three sites.

2.1.9 However, the average vehicular trip rates are constrained by the availability of car parking on two of the sites, so if a raw TRICS vehicular trip rate were used for vehicle demand the best information available is the Wembley site data alone (the vehicular rate in **Table 4**). To verify the vehicle trip generation, the level of car parking accumulation for the

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New Malden site using the Wembley data can be compared against the 100 spaces available for employees. The results of this assessment are set out in **Table 6** below.

Table 6: Car Parking Accumulation (using Wembley Site trip rate)

Time	Arrivals	Departures	Total	Accumulation
07:00-07:30	3	1	4	2
07:30-08:00	18	2	20	19
08:00-08:30	19	2	20	36
08:30-09:00	16	3	20	49
09:00-09:30	18	7	25	60
09:30-10:00	20	7	28	73
10:00-10:30	20	6	25	87
10:30-11:00	9	7	16	88
11:00-11:30	10	12	22	86
11:30-12:00	7	4	11	88
12:00-12:30	8	11	20	85
12:30-13:00	11	11	21	85
13:00-13:30	6	9	15	82
13:30-14:00	5	4	9	83
14:00-14:30	8	8	16	83
14:30-15:00	8	6	14	85
15:00-15:30	7	10	16	82
15:30-16:00	9	7	16	83
16:00-16:30	4	16	20	71
16:30-17:00	6	17	23	60
17:00-17:30	6	20	26	45
17:30-18:00	3	11	15	37
18:00-18:30	3	14	17	26
18:30-19:00	0	7	7	20

2.1.10 The above table shows that using the Wembley vehicle trip rates would reflect a parking demand well within the 100 parking spaces available at the New Malden site. As such it can be concluded that this represents a more realistic vehicle trip rate than that utilised for the Transport Assessment.

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3 Mode Shares

- 3.1.1 On the basis of the above trip rate exercise it seems realistic to assess the level of vehicular demand and mode share based upon the Wembley site. Comparing Tables 2 and 4 above shows that the person trip rates for Wembley are marginally lower in the AM peak than the average of the 3 sites but that PM peak person trip rates and daily trip rates are broadly similar. Therefore, the extant travel demand has been calculated using the Wembley trip rates and mode shares.
- 3.1.2 The mode shares derived from the 2019 TA are compared to the mode share from the multimodal sites, and the Wembley site (**Table 7**). These are then compared to the 2011 Census journey to work origin-destination data for the mid-layer super output area which covers the site (E02000704 as a place of work).
- 3.1.3 The Census Journey to Work data shows a level of car mode share double that of the Wembley site, however if that data was applied to a person trip rate, the level of car parking would exceed the 100 space car park on site and suggest that vehicles would be parking in adjoining residential streets or Tesco car park during the day. Doubling the car mode share to match the Census data would also double the extant traffic generation, which may then exceed the proposed traffic generation.
- 3.1.4 Notwithstanding the surveyed car mode share indicated within the Census Journey to work data, a measured approach has been taken to progress analysis using the Wembley mode share proportion.
- 3.1.5 By applying the trip generation for car, taxi and bicycle as a percentage of all person trips (2-way daily) set out in **Table 2** and **Table 4** the mode shares for other modes have been proportioned in line with 2011 Census data. The resultant adjusted mode shares for all standard census output modes are provided in **Table 7**.

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Table 7: Office Mode Shares Derivation

Mode	2019 TA Mode Shares (TRICS)	Mode Share of the Three Multi-Modal TRICS sites (TRICS)	Alternative Mode Shares Wembley Only (TRICS)	JTW E02000704 as a place of work	Alternative Adjusted (Wembley Only)*
Car Driver	19.2%	20.8%	26.5%	49.9%	26.5%
Taxi	0.5%	1%	0.1%	0.1%	0.1%
Car Passenger	-	-	-	2.7%	4.3%
Bus	-	30.8%	25.4%	15.0%	23.8%
Underground	-			5.0%	7.9%
Train	-			11.1%	17.7%
Walk	-	40.9%	37.4%	11.4%	18.1%
Bicycle	1.4%	1%	0.2%	3.8%	0.2%
Motorcycle	-	-	-	0.9%	1.4%

*calculated using the shown Wembley mode shares (non-italic), with the remaining modes proportioned based on the Journey to Work data.

NB. Figures are subject to rounding

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4 Trip Generation by Mode

4.1.1 By applying the all person trip generation in **Table 2** to the adjusted Wembley TRICS mode shares set out in **Table 7**, the trip generation by mode can then be derived as set out in **Table 8**.

Table 8: Office Multi-modal Trip Generation: Wembley Site Only (derived mode shares)

Mode	AM Peak (0800-0900)			PM Peak (1700-1800)			Daily (0700-1900)		
	In	Out	Total	In	Out	Total	In	Out	Total
Car Driver	27	2	29	4	29	33	205	186	391
Taxi	0	0	0	0	0	0	1	1	2
Car Passenger	5	0	5	1	5	5	34	30	64
Bus	25	2	26	4	26	30	184	167	351
Underground	8	1	9	1	9	10	61	55	117
Train	18	1	20	3	19	22	137	124	261
Walk	19	1	20	3	20	22	140	127	267
Bicycle	0	0	0	0	0	0	1	1	2
Motorcycle	1	0	2	0	1	2	10	10	20
Total	104	7	111	16	109	124	773	701	1474

4.1.2 When considered as part of a multi-modal assessment the vehicular rates applied in the 2019 TA and considering the Wembley site in isolation result in slightly lower AM and PM car driver trip generation to that forecast in the 2019 TA. This is due to a lower land use being applied, and the vehicular rates in the 2019 TA also including cycles and taxis.

