

Proposed Quarry

Hatfield Aerodrome

**Transport Chapter Addendum
Brett Aggregates Limited**

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1.0 INTRODUCTION

1.1 Background

SLR Consulting Limited (SLR) was appointed by Brett Aggregates Limited (BAL) to prepare a planning application and associated Environmental Statement (ES) for a proposed quarry at the former Hatfield Aerodrome, Hatfield, Hertfordshire. Subsequent to the submission of the planning application (in January 2016) SLR has continued to support BAL by addressing comments raised during the consultation process.

This report forms an Addendum to the Transport Chapter presented in the ES and should be read alongside the Transport Chapter (chapter 7) contained within the ES and does not replace it.

The Transport Chapter of the ES considers the potential environmental effects related to the movement of vehicles associated with the operation of the proposed quarry.

Consideration is given to existing and future traffic levels, to the routing of vehicles on the surrounding highway network and to the resultant capacity and environmental impacts of site generated traffic. The chapter concludes with a summary of the assessments undertaken and an overview of the mitigation measures proposed.

1.2 Purpose of this Addendum

Hertfordshire County Council (HCC), acting as the local highways authority, has requested further information relating to highways and transportation.

This Transport Addendum seeks to provide the information in order for HCC to consider the application proposals and make their recommendation.

1.3 Summary of Proposals

As set out in the ES (chapter 1 and chapter 3) the proposals would involve the winning and working, together with processing for sale, of some 8Mt of sand and gravel over a period of around 30 years (based on an annual output of around 250,000tpa). The proposed development would also consist of processing facilities and a concrete batching. These would be located in the northern part of the application site.

Processed aggregates and concrete (together with the import of cement and inert fill materials) would be exported via a new access constructed onto the A1057 on the southern side of the quarry.

An internal road would connect a new site access from the A1057 to the processing facilities at the north of the quarry. This would run along the western boundary of the proposed quarry.

Processed aggregate would be exported from the site via HGVs of an appropriate size and nature, and said HGVs would be weighed on both ingress and egress of the site.

The quarry would be worked on a phased basis to allow for progressive restoration. As such, in addition to the export of aggregate/concrete restoration materials would also be imported to the application site.

The quarry would operate to the following hours:

- 0700 hours to 1800 hours Monday to Friday;
- 0700 hours to 1300 hours Saturdays; and
- No operations on Sundays or bank holidays save for emergency repairs.

The quarry would have a core staff of 6 employees. This would comprise a manager, a foreman, 2 loading shovel operatives, 1 dozer operative, 1 concrete batcher and 1 weighbridge operative.

The number of staff would increase to 10 during earthmoving works which would be undertaken on a campaign basis. This would be over a temporary period. For the purposes of any impact assessment a workforce of 10 has been assumed.

1.4 Highways Discussions

SLR attended a meeting at 1030HRS on the 10th March 2016 at Hertfordshire County Council's County Hall, Pegs Lane, Hertford. The meeting was scheduled with Hertfordshire County Council (HCC) Highways in order to discuss the highways and transportation implications of the application proposals.

Attending the meeting was the following:

- Chay Dempster, Hertfordshire County Council (Planning Case Officer);
- Vetti Vettivelu, Hertfordshire County Council (Highways Development Management);
- James Dale Hertfordshire County Council (Highways Development Management);
- Manjinder Sehmi, Hertfordshire County Council (Highways);
- Chris Lowden, SLR Consulting Limited; and
- Adam Turner, SLR Consulting Limited.

The issues raised during the meeting are detailed and addressed within the following chapters of this report.

2.0 PRINCIPLE OF ACCESS SERVED OFF AN A CLASS ROAD

2.1 HCC Highways Request

HCC has highlighted that there is County Policy advising against new access arrangements onto A Class roads unless an exceptional case can be shown. It is the responsibility of the applicant to demonstrate that an exceptional case exists.

2.2 Local Transport Plan Policy

The Hertfordshire County Council Local Transport Plan 3 (LTP3) sets out the county's main transport policies.

Paragraph 3.20 provides guidance on Road Hierarchy and Network Development. It states that:

'The county council will maintain and develop a road hierarchy so that traffic is concentrated onto roads appropriate to its journey purpose'.

The LTP3 would classify the A1057 as a Rural Main Distributor Roads. It defines these roads as:

'...connect the main towns with the Primary Route Network and link neighbouring towns within the PRN grid. Single carriageways will usually be adequate. Main distributor roads consist of those county 'A' roads which do not form part of the Primary Route Network and are identified by the white backed signs'.

The LTP3 states that the County Council will develop and maintain strategies for roads within the urban and inter urban network that:

'B. In Rural Main Distributor Roads:

- Discourage through traffic from using rural main distributor roads.*
- Not allow new access except where special circumstances can be demonstrated'.*

'H. Consider the 'place and movement' function of a road in conjunction with the hierarchy when assessing a highway proposal, whether county council or development promoted'.

2.3 Special Circumstances

The application proposes to gain direct access off the A1057.

Whilst the A1057 has 'A' road status, in the proximity of the application site access it is a single carriageway road with pedestrian footways, street lights and mean average speeds of 33.4mph westbound and 35.2mph eastbound, many of the traits of an area which could be defined as 'place'.

The proposed operation and its surrounding environment would benefit from direct and dedicated access served off an A Class road.

The access junction design, as detailed within Section 4 of this Transport Chapter Addendum, has been designed with a ghost right turn lane facility. Following the initial

assessment (as reported in the ES) it was considered that a ghost right turn lane was not required to meet any general design guidelines or address any issues relating to junction capacity or safety. The ghost right turn lane facility has been proposed in order to err on the side of caution in acknowledgement that the access location would be an exception from the County Policy advice.

