

**S&J PADFIELD & PARTNERS
AND ST MODWEN PROPERTIES**

**PROPOSED EMPLOYMENT ALLOCATION:
BRENTWOOD ENTERPRISE PARK, ESSEX**

TRANSPORT APPRAISAL ADDENDUM

**REPORT REF. NO M401-03
PROJECT NO. M401
FEBRUARY 2015**

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BRENTWOOD ENTERPRISE PARK, ESSEX**

TRANSPORT APPRAISAL ADDENDUM

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EXECUTIVE SUMMARY

This report has been prepared on behalf of S&J Padfield & Partners and St Modwen Properties to support the proposed allocation of land at the former M25 widening works compound site for employment in the emerging Brentwood Local Plan. The proposed allocation site, known as "Brentwood Enterprise Park", is ideally located for distribution warehousing with associated offices, being positioned adjacent to M25 Junction 29, and would help meet the majority of unmet employment need in the Borough.

Proposed improvements to the M25 J29 gyratory have been identified, which include signalisation of the two currently un-signalised nodes and widening of the circulatory carriageway and off-slips, to accommodate additional traffic associated with employment development. An assessment of the impact of predicted weekday peak hour vehicle traffic associated with the proposed development on the operation of the gyratory has previously been undertaken, and the Highways Agency (HA) has confirmed that it has been adequately demonstrated that development traffic could be accommodated in a 2030 scenario.

The HA outlined some points of detail with the proposed junction improvement scheme that required further consideration, and these matters have been reviewed and incorporated into the design.

The potential to enhance the sustainable travel credentials of the site through diligent travel planning and provision of a commuter bus service has been further examined.

It is anticipated that a commuter bus service would link the site with Brentwood Town Centre and strategic allocations at West Horndon. This would also connect to rail stations at Brentwood and West Horndon, around a 15 minute bus journey from both. When coupled with a rail journey of up to 20 minutes from origins such as Barking, Ilford, Benfleet or Chelmsford, a commute to the site from such origins or closer should take well within an hour. An integrated journey with rail is therefore a realistic option.

To further enhance sustainability, the site could include a range of supporting facilities, such as shops, banking and food & drink uses, which would enhance support for businesses on the

Enterprise Park and remove the need for employees to travel off-site to access facilities thereby supporting site sustainability.

Other Travel Plan measures that could be implemented to promote the use of sustainable modes of transport include: -

- Potential to formalise existing off-site foot/cycle connections to existing signed routes;
- On-site cycle parking in accordance with minimum standards;
- Promote cycle use through schemes such as Bike to Work;
- Provision of Welcome Packs for new employees with details on all available travel options;
- Travel information displayed on public noticeboards;
- Car sharing scheme established on a database such as essexcarshare.com;
- Commuter Car Club, allowing for occasional business travel;
- Reducing the need to travel by encouraging video or tele-conferencing for meetings;
- Regular Travel Plan meetings with employers to share information and suggest improvements;
- Personalised travel planning service; and
- Encouraging employers to participate in ECC's Travel Plan Accreditation Scheme.

The site is ideally located adjacent to M25 J29 which would assist with sustainable fleet management for distribution warehousing operations located there, with reduced journey lengths on lower category roads. Therefore emissions would be lower than for such uses located at other sites within the Borough that are not readily accessible from the strategic network.

In view of the above we consider that this site is suitable for allocation for employment development in transport terms.

1.0 INTRODUCTION

- 1.1 Ardent Consulting Engineers (ACE) is retained by S&J Padfield & Partners (SJPP) and St Modwen Properties to advise on transport aspects relating to the proposed employment allocation of land, known as "Brentwood Enterprise Park" (BEP), on the former M25 widening works site compound adjacent to the A127/M25 J29 gyratory at Brentwood, Essex.
- 1.2 Brentwood Borough Council (BBC) is the local planning authority, while Essex County Council (ECC) is the local highway authority responsible for all roads in the area to the east of the M25. The motorway and gyratory is the responsibility of the Highways Agency (HA). The London Borough of Havering lies to the west of the M25, while a short distance to the south is the Borough of Thurrock; both Havering and Thurrock are unitary authorities. Transport for London (TfL) is the highway authority for the A127 to the west of the M25 since it forms part of the strategic TfL Road Network (TLRN) and is a "Red Route" clearway.
- 1.3 Following publication of BBC's *Local Plan 2015-2030 Preferred Options for Consultation* in July 2013, representations were made by Strutt & Parker on behalf of SJPP in support of the site's proposed allocation for employment development (under Site ref. 101A). ACE prepared a Transport Appraisal (TA, report ref. M401-01, dated October 2013) in support of these representations.
- 1.4 Following consultation on its *Preferred Options*, BBC was minded that several key issues needed to be reconsidered, specifically: objectively assessed housing need; new employment land and job provision; the impacts of Crossrail; sustainability; planning for Gypsies & Travellers; and proposals made by neighbouring Basildon

District Council. This resulted in publication of its *Strategic Growth Options Consultation* (SGOC) document in January 2015.

- 1.5 The SGOC identifies that for employment types such as distribution warehousing with associated offices, site locations close to the strategic highway network and near to key junctions are needed. It states that the proposed land at M25 J29 to provide a new business park would help meet the majority of unmet employment need in the Borough.
- 1.6 It is envisaged by BBC that a number of existing employers in the Borough would relocate to BEP, allowing existing employment sites in and adjacent to urban areas to be redeveloped for residential use for which they are better suited.
- 1.7 The TA identified proposed improvements to the M25 J29 gyratory, including signalisation of the two un-signalled nodes and widening of the circulatory carriageway and off-slips, to accommodate additional traffic associated with employment development. It also outlined travel plan measures necessary to promote the use of sustainable modes of transport, including a potential commuter bus service to link the employment site with rail stations at Brentwood and West Hordon.
- 1.8 This Addendum report outlines discussions with the HA following submission of the TA in respect of the proposed M25 J29 gyratory improvements. It also further examines the potential to enhance the sustainable travel credentials of the site through diligent travel planning and provision of a commuter bus service.

