

Annex A

Mayer Brown Report

**MARKHAM EMPLOYMENT GROWTH ZONE
DERBYSHIRE**

TRIP GENERATION ASSESSMENT

July 2009

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TRIP GENERATION ASSESSMENT

July 2009

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1. INTRODUCTION & BACKGROUND

- 1.1. Mayer Brown Limited (MB) was instructed by Henry Boot Developments Ltd (HB) in June 2009 to assess the forecast trip generations for those sites forming part of the wider Markham Employment Growth Zone (MEGZ) in which HB has an interest.
- 1.2. MEGZ consists of almost 160 hectares of reclaimed land between Staveley and Bolsover, comprising 23 separate development sites and a new junction (J29A) along the M1, as shown by Plan 1. A planning application for the full development was submitted in May 2002 and subsequently granted permission in April 2005.
- 1.3. The planning application was accompanied by a Transport Assessment (TA), prepared by Atkins and dated May 2002, to assess the highway impacts of the MEGZ development proposals. This Assessment develops and updates the trip generation forecasting work undertaken by Atkins, using more recent trip rate data to assess the effect of potential changes in land use across those MEGZ sites in which HB has an interest.

2. CONSENTED DEVELOPMENT & TRAFFIC GENERATIONS

2.1. Those sites considered by this Assessment, within the overall project proposals for MEGZ, are shown on Plan 1. Details of the consented land uses and Gross Floor Areas (GFAs) for each site are summarised in Table 2.1.

Site No.	B1 (m ²)	B2 (m ²)	B8 (m ²)	Total (m ²)
1&2	-	7,128	73,278	80,406
5	-	1,764	18,132	19,896
6	16,000	7,291	-	23,291
7	6,000	6,242	-	12,242
8	3,000	2,795	-	5,795
9	-	7,644	16,213	23,857
13	-	10,958	36,977	47,935
14	-	4,769	10,435	15,204
15	-	5,785	12,660	18,445
16	-	5,624	12,305	17,929
TOTAL	25,000	60,000	180,000	265,000

Table 2.1: Consented Land Uses and Gross Floor Areas

2.2. As shown by Table 2.1, a total of 265,000m² of development is consented across the HB sites, comprising 25,000m² B1, 60,000m² B2 and 180,000m² B8, as per Condition 21 of the planning permission granted.

2.3. The 2002 Atkins TA, upon which the planning application was determined, provided peak period trip rates for each of these land uses. These were calculated using the latest trip rate data available at the time of derivation: version 4.2 of the TRICS database.

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- 2.4. The methodology employed by Atkins in calculating all of the trip rates used in the 2002 TA was extremely robust. The AM peak trip rate for each land use was taken to be the individual peak hour within the two-hour period of 07.00 to 09.00 on a weekday, whenever that may be and however it might fall (even if split over two segregated half-hours). Similarly, the PM peak trip rate is taken to be the individual peak hour within the two-hour period of 17.00 to 19.00.
 - 2.5. This methodology is doubly robust assessment as, in addition to the calculation of extreme peak trip rates for each individual land use type, the peak hours for all the different land uses are treated as if they all perfectly coincide. In reality, the peak hours for each use (and for each individual occupier/operation with that use) will be staggered, such that peak period traffic flows will be spread out over a longer period of time, reaching smaller maximum values.
 - 2.6. For further robustness, Atkins made no allowance for the reduced demand for car travel that will result from public transport and footway/cycleway improvements and the implementation of area-wide and individual operator travel plans.
 - 2.7. Application of the trip rates derived by Atkins to the consented development by land use type is summarised in Table 2.2.

Land Use	Two-Way Hourly Trip Rates & Traffic Generations			
	AM Peak		PM Peak	
	Trip Rate (per 100m ²)	Traffic Generations	Trip Rate (per 100m ²)	Traffic Generations
B1 (25,000m ²)	1.61	403	1.56	390
B2 (60,000m ²)	1.34	804	1.08	648
B8 (180,000m ²)	0.29	522	0.42	756
TOTAL	-	1729	-	1794

Table 2.2: Consented Development Trip Rates & Traffic Generations

- 2.8. As shown by Table 2.2, based on the 2002 Atkins TA upon which consent was granted, the permitted development would generate 1729 vehicular trips in the AM peak hour and 1794 trips in the PM peak.

3. DEVELOPMENT PROPOSALS & TRAFFIC GENERATIONS

- 3.1. HB desire for greater flexibility in the proportions of B2 and B8 land use allocations. This Assessment considers the full range of possible B2-B8 splits from 100% B2 to 100% B8. No change is proposed in respect of B1 allocations or overall GFAs.
- 3.2. In accordance with the approach taken by Atkins, this Assessment utilises trip rates calculated from current (2009) trip rate data: version 6.3.1 of TRICS.
- 3.3. The TRICS database has been interrogated to identify suitable survey sites, similar to those forming part of MEGZ. In particular, survey sites have been selected according to whether they have a comparable GFA and whether their location is appropriate (edge of town or free-standing). In order to provide as large a sample of data as possible, the only sites meeting the above criteria that have been excluded from the selection are those in geographical locations at the extremity or outside of the UK (Ireland and Scottish Highlands). Survey sites in these locations are not considered to be representative of MEGZ.
- 3.4. The land use sub-categories in TRICS have been selected to match the development proposals as closely as possible. Survey sites falling within TRICS land use category 02/A (Office) have been used for B1 as the provision is likely to take the form of large buildings on each site. Sites falling within category 02/D (Industrial Estate) have been used for B2, comprising a number of industrial buildings on each site. For B8, sites falling within category 02/F (Warehousing - commercial) have been chosen as this covers the largest range of operations, including ancillary office and industrial uses.
- 3.5. For consistency with the work undertaken by Atkins, the same extremely robust methodology for calculating the trip rates used in the 2002 TA has been applied within this Assessment. This means that the peak hour trip

rates for each land use are taken to be the sum of the two highest half-hour rates within each of the two-hour AM and PM weekday periods, even if they are segregated by intervening half-hour or hour-long reduced rates. Again, this provides for a doubly robust assessment as, in addition to the calculation of extreme peak trip rates for each individual land use type, the peak hours for all the different land uses are treated as if they all perfectly coincide.