Appendix B

Alternative Trip Generation Methodology (Proposed Uses)

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1 Introduction

1.1.1 This technical note has been prepared to inform the Public Inquiry relating to the redevelopment of 265 Burlington Road in the London Borough of Merton (LBM) planning application ref: 19P2387.

1.1.2 At the scoping stage only vehicular residential trip rates were presented. The trip generation methodology applied in the Transport Assessment (TA) dated May 2019 as agreed with LBM at that time utilised person trip rates and applied Census Journey to Work mode shares to apportion trips to other modes. This methodology treats every peak hour trip as a work trip, whereas in reality the peak hour residential travel demand will include many other journey purposes such as education, retail and leisure.

1.1.3 This note re-examines the trip rates and mode shares applied in the 2019 TA and considers the journey purpose and implications this has on mode shares. For clarity, the proposed land uses relating to the redevelopment comprise 456 dwellings and some commercial space as set out in **Table 1**.

Table 1: Summary Proposed Development

Land Use	Proposed
Office	499 sqm
Private Residential (flats)	313 units
Affordable Residential (flats)	85 units
Intermediate (flats)	58 units
Total	456 units

1.1.4 The proposed level of car parking (220 spaces) equates to a proposed parking ratio of 0.48 car parking spaces per unit.

1.1.5 It should be noted that the 2019 TA assessed the proposed office use in terms of service vehicle movements only on the basis that employment trips would be internal to the site (served by residents). This note continues by assessing the office as a fully external trip generator.

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2 Person Trip Rates

2.1.1 The TRICS surveys used for to derive the multi-modal trip rates for the residential land uses (private and affordable) in the 2019 TA are set out below.

Table 2: Residential private flats (multi-modal)

Reference	Date of Survey	Description	Town/City	Location	Dwells	Parking	Parking ratio	PTAL
BT-03-C-01	Wednesday 28/09/16	Blocks of flats	Park royal	Suburban Area	170	212	1.2	3
BT-03-C-02	Wednesday 30/11/16	Blocks of flats	Wembley	Suburban Area	472	151	0.3	5
HO-03-C-03	Friday 18/11/16	Blocks of flats	Brentford	Edge of Town Centre	150	106	0.7	2
HO-03-C-04	Tuesday 03/07/18	Blocks of flats	Isleworth	Neighbourhood Centre	203	142	0.7	3
HV-03-C-02	Tuesday 22/11/16	Blocks of flats	Romford	Suburban Area	493	246	0.5	2

Table 3: Residential affordable flats (multi-modal)

Reference	Date of survey	Description	Town/City	Location	Dwells	Parking	Parking ratio	PTAL
BT-03-D-01	Thursday, 26/06/14	Blocks of flats	Dollis hill	Suburban Area	160	162	1.0	2
IS-03-D-02	Thursday, 28/11/13	Blocks of flats	Islington	Neighbourhood Centre	250	72	0.3	5
IS-03-D-04	Monday, 27/06/16	Blocks of flats	Highbury	Edge of Town Centre	247	0*	0.0	5

2.1.2 A summary of trip rates for each land use is provided in **Table 4** and corresponding all person trip generation in **Table 5**. Note that all peak hours shown are 0800-0900 and 1700-1800.

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Table 4: Residential and Office All Person Trip Rates

Mode	Calculation Factor	AM Peak (0800-0900)			PM Peak (1700-1800)			Daily (0700-2100)		
		In	Out	Total	In	Out	Total	In	Out	Total
Residential Private	Per unit	0.067	0.386	0.453	0.27	0.136	0.406	2.163	2.242	4.405
Residential Affordable	Per unit	0.126	0.689	0.815	0.367	0.221	0.588	3.433	3.462	6.895
Office (2019 TA*)	Per 100sqm GFA	3.058	0.164	3.222	0.392	2.918	3.31	18.116	16.854	34.97

*from all person rates set out in the Original Uses note

Table 5: Residential and Office All Person Trip Generation

Mode	AM Peak (0800-0900)			PM Peak (1700-1800)			Daily (0700-2100)		
	In	Out	Total	In	Out	Total	In	Out	Total
Residential Private	21	121	142	85	43	127	677	702	1379
Residential Affordable	18	99	117	52	32	84	491	495	986
Office (2019 TA*)	15	1	16	2	15	17	90	84	175

*from all person rates set out in the Original Uses note

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3 Mode Shares

- 3.1.1 The 2019 TA relied on the TRICS person trip rates and at the request of LBM utilised 2011 census journey to work data to disaggregate other modes.
- 3.1.2 Journey to work mode share data is not considered to represent actual residential mode shares as this does not take account of other journey purposes such as education, retail and leisure, which form a significant proportion of peak hour residential trips. As only a single Census data set was used to forecast mode share, differences between private and affordable mode shares were not considered in the 2019 TA.
- 3.1.3 The mode shares for private and affordable residential units presented in Table 6 considers the mode shares of private and affordable residential uses separately. The mode shares have been derived using the multi-modal trip rates for these modes as a percentage of the all person trip rate (2-way daily). The public transport modes have been disaggregated in line with 2011 census journey to work origin-destination data for the mid-layer super out area which covers the site (E02000704 as a place of residence) to better reflect local public transport availability.
- 3.1.4 The mode shares for the proposed Office use are consistent with those applied for the original land uses; however, car driver, car passenger and motorcycle have been proportionately distributed across other modes to reflect that no parking spaces are proposed for these uses.
- 3.1.5 The resultant adjusted mode shares for all standard census output modes are provided in **Table 6**.

