



Former Greggs Factory

Alternative Uses – Transport Review

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SUBJECT:	Alternative Commercial Scheme Assessment		
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EXECUTIVE SUMMARY

The former Greggs Factory in Twickenham has been unoccupied for a number of years. It is therefore not generating any transport activity and as such has no impact on the surrounding roads and network. However, local residents who were neighbours at the time it was still operating will remember the impact multiple HGVs movements had on their wellbeing, safety of the road network and the physical damage such movements caused to roads and footways.

WSP prepared a Transport Assessment (dated February 2019) in support of a proposed residential development on the site. Section 5.8 of the Transport Assessment included an assessment of the potential highways impacts of bringing the site back into employment use. This note takes that assessment step further by considering the possible impacts of both a B1 commercial scheme and a B2 industrial scheme.

There are broadly two impacts that employment use on the site generates – local traffic and parking pressures, and safety hazards caused by multiple HGVs using the local road network at the same time.

In a purely B1 commercial scheme there would necessarily be a reasonably high parking demand generated by the number of employees it would be possible to accommodate on the site, and the modest PTAL. This has the potential to result in localised congestion during the morning and evening peak hours, as well as generating overspill parking demand on surrounding streets if sufficient supply was not provided on-site. Though the immediate area is within a CPZ, there are streets further afield which are uncontrolled. People tend to be willing to park further away from their workplace than they do their home, so the potential impact on these uncontrolled streets is likely to be worse than a residential scheme.

In a purely B2 industrial scheme the potential impacts are less to do with local capacity and parking – employment density would almost certainly be lower – and more to do with safety. When the site was operating as a Greggs factory there were frequent instances of HGVs not being able to pass each other on the local roads and having to either back-up or mount the footways. Both of these activities are dangerous, especially mounting the kerb. Evidence of this was visible where kerbstones had become dislodged and the footway started to deform and crack. Photographs of this are provided in this note.

Anecdotal evidence from local residents also identifies some of the damage to property that occurred as a result of too many HGVs using the roads. One neighbour in particular explained that her car had to be written off after an HGV entering the site scraped past it where there was insufficient width.

Of course, any use of the site will inevitably result in at least the occasional HGV movement from refuse collection activities but the concentration of multiple HGVs and even light goods vehicles as any one time is

what has historically caused problems and would likely continue to do so if the site were brought into industrial use again.

With either alternative option, be it B1 and B2, there are no clear routes to mitigate the risks. Increasing traffic and parking capacity on local residential streets is an extremely difficult and often impossible undertaking. Similarly, dealing with the impacts of multiple HGVs cannot easily be overcome – there is no scope to widen the local roads and introducing dedicated signed routes of HGVs has already been done.

In summary, there are compelling reasons why from a highways perspective the re-introduction of substantive employment use on this site would be unacceptable, unsafe and extremely difficult to attempt to mitigate.

INTRODUCTION

This note presents a concise review of the potential highways impacts of a fully commercial or industrial scheme on the former Greggs Factory site. It considers whether the impacts could be adequately mitigated and whether such schemes might be acceptable from a highways perspective. To give some context, it explores the impacts associated with the site's previous use as a factory.

HISTORICAL SITE ISSUES

Greggs Factory is accessed immediately off residential roads, with Edwin Road, Gould Road and nearby Norcutt Road characterised by residential permit parking along both kerbsides. Due to the site's residential setting, the adjoining network of roads do not lend themselves to high-volume HGV movements. Carriageways are in parts narrow and often flanked by parked cars.

The narrow nature of the roads means two-way traffic requires negotiation and give-way between drivers to pass, which is typical practice between car drivers in many suburban residential streets such as those adjoining Greggs Factory. However, regular HGV traffic exacerbates and prohibits accessibility, with less opportunities and space for manoeuvre and utilisation of passing points in the highway layout. This in-turn leads to increased traffic, congestion, pollution and impact upon residential amenity.

Figure 1, extracted from the Greggs site Transport Assessment illustrates locations of conflict spots for HGV's, with the image in Figure 2 illustrating the damage caused to the kerb and pedestrian realm.