Furthermore, the application site only has frontage onto the A1057 and the applicant does not control any further land to allow for an alternative access option onto another road.

As such it is considered that an exceptional case exists.

3.0 TRAFFIC FORECAST AND DISTRIBUTION

3.1 HCC Highways Request

HCC indicated that they would seek to condition the number of HGV movements generated by the quarry, but would look to ensure that the condition was workable (i.e. not restrictive). Both SLR and Bal would request that any limit allows suitable flexibility to allow for fluctuations in the market. In this respect it is not uncommon to average the HGV movements over a period of time.

HCC stated that they were satisfied with the traffic distribution assumptions as weight restrictions and the layout of the strategic road network would largely dictate routing.

3.2 HGV Traffic Forecast

The traffic forecast has been calculated using first principles and an average payload of 17t. This is based on SLR's experience working on similar sites and also provides for a worst case scenario.

The Transport Assessment (Table 7/5 in Chapter 7 of the ES) has calculated that the proposals is likely to generate 87 HGV trips per day comprising 29 material 'import' trips and 58 material 'export' trips. This equates to 174 HGV movements daily.

HGV traffic would operate throughout the working day, scheduled evenly to ensure the site operates efficiently. It is proposed that the operational hours of the development would be from 07:00 - 18:00 Monday to Friday, and 07:00 – 13:00 Saturday.

For robustness, on the basis of a ten hour day, 18 HGV movements (in and out) would be generated per hour, or one every 3.3 minutes.

It is considered that this is a robust HGV traffic forecast and that the quarry would operate typically within this level. In order to accommodate any uncharacteristic spikes in activity it is recommended that any HGV restriction should be capped at 200 HGVs per day, which would allow for a 13 additional HGV trips per day, or an average of between 1 and 2 per hour.

4.0 ACCESS JUNCTION DESIGN

4.1 HCC Highways Request

HCC Highways had undertaken a site visit and it was suggested that the access may need to be moved slightly east as it may not get full visibility to the west (in front of Notcutts Garden Centre).

It was also suggested during the Highways meeting that the indicative entrance design (with two 90 degree bends) was not ideal and that a straighter entrance road would be preferable (allow HGVs entering the site to make the manoeuvre quicker).

HCC advised that a central ghost island arrangement may be preferable to allow for the free flow of traffic. However, it was accepted that the volume of traffic may demonstrate that the current arrangement would be acceptable. However, having a ghost island would help in demonstrating the exceptional case.

It was requested that a Stage 1 Road Safety Audit should be provided in order to support the access proposals.

4.2 Initial Access Design

SLR produced an initial junction design which depicted the site access as a simple priority junction with 4.5 metre by 120 metre visibility splays. The initial site access junction design is shown within Figure 1.

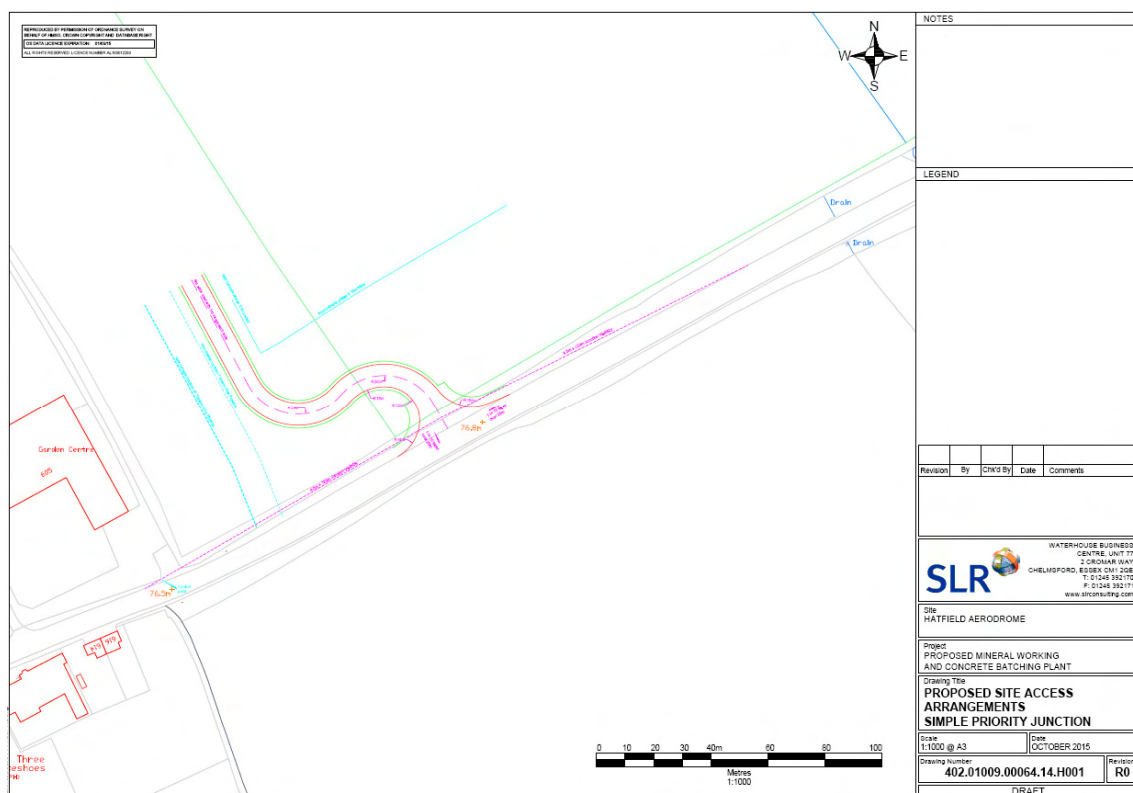


Figure 1
Initial Site Access Junction Design

4.3 Stage 1 Road Safety Audit

On the basis of the above requests, SLR commissioned an independent Transport Consultant to undertake a Stage 1 Road Safety Audit (RSA). AECOM undertook the audit during April 2016.