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Table 6: Residential Mode Share Assumptions

Mode	Residential			Office		
	Private (TRICS)	Affordable (TRICS)	JTW E02000704 as a place of residence	Adjusted Private	Adjusted Affordable	Adjusted Wembley (TRICS)
Car Driver	22.5%	11.8%	24.9%	22.5%	11.8%	0.0%
Taxi	1.4%	1.3%	0.1%	1.4%	1.3%	5.5%
Car Passenger	14.4%	12.7%	1.6%	14.4%	12.7%	0.0%
Bus	29.9%	21.8%	8.3%	4.1%	3.0%	29.2%
Underground			13.7%	6.7%	4.9%	13.3%
Train			39.2%	19.2%	14.0%	23.0%
Walk	29.5%	49.1%	7.0%	29.5%	49.1%	23.5%
Bicycle	1.3%	2.2%	4.1%	1.3%	2.2%	5.5%
Motorcycle	1.0%	0.9%	1.2%	1.0%	0.9%	0.0%
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

3.1.6 The adjusted mode shares result in a significantly higher walk mode share and lower car driver mode share than those applied in the 2019 TA correctly reflecting the different journey purposes undertaken by residents in the peak periods.

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4 Trip Generation by Mode

4.1 Residential

4.1.1 By applying the all person residential trip generation to the adjusted mode shares a trip generation by mode can be derived as set out in **Table 7** and **Table 8** for private and affordable residential uses respectively.

Table 7: Private Residential Trip Generation by Mode (313 Units)

Mode	AM Peak (0800-0900)			PM Peak (1700-1800)			Daily (0700-2100)		
	In	Out	Total	In	Out	Total	In	Out	Total
Car Driver	5	27	32	19	10	29	152	158	310
Taxi	0	2	2	1	1	2	10	10	20
Car Passenger	3	17	20	12	6	18	97	101	198
Bus	1	5	6	3	2	5	27	28	56
Underground	1	8	10	6	3	9	45	47	92
Train	4	23	27	16	8	24	130	135	264
Walk	6	36	42	25	13	38	200	207	407
Bicycle	0	2	2	1	1	2	9	9	18
Motorcycle	0	1	1	1	0	1	6	7	13
Total	21	121	142	85	43	127	677	702	1379

NB. Figures are subject to rounding

Table 8: Affordable Residential Trip Generation by Mode (143 Units)

Mode	AM Peak (0800-0900)			PM Peak (1700-1800)			Daily (0700-2100)		
	In	Out	Total	In	Out	Total	In	Out	Total
Car Driver	2	12	14	6	4	10	58	58	116
Taxi	0	1	2	1	0	1	6	6	13
Car Passenger	2	13	15	7	4	11	63	63	126
Bus	1	3	3	2	1	2	15	15	29
Underground	1	5	6	3	2	4	24	24	48
Train	3	14	16	7	4	12	69	69	138
Walk	9	48	57	26	16	41	241	243	484
Bicycle	0	2	3	1	1	2	11	11	22
Motorcycle	0	1	1	0	0	1	5	5	9
Total	18	99	117	52	32	84	491	495	986

NB. Figures are subject to rounding

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Residential Servicing Trips

4.1.2 The residential servicing trips for private and affordable can be seen in **Table 9** and **Table 10**. These trips are considered additional to that presented in **Table 7** and **Table 8**

Table 9: Private Servicing Trips

Mode	AM Peak (0800-0900)			PM Peak (1700-1800)			Daily (0700-2100)		
	In	Out	Total	In	Out	Total	In	Out	Total
LGV	0	1	1	3	2	5	23	23	46
OGV	0	0	0	0	0	1	6	6	12

Table 10: Affordable Servicing Trips

Mode	AM Peak (0800-0900)			PM Peak (1700-1800)			Daily (0700-2100)		
	In	Out	Total	In	Out	Total	In	Out	Total
LGV	2	2	4	1	1	2	15	15	30
OGV	0	0	0	0	0	0	2	2	4

Table 11: Total Residential Servicing Trips

Mode	AM Peak (0800-0900)			PM Peak (1700-1800)			Daily (0700-2100)		
	In	Out	Total	In	Out	Total	In	Out	Total
LGV	2	2	5	4	3	7	38	38	76
OGV	0	0	0	0	0	1	8	8	16

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4.2 Office

4.2.1 Applying the Wembley all person office trip generation to the adjusted mode shares using the Wembley site, a trip generation by mode can be derived. However, as there is no car parking for the office at the site the car mode share has been reduced to zero.