- 3.6. For further robustness and consistency with the work undertaken by Atkins, no reduction has been applied to the trip rates to account for the modal shift that will accrue from public transport and footway/cycleway improvements and the implementation of area-wide and individual operator travel plans.
- 3.7. The resultant trip rates for each of the main B1, B2 and B8 uses are summarised in Table 3.1, with full details provided in Appendix A.

Land Use	Peak Hour Trip Rates (per 100m ²)					
	AM Peak			PM Peak		
	Arr.	Dep.	2-Way	Arr.	Dep.	2-Way
B1	1.499	0.142	1.641	0.111	1.104	1.215
B2	0.468	0.190	0.658	0.109	0.405	0.514
B8	0.128	0.071	0.199	0.062	0.110	0.172

Table 3.1: Trip Rates for B1, B2 and B8 Proposals

- 3.8. The trip rates set out in Table 3.1 have been applied to the B1 and combined B2-B8 GFAs shown in Table 2.1 for the full range of possible B2-B8 splits from 100% B2 to 100% B8. This provides total development generations for all of the sites that are the subject of this Assessment, as shown in Table 3.2.

Table 3.2: Total Proposed Development Generations

B1 - 25,000m²		B2 / B8 – 240,000m²						Total Vehicle Generations	
AM	PM	B2			B8			AM	PM
		%B2	AM	PM	%B8	AM	PM		
410	304	100	1579	1234	0	0	0	1989	1537
410	304	98	1548	1209	2	10	8	1967	1521
410	304	96	1516	1184	4	19	17	1945	1505
410	304	94	1484	1160	6	29	25	1923	1488
410	304	92	1453	1135	8	38	33	1901	1472
410	304	90	1421	1110	10	48	41	1879	1455
410	304	88	1390	1086	12	57	50	1857	1439
410	304	86	1358	1061	14	67	58	1835	1422
410	304	84	1327	1036	16	76	66	1813	1406
410	304	82	1295	1012	18	86	74	1791	1390
410	304	80	1263	987	20	96	83	1769	1373
410	304	78	1232	962	22	105	91	1747	1357
410	304	76	1200	938	24	115	99	1725	1340
410	304	74	1169	913	26	124	107	1703	1324
410	304	72	1137	888	28	134	116	1681	1308
410	304	70	1105	864	30	143	124	1659	1291
410	304	68	1074	839	32	153	132	1637	1275
410	304	66	1042	814	34	162	140	1615	1258
410	304	64	1011	790	36	172	149	1593	1242
410	304	62	979	765	38	181	157	1571	1225
410	304	60	948	740	40	191	165	1549	1209
410	304	58	916	715	42	201	173	1527	1193
410	304	56	884	691	44	210	182	1505	1176
410	304	54	853	666	46	220	190	1483	1160
410	304	52	821	641	48	229	198	1461	1143
410	304	50	790	617	50	239	206	1439	1127
410	304	48	758	592	52	248	215	1417	1111
410	304	46	726	567	54	258	223	1395	1094
410	304	44	695	543	56	267	231	1373	1078
410	304	42	663	518	58	277	239	1351	1061
410	304	40	632	493	60	287	248	1328	1045
410	304	38	600	469	62	296	256	1306	1028
410	304	36	569	444	64	306	264	1284	1012
410	304	34	537	419	66	315	272	1262	996
410	304	32	505	395	68	325	281	1240	979
410	304	30	474	370	70	334	289	1218	963
410	304	28	442	345	72	344	297	1196	946
410	304	26	411	321	74	353	305	1174	930
410	304	24	379	296	76	363	314	1152	914
410	304	22	347	271	78	373	322	1130	897
410	304	20	316	247	80	382	330	1108	881
410	304	18	284	222	82	392	338	1086	864
410	304	16	253	197	84	401	347	1064	848
410	304	14	221	173	86	411	355	1042	831
410	304	12	190	148	88	420	363	1020	815
410	304	10	158	123	90	430	372	998	799
410	304	8	126	99	92	439	380	976	782
410	304	6	95	74	94	449	388	954	766
410	304	4	63	49	96	458	396	932	749
410	304	2	32	25	98	468	405	910	733
410	304	0	0	0	100	478	413	888	717