1.9 Following this introduction, the remainder of the report is structured as follows: -

- **Section 2.0** outlines the proposed development allocation and improvements to the M25 J29 Gyratory to facilitate access, and outlines discussions with the HA;
- **Section 3.0** examines sustainable travel opportunities and sets out a range of potential Travel Plan measures; and
- **Section 4.0** provides a summary and identifies conclusions.

2.0 PROPOSED DEVELOPMENT AND ACCESS

Proposed Development

- 2.1 The proposed allocation is for employment, split between B1(a) office, B1(b) Research & Development, B1(c) light industrial, B2 general industrial and B8 (distribution warehousing) use classes, together with a budget hotel (use class C1).

Site Access

- 2.2 It is proposed to retain and improve the former M25 widening works compound access/egress arrangements on the south eastern edge of the gyratory at J29 to access the site. The existing signalised node on the south eastern corner of the gyratory would continue to operate under 3-stage control as it does presently. Other proposed improvements to the gyratory include the following: -

- signalisation of the two remaining unsignalled main arms (M25 northbound and A12 eastbound off-slips);
- provision of a third lane within the existing circulatory carriageway width on the southern and western sides;
- widening of the A127 westbound off-slip to provide a third lane; and
- widening of the circulatory carriageways on the east side to provide a flared approach with short fourth lane between the A127 under-bridge and the stop line.

- 2.3 The proposed site access arrangements, submitted with the TA, are shown on **ACE Drawing No. M401-006** (included at **Appendix A**).

- 2.4 An assessment of the impact of predicted weekday peak hour vehicle traffic associated with the proposed development on the operation of the gyratory in a future year of 2030 (the end of the

Plan period), allowing for projected background traffic growth, was undertaken as part of the TA. This shows that the full signalisation of the gyratory proposed in conjunction with the allocation is expected to result in a significant improvement in its overall operation in the weekday am peak hour in 2030. In the pm peak some decrease in overall operation is expected. In both peaks, the proposed site access arrangements are predicted to operate satisfactorily, with no material impact on the operation of either the A127 westbound off-slip or the circulatory carriageway at this node.

- 2.5 The HA, as responsible highway authority for the M25 and gyratory, has confirmed in correspondence dated 23rd December 2013 (see **Appendix B**), that it has been adequately demonstrated that development traffic could be accommodated in a 2030 scenario. It however outlined some points of detail with the design that required further consideration. These matters are shown below, along with ACE's response, as detailed in a letter to the HA dated 21st January 2014 (see **Appendix B**).

a) Widening the roundabout on the approach to the stop line and widening the A127 westbound off slip, both to four lanes, give cause for concern in that it increases the risk that drivers will not be able to see the signals properly on the approaches. If the modelling works it would be better to retain 3 lanes on the roundabout. With a 4 lane layout, at detailed design stage the developer would need to make sure that the signals are fully visible from all lanes on the approach. The advice in TD 50/04 is that the secondary signals should be no more than 50m from the stop line - on both of these approaches they will be around 70m, so this is particularly important.

ACE can confirm that 4-lane entries on both the A127 westbound off-slip and adjacent (east side) circulatory section are necessary for capacity reasons on the basis of the robust analysis presented

in the TA. **ACE Drawing no. M401-007** (included at **Appendix A**) shows that the proposed secondary signals would be fully visible from each lane in accordance with guidance set out in *TD 50/04*; these being no more than 50m from the stop line and at an angle of no greater than 30 degrees from the centre of the lanes. This has been achieved in-part by modifying the proposed design to include a larger splitter island, as detailed below.

- b) *The proposed splitter island on the roundabout does not appear to be large enough to mount any street furniture and is anyway at risk of becoming an obstruction that vehicles could hit. Without the island, the hatched area could be a large area of the carriageway with lower skid resistance that could be hazardous for motorcycles. In the existing layout, the left lane on the roundabout was separated by a solid white line and the road legend said "works access only". Therefore the hatching was less of an issue.*

If the layout could be altered to either remove the island and hatching, or bring it forward to the stop line where a signal could be mounted on it (subject to sufficient width) the Highways Agency would be happier.

The proposed splitter island has been increased in size and now provides better separation and guidance to drivers as well as being of sufficient size to mount signals. This modification has also allowed the stop line for M25 south and A127 west lanes to be pushed further forward, providing a capacity benefit (by reducing phase intergreen times). The enlargement of the splitter island is achieved by local realignment of the offside kerb line to widen the circulatory carriageway.

- c) *From a NMU [non-motorised user] perspective, the existing cycle route that goes around the outside of the roundabout is pretty poor, and the NMU context report will need to identify any*

increased use resulting from the development. There may need to be some upgrading of the route. The unsignalled crossing of the M25 on slips may be an issue if the numbers of NMUs are likely to increase.

It is agreed that the foot/cycleway around the roundabout is in poor condition. It is anticipated that the section around the southern part of the roundabout (connecting the A127 west with the development site) would be re-surfaced as part of the package of highway improvements. The M25 northbound off-slip is to be signalised and a toucan crossing could be provided in conjunction to facilitate safe crossing of this arm.

Consideration has been given to a potential crossing facility on the M25 southbound on-slip and a possible arrangement is shown on **ACE drawing no. M401-007** (at **Appendix A**). This comprises a standalone toucan crossing linked to the adjacent (east side) signalised node to ensure minimal delay to vehicles and queues at the stop line.