4.2.2 Table 12: Office Trip Generation by Mode

Mode	AM Peak (0800-0900)			PM Peak (1700-1800)			Daily (0700-2100)		
	In	Out	Total	In	Out	Total	In	Out	Total
Car Driver	0	0	0	0	0	0	0	0	0
Taxi	1	0	1	0	1	1	5	5	10
Car Passenger	0	0	0	0	0	0	0	0	0
Bus	4	0	4	1	4	5	29	26	55
Underground	2	0	2	0	2	2	13	12	25
Train	3	0	3	0	3	4	23	21	44
Walk	3	0	3	0	3	4	23	21	45
Bicycle	1	0	1	0	1	1	5	5	10
Motorcycle	0	0	0	0	0	0	0	0	0
Total	13	1	14	2	14	16	99	90	190

NB. Figures are subject to rounding

Table 13: Office Servicing (Wembley Site)

Mode	AM Peak (0800-0900)			PM Peak (1700-1800)			Daily (0700-2100)		
	In	Out	Total	In	Out	Total	In	Out	Total
LGV	0	0	0	0	0	0	26	24	50
OGV	0	0	0	0	0	0	0	0	0

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4.3 Total and Net Change

4.3.1 The resultant combined total trip generation by mode for the proposed land uses is set out in **Table 14**.

Table 14: Total Trip Generation by Mode

Mode	AM Peak (0800-0900)			PM Peak (1700-1800)			Daily (0700-2100)		
	In	Out	Total	In	Out	Total	In	Out	Total
Car Driver	7	39	46	25	13	38	210	216	426
Taxi	1	3	4	2	2	4	22	21	43
Car Passenger	5	30	35	19	10	29	160	164	324
Bus	5	8	13	6	7	12	71	69	140
Underground	4	13	17	8	6	15	83	83	166
Train	10	37	47	24	16	40	221	225	446
Walk	18	84	102	51	31	83	465	472	936
Bicycle	1	4	5	2	2	4	25	25	50
Motorcycle	0	2	2	1	1	2	11	11	22
Total	52	220	273	139	88	227	1267	1287	2554

NB. Figures are subject to rounding

Table 15: Total Servicing Trip Generation

Mode	AM Peak (0800-0900)			PM Peak (1700-1800)			Daily (0700-2100)		
	In	Out	Total	In	Out	Total	In	Out	Total
LGV	3	2	5	4	3	7	65	62	126
OGV	0	0	0	0	0	1	8	8	16

4.3.2 **Table 14** shows that the total car trips for the proposed land uses as set out in this note (excluding servicing trips) is significantly below the 83 AM and 69 PM vehicle trips forecast in the 2019 TA.

Subject 265 Burlington Road – Alternative Trip Generation Methodology (Proposed Uses)

Date 24 April 2020

Job No/Ref 602563-51

4.3.3 **Table 16** shows the net change in trips generated by mode from the existing to the proposed land uses.

Table 16: Net Change in Total Trip Generation by Mode

Mode	AM Peak (0800-0900)			PM Peak (1700-1800)			Daily (0700-2100)		
	In	Out	Total	In	Out	Total	In	Out	Total
Car Driver	-16	38	22	22	-8	14	75	90	165
Taxi	1	3	4	2	1	3	18	18	36
Car Passenger	0	30	29	18	5	23	127	134	261
Bus	-25	6	-19	2	-22	-21	-109	-98	-207
Underground	-6	12	6	7	-3	4	23	28	50
Train	-13	36	23	21	-6	15	88	100	188
Walk	-5	83	78	48	9	58	328	344	672
Bicycle	0	4	3	2	0	3	15	16	31
Motorcycle	-1	2	1	1	-1	0	1	2	3
Total	-66	214	148	124	-25	99	564	633	1197

NB. Figures are subject to rounding

Table 17: Net Change in Servicing

Mode	AM Peak (0800-0900)			PM Peak (1700-1800)			Daily (0700-2100)		
	In	Out	Total	In	Out	Total	In	Out	Total
LGV	n/a not presented in the 2019 TA (merged with car driver)								
OGV	0	0	0	0	0	+1	+7	+7	+14

4.3.4 **Table 16** shows that the net change in car trips (excluding servicing trips) between the proposed and original land uses as set out in **Table 14** of this note and **Table 8** of the Original uses note is significantly below the 56 AM and 39 PM net change in vehicle trips forecast in the 2019 TA.

Appendix C

RSA Designer's Response

Redrow Homes Ltd
256 Burlington Road
Stage 1 Road Safety Audit

Final | 9 November 2020

This report takes into account the particular instructions and requirements of our client.

It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 274852-00

Arup Ltd
13 Fitzroy Street
London
W1T 4BQ
United Kingdom
www.arup.com

ARUP

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Appendix A: Stage 1 Road Safety Audit

1 Introduction

Arup has been appointed by Redrow Homes Ltd (the Client) to present evidence in relation to the proposed development at Burlington Road. A Stage 1 Road Safety Audit (RSA) dated September 2020 has been conducted by TrafficWatch on behalf of PWLC Projects acting for LB Merton.

The findings of the RSA can be found in **Appendix A** of this document.

The purpose of this report is to provide a Designer's Response to the issues raised by the aforementioned audit.

2 Designer's Response

The designer's responses to the audit are shown in **Table 1** below. The problem location points can be seen in **Figure 1**.