4. SUMMARY & CONCLUSIONS

- 4.1. The consented development across the sites considered by this Assessment comprises a total of 265,000m² GFA, consisting of 25,000m² B1, 60,000m² B2 and 180,000m² B8. This equates to a permitted B2-B8 split of 25% B2 to 75% B8.
- 4.2. The 2002 Atkins TA, upon which the planning application was determined, provided peak period trip rates for each of these land uses, resulting in 1729 vehicular attractions in the AM peak hour and 1794 attractions in the PM peak
- 4.3. The same extremely robust trip rate methodology employed by Atkins, has been applied, making use of current data. Resultant trip rates and traffic generations have been calculated for the full range of possible B2-B8 splits and retained B1 proposals.
- 4.4. The total numbers of two-way vehicle generations for the range of possible B2-B8 splits are provided in Table 3.2. This shows that up to 100% of the B2/B8 provision may be allocated as B8 or up to 76% (182,400m²) allocated as B2 without surpassing either of the peak hour traffic attractions (1729 and 1794) for the development previously consented.
- 4.5. Compared to the traffic flows derived from the 2002 TA that accompanied the permitted MEGZ development, neither the 76% B2 nor the 100% B8 scenarios would result in any greater traffic / environmental impact. In fact, even for the maximum development-mix scenarios described above, there would be substantial environmental benefits. For the 76% B2 scenario, there would be the same number of trips in the AM peak hour but approximately 450 fewer trips in the PM peak. For the 100% B8 scenario, there would be approximately 850 fewer trips in the AM peak hour and over 1000 fewer trips in the PM peak.

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- 4.6. It is concluded that a scenario of up to 76% B2 or that of up to 100% B8 would not breach the predicted AM or PM peak hour traffic flows and that significant benefits would in fact accrue. As such, it is not considered that there is any transport planning reason to preclude the amendment of Condition 21 of the planning permission granted in line with the scenarios described.

APPENDICES

Appendix A

TRICS Output

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 02 - EMPLOYMENT
Category : A - OFFICE

VEHICLES

Selected regions and areas:

02 SOUTH EAST		
HC HAMPSHIRE		1 days
08 NORTH WEST		
LC LANCASHIRE		1 days
09 NORTH		
TV TEES VALLEY		1 days
TW TYNE & WEAR		1 days
10 WALES		
MT MERTHYR TYDFIL		1 days

Main parameter selection:

Parameter: Gross floor area
Range: 408 to 10000 (units: sqm)

Date Range: 01/01/01 to 11/12/08

Selected survey days:

Monday	1 days
Thursday	2 days
Friday	2 days

Selected survey types:

Manual count	5 days
Directional ATC Count	0 days

Selected Locations:

Edge of Town	5
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Selected Location Sub Categories:

Commercial Zone	3
No Sub Category	2

Optional parameter selection:

Use Class:

B1	5 days
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Population within 1 mile:

1,001 to 5,000	1 days
10,001 to 15,000	3 days
15,001 to 20,000	1 days

Population within 5 miles:

75,001 to 100,000	1 days
100,001 to 125,000	2 days
125,001 to 250,000	1 days
250,001 to 500,000	1 days

Car ownership within 5 miles:

0.6 to 1.0	4 days
1.6 to 2.0	1 days

Optional parameter selection (Cont.):

Travel Plan:

No

5 days

LIST OF SITES relevant to selection parameters

- | | | | |
|----------|-------------------|--------------------------------------------------------------------------------------------------------------------------------|------------------------|
| 1 | HC-02-A-09 | ERICSON, BASINGSTOKE | HAMPSHIRE |
| | | MAPLEWOOD
CHINEHAM BUSINESS PARK
BASINGSTOKE
Total Gross floor area: 9000 sqm
Survey date: THURSDAY 22/11/07 | Survey Type: MANUAL |
| 2 | LC-02-A-07 | COUNCIL OFFICES, BLACKPOOL | LANCASHIRE |
| | | SOUTH PROMENADE
SAINT ANNES
BLACKPOOL
Total Gross floor area: 6678 sqm
Survey date: FRIDAY 13/05/05 | Survey Type: MANUAL |
| 3 | MT-02-A-01 | OFFICE, MERTHYR TYDFIL | MERTHYR TYDFIL |
| | | A4102
RHYD-Y-CAR
MERTHYR TYDFIL
Total Gross floor area: 5950 sqm
Survey date: FRIDAY 05/10/07 | Survey Type: MANUAL |
| 4 | TV-02-A-02 | BUILDING SOCIETY, DARLINGTON | TEES VALLEY |
| | | LINGFIELD WAY
MORTON PARK
DARLINGTON
Total Gross floor area: 3500 sqm
Survey date: MONDAY 25/04/05 | Survey Type: MANUAL |
| 5 | TW-02-A-03 | DEVELOP. AGENCY, NEWCASTLE | TYNE & WEAR |
| | | KINGFISHER BOULEVARD
LEMINGTON
NEWCASTLE UPON TYNE
Total Gross floor area: 6480 sqm
Survey date: THURSDAY 11/12/08 | Survey Type: MANUAL |