The RSA is included at Appendix A of this report. The following provides a summary of the potential issues highlighted during the RSA.

4.3.1 Access Road Alignment

Summary: Horizontal access road alignment needs reviewing.

'Large vehicles may encroach onto opposing side of road as result of horizontal alignment of site access road and forward visibility around bends may be compromised Swept path information has not been provided for the site access road and the audit team is concerned that, due to the horizontal alignment of the site access road, large vehicles may struggle to negotiate the bends without encroaching onto the opposing side of the carriageway. This may result in head-on/ side-swipe collisions between vehicles travelling in opposite directions.

In addition, the forward visibility splays around the bends on the site access road are likely to run through the land on either side of the access road. It is unclear whether any buildings/ landscaping/ signage etc. will be provided on this land and whether these may compromise forward visibility. Inadequate forward visibility around the bends may result in rear end shunt collisions between slowing, manoeuvring vehicles and those exiting the bend'.

Recommendation:

'Undertake swept path analyses to ensure that opposing large vehicles will be able to safely negotiate the alignment of the site access road (particularly through the bends). Ensure that adequate forward visibility splays are achievable at the bends and that they are kept clear of signage/ street furniture/ landscaping etc'.

Design Response:

A swept-path analysis has been undertaken which considers the turning requirements of a maximum sized articulated vehicle. The site access design has been amended to demonstrate that two HGVs can pass without any issues.

4.3.2 Pedestrian Provision

Summary: No pedestrian crossing facilities proposed.

'It is unclear from the plan provided whether a footway or verge is proposed around the site access junction. If a footway is provided there do not appear to be any pedestrian crossing facilities (dropped kerbs or tactile paving) proposed either across the site access junction or across Hatfield Road (linking the proposed footway to the existing provision on the southern side of Hatfield Road). Pedestrians are likely to be at risk of being struck by vehicles when crossing in this area if suitable facilities are not provided'.

Recommendation:

'If footway facilities are proposed, provide crossing facilities (dropped kerbs/tactile paving) across the site access road junction and across Hatfield Road to ensure pedestrians are

able to safely navigate across the site access road, as well as access the existing footway facilities on the southern side of Hatfield Road'.

Design Response:

An island has now been included which facilitates pedestrian crossing and also prevents overtaking to protect the right turn lane.

4.3.3 Junction Visibility

Summary: Junction visibility splays obscured by vegetation/ road alignment west of junction.

'The plans provided show site access visibility splays of 4.5m x 120m however the splays to both the left and right appear to run through existing thick/established vegetation that currently lines the northern side of the carriageway. It is unclear from the plans provided whether (and to what extent) the vegetation on the northern side of the carriageway is to be removed/cut-back and therefore whether these visibility splays will be achievable in reality. The road alignment to the west of the proposed access junction may exacerbate this concern if the vegetation is not sufficiently cleared/cut-back and may jeopardise both emerging visibility for traffic exiting the site and forward visibility to the junction for eastbound traffic.

Insufficient visibility could result in collisions between mainline and emerging traffic or rear end shunts on the western approach'.

Recommendation:

Remove/cut-back significant levels of vegetation (some of which appears to be mature, large trees etc.) to ensure that adequate visibility splays of 4.5m x 120m can be achieved. This is likely to constitute an ongoing maintenance issue.

Design Team/ Project Sponsor Response:

Junction visibility splays would be provided as shown on the proposed junction layout plan. The envelope of visibility would be cleared and maintained in order to meet the necessary requirements. A note has been included on the proposed junction layout plan. In addition, new hedgerow planting would be undertaken along the boundary of the quarry on the northern side of the visibility splay to compensate for any loss of hedgerow needed to accommodate the highway works.

4.3.4 Lighting Requirements

Summary: Unclear if lighting columns are to be re-provided within scheme

The scheme proposes to widen the A1057 Hatfield Road into the northern verge where a number of lighting columns are currently located. It is unclear from the plans provided whether these lighting columns are to be re-provided (and if so where they will be relocated) within the scheme. The likely set back of columns may impact on lighting levels at the junction. Insufficient lighting levels may result in collisions on this approach during the hours of darkness.

Recommendation:

Ensure at detailed design that sufficient levels of lighting are provided at the junction.

Design Team/ Project Sponsor Response:

5.0 OFF SITE TRAFFIC CAPACITY

5.1 HCC Highways Request

Further clarification was requested with regards to the likely traffic impact of the proposals at Junction 3 of the A1(M). HCC advised that further traffic data could be obtained from their Highways and Operation Strategy Team in order to undertake further assessment.

5.2 Traffic Data

Initial enquiries to obtain detailed traffic modelling data were unsuccessful.

Discussions with HCC Highways and Operation Strategy Team suggested that they agreed that the proposals would be very unlikely to impact the operation of the local highway network due to the road's A Class status and existing background traffic volumes.

Following further enquiries traffic data was requested from the Transport Planning and Data Team at Hertfordshire County Council who were able to provide Automatic Traffic Count (ATC) data.

5.2.1 A1001 Comet Way

Data was obtained for the A1001 Comet Way which links the A1057 with Junction 3 of the A1(M). Comet Way is the route to the A1(M) for access northbound and southbound, therefore this would be the route for operational traffic.

The data includes the 7 day period between 3rd and the 9th February 2015. The traffic flows are represented in 5 minute periods.

The data has been reviewed and summarised as Annual Average Weekday Traffic (AAWT) flows in PCUs (where a car is 1 PCU and a HGV is 2 PCUs) and as shown at Table 5-1.