Figure 1: Problem Location Points

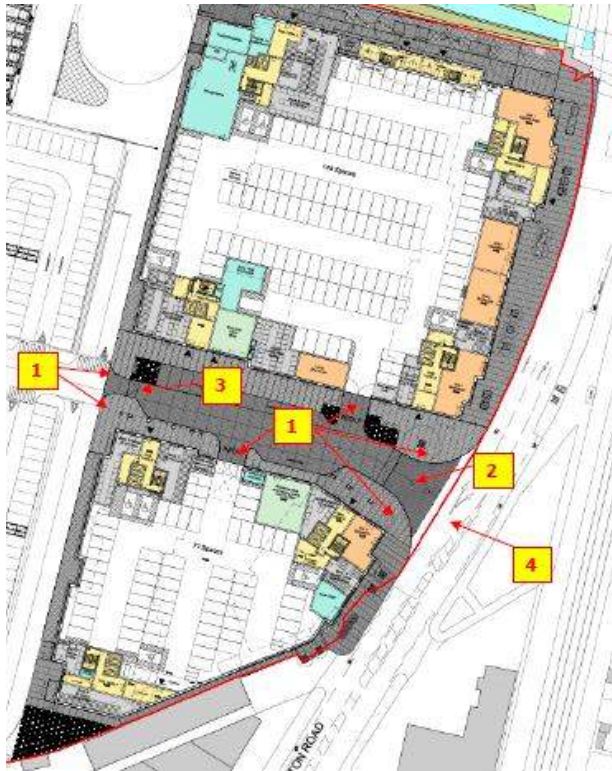


Table 1: Designer's Response

Problem RSA Ref No.	Location	RSA Comment	RSA Recommendation	Problem Accepted Y/N	Recommendation Accepted Y/N	Designer's Response
1	Site Access	Omission of pedestrian crossing facilities may increase the risk of pedestrian trip hazards. The drawings provided for audit do not indicate any pedestrian crossing provision at the site access with Burlington Road, within the internal site access points and between the site and Tesco car park. Omission of suitable pedestrian crossing facilities throughout the scheme i.e. dropped kerbs and tactile paving could increase the risk of pedestrian trip hazards particularly for those with mobility or visual impairments.	It is recommended that pedestrian crossing facilities are provided throughout the scheme.	Y	Y	Pedestrian Crossing facilities would be provided but were not shown on the plan provided to the Road Safety Auditor. Pedestrian crossing facilities have been added throughout the scheme to all relevant vehicular accesses on the audit plan. These facilities take the form of tactile paving and, where required, dropped kerbs. See drawing 274852-00-SK-001 revA for details.
Local Highway Authority comment:						
Local Highway Authority approval of designer's response			Signed:			
2	Site Access – Pedestrian Refuge.	Depth of the pedestrian refuge may increase the risk of collisions between pedestrians and vehicles. The audit team would note that the depth of the proposed pedestrian refuge (i.e. Approximately 1 metre) within the bellmouth of the site access is considered to be	It is recommended that the depth of pedestrian refuge be increased.	Y	Y	The depth of the pedestrian island has been increased to 2m. This is in accordance with TFL street scape guidance for the preferred minimum width for pedestrian refuge islands. See drawing 274852-00-SK-001 revA for details and drawing 274852-00-SK-002 revA for tracking.

Problem RSA Ref No.	Location	RSA Comment	RSA Recommendation	Problem Accepted Y/N	Recommendation Accepted Y/N	Designer's Response
		insufficient to accommodate a pedestrian with for example a pushchair without the potential for them to overhang into the carriageway, increasing the risk of pedestrian/vehicle collisions. It is noted that this is an existing issue that hasn't resulted in any PICs.				
Local Highway Authority comment:						
Local Highway Authority approval of designer's response			Signed:			
3	Site Access.	Non-compliance with one-way system into the Tesco car park could result in head-on type collisions. It is understood that the one way egress only operation will be retained at the western extent of the site access road, to restrict entry to the Tesco supermarket via proposed site access/ Burlington Road. Although only limited information is shown on the drawings provided for audit regarding this element of the access arrangements, the audit team would note that as observed during the site visit there is and could be a relatively low level of compliance with the no entry type arrangement	It is recommended that physical measures e.g. through the installation of one-way traffic directional flow plates be included within the scheme to restrict entry to the Tesco superstore.	Y	N	<p>The layout replicates the current level of control, whilst enhancing the level of public realm and encourages a slow speed environment. There is no known accident issue associated with this existing control and should a driver seek to disobey 'no entry' signage then that driver would proceed with extreme caution but would have visibility of any opposing vehicles travelling east at this location. The level of risk for a head on collision is therefore considered to be very low.</p> <p>To address the compliance issue the Safety Audit recognises that a physical measure could be introduced. However a physical solution such as a line of directional flow plates would prevent emergency vehicle access (which is</p>

Problem RSA Ref No.	Location	RSA Comment	RSA Recommendation	Problem Accepted Y/N	Recommendation Accepted Y/N	Designer's Response
		without for example physical measures to restrict entry to the Tesco superstore, which could result in head-on type collisions.				understood to be necessary) as well as having potential noise and maintenance implications. Whilst the latter may be capable of being resolved, maintenance of emergency vehicle access is clearly important and would outweigh the low road safety risk as explained above. No mitigation is therefore proposed other than ensuring the signage of the no entry is adequately provided. The designer will discuss this issue with the highway authority to ensure provision of an acceptable of solution.
Local Highway Authority comment:						
Local Highway Authority approval of designer's response			Signed:			
4	Site Access/ Burlington Road.	Queuing through the junction could result in rear end shunt type collisions. Queueing associated with the operation of the level crossing to the north of the site access could result in blocking back through the junction as observed during the site visit. Blocking back through the junction could result in an increased risk of rear end shunts, particularly for vehicles turning right into the site access from Burlington Road (n).	It is recommended that 'keep clear' carriageway markings be provided in the vicinity of the site access on the Burlington Road northbound carriageway.	Y	Y	The existing junction has accommodated right turn movements in the past and with some of the non-compliance noted above, still accommodates right turn manoeuvres. No accidents associated with the right turn manoeuvre appear to have occurred at this junction in the last 5 years. The level of risk could therefore be considered as low. Some shunt accidents have occurred in the wider area as a result of activity, queues, and manoeuvres but this is not untypical of urban areas.