2.6 Following submission of the above response to the HA, further comments were received (see **Appendix B**). Again, these are shown below along with ACE's response.

a) I agree that the proposed splitter island is now probably just large enough to accommodate signal equipment and, with such equipment mounted on it, would be more visible to circulatory traffic and, in particular, powered two wheelers. Although splitter islands within the circulatory carriageway are unusual (they are not specifically mentioned in TD 50/04) they are in use elsewhere on the SRN, notably at M4 Junction 4. Motorcyclists might still want to weave across and through slower moving traffic on all sections of the circulatory carriageway, so I would recommend that the hazard markings between the Brentwood Enterprise Park approach lane

and the M25 south approach lane be extended back on the circulatory carriageway to a point just downstream of the A127 eastbound exit from the roundabout.

Agreed, **ACE drawing no. M401-007A** (included at **Appendix A**) shows hazard lane markings extended back as recommended.

- b) I note the location of the proposed Toucan crossing on the M25 south on-slip but would query whether there is enough stacking space between it and the circulatory carriageway. I would advise getting the developer to check this.*

The proposed toucan crossing would only display a red aspect to vehicle traffic when the development site egress is on green, therefore vehicles will not be travelling around the circulatory at this time.

- c) The NMU route through the southern section of the junction will need improving beyond just resurfacing. The boundary treatment of the route requires it to be physically segregated from the carriageway wherever possible (see paragraph 7.22 of TA 90/05). There is some scope at this junction to do this.*

There is scope to achieve this as suggested, and this provision will be reviewed in detail at the application stage.

- 2.7 **ACE Drawing no. M401-007A** (at **Appendix A**) shows the latest design iteration of the proposed access arrangements, which addresses matters raised by the HA. To reiterate, the HA has confirmed that it has been adequately demonstrated that development traffic could be accommodated in a 2030 scenario.

- 2.8 ECC, in its role as local highway authority responsible for all roads in the area to the east of the M25 (including the A127 and its east facing slips) has not provided formal comment on the proposed

highway improvements nor ACE modelling to date. This is in lieu of the results of Local Plan option testing currently being undertaken by Peter Brett Associates, commissioned by BBC.

- 2.9 The TA assessed a future year of 2030 (the end of the Plan period) with projected background growth applied to surveyed flows. This was derived from the National Transport Model (NTM) 2013, which is based on predicted increases in total annual vehicle mileage by Region and road type, and combined with local growth factors for each peak period derived from the National Trip Ends Model (NTEM) v6.2 (July 2011) using the Trip Ends Model Program (TEMPRO).
- 2.10 Full details of the methodology used to derive projected background growth are included in the TA; however, it is relevant to note that the assessment was robust in that no reduction to the number of jobs assumed in the Brentwood zone to account for those on the site using the *Alternative Planning Assumptions* facility in TEMPRO was applied so there will be some double counting of trips due to future developments. Furthermore, since some of the employment uses on the site would be relocated from elsewhere within the Borough, an allowance could be made for trips to/from these existing sites already passing through the gyratory, but again to be robust this was not undertaken.

3.0 TRAVEL PLAN

- 3.1 A comprehensive Travel Plan would need to be implemented in order to encourage employees and visitors to travel to BEP by sustainable modes of transport (walking, cycling, public transport and car sharing) rather than by single occupancy car.
- 3.2 The Travel Plan would also need to consider business travel, fleet activities and the delivery of goods. In respect of the latter, BEP is ideally located to M25 J29 to assist with sustainable fleet management, with reduced journey lengths on lower category roads and therefore emissions compared with other sites within the borough that are not readily accessible from the strategic network.
- 3.3 An Overarching Site Travel Plan (OSTP) would need to be prepared and agreed with BCC and ECC at the planning application stage. The development would contain multiple occupiers, and once these are known, they will be encouraged to develop their own Occupier Travel Plans within the context of the OSTP taking into account their own specific travel planning requirements, arising from its working practices and operations.
- 3.4 A Travel Plan Co-ordinator (TPC) would be appointed to ensure the delivery and management of the OSTP, and to promote and implement the various agreed initiatives.
- 3.5 There are a range of physical and management measures that could be delivered as part of the BEP development to facilitate travel by other modes, and measures to promote sustainable travel opportunities. These are set out below.

Commuter Bus Service

- 3.6 To enable public transport to be a realistic travel option for employees, a commuter bus service would be required to link the site with local settlements and rail stations.
- 3.7 An indicative route for a potential bus service is shown at Figure 3 of the *Preferred Options* document (see **Plate 1**). The route would connect BEP with employees residing in and around Brentwood Town Centre and strategic allocations at West Horndon.

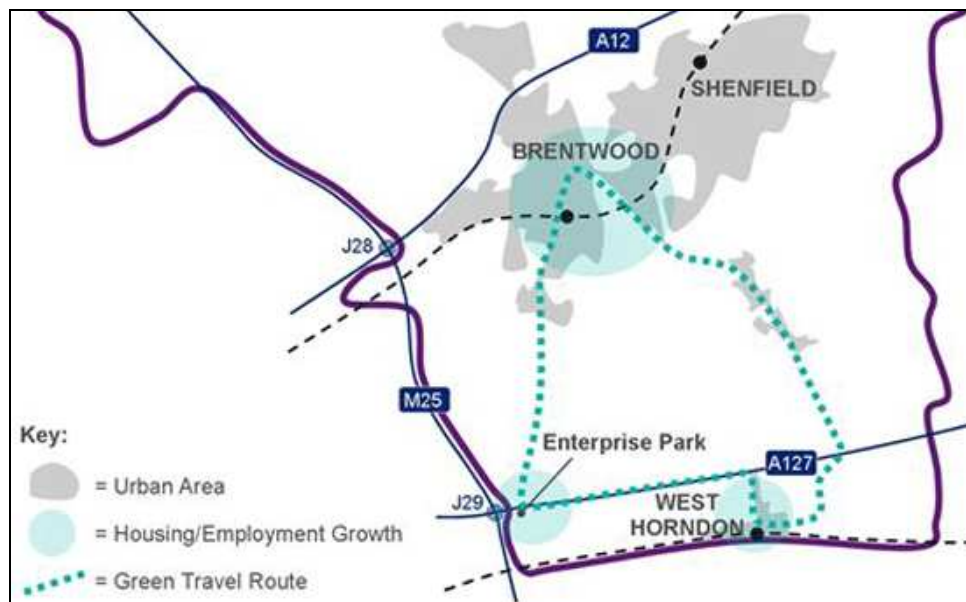


Plate 1: 'Green Travel Route'