Table 5-1
A1001 Comet Way Traffic Data Summary (AAWT)

Direction	Northbound	Southbound	Two-way
AAWT (0000-2400Hrs)	13,583	11,973	25,556
AM Peak (0800-0900Hrs)	1,170	745	1,914
PM Peak (1700-1800Hrs)	892	1,092	1,984

Further to the above summary the graph at Figure 3 illustrates the average pattern of vehicle movement throughout a typical weekday. The graph represents PCUs.

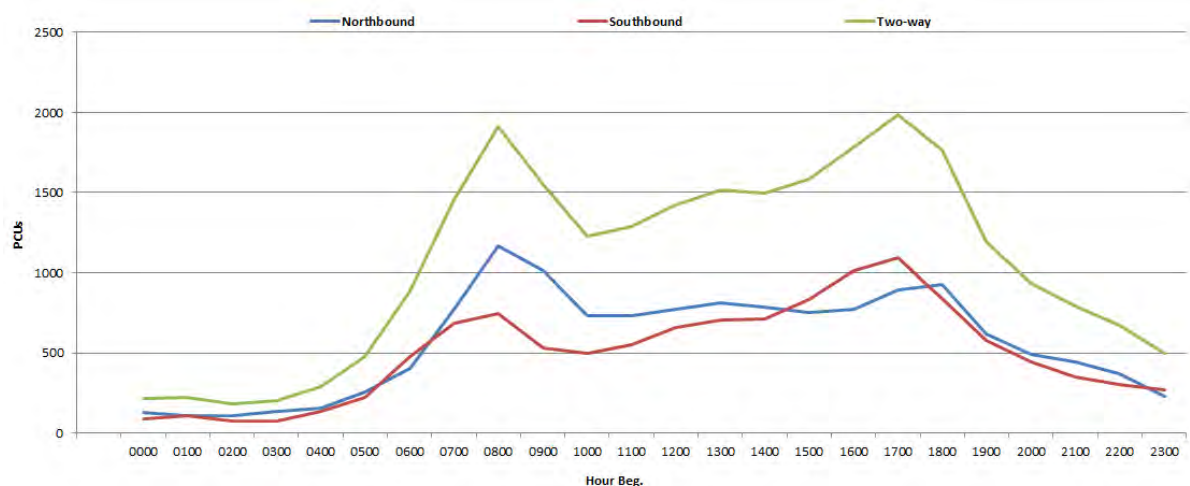


Figure 3
A1001 Comet Way Daily PCU Profile

The data shows a typical weekday traffic pattern for an A Class road link with defined weekday AM and PM peak periods, with a minor increase at lunchtime.

The graph at Figure 4 illustrates the average pattern of HGV movement throughout a typical weekday.

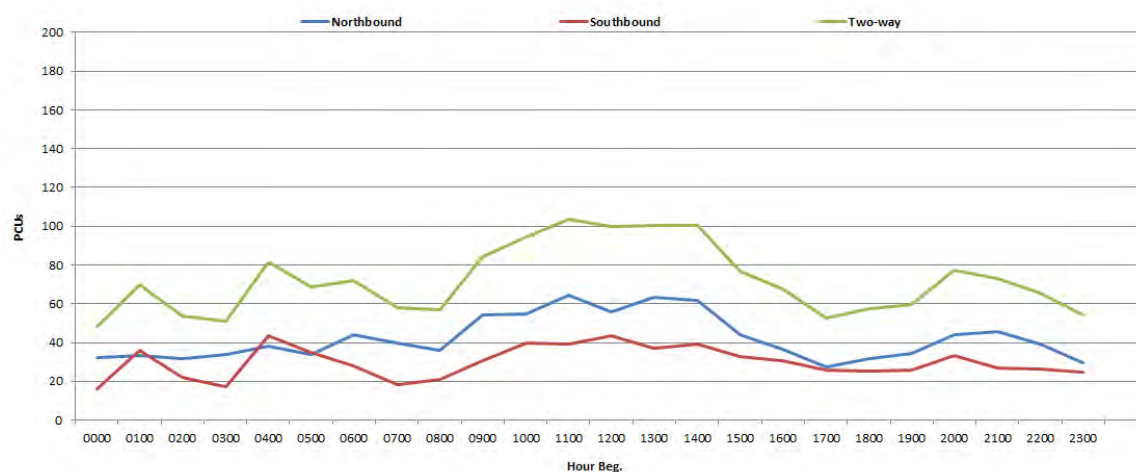


Figure 4
A1001 Comet Way Daily HGV Profile

Figure 4 shows that there are no obvious patterns in HGV movement other than there is an increase in HGV numbers during the working day.

5.3 Assessment

Table 5-2 considers the impact of the proposed development traffic forecast against the existing background traffic data for 2015.

No traffic growth has been applied as this will only serve to reduce the impact. Additionally, for the purposes of a robust assessment it has been assumed that 100% of all traffic will route via the A1001 Comet Way.

Table 5-2
A1001 Comet Way Traffic Impact (AAWT)

Period	Background	Proposed	Impact (%)
AAWT (0000-2400Hrs)	25,556	368	0.01
AM Peak (0800-0900Hrs)	1,914	46	0.01
PM Peak (1700-1800Hrs)	1,984	46	0.01

The above assessment indicates that the proposals would increase traffic flows on Comet Way by approximately 0.01%. It would therefore be a similar level of impact at the A1(M) junction and its slip-roads.

This level of impact is considered to be well within the normal fluctuation in daily traffic, which is typically 10%.

The 7 day ATC data obtained from HCC has been reviewed actually shows that the AAWT flows vary between 23,268 and 24,611 PCUs, a variation of 1,343.