Problem RSA Ref No.	Location	RSA Comment	RSA Recommendation	Problem Accepted Y/N	Recommendation Accepted Y/N	Designer's Response
						<p>The provision of a 5m long 'Keep Clear' marking can be incorporated into the scheme on the Northbound carriageway of Burlington Road. This can be sized as shown to facilitate right turn in manoeuvres. For tracking see drawing 274852-00-SK-003 revA.</p> <p>Although the Keep Clear marking can be physically accommodated, we note that due to the nearby level crossing the highway authority has previously been reluctant to approve any changes to the highway which result in a loss of northbound queuing capacity albeit this measure only removes 1 vehicle queuing space capacity. The loss of this queuing capacity would result in the northbound queue extended further south along Burlington Road.</p> <p>The designer will discuss this issue with the highway authority to determine whether they would find a reduction in the northbound queuing capacity of Burlington Road by 5m acceptable or whether on balance retention of the existing arrangement is preferred.</p>

Problem RSA Ref No.	Location	RSA Comment	RSA Recommendation	Problem Accepted Y/N	Recommendation Accepted Y/N	Designer's Response
Local Highway Authority comment:						
Local Highway Authority approval of designer's response			Signed:			

Appendix A Stage 1 Road Safety Audit



LB Merton

**PROPOSED SITE ACCESS ARRANGEMENTS
BURLINGTON ROAD, NEW MALDEN**

**STAGE 1 - ROAD SAFETY AUDIT
SEPTEMBER 2020**



Document:	TW2775_GS881-2020 - Proposed Site Access Arrangements, Burlington Road, New Malden - LB Merton - S1 RSA - Final v1.docx
Client:	LB Merton
Job Number:	TW 2775 / gs-881-2020
File Origin:	Burlington Road, Access Arrangements, LB Merton - Stage 1 RSA/TW2775_GS881-2020 - Proposed Site Access Arrangements, Burlington Road, New Malden - LB Merton - S1 RSA - Final v1.docx

Document Checking:			
Primary Author:	Tristan Brooks	Initialed:	TB
Contributor:	R Lister	Initialed:	RL
Reviewed By:		Initialed:	

Document Reference and Revision			
Issue	Date	Status	Checked for Issue
1	17/09/2020	Final	Tristan Brooks
2	24/09/2020	Final v1	Tristan Brooks
3			
4			

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Appendices

Appendix A - Drawings and documents supplied for audit.

Appendix B – Location plan of identified problems.

1 INTRODUCTION

- 1.1 This report presents the findings from a Stage 1 Road Safety Audit undertaken on the proposed access arrangements to a mixed use commercial/residential development on land to the west of Burlington Road, in the London Borough of Merton.
- 1.2 The audit was carried out by the following:
- T Brooks - Road Safety Audit Team Leader
BSc (Hons), MBA, CMILT, MCIHT, MSoRSA,
HE RSA Cert. of Competency
 - R Lister - Road Safety Audit Team Member
BSc (Hons), MSc, MRTPI, MILT, MCIHT,
MSoRSA
- 1.3 The RSA was commissioned by the London Borough of Merton, who provided the brief and approved the audit team.
- 1.4 A pre-audit verbal briefing was provided by PWLC Projects acting as a consultant on behalf of LB Merton.
- 1.5 The site visit was undertaken on Thursday 10th September 2020 between 16:10 and 18:00 and comprised walks and drive throughs of the area covered by the proposals. During the site visit both the weather and road surface were dry. Traffic in the vicinity of the proposed access arrangements on Burlington Road was moderate, with queuing observed in the offside northbound lane on Burlington Road and site access arm of the junction as a result of the level crossing to the north of the scheme. The audit team would note that the queuing was intermittent and cleared relatively quickly when not impeded by the closure of the level crossing.
- 1.6 During the site visit relatively large numbers of pedestrians and cyclists were observed throughout the location of the scheme. A relatively large number (42) vehicles were observed to ignore the one-way egress only arrangements from the Tesco supermarket and access the store via Burlington Road. A small number of vehicles (6) travelling southbound on Burlington Road were also observed to use the site access junction to turn within and continue north along Burlington Road, which is likely to be a result of the no right turn available from West Barnes Lane to Burlington Road.
- 1.7 Burlington Road in the vicinity of the proposed scheme is subject to a 20mph speed limit and is street lit.

- 1.8 The drawings and documents supplied for audit are listed in **Appendix A**. An annotated drawing showing the locations of the problems identified is provided in **Appendix B**.
- 1.9 The terms of reference of the audit are as that described in DMRB GG/119 Guidelines on Road Safety Audits. This standard has been used for guidance only. The one exception to GG/119 is the inclusion (if applicable) of a notes/observation section at the end of the report. The audit team has examined and reported only on the road safety implications of the scheme as presented and has not examined or verified the compliance of the designs to any other criteria.
- 1.10 The scope of the RSA is shown in Figure 1.