TRIP RATE for Land Use 02 - EMPLOYMENT/A - OFFICE

VEHICLES

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 00:30	0	0	0.000	0	0	0.000	0	0	0.000
00:30 - 01:00	0	0	0.000	0	0	0.000	0	0	0.000
01:00 - 01:30	0	0	0.000	0	0	0.000	0	0	0.000
01:30 - 02:00	0	0	0.000	0	0	0.000	0	0	0.000
02:00 - 02:30	0	0	0.000	0	0	0.000	0	0	0.000
02:30 - 03:00	0	0	0.000	0	0	0.000	0	0	0.000
03:00 - 03:30	0	0	0.000	0	0	0.000	0	0	0.000
03:30 - 04:00	0	0	0.000	0	0	0.000	0	0	0.000
04:00 - 04:30	0	0	0.000	0	0	0.000	0	0	0.000
04:30 - 05:00	0	0	0.000	0	0	0.000	0	0	0.000
05:00 - 05:30	0	0	0.000	0	0	0.000	0	0	0.000
05:30 - 06:00	0	0	0.000	0	0	0.000	0	0	0.000
06:00 - 06:30	0	0	0.000	0	0	0.000	0	0	0.000
06:30 - 07:00	0	0	0.000	0	0	0.000	0	0	0.000
07:00 - 07:30	5	6322	0.152	5	6322	0.022	5	6322	0.174
07:30 - 08:00	5	6322	0.399	5	6322	0.066	5	6322	0.465
08:00 - 08:30	5	6322	0.721	5	6322	0.060	5	6322	0.781
08:30 - 09:00	5	6322	0.778	5	6322	0.082	5	6322	0.860
09:00 - 09:30	5	6322	0.487	5	6322	0.079	5	6322	0.566
09:30 - 10:00	5	6322	0.244	5	6322	0.098	5	6322	0.342
10:00 - 10:30	5	6322	0.158	5	6322	0.082	5	6322	0.240
10:30 - 11:00	5	6322	0.152	5	6322	0.076	5	6322	0.228
11:00 - 11:30	5	6322	0.161	5	6322	0.092	5	6322	0.253
11:30 - 12:00	5	6322	0.120	5	6322	0.117	5	6322	0.237
12:00 - 12:30	5	6322	0.133	5	6322	0.266	5	6322	0.399
12:30 - 13:00	5	6322	0.190	5	6322	0.196	5	6322	0.386
13:00 - 13:30	5	6322	0.259	5	6322	0.228	5	6322	0.487
13:30 - 14:00	5	6322	0.183	5	6322	0.127	5	6322	0.310
14:00 - 14:30	5	6322	0.152	5	6322	0.136	5	6322	0.288
14:30 - 15:00	5	6322	0.130	5	6322	0.174	5	6322	0.304
15:00 - 15:30	5	6322	0.117	5	6322	0.127	5	6322	0.244
15:30 - 16:00	5	6322	0.073	5	6322	0.146	5	6322	0.219
16:00 - 16:30	5	6322	0.073	5	6322	0.307	5	6322	0.380
16:30 - 17:00	5	6322	0.104	5	6322	0.471	5	6322	0.575
17:00 - 17:30	5	6322	0.060	5	6322	0.731	5	6322	0.791
17:30 - 18:00	5	6322	0.051	5	6322	0.373	5	6322	0.424
18:00 - 18:30	5	6322	0.035	5	6322	0.183	5	6322	0.218
18:30 - 19:00	5	6322	0.041	5	6322	0.196	5	6322	0.237
19:00 - 19:30	0	0	0.000	0	0	0.000	0	0	0.000
19:30 - 20:00	0	0	0.000	0	0	0.000	0	0	0.000
20:00 - 20:30	0	0	0.000	0	0	0.000	0	0	0.000
20:30 - 21:00	0	0	0.000	0	0	0.000	0	0	0.000
21:00 - 21:30	0	0	0.000	0	0	0.000	0	0	0.000
21:30 - 22:00	0	0	0.000	0	0	0.000	0	0	0.000
22:00 - 22:30	0	0	0.000	0	0	0.000	0	0	0.000
22:30 - 23:00	0	0	0.000	0	0	0.000	0	0	0.000
23:00 - 23:30	0	0	0.000	0	0	0.000	0	0	0.000
23:30 - 24:00	0	0	0.000	0	0	0.000	0	0	0.000
Total Rates:			4.973			4.435			9.408

Parameter summary

Trip rate parameter range selected:	408 - 10000 (units: sqm)
Survey date date range:	01/01/01 - 11/12/08
Number of weekdays (Monday-Friday):	5
Number of Saturdays:	0
Number of Sundays:	0
Optional parameters used in selection:	NO
Surveys manually removed from selection:	1

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 02 - EMPLOYMENT
 Category : D - INDUSTRIAL ESTATE

VEHICLES

Selected regions and areas:

02 SOUTH EAST		
EX ESSEX		1 days
WS WEST SUSSEX		1 days
03 SOUTH WEST		
CW CORNWALL		1 days
WL WILTSHIRE		1 days
05 EAST MIDLANDS		
DS DERBYSHIRE		1 days
NT NOTTINGHAMSHIRE		1 days
07 YORKSHIRE & NORTH LINCOLNSHIRE		
KH KINGSTON UPON HULL		1 days
WY WEST YORKSHIRE		1 days
08 NORTH WEST		
CH CHESHIRE		1 days
LC LANCASHIRE		1 days
MS MERSEYSIDE		1 days
09 NORTH		
CB CUMBRIA		1 days
DH DURHAM		1 days
NB NORTHUMBERLAND		1 days
11 SCOTLAND		
ER EAST RENFREWSHIRE		1 days

Main parameter selection:

Parameter: Gross floor area
 Range: 2016 to 234115 (units: sqm)

Date Range: 01/01/01 to 07/09/08

Selected survey days:

Monday	2 days
Tuesday	3 days
Wednesday	3 days
Thursday	3 days
Friday	4 days

Selected survey types:

Manual count	14 days
Directional ATC Count	1 days

Selected Locations:

Edge of Town	13
Free Standing (PPS6 Out of Town)	2

Selected Location Sub Categories:

Industrial Zone	9
Out of Town	2
No Sub Category	4

Optional parameter selection:

Use Class:

Not Known	5 days
B1	3 days
B2	5 days

Optional parameter selection (Cont.):

Population within 1 mile:

1,000 or Less	1 days
1,001 to 5,000	3 days
5,001 to 10,000	5 days
10,001 to 15,000	1 days
15,001 to 20,000	3 days
20,001 to 25,000	2 days

Population within 5 miles:

5,001 to 25,000	3 days
50,001 to 75,000	3 days
75,001 to 100,000	2 days
125,001 to 250,000	3 days
250,001 to 500,000	4 days