5.4 Cumulative Impacts

HCC has also asked for consideration to be given to other developments in the area that may have a cumulative effect with the proposed quarry; this included new housing developments, allocations for housing and the neighbouring quarry operated by CEMEX.

5.4.1 Allocated Residential Sites

In relation to any allocations, then SLR would contend that it is for the later development to demonstrate that there aren't any cumulative effects with the proposed quarry. In this respect, the application site has been allocated for mineral extraction for many years within the adopted Minerals Local Plan, and so any later allocations for housing development should take the allocation into account and not frustrate the ability to bring forward the mineral allocation.

In terms of impact on the capacity of the local road network, a quarry has very different traffic patterns to that of a residential or commercial development. A residential or commercial development would be peak hour intensive with a large proportion of work based commute trips occurring in line with the typical working day. Whereas a quarry has a steady traffic profile spread throughout the working day.

It is therefore considered that the cumulative effect of allocated residential sites would be minimal and that any resulting traffic capacity issues would be resulting solely from the forthcoming housing developments and allocations. This should be considered as part of their assessments and proposed applications.

5.4.2 CEMEX Site, Hatfield Quarry

Consideration of the cumulative impact of the CEMEX quarry on the operation of the local highway network has been requested, and in particular the current application to import inert waste materials as part of the restoration scheme.

The scheme proposed the final restoration of Cut Field, accessed off Oaklands Lane, through the importation of approximately 1,226,000t of inert waste and soils progressively over a seven year period.

Details of the proposals have been taken from the Transport Statement produced by WYG dated 7th March 2014.

Traffic generation is provided as PCUs. It has been forecast that the scheme would generate up to 200 additional PCUs, of which 20 PCUs would occur during the network peak periods. Traffic distribution assumes that all operational movements will route via the A1057 to the A1(M).

Table 5-3 below considers the impact of the cumulative traffic of the proposed application and the CEMEX Site on the A1057 based on 2015 average weekday traffic levels expressed as PCUs. Again, no traffic growth has been applied as this will only serve to reduce the impact.

**Table 5-3
A1057 Cumulative Traffic Impact (AAWT)**

Period	2015 Background Traffic (PCUs)	Proposed Brett (PCUs)	Proposed CEMEX (PCUs)	Cumulative Total (PCUs)	Impact (%)
AAWT (0000-2400Hrs)	16,164	368	200	568	3.5
AM Peak (0800-0900Hrs)	1,154	46	20	66	5.7
PM Peak (1700-1800Hrs)	1,303	46	20	66	5.1

The above assessment indicates that the cumulative impact of the two sites would increase the daily traffic flow on the A1057 by approximately 3.5%. In terms of peak traffic impact, there would be an impact of up to 5.7%. This impact assumes that all traffic routes to/from the east and is a worst case scenario. Once traffic reaches the A1(M) junction traffic will disperse throughout the network minimising the impacts further.

Again, this level of impact is considered to be well within the normal fluctuation in daily traffic, which is typically 10%.

Furthermore, the CEMEX scheme is planned over a seven year period, therefore the overlap would be limited, particularly as the proposed application would ramp up operations.

It is therefore considered that the cumulative effect of the proposed application and the CEMEX Site would be minimal and limited to a short period only.

6.0 MITIGATION MEASURES

6.1 HCC Highways Request

HCC enquired as to whether private collections would be entertained at the site, or whether there deliveries would be solely by fleet/contractors. It is understood that in the past there have been problems in the county over collect trade.

6.2 Proposed Mitigation Measures

Operation would predominantly be fleet and contractors based on pre-arranged orders. However, Brett can't rule out some private collection trade.

6.2.1 The Brett Group Transport Policy

The proposed site operator, Brett, operates a large number of sites in the UK as a responsible and considerate neighbour. They have implemented a Transport Policy which is adhered to at all of its sites.

The Brett Group Transport Policy seeks to reduce the adverse social and environmental impacts of its transport operations. It includes measures such as:

- Minimise neighbourhood impacts by ensuring that any restrictions in vehicle movements are adhered to; and
- Minimise impact by ensuring products are transferred in appropriate vehicles, suitably packaged and secured.

The Brett Group Transport Policy is attached at Appendix B.

6.2.2 Wheel Wash Facility

A wheel wash facility is proposed to address any concerns of dust and debris on the highway network.

6.3 Highways Contributions

In light of the minor impact anticipated on the local highway network, it's existing high volumes of traffic and A Class status, it is reasoned that no Highway contributions would be necessary.

7.0 SUMMARY AND CONCLUSIONS

This Addendum to the Transport Chapter should be read with reference to the Transport Chapter (chapter 7) contained within the Environmental Statement (ES) and does not replace it. The Transport Chapter of the ES considers the potential environmental effects related to the movement of vehicles associated with the operation of the proposed quarry.

Hertfordshire County Council (HCC), acting as the local highways authority, has requested further information relating to highways and transportation. This Transport Addendum seeks to provide the information in order for HCC to consider the application proposals and make their recommendation.

Consideration has been given to existing and future traffic levels, to the routing of vehicles on the surrounding highway network and to the resultant capacity and environmental impacts of site generated traffic.

A Stage 1 Road Safety Audit (RSA) has been undertaken by independent consultants AECOM which has informed a revised site access design.

It is concluded that the proposed access design is suitable in terms of operational capacity and highway safety and the development will not exacerbate any existing vehicular congestion, nor generate any additional vehicular congestion or conflict elsewhere on the local highway network.

For the above reasons, the proposed development of the site accords with the national and local planning policies and is considered to be acceptable in traffic and transport terms.

8.0 CLOSURE

This report has been prepared by SLR Consulting Limited with all reasonable skill, care and diligence, and taking account of the manpower and resources devoted to it by agreement with the client. Information reported herein is based on the interpretation of data collected and has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of Brett; no warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR.