- 3.8 The potential bus service would connect the site to Brentwood station (for Abellio Greater Anglia Metro and, from 2018/19, Crossrail services) and West Horndon station (for c2c rail services), for journeys to/from Central London and other settlements in Brentwood Borough and Essex. Such connections would significantly enhance site accessibility by public transport; thereby reducing reliance on the private car for employees and visitors alike.

- 3.9 The site is located around a 15 minute bus journey from both Brentwood and West Hordon rail stations. When coupled with a 15–20 minute rail journey from origins such as Barking, Ilford, Benfleet or Chelmsford, or intervening stations, a commute to BEP from such origins or closer would take well within an hour subject to travel to the origin station and wait times. An integrated journey with rail is therefore a realistic option. The bus service would be timetabled to coordinate with rail services, and it may be possible for the TPC to negotiate discounted travel for BEP employers and their staff to further encourage travel by public transport.
- 3.10 There is an additional option for a bus service connecting the site to Upminster rail station (for c2c trains, Abellio Greater Anglia services to Romford, and London Underground District Line services – this being its eastern terminus). The former 348 bus provided a connection between Upminster station and the stops nearest the site on Warley Street, and there is an opportunity to reinstate this connection and extend into the site.
- 3.11 The nearest bus stops to the site on Warley Street, are now served by the 269 (Grays–South Ockendon–Brentwood) and the X81 route (Lakeside–Brentwood–Shenfield–Hutton) routes. The potential for either of these existing routes to be extended to BEP would be examined.

Examples of Community/Commuter Bus Services

Birch Coppice Business Park, Tamworth

- 3.12 Birch Coppice Business Park, Tamworth, employs a total of some 4,500 people, and is located adjacent to M42 Junction 10 in North Warwickshire. Stagecoach Midlands worked closely with businesses in and around the Business Park to identify new commuter routes and services to allow employees in Tamworth and Nuneaton to access the site by bus. The bus services were launched following

consultation with employers at Birch Coppice, Job Centre Plus, North Warwickshire Borough Council and Warwickshire County Council, and are well-used by employees.

Work Link Buses, Rutland

- 3.13 Work Link is a commuter bus service in Rutland, East Midlands, that facilitates access to industrial/business parks outside of the main commuter hours and is primarily aimed at providing access for evening shift workers. Work Link is operated by Centrebus on behalf of Rutland County Council and funded by a grant from the Local Sustainable Transport Fund. Again, this is a well-used service.

Brentwood Community Transport

- 3.14 BBC, in partnership with ECC, part funds Brentwood Community Transport (BTC), which operates bus services from outlining communities in the Borough to Brentwood Community Hospital, rail stations at Brentwood and Shenfield, and also Romford Town Centre (the 898 'Queens Shopper'). BTC services are primarily focused on linking communities and facilitating access to services for those less able to travel, and demonstrates a successful partnership between BBC, ECC and the community to deliver much needed services.
- 3.15 A new commuter bus service would provide additional connections along its route for outlying communities in the southern part of the Borough, which currently has limited service, and could therefore complement existing BEP services.

Walk/Cycle

- 3.16 There is an un-signed foot/cycleway along the south side of the A127 which runs along the westbound off-slip up to J29 and along the southern side of the gyratory, continuing west along the on-slip. This links to Laindon and beyond as a signed 'local' route to the east

(see **Plate 2**). National Cycle Network (NCN) Route 139 (connecting Rainham and Noak Hill via Upminster) crosses the A127 circa 2km west of the site.



Plate 2: Existing Cycle Routes (extract from Sustrans map)

- 3.17 There is potential to formalise off-site connections to the existing signed routes and this would be examined in discussion with BBC, ECC, Sustrans and local cycle groups. Traffic-free connections will be made between the foot/cycleway on the south side of the A127 and BEP.
- 3.18 As identified earlier, it is proposed to provide toucan crossings on the M25 northbound off-slip and southbound on-slip, to facilitate safe walk and cycle movement around the south side of the gyratory, as shown on **ACE drawing no. M401-007A** (at **Appendix A**).
- 3.19 On-site cycle parking would be provided for staff and visitors in accordance with minimum standards.
- 3.20 Employers on BEP would be encouraged to take part in the Bike to Work scheme, which helps staff obtain a new bike and safety equipment at a discount using a salary sacrifice arrangement.

Employers would also be encouraged to provide pool bikes and safety equipment for use by employees for work-related journeys.

3.21 Employers could provide an umbrella pool to encourage intra-site walk trips in wet weather conditions.

3.22 The site could include a range of supporting facilities, including shops, banking, food & drink uses, a hotel and gym. Such facilities would support businesses on the site and remove the need for employees to travel off-site to access facilities, with the Enterprise Park being self-sufficient in that respect, and therefore sustainable.

Marketing and Promotion

3.23 Welcome Packs would be issued by the TPC to all employers for onward distribution to staff from which they can make informed decisions about the travel mode they select. The packs will include details on all travel options available. These could contain details of:-

- literature of the health benefits of walking and cycling;
- cycle routes in the vicinity of the site;
- safe pedestrian routes to the site;
- public transport routes and services (maps and timetables) along with fare information;
- relevant journey planning web-sites to use to provide links to up-to-date and accurate information about public transport options in the area; and
- local taxi firms operating in the area.