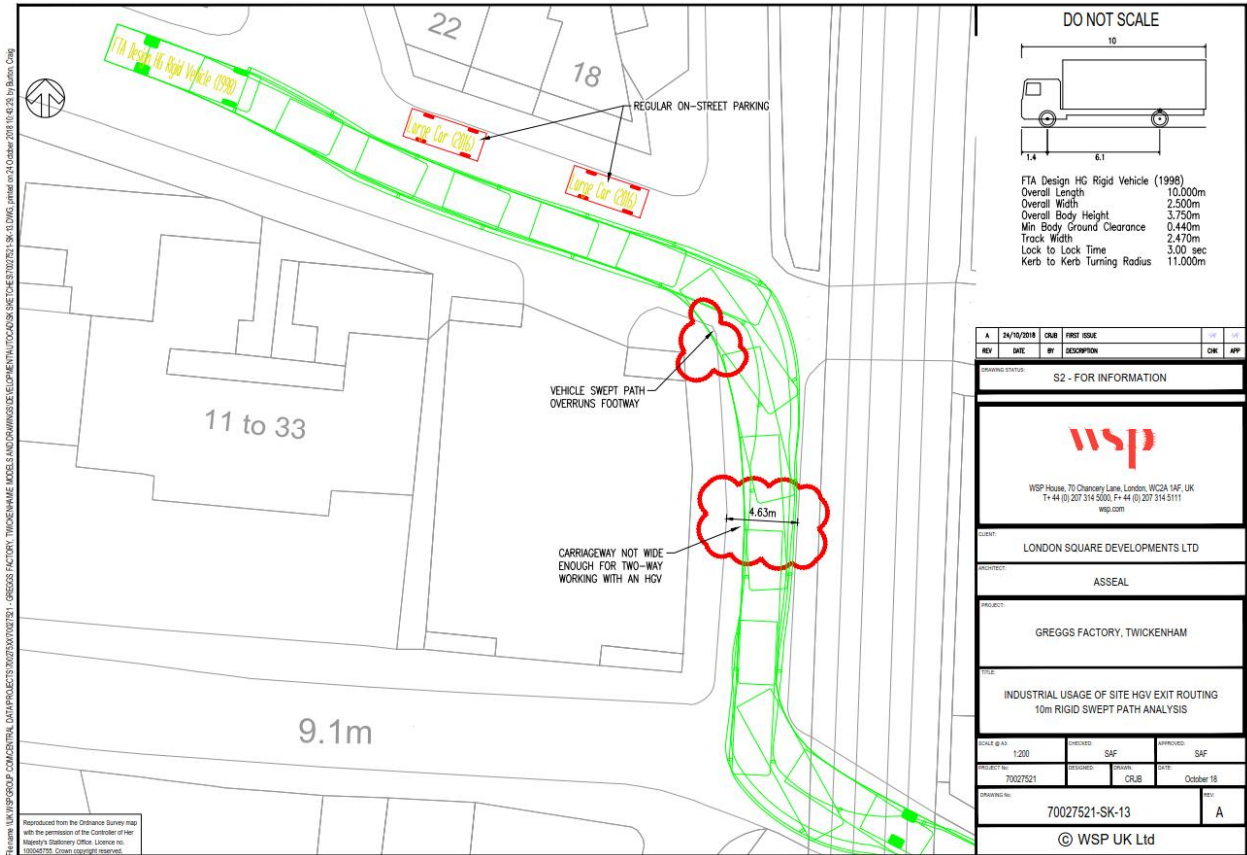


Figure 1 - Swept-Path-Analysis - HGV Conflict



Figure 2 - Illustration of damage, HGV movement (Edwin Road and Marsh Farm Road)





TRIP-GENERATION METHODOLOGY

INTRODUCTION




The following sections provides an assessment of the travel characteristics associated with the extant industrial site and relevant trip-generation methodology, before outlining the project trip-generation for an alternative office development.

METHODOLOGY

As outlined in the Transport Assessment, the TRICS database has been consulted and reviewed in order to find trip data for comparable development sites. TRICS is a database that holds transport-related surveys from sites across the UK. It is the industry-standard tool used to estimate the effect of proposed change in land use on transport travel patterns. The following selection criteria was used to ensure a suitability of comparable survey data sets:

-  Comparable location (outer London boroughs)
-  Comparable Public Transport Access Level (within reason and where possible)
-  Comparable on-site parking provision
-  Comparable development type in terms of use class

Within the Transport Assessment, the same approach has been applied to an assessment of the extant permitted B2 industrial use, the proposed residential-led mixed use development, comprising both C3 residential and B1 office developments, and an entirely commercial B1 Office development. The Transport Assessment presented trip-generation analysis in tabulated form, applying data from comparable TRICS sites to assess the extant site, proposed residential site and an alternative commercial site and establish:

-  Trip-rates based on “total person” trip rates
-  Trip-generation mode share based on “travel to work census data” for the specific ward in Richmond”
-  Multi-modal trip-generation based on “total person” trip data

The following sections illustrate the total person trip rates generated by both an industrial use and an alternative commercial use. Please refer to Chapter 5 “Trip Generation” of the submitted Transport Assessment for full methodology and assessment.