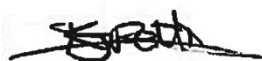
SLR disclaims any responsibility to the client and others in respect of any matters outside the agreed scope of the work.

Appendix A
Stage 1 Road Safety Audit

A photograph of a two-lane road lined with trees and a 'KILL YOUR SPEED' sign. The road is paved and has a dashed white line down the center. On the left side of the road, there is a tall green lamppost and a white sign with a black border that reads 'KILL YOUR SPEED'. In the distance, a white van and a dark car are visible on the road. The trees are mostly bare, suggesting a late autumn or winter setting. The sky is overcast.

Hatfield Aerodrome, Proposed Site Access Arrangements: Stage 1 Road Safety Audit

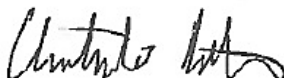
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April 2016

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Where field investigations are carried out, these have been restricted to a level of detail required to meet the stated objectives of the services. The results of any measurements taken may vary spatially or with time and further confirmatory measurements should be made after any significant delay in issuing this Report.

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Appendix B.	PROBLEM LOCATIONS PLAN

1 Introduction

This report results from a Stage 1 Road Safety Audit carried out for the proposed access arrangements for the proposed mineral working (quarry) and concrete batching plant at the Hatfield Aerodrome site on the A1057 Hatfield Road in Hertfordshire. The audit was carried out at the request of AECOM on behalf of the client: Brett Group.

The report indicates each of the problems identified together with recommendations to solve or mitigate the problems, the Audit Team Statement and a schedule of documents reviewed.

The members of the Audit Team were:

1) Mark Watson BA (Hons) MCIHT MSoRSA
Audit Team Leader
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2) Kimberley Pettingill BSc (Hons) MCIHT MSoRSA
Audit Team Member
AECOM

The audit took place at AECOM's Chelmsford office during April 2016. The audit comprised of an examination of the documents provided by the designers (see **Appendix A**). In addition to examining the documents supplied, the Audit Team visited the site of the proposed measures on 12 April 2016. The audit was undertaken during the morning off-peak traffic hours of 11:00 to 12:00. Weather conditions during the site visit were overcast with a dry carriageway surface.

No departures from standards have been notified to the Audit Team on the proposals.

The locations of problems are shown in conjunction with the scheme proposals in **Appendix B** where the reference numbers relate to the problems identified in this report.

The terms of reference of the Road Safety Audit are as described in HD 19/15. The advice issued in the Design Manual for Roads and Bridges (DMRB) applies to trunk road and motorway highway improvement schemes; however, it has been used in this report to define the scope of this audit. The Road Safety 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. However, to clearly explain a safety problem or the recommendation to resolve a problem the Audit Team may, on occasion, have referred to a design standard without touching on technical audit.

An absence of comment relating to specific road users / modes in Section 4 of this report does not imply that they have not been considered; instead the Audit Team feels they are not adversely affected by the proposed changes.

This Safety Audit is not intended to identify pre-existing hazards which remain unchanged due to the proposals; hence they will not be raised in Section 4 of this report as they fall outside the remit of Road Safety Audit in general. Details which are considered to be outside the Terms of Reference, but which the Audit Team wishes to draw to the attention of the Client Organisation, have been sent to the overseeing organisation project sponsor in a covering letter to this Road Safety Audit Report.

Nothing in this Audit should be regarded as a direct instruction to include or remove a measure from within the scheme. Responsibility for designing the scheme lies with the designer and as such the Audit Team accepts no design responsibility for any changes made to the scheme as a result of this Audit.

In accordance with HD 19/15 Road Safety Audits must be repeated if the scheme design materially changes, if there are many changes which could together impact on road user safety, or if the previous finalised Road Safety Audit for the relevant stage is more than 5 years old.

All traffic sign and road marking diagram number references are made to The Traffic Signs Regulations and General Directions, 2002 (TSRGD).

2 Site Description

The A1057 Hatfield Road runs in an approximate east/west direction between Hatfield to the east and St Albans to the west. In the vicinity of the scheme the A1057 Hatfield Road is a single carriageway road which is subject to a 40mph speed limit and is street lit. A footway is provided on the southern side of the carriageway. Speed cameras are positioned on both the eastbound and westbound carriageways of the A1057 Hatfield Road within the vicinity of the scheme area.

Land use in the audit area is predominantly rural fields/ agricultural, with several residential properties located to the east and a garden centre, public house, petrol filling station, industrial uses and residential properties located to the west.

2.1 Proposed Scheme

A proposed mineral working quarry and concrete batching plant is proposed at the former Hatfield Aerodrome site located to the north of the A1057 Hatfield Road. A new priority site access T-junction is proposed directly onto the A1057 Hatfield Road with an associated ghost island right turn facility.

The site access road will be a two-way single carriageway road where, upon entry to the site, vehicles will be required to turn through approximately 90 degrees to the west, shortly followed by a 90 degree bend to the north.

It is understood that no pedestrian footway facilities are proposed at the site access.

The proposals that form the scope of this road safety audit are shown in drawing 402.01009.00064.14.H002 Rev R0 (referenced in **Appendix A**).

3 Matters Outstanding from Previous Road Safety Audits

The auditors have not been provided with any copies of previous Road Safety Audits or Exception Reports.

4 Matters Arising From This Stage 1 Road Safety Audit

The following problems have been identified from the documents submitted:

A GENERAL

No comments.

B LOCAL ALIGNMENT

B1 PROBLEM

Location: Site access road

Drawing No: 402.01009.00064.14.H002 Rev R0

Summary: Large vehicles may encroach onto opposing side of road as result of horizontal alignment of site access road and forward visibility around bends may be compromised

Swept path information has not been provided for the site access road and the audit team is concerned that, due to the horizontal alignment of the site access road, large vehicles may struggle to negotiate the bends without encroaching onto the opposing side of the carriageway. This may result in head-on/ side-swipe collisions between vehicles travelling in opposite directions.