3.24 In addition to the Welcome Packs, travel information would also be displayed on public noticeboards within communal areas and also made available electronically via websites. The TPC would be responsible for ensuring the information is kept up to date.

Car Sharing

- 3.25 A car sharing scheme for BEP would be established on a database such as essexcarshare.com, which would allow employees to search for others with similar travel requirements. This could be coupled with an employer Guaranteed Ride Home (GRH) service, whereby if a car sharer is forced to use an alternative mode of transport to get to/from work due to their normal car sharing option not being available, then their employer's GRH scheme covers the cost e.g. a taxi fare.

Car Club

- 3.26 A Commuter Car Club could be established on-site, allowing for occasional business travel that cannot be undertaken by non-car modes. This provision would be subject to discussions with BBC, ECC and car club operators.

Reducing Need for Business Travel

- 3.27 The amount of business travel that is undertaken could be reduced, particularly for offices, by encouraging video or tele-conferencing to conduct meetings where possible.

Meetings

- 3.28 Regular Travel Plan meetings would be encouraged in which transport matters can be discussed with employers and suggested improvements implemented by the TPC. Such meetings would provide opportunities for site users to share information, suggest improvements to services and discuss local transport issues.

Personalised Travel Planning

- 3.29 The TPC could offer a personalised travel planning service to staff. This could involve the issue of travel diaries, identifying other modes of transport that could be used for various journeys and identifying ways to overcome any barriers to travel. This service would be advertised in the Welcome Packs.

ECC Travel Plan Accreditation Scheme

- 3.30 Employers would be encouraged to participate in ECC's Travel Plan Accreditation Scheme, whereby its Travel Plan is monitored over the course of a year and then awarded either bronze, silver, or gold level depending on number of measures achieved, travel survey response rates and travel plan targets reached. Upon accreditation, funding may be awarded by ECC to support further Travel Plan development and additional measures.

4.0 SUMMARY AND CONCLUSIONS

- 4.1 S&J Padfield & Partners and St Modwen Properties are seeking an allocation of land at the former M25 widening works compound site for employment in the emerging Brentwood Local Plan. The proposed allocation site, known as "Brentwood Enterprise Park", is ideally located for distribution warehousing with associated offices, being positioned adjacent to M25 Junction 29, and would help meet the majority of unmet employment need in the Borough.
- 4.2 This Addendum report has outlined discussions with the Highways Agency (HA) following submission of a Transport Appraisal (TA) in support of representations made in October 2013 on the Borough's *Local Plan Preferred Options for Consultation*.
- 4.3 The TA identified proposed improvements to the M25 J29 gyratory, including signalisation of the two currently un-signalled nodes and widening of the circulatory carriageway and off-slips, to accommodate additional traffic associated with employment development. An assessment of the impact of predicted weekday peak hour vehicle traffic associated with the proposed development on the operation of the gyratory was undertaken as part of the TA, and the HA subsequently confirmed that it has been adequately demonstrated that development traffic could be accommodated in a 2030 scenario.
- 4.4 The HA outlined some points of detail with the proposed junction improvement scheme that required further consideration, and these matters have been reviewed and incorporated into the design.
- 4.5 This Addendum report has further examined the potential to enhance the sustainable travel credentials of the site through diligent travel planning and provision of a commuter bus service.

- 4.6 It is anticipated that a commuter bus service would link the site with Brentwood Town Centre and strategic allocations at West Horndon. This would also connect to rail stations at Brentwood and West Horndon, around a 15 minute bus journey from both. When coupled with a rail journey of up to 20 minutes from origins such as Barking, Ilford, Benfleet or Chelmsford, a commute to the site from such origins or closer should take well within an hour. An integrated journey with rail is therefore a realistic option.
- 4.7 Potential bus services for further investigation have been identified, and examples given of other similar commuter bus services that are successful elsewhere.
- 4.8 The site could include a range of supporting facilities, such as shops, banking and food & drink uses, which would enhance support for businesses on the Enterprise Park and remove the need for employees to travel off-site to access facilities, thereby supporting site sustainability.
- 4.9 Other Travel Plan measures that could be implemented to promote the use of sustainable modes of transport include: -
- Potential to formalise existing off-site foot/cycle connections to existing signed routes;
 - On-site cycle parking in accordance with minimum standards;
 - Promote cycle use through schemes such as Bike to Work;
 - Provision of Welcome Packs for new employees with details on all available travel options;
 - Travel information displayed on public noticeboards;
 - Car sharing scheme established on a database such as essexcarshare.com;
 - Commuter Car Club, allowing for occasional business travel;