1. EXISTING SITE ASSESSMENT

EXISTING SITE – INDUSTRIAL ESTATE TRIP GENERATION

The TRICS output showing the total person hourly trip rates for an indicative trip generation based on a mixed B1/B2/B8 industrial use with a GFA of 7,228sqm (the floor area of the existing buildings on site) is summarised in Table 1 below. The full TRICS output is available in Appendix D of the Transport Assessment.

Table 1 - TRICS Industrial Trip Rates & Generation

Time Period	Total Person Trip Rate (per 100sqm)			Trip Generation (7228sqm site)		
	Arrive	Depart	Total	Arrive	Depart	Total
600	2.672	0.098	2.77	193	7	200
700	0.344	0.262	0.606	25	19	44
800	0.131	0.066	0.197	9	5	14
900	0.164	0.098	0.262	12	7	19
1000	0.279	0.279	0.558	20	20	40
1100	0.311	0.23	0.541	22	17	39
1200	0.115	0.148	0.263	8	11	19
1300	0.18	0.197	0.377	13	14	27
1400	0.148	0.164	0.312	11	12	23
1500	0.295	0.18	0.475	21	13	34
1600	1.885	0.18	2.065	136	13	149
1700	0.066	3.311	3.377	5	239	244
TOTAL	6.59	5.213	11.803	476	377	853

Note: Some minor errors occur in the table due to roundings

The peak hour for the industrial site is 0600-0700. It is important to note as shown by the total person trip rates across the day that an industrial use comparable to the previous use is characterised by shift working, and will generate a significant number of trips earlier in the morning, and across a longer PM peak. This must be considered when analysing the comparative trip-generation against alternative commercial or residential uses. A key generator of traffic for industrial sites is OGV/HGV trips. HGV trips have been a clear source of neighbourhood conflict for the previous site use. As such, it is pertinent to review the projected HGV trips for a similar industrial use at the site to consider the impact of an alternative fully operational industrial site.

As the full assessment outlined in the Transport Assessment shows, the permitted use could be expected to generate around 68 HGV trips during a typical day, notwithstanding further HGV trips prior to 0600 and beyond 1800 and smaller LGV trips not indicated in the TRICS assessment. This is considered to be similar to the former Greggs use where HGV's were used for the distribution of goods throughout the day. The forecast also shows the concentration of HGV movements tends to be in the morning and over lunchtime. As with the previous uses on site this has the potential to result in the conflicts which are well-documented.



It is therefore reasonable to assume that bringing the site back into industrial use with an alternative tenant or activities does not necessarily overcome any of the historic issues associated with HGVs on the local road network.

Census Data Application

2011 Census data 'WD703EW - Method of travel to work (2001 specification) for the middle super output area (MSOA) "Richmond ward 14" has been used to disaggregate the trips to the site by mode. It should be noted that the application of Census data represents a simplified but robust assessment of public transport trips as this only accounts for employment journey purposes. However, this is deemed appropriate for this assessment given travel to an industrial site would be for employment. The modal share has been adjusted to remove those "not in employment" or "working from home", with the percentage share adjusted across the travel modes accordingly.

Table 2 – Adjusted Mode Share – Industrial Estate (Census WP703EW)

Richmond Ward 014	Count	Percentage
Underground, metro, light rail, tram	320	4.6%
Train	1,286	18.3%
Bus, minibus or coach	1,172	16.7%
Taxi	11	0.2%
Motorcycle, scooter or moped	73	1.0%
Driving a car or van	2,745	39.1%
Passenger in a car or van	140	2.0%
Bicycle	491	7.0%

The estimated multi-modal industrial estate peak hour travel demand based on an industrial use of 7,228sqm is outlined in Table 3.