Car ownership within 5 miles:

0.6 to 1.0	7 days
1.1 to 1.5	8 days

Travel Plan:

Not Known	2 days
No	13 days

LIST OF SITES relevant to selection parameters

- | | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|--------------------------------------------------------------------|
| <p>1 CB-02-D-03
 CARLISLE ROAD</p> <p>BRAMPTON
 Total Gross floor area: 13700 sqm
 <i>Survey date: THURSDAY 23/06/05</i></p> | <p>INDUSTRIAL ESTATE, BRAMPTON</p> | <p>CUMBRIA</p> <p><i>Survey Type: MANUAL</i></p> |
| <p>2 CH-02-D-02
 MANCHESTER ROAD
 WINCHAM
 NORTHWICH
 Total Gross floor area: 22000 sqm
 <i>Survey date: FRIDAY 15/06/07</i></p> | <p>INDUSTRIAL EST., NORTHWICH</p> | <p>CHESHIRE</p> <p><i>Survey Type: MANUAL</i></p> |
| <p>3 CW-02-D-02
 DRUIDS ROAD</p> <p>CAMBORNE
 Total Gross floor area: 6515 sqm
 <i>Survey date: FRIDAY 21/09/07</i></p> | <p>INDUSTRIAL ESTATE, CAMBORNE</p> | <p>CORNWALL</p> <p><i>Survey Type: MANUAL</i></p> |
| <p>4 DH-02-D-01
 PARKWAY
 ANNFIELD PLAIN
 NEAR CONSETT
 Total Gross floor area: 12025 sqm
 <i>Survey date: WEDNESDAY 27/04/05</i></p> | <p>INDUSTRIAL ESTATE, NR CONSETT</p> | <p>DURHAM</p> <p><i>Survey Type: MANUAL</i></p> |
| <p>5 DS-02-D-01
 BERRISTOW LANE</p> <p>SOUTH NORMANTON
 Total Gross floor area: 92286 sqm
 <i>Survey date: TUESDAY 15/06/04</i></p> | <p>IND. ESTATE, SOUTH NORMANTON</p> | <p>DERBYSHIRE</p> <p><i>Survey Type: MANUAL</i></p> |
| <p>6 ER-02-D-02
 SPIERSBRIDGE AVENUE
 THORNLIBANK
 NEAR GLASGOW
 Total Gross floor area: 4233 sqm
 <i>Survey date: WEDNESDAY 10/10/01</i></p> | <p>INDUSTRIAL EST., NEAR GLASGOW</p> | <p>EAST RENFREWSHIRE</p> <p><i>Survey Type: MANUAL</i></p> |
| <p>7 EX-02-D-01
 OAKWOOD HILL</p> <p>LOUGHTON
 Total Gross floor area: 27687 sqm
 <i>Survey date: THURSDAY 22/11/07</i></p> | <p>INDUSTRIAL ESTATE, LOUGHTON</p> | <p>ESSEX</p> <p><i>Survey Type: MANUAL</i></p> |
| <p>8 KH-02-D-02
 BOULEVARD STREET</p> <p>KINGSTON UPON HULL
 Total Gross floor area: 2220 sqm
 <i>Survey date: THURSDAY 18/10/01</i></p> | <p>INDUSTRIAL ESTATE, HULL</p> | <p>KINGSTON UPON HULL</p> <p><i>Survey Type: MANUAL</i></p> |
| <p>9 LC-02-D-04
 GREEN LANE WEST</p> <p>GARSTANG
 Total Gross floor area: 4555 sqm
 <i>Survey date: FRIDAY 16/06/06</i></p> | <p>INDUSTRIAL ESTATE, GARSTANG</p> | <p>LANCASHIRE</p> <p><i>Survey Type: MANUAL</i></p> |

LIST OF SITES relevant to selection parameters (Cont.)

- | | | | |
|-----------|-------------------|--------------------------------------|------------------------------------|
| 10 | MS-02-D-05 | INDUSTRIAL ESTATE, ST HELENS | MERSEYSIDE |
| | | BROADOAK ROAD | |
| | | ST HELENS | |
| | | Total Gross floor area: 11700 sqm | |
| | | Survey date: TUESDAY 18/10/05 | Survey Type: MANUAL |
| 11 | NB-02-D-01 | INDUSTRIAL ESTATE, HEXHAM | NORTHUMBERLAND |
| | | A695 | |
| | | HEXHAM | |
| | | Total Gross floor area: 10525 sqm | |
| | | Survey date: MONDAY 23/05/05 | Survey Type: MANUAL |
| 12 | NT-02-D-01 | IND. ESTATE, SUTTON-IN-ASHFLD | NOTTINGHAMSHIRE |
| | | B6028 STONEYFORD ROAD | |
| | | STANTON HILL | |
| | | SUTTON-IN-ASHFIELD | |
| | | Total Gross floor area: 26400 sqm | |
| | | Survey date: FRIDAY 30/06/06 | Survey Type: MANUAL |
| 13 | WL-02-D-01 | IND. ESTATE, WOOTTON BASSETT | WILTSHIRE |
| | | MARLBOROUGH ROAD | |
| | | WOOTTON BASSETT | |
| | | Total Gross floor area: 7050 sqm | |
| | | Survey date: TUESDAY 03/10/06 | Survey Type: MANUAL |
| 14 | WS-02-D-05 | IND. ESTATE, NR BURGESS HILL | WEST SUSSEX |
| | | STAIRBRIDGE LANE | |
| | | NEAR BURGESS HILL | |
| | | Total Gross floor area: 5858 sqm | |
| | | Survey date: WEDNESDAY 24/09/03 | Survey Type: DIRECTIONAL ATC COUNT |
| 15 | WY-02-D-02 | INDUSTRIAL EST., HUDDERSFIELD | WEST YORKSHIRE |
| | | A629 WAKEFIELD ROAD | |
| | | TANDEM | |
| | | HUDDERSFIELD | |
| | | Total Gross floor area: 20824 sqm | |
| | | Survey date: MONDAY 11/09/06 | Survey Type: MANUAL |