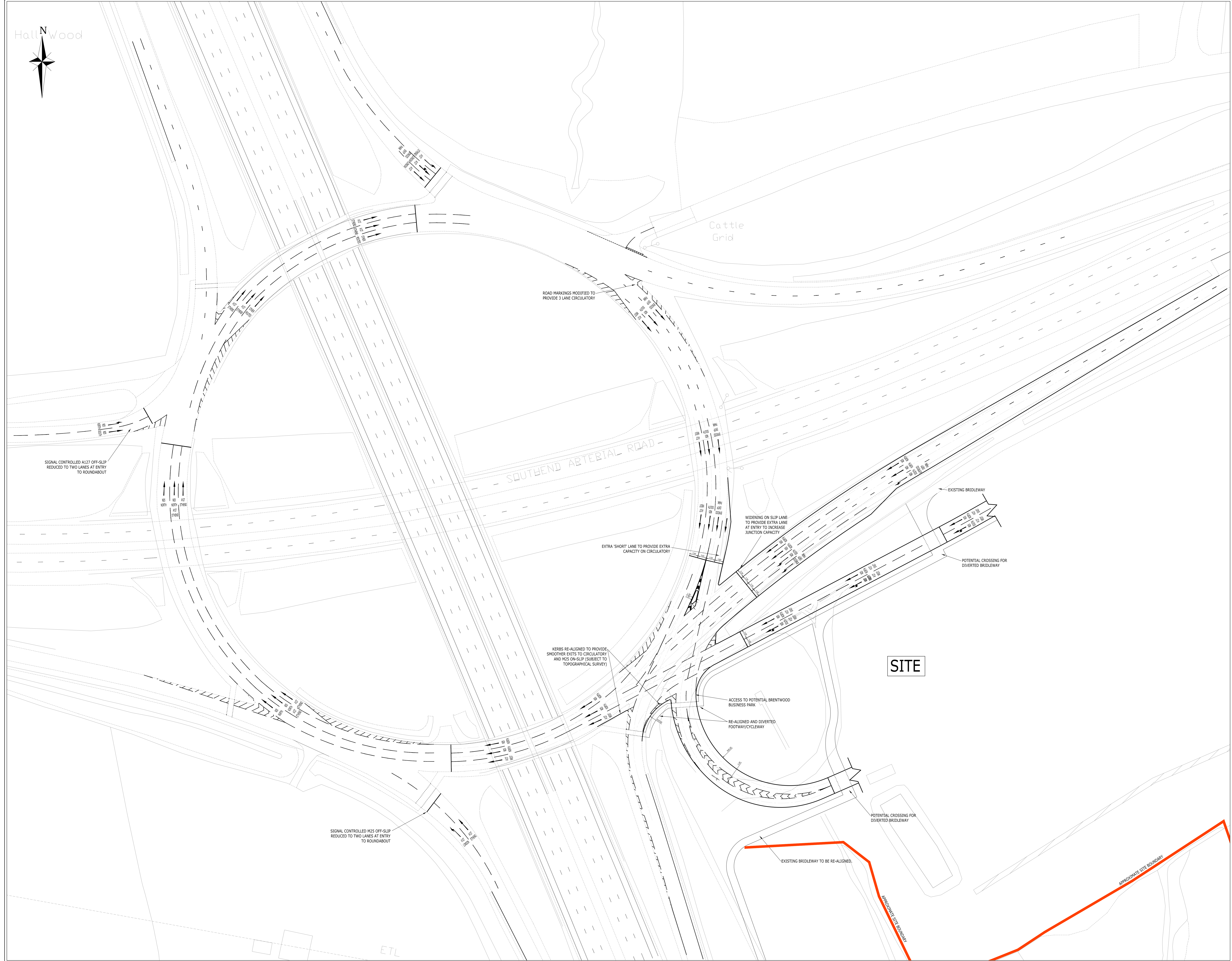
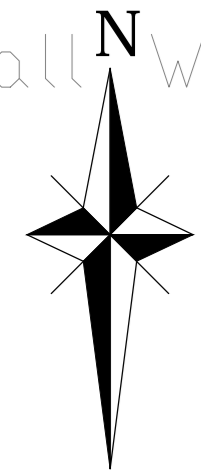
- Reducing the need to travel by encouraging video or tele-conferencing to conduct meetings;
- Regular Travel Plan meetings with employers to share information and suggest improvements;
- Personalised travel planning service; and
- Encouraging employers to participate in ECC's Travel Plan Accreditation Scheme.

4.10 The site is ideally located adjacent to M25 J29 which would assist with sustainable fleet management for distribution warehousing operations located there, with reduced journey lengths on lower category roads. Therefore emissions would be lower than for such uses located at other sites within the Borough that are not readily accessible from the strategic network.

4.11 In view of the above we consider that this site is suitable for allocation for employment development in transport terms.

Appendix A

Proposed Access and Improvements to M25 Junction 29



SIGNAL CONTROLLED A127 OFF-SLIP
REDUCED TO TWO LANES AT ENTRY
TO ROUNDABOUT

ROAD MARKINGS MODIFIED TO
PROVIDE 3 LANE CIRCULATORY

SOUTHEND ARTERIAL ROAD

EXTRA 'SHORT' LANE TO PROVIDE EXTRA
CAPACITY ON CIRCULATORY

KERBS RE-ALIGNED TO PROVIDE
SMOOTHER EXITS TO CIRCULATORY
AND RES ON-SLIP (SUBJECT TO
TOPOGRAPHICAL SURVEY)

WIDENING ON SLIP LANE
TO PROVIDE EXTRA LANE
AT ENTRY TO INCREASE
JUNCTION CAPACITY

SITE

SIGNAL CONTROLLED M25 OFF-SLIP
REDUCED TO TWO LANES AT ENTRY
TO ROUNDABOUT

EXISTING BRIDLEWAY TO BE RE-ALIGNED.

POTENTIAL CROSSING FOR
DIVERTED BRIDLEWAY

APPROXIMATE SITE BOUNDARY

NOTES:

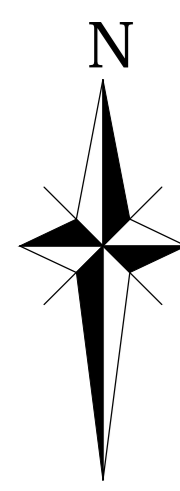
NO.	DESCRIPTIONS	DRAWN	CHECKED	DATE

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 PROJECT TITLE:
LAND SOUTH OF CODHAM HALL