Table 3 – Industrial Site Peak Hour Travel Demand

Richmond Ward 014	AM			PM		
	In	Out	2 way	In	Out	2 way
Underground, metro, light rail, tram	9	0	9	0	11	11
Train	35	1	37	1	44	45
Bus, minibus or coach	32	1	33	1	40	41
Taxi	0	0	0	0	0	0
Motorcycle, scooter or moped	2	0	2	0	2	3
Driving a car or van	75	3	78	2	94	95
Passenger in a car or van	4	0	4	0	5	5
Bicycle	13	0	14	0	17	17
On foot	21	1	22	1	26	26
Other method of travel to work	1	0	1	0	1	1
ALL CATEGORIES	193	7	200	5	239	244

2. COMMERCIAL SCHEME ASSESSMENT

ALTERNATIVE SCHEME – B1 COMMERCIAL OFFICE TRIP GENERATION

To further assess the impact of alternative development at the site, the scheme architects, Assael Architecture, have prepared an indicative scheme comprised of 100% B1 commercial units at the site, to assess the potential transport and trip-generation impacts that such a development would have at the site and upon the surrounding network. The comparative 100% commercial scheme comprises 6,223sqm (GIA) of commercial units with associated parking spaces and commercial loading bays.

A ground floor site plan is illustrated in Figure 1.