TRIP RATE for Land Use 02 - EMPLOYMENT/D - INDUSTRIAL ESTATE

VEHICLES

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 00:30	1	5858	0.000	1	5858	0.000	1	5858	0.000
00:30 - 01:00	1	5858	0.000	1	5858	0.000	1	5858	0.000
01:00 - 01:30	1	5858	0.000	1	5858	0.000	1	5858	0.000
01:30 - 02:00	1	5858	0.000	1	5858	0.000	1	5858	0.000
02:00 - 02:30	1	5858	0.000	1	5858	0.000	1	5858	0.000
02:30 - 03:00	1	5858	0.000	1	5858	0.000	1	5858	0.000
03:00 - 03:30	1	5858	0.000	1	5858	0.000	1	5858	0.000
03:30 - 04:00	1	5858	0.000	1	5858	0.000	1	5858	0.000
04:00 - 04:30	1	5858	0.000	1	5858	0.000	1	5858	0.000
04:30 - 05:00	1	5858	0.000	1	5858	0.000	1	5858	0.000
05:00 - 05:30	1	5858	0.034	1	5858	0.000	1	5858	0.034
05:30 - 06:00	1	5858	0.034	1	5858	0.000	1	5858	0.034
06:00 - 06:30	2	5046	0.089	2	5046	0.030	2	5046	0.119
06:30 - 07:00	2	5046	0.129	2	5046	0.040	2	5046	0.169
07:00 - 07:30	15	17839	0.114	15	17839	0.067	15	17839	0.181
07:30 - 08:00	15	17839	0.215	15	17839	0.078	15	17839	0.293
08:00 - 08:30	15	17839	0.222	15	17839	0.084	15	17839	0.306
08:30 - 09:00	15	17839	0.246	15	17839	0.106	15	17839	0.352
09:00 - 09:30	15	17839	0.170	15	17839	0.113	15	17839	0.283
09:30 - 10:00	15	17839	0.131	15	17839	0.118	15	17839	0.249
10:00 - 10:30	15	17839	0.132	15	17839	0.138	15	17839	0.270
10:30 - 11:00	15	17839	0.136	15	17839	0.136	15	17839	0.272
11:00 - 11:30	15	17839	0.149	15	17839	0.148	15	17839	0.297
11:30 - 12:00	15	17839	0.155	15	17839	0.160	15	17839	0.315
12:00 - 12:30	15	17839	0.127	15	17839	0.176	15	17839	0.303
12:30 - 13:00	15	17839	0.129	15	17839	0.144	15	17839	0.273
13:00 - 13:30	15	17839	0.161	15	17839	0.156	15	17839	0.317
13:30 - 14:00	15	17839	0.158	15	17839	0.138	15	17839	0.296
14:00 - 14:30	15	17839	0.139	15	17839	0.150	15	17839	0.289
14:30 - 15:00	15	17839	0.115	15	17839	0.142	15	17839	0.257
15:00 - 15:30	15	17839	0.117	15	17839	0.135	15	17839	0.252
15:30 - 16:00	15	17839	0.127	15	17839	0.139	15	17839	0.266
16:00 - 16:30	15	17839	0.111	15	17839	0.185	15	17839	0.296
16:30 - 17:00	15	17839	0.108	15	17839	0.242	15	17839	0.350
17:00 - 17:30	15	17839	0.066	15	17839	0.252	15	17839	0.318
17:30 - 18:00	15	17839	0.043	15	17839	0.153	15	17839	0.196
18:00 - 18:30	15	17839	0.031	15	17839	0.085	15	17839	0.116
18:30 - 19:00	15	17839	0.021	15	17839	0.044	15	17839	0.065
19:00 - 19:30	1	5858	0.000	1	5858	0.034	1	5858	0.034
19:30 - 20:00	1	5858	0.000	1	5858	0.034	1	5858	0.034
20:00 - 20:30	1	5858	0.017	1	5858	0.017	1	5858	0.034
20:30 - 21:00	1	5858	0.017	1	5858	0.017	1	5858	0.034
21:00 - 21:30	1	5858	0.017	1	5858	0.000	1	5858	0.017
21:30 - 22:00	1	5858	0.017	1	5858	0.017	1	5858	0.034
22:00 - 22:30	1	5858	0.000	1	5858	0.000	1	5858	0.000
22:30 - 23:00	1	5858	0.000	1	5858	0.000	1	5858	0.000
23:00 - 23:30	1	5858	0.000	1	5858	0.000	1	5858	0.000
23:30 - 24:00	1	5858	0.000	1	5858	0.000	1	5858	0.000
Total Rates:			3.477			3.478			6.955

Parameter summary

Trip rate parameter range selected:	2016 - 234115 (units: sqm)
Survey date date range:	01/01/01 - 07/09/08
Number of weekdays (Monday-Friday):	19
Number of Saturdays:	0
Number of Sundays:	0
Optional parameters used in selection:	NO
Surveys manually removed from selection:	2

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 02 - EMPLOYMENT
 Category : F - WAREHOUSING (COMMERCIAL)