In addition, the forward visibility splays around the bends on the site access road are likely to run through the land on either side of the access road. It is unclear whether any buildings/ landscaping/ signage etc. will be provided on this land and whether these may compromise forward visibility. Inadequate forward visibility around the bends may result in rear end shunt collisions between slowing, manoeuvring vehicles and those exiting the bend.

RECOMMENDATION

Undertake swept path analyses to ensure that opposing large vehicles will be able to safely negotiate the alignment of the site access road (particularly through the bends). Ensure that adequate forward visibility splays are achievable at the bends and that they are kept clear of signage/ street furniture/ landscaping etc.

Design Team/ Project Sponsor Response:

A swept-path analysis has been undertaken which considers the turning requirements of a maximum sized articulated vehicle. The site access design has been amended to demonstrate that two HGVs can pass without any issues. The revised site access plan also provides forward visibility splays which should be kept clear throughout the life of the site access road under the proposed arrangement.

C NON-MOTORISED USER PROVISION

C1 PROBLEM

Location: Proposed site access junction

Drawing No: 402.01009.00064.14.H002 Rev R0

Summary: No pedestrian crossing facilities proposed

It is unclear from the plan provided whether a footway or verge is proposed around the site access junction. If a footway is provided there do not appear to be any pedestrian crossing facilities (dropped kerbs or tactile paving) proposed either across the site access junction or across Hatfield Road (linking the proposed footway to the existing provision on the southern side of Hatfield Road). Pedestrians are likely to be at risk of being struck by vehicles when crossing in this area if suitable facilities are not provided.

RECOMMENDATION

If footway facilities are proposed, provide crossing facilities (dropped kerbs/tactile paving) across the site access road junction and across Hatfield Road to ensure pedestrians are able to safely navigate across the site access road, as well as access the existing footway facilities on the southern side of Hatfield Road.

Design Team/ Project Sponsor Response:

An island has now been included which facilitates pedestrian crossing and also prevents overtaking to protect the right turn lane.

D JUNCTIONS

D1 PROBLEM

Location: Proposed site access junction

Drawing No: 402.01009.00064.14.H002 Rev R0

Summary: Junction visibility splays obscured by vegetation/ road alignment west of junction

The plans provided show site access visibility splays of 4.5m x 120m however the splays to both the left and right appear to run through existing thick/established vegetation that currently lines the northern side of the carriageway. It is unclear from the plans provided whether (and to what extent) the vegetation on the northern side of the carriageway is to be removed/cut-back and therefore whether these visibility splays will be achievable in reality. The road alignment to the west of the proposed access junction may exacerbate this concern if the vegetation is not sufficiently cleared/cut-back and may jeopardise both emerging visibility for traffic exiting the site and forward visibility to the junction for eastbound traffic. Insufficient visibility could result in collisions between mainline and emerging traffic or rear end shunts on the western approach.

RECOMMENDATION

Remove/cut-back significant levels of vegetation (some of which appears to be mature, large trees etc.) to ensure that adequate visibility splays of 4.5m x 120m can be achieved. This is likely to constitute an ongoing maintenance issue.

Design Team/ Project Sponsor Response:

Junction visibility splays will be provided as shown on the proposed junction layout plan. The envelope of visibility will be cleared and maintained in order to meet the necessary requirements. A note has been included on the proposed junction layout plan.

E ROAD SIGNS, CARRIAGEWAY MARKINGS & LIGHTING**E1 PROBLEM**

Location: Hatfield Road, northern side of carriageway

Drawing No: 402.01009.00064.14.H002 Rev R0

Summary: Unclear if lighting columns are to be re-provided within scheme

The scheme proposes to widen the A1057 Hatfield Road into the northern verge where a number of lighting columns are currently located. It is unclear from the plans provided whether these lighting columns are to be re-provided (and if so where they will be relocated) within the scheme. The likely set back of columns may impact on lighting levels at the junction. Insufficient lighting levels may result in collisions on this approach during the hours of darkness.

RECOMMENDATION

Ensure at detailed design that sufficient levels of lighting are provided at the junction.

Design Team/ Project Sponsor Response:

Lighting will be considered during the detailed design stage. The proposed design will ensure that the necessary lighting requirements are met.


5 Audit Team Statement

We certify that this Road Safety Audit has been carried out in accordance with HD 19/15.

No one on the Audit Team has been involved with the design of the measures.

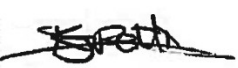
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Signed: 
Date: 25/04/16

AUDIT TEAM OBSERVERS:

There were no Audit Team Observers present during the site visit.

Appendix A.

LIST OF DRAWINGS, DOCUMENTS AND DEPARTURES FROM STANDARDS

The following documents were submitted as part of the road safety audit:

Drawings

402.01009.00064.14.H002 001	Proposed Site Access Arrangements Ghost Right Turn Lane Site Access Location Plan	October 2015 April 2015	Rev R0 -
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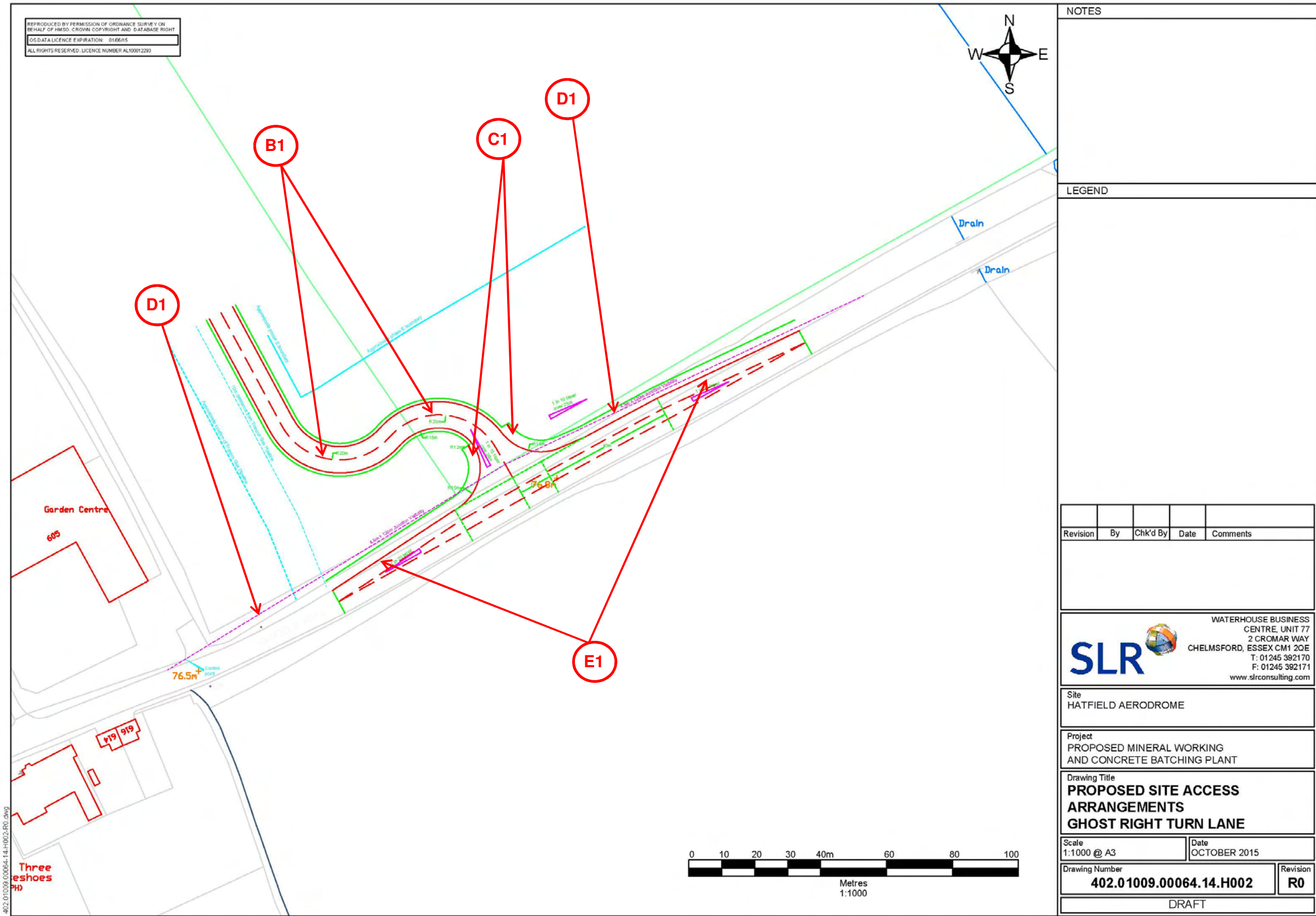
Documents

Environmental Statement (ES)	Section 7: Transport	SLR Consulting Limited	FINAL
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Departures from Standard

None presented.

Appendix B. PROBLEM LOCATIONS PLAN



About AECOM

AECOM (NYSE: ACM) is a global provider of professional technical and management support services to a broad range of markets, including transportation, facilities, environmental, energy, water and government. With approximately 100,000 employees around the world, AECOM is a leader in all of the key markets that it serves. AECOM provides a blend of global reach, local knowledge, innovation, and collaborative technical excellence in delivering solutions that enhance and sustain the world's built, natural, and social environments. A Fortune 500 company, AECOM serves clients in more than 100 countries and has annual revenue in excess of \$6 billion.

More information on AECOM and its services can be found at www.aecom.com.

Appendix B

Brett Transport Policy

BRETT GROUP TRANSPORT POLICY



Brett Group businesses will act to reduce the adverse social and environmental impacts of transport associated with the delivery of our products to customers.

In order to achieve this we will:

- Minimise transport of our products through effective route planning and wherever possible reduce unladen road mileage.
- Monitor and review distances travelled and types of transport used to deliver constituent materials and deliver products.
- Promote alternative delivery methods such as barge or rail.
- Ensure delivery drivers have undertaken training in safe, fuel efficient and considerate driving.
- Minimise neighbourhood impacts by ensuring that any restrictions in vehicle movements are adhered to.
- Minimise impact by ensuring products are transferred in appropriate vehicles, suitably packaged and secured.
- Consider the use of alternative fuels, fuel efficiency and safety standards when purchasing new equipment or vehicles.
- Dispose of vehicles responsibly at end of life.

Measures

- % of delivery drivers trained in safe, fuel efficient and considerate driving.
- Products delivered by road e.g. tonnes by road, m³ by road.
- Products delivered by rail e.g. tonnes by rail, m³ by rail.
- Products delivered by barge/ship e.g. tonnes by barge/ship, m³ by barge/ship.
- Average delivery distance per unit of delivered products e.g. km/t, km/m³.
- Average load size per mode of transport e.g. tonnes or m³ by road, rail or barge.
- Average fuel consumption e.g. litres/tonnes, litres/m³.
- Carbon emissions per unit of delivered products e.g. kgCO₂/m³.

Bill Brett
Group Chairman

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Issue 3 January 2015



Drawing 1

Proposed Site Access Junction Layout

Drawing 2

Swept-path Analysis

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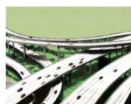
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