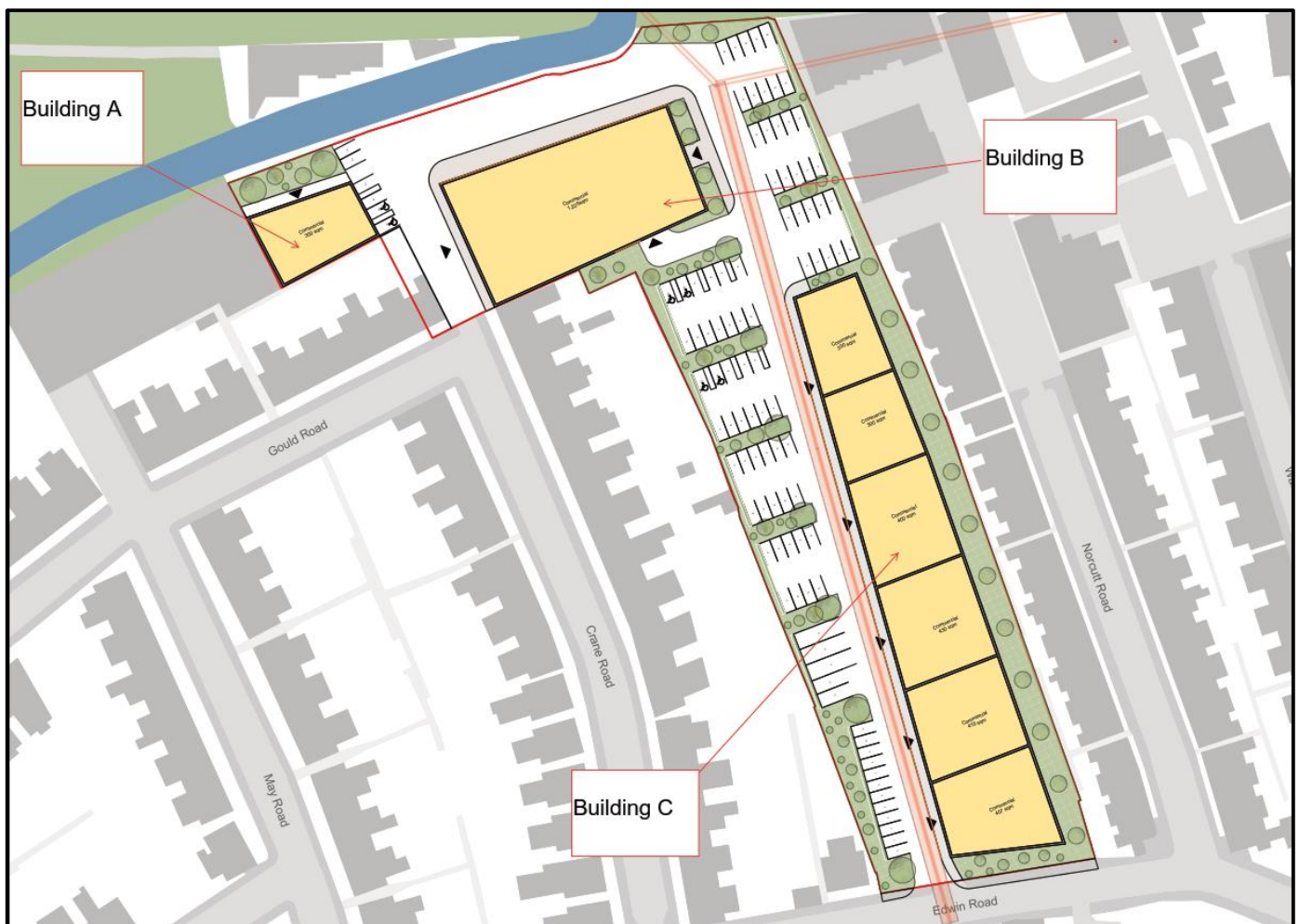


Figure 1 - Commercial Scheme Ground Floor Layout

Following the application of the selection criteria as identified in the trip-generation methodology, details of the total person hourly trip rates and an indicative trip generation based on a B1 commercial scheme with a GIA of 6,223 is indicated in Table 4, with peak hour trip rates and trip generation highlighted for the AM (0800-0900) and PM (1700-1800) peaks. The TRICS reports are contained within Appendix F of the Transport Assessment.

As Table 4 illustrates, a considerable number of total person trips would be generated during the AM and PM peak.



Table 4 – TRICS Commercial Trip Rates & Generation

Time Period	Total Person Trip Rate (per 100sqm)			Proposed Trip Rate (6,223sqm site)		
	Arrive	Depart	Total	Arrive	Depart	Total
700	0.838	0.102	0.94	52	6	58
800	1.723	0.065	1.788	107	4	111
900	1.216	0.07	1.286	76	4	80
1000	0.339	0.094	0.433	21	6	27
1100	0.174	0.118	0.292	11	7	18
1200	0.288	0.301	0.589	18	19	37
1300	0.259	0.236	0.495	16	15	31
1400	0.184	0.191	0.375	11	12	23
1500	0.108	0.36	0.468	7	22	29
1600	0.094	0.95	1.044	6	59	65
1700	0.089	1.83	1.919	6	114	119
1800	0.08	0.922	1.002	5	57	62
TOTAL	5.392	5.239	10.631	336	326	662

Note: Some minor errors occur in the table due to roundings

A commercial development would also be likely to generate several servicing trips by HGV's and LGV's throughout the day. As such, the trip-generation for goods vehicles has been calculated. Please refer to Table 5.

Table 5 – LGV Trip Generation – B1 Commercial Use

Time Period	Vehicle Trip Rate (per 100sqm)			Proposed Trip Rate (6,223sqm site)		
	Arrive	Depart	Total	Arrive	Depart	Total
700	0.014	0.008	0.022	1	0	1
800	0.013	0.007	0.02	1	0	1
900	0.006	0.007	0.013	0	0	1
1000	0.024	0.02	0.044	1	1	3
1100	0.013	0.013	0.026	1	1	2
1200	0.017	0.012	0.029	1	1	2
1300	0.008	0.009	0.017	0	1	1
1400	0.007	0.011	0.018	0	1	1
1500	0.004	0.01	0.014	0	1	1
1600	0.009	0.018	0.027	1	1	2
1700	0.001	0.007	0.008	0	0	0
1800	0.002	0.002	0.004	0	0	0
TOTAL	0.118	0.124	0.242	7	8	15

As the table illustrates, the development could be expected to generate in excess of 15 vehicle trips throughout the day. This does not account for additional HGV trips throughout the day, and additional LGV trips prior to and beyond the peak. There would also be potential for additional daily trips for commercial waste and recycling, which would not form part of the existing residential refuse strategy for the neighbourhood, and would thus create an additional burden on the road network, exacerbating the existing issues caused by years of industrial estate activity at the former factory in terms of both road safety, and kerbside damage caused by HGV and LGV vehicles on the local road network.

Table 6 looks more widely at total person trips generated by a B1 office development during peak hours of operation. Applying the same adjusted mode share census data parameters for “Method of Travel to Work”, the estimated multi-modal residential peak hour travel demand based on commercial scheme of 6,223sqm is outlined in Table 6.