VEHICLES

Selected regions and areas:

02 SOUTH EAST		
BD	BEDFORDSHIRE	1 days
BU	BUCKINGHAMSHIRE	1 days
HC	HAMPSHIRE	1 days
HF	HERTFORDSHIRE	1 days
KC	KENT	1 days
SC	SURREY	1 days
03 SOUTH WEST		
CW	CORNWALL	1 days
04 EAST ANGLIA		
SF	SUFFOLK	1 days
06 WEST MIDLANDS		
WO	WORCESTERSHIRE	2 days
09 NORTH		
TV	TEES VALLEY	1 days
10 WALES		
NW	NEWPORT	1 days

Main parameter selection:

Parameter: Gross floor area
 Range: 2787 to 80066 (units: sqm)

Date Range: 01/01/01 to 19/11/08

Selected survey days:

Tuesday	4 days
Wednesday	1 days
Thursday	5 days
Friday	2 days

Selected survey types:

Manual count	12 days
Directional ATC Count	0 days

Selected Locations:

Edge of Town	12
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Selected Location Sub Categories:

Industrial Zone	6
Commercial Zone	2
No Sub Category	4

Optional parameter selection:

Use Class:

B8	12 days
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Population within 1 mile:

1,001 to 5,000	7 days
10,001 to 15,000	5 days

Optional parameter selection (Cont.):

Population within 5 miles:

25,001 to 50,000	1 days
50,001 to 75,000	1 days
100,001 to 125,000	4 days
125,001 to 250,000	5 days
250,001 to 500,000	1 days

Car ownership within 5 miles:

0.6 to 1.0	6 days
1.1 to 1.5	6 days

Travel Plan:

Not Known	6 days
Yes	1 days
No	5 days

LIST OF SITES relevant to selection parameters

- | | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|
| <p>1 BD-02-F-01 WAREHOUSING, DUNSTABLE
 FRENCH'S AVENUE</p> <p>DUNSTABLE
 Total Gross floor area: 6050 sqm
 <i>Survey date: THURSDAY 07/03/02</i></p> | <p>BEDFORDSHIRE</p> <p><i>Survey Type: MANUAL</i></p> |
| <p>2 BU-02-F-01 SUPERSTORE DISTRIB.,M.KEYNES
 BLETCHAM WAY
 BLETCHLEY
 MILTON KEYNES
 Total Gross floor area: 52125 sqm
 <i>Survey date: THURSDAY 07/02/02</i></p> | <p>BUCKINGHAMSHIRE</p> <p><i>Survey Type: MANUAL</i></p> |
| <p>3 CW-02-F-01 WAREHOUSING, TRURO
 A390
 THREEMILESTONE
 NEAR TRURO
 Total Gross floor area: 5150 sqm
 <i>Survey date: TUESDAY 18/09/07</i></p> | <p>CORNWALL</p> <p><i>Survey Type: MANUAL</i></p> |
| <p>4 HC-02-F-01 WAREHOUSING, SOUTHAMPTON
 MAURETANIA ROAD
 NURSLING INDUSTRIAL ESTATE
 SOUTHAMPTON
 Total Gross floor area: 4000 sqm
 <i>Survey date: WEDNESDAY 21/11/07</i></p> | <p>HAMPSHIRE</p> <p><i>Survey Type: MANUAL</i></p> |
| <p>5 HF-02-F-03 DISTRIBUTION CEN., HATFIELD

 HATFIELD BUSINESS CEN.
 HATFIELD
 Total Gross floor area: 80000 sqm
 <i>Survey date: THURSDAY 10/07/08</i></p> | <p>HERTFORDSHIRE</p> <p><i>Survey Type: MANUAL</i></p> |
| <p>6 KC-02-F-01 FOOD DISTRIB., SNODLAND
 HOLBOROUGH ROAD

 SNODLAND
 Total Gross floor area: 7500 sqm
 <i>Survey date: THURSDAY 20/06/02</i></p> | <p>KENT</p> <p><i>Survey Type: MANUAL</i></p> |
| <p>7 NW-02-F-01 LOGISTICS CENTRE, NEWPORT
 TREDEGAR TERRACE
 CROSSKEYS
 NEWPORT
 Total Gross floor area: 16275 sqm
 <i>Survey date: FRIDAY 12/10/07</i></p> | <p>NEWPORT</p> <p><i>Survey Type: MANUAL</i></p> |
| <p>8 SC-02-F-04 WAREHOUSING, CHERTSEY
 PRETORIA ROAD

 CHERTSEY
 Total Gross floor area: 4460 sqm
 <i>Survey date: TUESDAY 27/11/07</i></p> | <p>SURREY</p> <p><i>Survey Type: MANUAL</i></p> |
| <p>9 SF-02-F-01 PHARMACY DISTRIB., THETFORD
 BURRELL WAY
 BARROW HILL
 THETFORD
 Total Gross floor area: 4550 sqm
 <i>Survey date: FRIDAY 27/09/02</i></p> | <p>SUFFOLK</p> <p><i>Survey Type: MANUAL</i></p> |

LIST OF SITES relevant to selection parameters (Cont.)