DRAWING TITLE:
PROPOSED ACCESS & IMPROVEMENTS TO M25 JUNCTION 29

SCALE:	DATE:	DESIGNED:
1:500 @ A0	SEPT 2013	RMA
DRAWN: RMA	CHECKED: SAF	APPROVED: ML
DRAWING NO.:	M401-006	REV: -



fall Wood

Cattle Grid

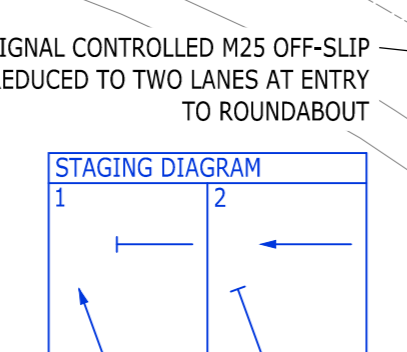
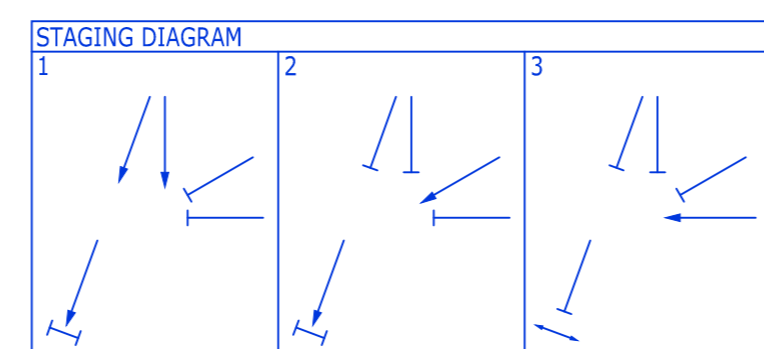
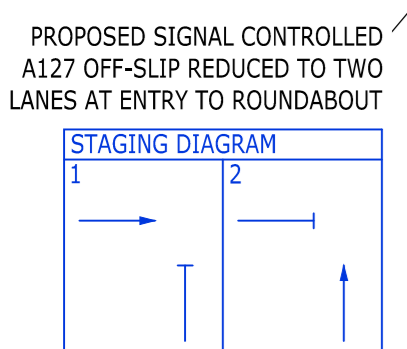
SOUTHEND ARTERIAL RD A127

SITE

- NOTES:
1. ALL HIGHWAYS AND SIGNAL DESIGN SUBJECT TO DETAILED TOPOGRAPHICAL SURVEY
 2. ALL SECONDARY SIGNALS ARE WITHIN 50m OF STOP LINES
- KEY:
- PSig PRIMARY SIGNAL
 - SSig SECONDARY SIGNAL
 - SECONDARY SIGNAL SIGHT LINES

ALTERATIONS TO A127 WESTBOUND OFF-SLIP AND ACCESS TO POTENTIAL BRENTWOOD ENTERPRISE PARK
SCALE: 1:250 @ A0

SCALE: 1:500 @ A0
ALTERATIONS TO M25 JUNCTION 29



DRAFT - FOR DISCUSSION ONLY

REV.	AMENDMENTS	DATE	BY

ARDENT CONSULTING ENGINEERS

Suite 207
One Aile Street
London
E1 8DE

1 020 7680 4088
1 020 7688 3756

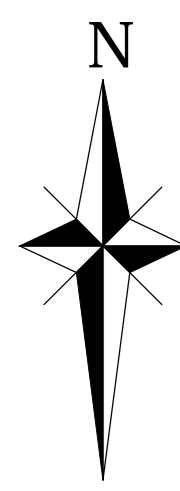
www.ardent-ce.co.uk
enquiries@ardent-ce.co.uk

CLIENT:
S & J PADFIELD & PARTNERS

PROJECT TITLE:
LAND SOUTH OF CODHAM HALL

DRAWING TITLE:
PROPOSED ACCESS & IMPROVEMENTS TO M25 JUNCTION 29

SCALE:	DATE:	DESIGNED:
AS SHOWN @ A0	JAN 2014	RMA
DRAWN: RMA	CHECKED: SAF	APPROVED: ML
DRAWING NO.:	M401-007	REV: -



fall Wood

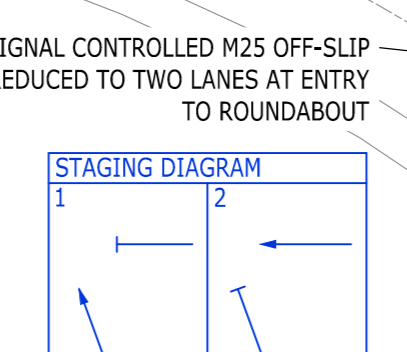
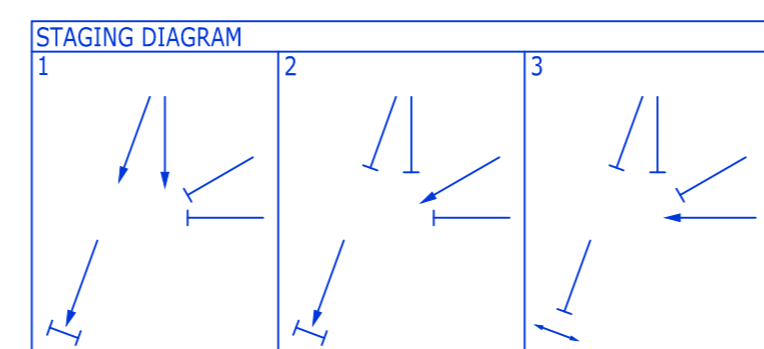
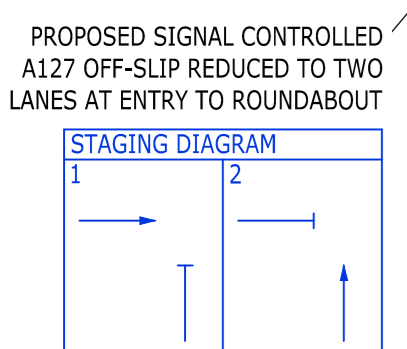
Cattle Grid

SOUTHEND ARTERIAL RD A127

M25

SITE

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 2. ALL SECONDARY SIGNALS ARE WITHIN 50m OF STOP LINES
- KEY:
- PSig PRIMARY SIGNAL
 - SSig SECONDARY SIGNAL
 - SECONDARY SIGNAL SIGHT LINES