Table 6 – Commercial Peak Hour Travel Demand

Richmond Ward 014	AM			PM		
	In	Out	2 Way	In	Out	2 Way
Underground, metro, light rail, tram	5	0	5	0	5	5
Train	20	1	20	1	21	22
Bus, minibus or coach	18	1	19	1	19	20
Taxi	0	0	0	0	0	0
Motorcycle, scooter or moped	1	0	1	0	1	1
Driving a car or van	42	2	43	2	44	47
Passenger in a car or van	2	0	2	0	2	2
Bicycle	7	0	8	0	8	8
On foot	12	0	12	1	12	13
Other method of travel to work	0	0	0	0	0	0
ALL CATEGORIES	107	4	111	6	114	119

As Table 6 illustrates, an alternative office use would generate a considerable number of vehicle trips by employees during both the AM and PM peak, which in turn creates issues in relation to congestion, traffic flow, highway safety, residential amenity and site access, with several vehicles concentrated on the site access during key peak hours of travel, as opposed to throughout the day.

The concentration of additional vehicles to the site is not limited to the peak periods, with the full assessment illustrating that commercial HGV/LGV activity occurs throughout the day and indeed beyond the morning and evening peak. As the existing site assessment detailed, there are no restrictions upon employment uses at the site across a 24-hour period, therefore there is potential for additional servicing activity and employment activity to occur early in the morning and late at night potentially across a 7-day week, depending on the operational requirements of tenants.

In summary, from a highways perspective, developing the site under a B1 employment use class does not remove or mitigate against the historical issues of employee traffic, LGV/HGV conflict, damage to the kerbside infrastructure and highway safety which have been clearly documented for the existing site.

SUMMARY

OVERVIEW

As outlined in the Executive Summary, there are broadly two impacts that employment use on the site generates – local traffic and parking pressures, and safety hazards caused by multiple HGVs using the local road network at the same time. The Trip-Generation Assessment shows that both a B1 commercial use or B2 industrial would generate a significant number of total person, vehicle and HGV trips throughout the day which would directly exacerbate the two clear impacts which have been well-documented in the history of the site.

PEAK HOUR CONSIDERATIONS

Applying the adjusted mode share of 39.1% car or driver trips, it is clear that the number of morning and evening trips associated with an industrial use and commercial use is significant when looking across the peak as a whole. Whilst some level of parking could be provided on site, there is real potential for localised congestion across the morning and evening peak, as well as generating overspill parking into the area, with several areas of uncontrolled parking outside of the immediate CPZ but within a viable walk distance for employees.

HGV TRIP COMPARISON

One of the key issues associated with the previous industrial site was the issues caused by regular HGV traffic which has been identified as a source of great conflict in a largely residential area. The existing residential surroundings would likely only generate one regular/weekly HGV movement associated with refuse collection, which is not new to the network, already serving the adjoining residential streets.

In summary, the development of a B1 commercial use, or the return to a B2 industrial use, gives rise to the following long-standing issues documented with the existing site.

- Damaged footways and kerbs;
- Concerns about safety for other road users and pedestrians;
- Local complaints about noise and poor air quality;
- No site restrictions, meaning existing industrial use allowed to operate for 24 hours a day;
- Damage to parked cars and street furniture;
- HGV engines idling and blocking road prior to and during the morning peak.

CONCLUSIONS

It is clear through the trip-generation assessment undertaken, that an alternative commercial use would generate a considerable number of total person and vehicle trips, and would not alleviate the issues surrounding LGV and HGV trips associated with the extant site.

In comparison to a commercial development to an industrial development as per the extant consented use, the trip generation assessment has illustrated that an alternative commercial development would generate less total trips than an industrial development, however there would still be a significant number of vehicle trips during the peak periods and throughout the day, and concerns around HGV/LGV traffic that have characterised the existing site would not be alleviated or remedied.

As outlined in the Executive Summary, by developing either a B1 commercial and B2 industrial scheme, there are no clear routes to mitigate the risks associated with the existing site. Increasing traffic and parking capacity on local residential streets is an extremely difficult and often impossible undertaking. Similarly, dealing with the impacts of multiple HGVs cannot easily be overcome – there is no scope to widen the local roads and introducing dedicated signed routes of HGVs has already been done.



An alternative and viable use to the existing site would need to generate significantly less trips, particularly during the peak which would mean less impact on the existing public transport network, whilst less vehicle trips would result in less issues for congestion, traffic flow, parking constraints, pedestrian safety and neighbourhood amenity.

In summary, from a highways perspective it is considered that the re-introduction of substantive employment use on this site would be unacceptable, unsafe and extremely difficult to attempt to mitigate.