Figure 1: Scope of Stage 1 RSA.



- 1.11 Details provided within the audit brief indicate that the two-way vehicle trip generation/attraction to the proposed development would be 83 and 69 in the AM and PM peak hours respectively.
- 1.12 The operational capacity assessments provided as part of the audit brief for the site access/ Burlington Road junction indicate that the junction will operate within capacity with

minimal levels of queueing in both the 2021 Do-Min and Do-Something modelling scenarios.

- 1.13 A review of the Personal Injury Collision (PIC) data between 1st January 2015 to 31st December 2019 indicates that during this period there have been 3 PICs in the immediate vicinity of the site access arrangements, all of which resulted in injuries that were slight in severity.
- 1.14 A Review of the collision data has indicated the following:
- 1 of the collisions occurred during the hours darkness and 2 during daylight;
 - 1 of the PICs occurred when the road surface was wet/damp;
 - All of the collisions involved adults over the age of 18;
 - 2 of the collisions involved rear end shunts; and
 - 1 of the collisions involved a powered 2 wheeled vehicle and was attributed to both vehicles performing right turn manoeuvres.
- 1.15 The audit team are aware that a Stage 1 RSA was undertaken in November 2018 by Mott McDonalds on a similar scheme to that assessed in this RSA.
- 1.16 No departures or relaxations from standard have been provided by the design team for review as part of this RSA.
- 1.17 The recommendations included within this report should not be regarded as being prescriptive design solutions to the problems raised. They are intended only to indicate a proportionate and viable means of eliminating or mitigating the identified problem, in accordance with DMRB GG/119. There may be alternative methods of addressing a problem which would be equally acceptable in achieving the desired elimination or mitigation and these should be considered when responding to this report.

2 ROAD SAFETY AUDIT FINDINGS FROM RSA 1

PROBLEM 1

LOCATION: Site Access.

SUMMARY: Omission of pedestrian crossing facilities may increase the risk of pedestrian trip hazards.

- 2.1 The drawings provided for audit do not indicate any pedestrian crossing provision at the site access with Burlington Road, within the internal site access points and between the site and Tesco car park. Omission of suitable pedestrian crossing facilities throughout the scheme i.e. dropped kerbs and tactile paving could increase the risk of pedestrian trip hazards particularly for those with mobility or visual impairments.

RECOMMENDATION

- 2.2 It is recommended that pedestrian crossing facilities are provided throughout the scheme.

PROBLEM 2

LOCATION: Site Access – Pedestrian Refuge.

SUMMARY: Depth of the pedestrian refuge may increase the risk of collisions between pedestrians and vehicles.

- 2.3 The audit team would note that the depth of the proposed pedestrian refuge (i.e. approximately 1 metre) within the bellmouth of the site access is considered to be insufficient to accommodate a pedestrian with for example a pushchair without the potential for them to overhang into the carriageway, increasing the risk of pedestrian/vehicle collisions.

- 2.4 It is noted that this is an existing issue that hasn't resulted in any PICs.

RECOMMENDATION

- 2.5 It is recommended that the depth of pedestrian refuge be increased.

PROBLEM 3

LOCATION: Site Access.

SUMMARY: Non-compliance with one-way system into the Tesco car park could result in head-on type collisions.

- 2.6 It is understood that the one way egress only operation will be retained at the western extent of the site access road, to restrict entry to the Tesco supermarket via proposed site access/ Burlington Road.
- 2.7 Although only limited information is shown on the drawings provided for audit regarding this element of the access arrangements, the audit team would note that as observed during the site visit there is and could be a relatively low level of compliance with the no entry type arrangement without for example physical measures to restrict entry to the Tesco superstore, which could result in head-on type collisions.

RECOMMENDATION

- 2.8 It is recommended that physical measures e.g. through the installation of one-way traffic directional flow plates be included within the scheme to restrict entry to the Tesco superstore.

PROBLEM 4

LOCATION: Site Access/ Burlington Road.

SUMMARY: Queuing through the junction could result in rear end shunt type collisions.

- 2.9 Queueing associated with the operation of the level crossing to the north of the site access could result in blocking back through the junction as observed during the site visit. Blocking back through the junction could result in an increased risk of rear end shunts, particularly for vehicles turning right into the site access from Burlington Road (n).

RECOMMENDATION

- 2.10 It is recommended that 'keep clear' carriageway markings be provided in the vicinity of the site access on the Burlington Road northbound carriageway.

3 AUDIT STATEMENT

3.1 We certify that this audit has been carried out in accordance with GG/119 unless otherwise noted.

Signed:



Date: 24 September 2020

T Brooks – BSc (Hons) MBA CMILT MCIHT MSoRSA,
HE RSA Cert. of Competency
Audit Team Leader
Traffic Watch (UK) Ltd
Kennedy House (Unit 2)
Murray Road
Orpington
Kent
BR5 3QY

Signed:



Date: 24 September 2020

R Lister - BSc (Hons), MSc, MRTPI, MILT, MCIHT,
MSoRSA
Audit Team Member
Traffic Watch (UK) Ltd
Kennedy House (Unit 2)
Murray Road
Orpington
Kent
BR5 3QY