- | | | | |
|-----------|-------------------|-----------------------------------------------------|-----------------------|
| 10 | TV-02-F-02 | ARGOS WAREHOUSE, DARL'TON | TEES VALLEY |
| | | ROUNDHOUSE ROAD
FAVERDALE
DARLINGTON | |
| | | Total Gross floor area: 80066 sqm | |
| | | Survey date: TUESDAY 07/10/08 | Survey Type: MANUAL |
| 11 | WO-02-F-01 | SUPERSTORE DIST., WORCESTER | WORCESTERSHIRE |
| | | WAINWRIGHT ROAD
SHIRE BUSINESS PARK
WORCESTER | |
| | | Total Gross floor area: 31416 sqm | |
| | | Survey date: THURSDAY 14/03/02 | Survey Type: MANUAL |
| 12 | WO-02-F-02 | DISTRIB. CENTRE, WORCESTER | WORCESTERSHIRE |
| | | COTSWOLD WAY

WORCESTER | |
| | | Total Gross floor area: 3824 sqm | |
| | | Survey date: TUESDAY 10/09/02 | Survey Type: MANUAL |

TRIP RATE for Land Use 02 - EMPLOYMENT/F - WAREHOUSING (COMMERCIAL)

VEHICLES

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 00:30	1	7500	0.093	1	7500	0.080	1	7500	0.173
00:30 - 01:00	1	7500	0.053	1	7500	0.067	1	7500	0.120
01:00 - 01:30	1	7500	0.013	1	7500	0.027	1	7500	0.040
01:30 - 02:00	1	7500	0.040	1	7500	0.067	1	7500	0.107
02:00 - 02:30	1	7500	0.027	1	7500	0.027	1	7500	0.054
02:30 - 03:00	1	7500	0.053	1	7500	0.067	1	7500	0.120
03:00 - 03:30	1	7500	0.027	1	7500	0.013	1	7500	0.040
03:30 - 04:00	1	7500	0.067	1	7500	0.053	1	7500	0.120
04:00 - 04:30	1	7500	0.053	1	7500	0.053	1	7500	0.106
04:30 - 05:00	1	7500	0.067	1	7500	0.053	1	7500	0.120
05:00 - 05:30	1	7500	0.080	1	7500	0.067	1	7500	0.147
05:30 - 06:00	1	7500	0.067	1	7500	0.053	1	7500	0.120
06:00 - 06:30	1	7500	0.133	1	7500	0.133	1	7500	0.266
06:30 - 07:00	1	7500	0.133	1	7500	0.080	1	7500	0.213
07:00 - 07:30	12	24618	0.038	12	24618	0.044	12	24618	0.082
07:30 - 08:00	12	24618	0.070	12	24618	0.037	12	24618	0.107
08:00 - 08:30	12	24618	0.047	12	24618	0.032	12	24618	0.079
08:30 - 09:00	12	24618	0.058	12	24618	0.034	12	24618	0.092
09:00 - 09:30	12	24618	0.052	12	24618	0.036	12	24618	0.088
09:30 - 10:00	12	24618	0.048	12	24618	0.036	12	24618	0.084
10:00 - 10:30	12	24618	0.031	12	24618	0.040	12	24618	0.071
10:30 - 11:00	12	24618	0.032	12	24618	0.029	12	24618	0.061
11:00 - 11:30	12	24618	0.034	12	24618	0.031	12	24618	0.065
11:30 - 12:00	12	24618	0.036	12	24618	0.034	12	24618	0.070
12:00 - 12:30	12	24618	0.037	12	24618	0.038	12	24618	0.075
12:30 - 13:00	12	24618	0.036	12	24618	0.040	12	24618	0.076
13:00 - 13:30	12	24618	0.067	12	24618	0.052	12	24618	0.119
13:30 - 14:00	12	24618	0.111	12	24618	0.101	12	24618	0.212
14:00 - 14:30	12	24618	0.051	12	24618	0.087	12	24618	0.138
14:30 - 15:00	12	24618	0.059	12	24618	0.073	12	24618	0.132
15:00 - 15:30	12	24618	0.036	12	24618	0.060	12	24618	0.096
15:30 - 16:00	12	24618	0.049	12	24618	0.056	12	24618	0.105
16:00 - 16:30	12	24618	0.038	12	24618	0.059	12	24618	0.097
16:30 - 17:00	12	24618	0.033	12	24618	0.060	12	24618	0.093
17:00 - 17:30	12	24618	0.027	12	24618	0.059	12	24618	0.086
17:30 - 18:00	12	24618	0.035	12	24618	0.051	12	24618	0.086
18:00 - 18:30	12	24618	0.020	12	24618	0.043	12	24618	0.063
18:30 - 19:00	12	24618	0.017	12	24618	0.026	12	24618	0.043
19:00 - 19:30	2	6775	0.030	2	6775	0.030	2	6775	0.060
19:30 - 20:00	2	6775	0.007	2	6775	0.037	2	6775	0.044
20:00 - 20:30	1	7500	0.053	1	7500	0.013	1	7500	0.066
20:30 - 21:00	1	7500	0.040	1	7500	0.053	1	7500	0.093
21:00 - 21:30	1	7500	0.040	1	7500	0.053	1	7500	0.093
21:30 - 22:00	1	7500	0.013	1	7500	0.027	1	7500	0.040
22:00 - 22:30	1	7500	0.067	1	7500	0.053	1	7500	0.120
22:30 - 23:00	1	7500	0.067	1	7500	0.040	1	7500	0.107
23:00 - 23:30	1	7500	0.040	1	7500	0.040	1	7500	0.080
23:30 - 24:00	1	7500	0.040	1	7500	0.040	1	7500	0.080
Total Rates:			2.365			2.384			4.749

Parameter summary

Trip rate parameter range selected:	2787 - 80066 (units: sqm)
Survey date date range:	01/01/01 - 19/11/08
Number of weekdays (Monday-Friday):	12
Number of Saturdays:	0
Number of Sundays:	0
Optional parameters used in selection:	NO
Surveys manually removed from selection:	1