APPENDIX A

List of Drawings and Documents Provided for Audit

E1180-D6100 – Rev P1

Ground Floor Plan

Transport Assessment

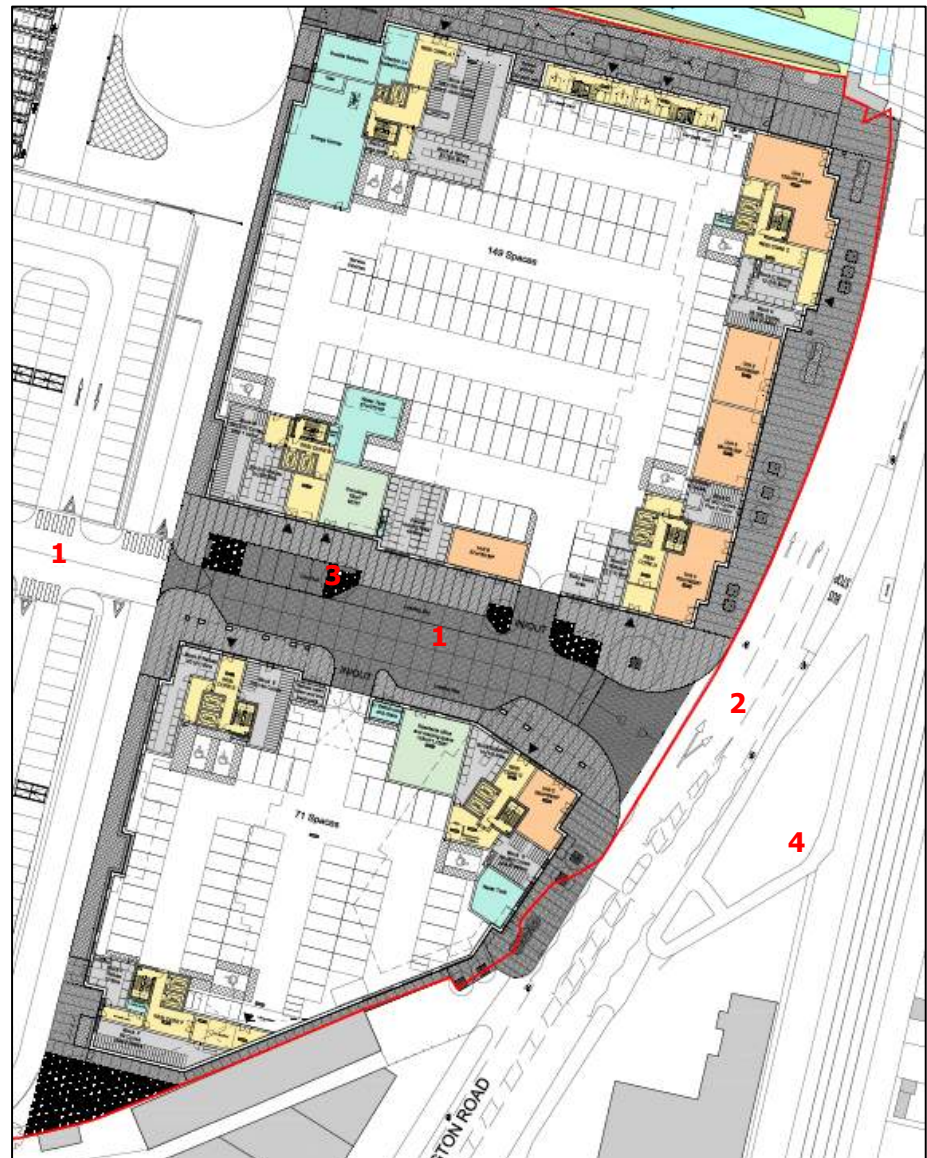
(Mott MacDonald – May 2019)

PIC Data

(01/01/15 – 31/12/19)

APPENDIX B

Location of Identified Problems



Appendix D

Letter from Tesco relating to car parking



Tesco Stores Limited
Highwoods
Shire Park
Welwyn Garden City
Hertfordshire
AL7 1GB

Wednesday 4th November 2020

Dear Mike,

New Malden Tesco Store – Car Parking

I am the Location Planning Manager in the Tesco Location Planning Department responsible in part for researching and analysing car parking requirements at this and other Tesco stores across the Country.

I understand from Louise Ford, the Town Planning Manager in our Property Acquisition team, that you seek my advice on the adequacy of the residual customer car parking provision to serve our Extra store at New Malden, following the planned implementation of your client Redrow's housing-led mixed use scheme which I understand is to soon be considered at a planning appeal inquiry.

Tesco calculates the required number of car parking spaces needed at each store to ensure there are sufficient spaces for all our car borne customers to park. The calculations are based on the sales and annual trading patterns of individual stores in conjunction with ANPR car park occupancy data and one-off surveys for individual stores.

Our New Malden Extra store is consistently one of the company's highest performing stores, although car parking demand here has reduced in recent years typical of many of our London stores through the increasing change to more convenience based customer shopping habits together with the increasing use of online shopping. Our data, as described above, confirms that following completion of the Redrow development and associated reorganisation of the customer car park as approved in July 2020, the provision of 577 car parking spaces at New Malden will be sufficient to serve our customer's car parking needs.

Please let me know if you require any further clarification on this.

Yours faithfully

A handwritten signature in black ink, appearing to read "Clare McIntyre". The signature is written in a cursive, flowing style.

For and Behalf of Tesco Stores Ltd

Clare McIntyre - Location Planning Manager