KERS RE-ALIGNED TO PROVIDE SMOOTHER EXITS TO CIRCULARITY AND M25 ON-SLIP (SUBJECT TO TOPOGRAPHICAL SURVEY)

EXISTING SIGNAL CONTROLLED SECTION OF CIRCULARITY TO BE RETAINED

ROAD MARKINGS MODIFIED TO PROVIDE 3 LANE CIRCULARITY

WIDENING ON SLIP LANE TO PROVIDE EXTRA LANE AT ENTRY TO INCREASE JUNCTION CAPACITY

ACCESS TO POTENTIAL BRENTWOOD ENTERPRISE PARK

RE-ALIGNED AND DIVERTED FOOTWAY/CYCLEWAY

EXISTING BRIDLEWAY

POTENTIAL CROSSING FOR DIVERTED BRIDLEWAY

POTENTIAL CROSSING FOR DIVERTED BRIDLEWAY

ALTERATIONS TO A127 WESTBOUND OFF-SLIP AND ACCESS TO POTENTIAL BRENTWOOD ENTERPRISE PARK

SCALE: 1:250 @ A0

SCALE: 1:500 @ A0

ALTERATIONS TO M25 JUNCTION 29

DRAFT - FOR DISCUSSION ONLY

REV	DESCRIPTIONS	DATE	BY	CHECKED
A	CIRCULARITY ROAD MARKINGS EXTENDED	29-04-14	RMA	SAF

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CLIENT:
S & J PADFIELD & PARTNERS

PROJECT TITLE:
LAND SOUTH OF CODHAM HALL

DRAWING TITLE:
PROPOSED ACCESS & IMPROVEMENTS TO M25 JUNCTION 29

SCALE:	DATE:	DESIGNED:
AS SHOWN @ A0	JAN 2014	RMA
DRAWN: RMA	CHECKED: SAF	APPROVED: ML
DRAWING NO: M401-007		REV: A

Appendix B

HA Correspondence

Steve Field

Subject: FW: Brentwood LDP: TA for M25 J29 proposed employment use

From: Whittingham, Thomas [<mailto:thomas.whittingham@highways.gsi.gov.uk>]

Sent: 23 December 2013 11:38

To: Philip Drane

Subject: FW: Brentwood LDP: TA for M25 J29 proposed employment use

Philip

Having reviewed the TA I can confirm that it adequately demonstrates that the development traffic could be accommodated in a 2030 scenario.

However, the Highways Agency has reservations with the future design proposals for the roundabout.

Widening the roundabout on the approach to the stop line and widening the A127 westbound off slip, both to four lanes, give cause for concern in that it increases the risk that drivers will not be able to see the signals properly on the approaches. If the modeling works it would be better to retain 3 lanes on the roundabout. With a 4 lane layout, at detailed design stage the developer would need to make sure that the signals are fully visible from all lanes on the approach. The advice in TD 50/04 is that the secondary signals should be no more than 50m from the stop line - on both of these approaches they will be around 70m, so this is particularly important.

The proposed splitter island on the roundabout does not appear to be large enough to mount any street furniture and is anyway at risk of becoming an obstruction that vehicles could hit. Without the island, the hatched area could be a large area of the carriageway with lower skid resistance that could be hazardous for motorcycles. In the existing layout, the left lane on the roundabout was separated by a solid white line and the road legend said "works access only". Therefore the hatching was less of an issue.

If the layout could be altered to either remove the island and hatching, or bring it forward to the stop line where a signal could be mounted on it (subject to sufficient width) the Highways Agency would be happier.

From a NMU perspective, the existing cycle route that goes around the outside of the roundabout is pretty poor, and the NMU context report will need to identify any increased use resulting from the development. There may need to be some upgrading of the route. The unsignalled crossing of the M25 on slips may be an issue if the numbers of NMUs are likely to increase.

Thanks

Tommy

Thomas Whittingham, Asset Manager - M25 SE Quadrant

Highways Agency | Federated House | London Road | Dorking | RH4 1SZ

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Safe roads, reliable journeys, informed travellers
Highways Agency, an executive agency of the Department for Transport.

Mr. Thomas Whittingham
Highways Agency
Federated House
London Road
Dorking
RH4 1SZ

Our Ref: SAF/slh15454/M401

21st January 2014

Dear Mr Whittingham,

**Brentwood Enterprise Park
Traffic Assessment for M25 J29**

I write in respect of the above-mentioned proposed Brentwood Local Development Plan (LDP) employment site to respond to matters raised in your email to Philip Drane of Brentwood Borough Council (BBC) dated 23rd December 2013, following your review of our Transport Appraisal (TA) report dated October 2013.

We note your confirmation that the TA adequately demonstrates that the development traffic could be accommodated at the M25 J29 gyratory in a 2030 scenario.

Your reservations over the proposed modifications to the gyratory are also noted. We list these below in *blue italics* along with our response.

Widening the roundabout on the approach to the stop line and widening the A127 westbound off slip, both to four lanes, give cause for concern in that it increases the risk that drivers will not be able to see the signals properly on the approaches. If the modeling works it would be better to retain 3 lanes on the roundabout. With a 4 lane layout, at detailed design stage the developer would need to make sure that the signals are fully visible from all lanes on the approach. The advice in TD 50/04 is that the secondary signals should be no more than 50m from the stop line - on both of these approaches they will be around 70m, so this is particularly important.

We can confirm that 4-lane entries on both the A127 westbound off-slip and adjacent (east side) circulatory section are necessary for capacity reasons on the basis of our robust analysis. We attach drawing no. M401-007, which shows that secondary signals would be fully visible from each lane in accordance with guidance set out in TD 50/04; these being no more than 50m from the stop line and at an angle of no greater than 30 degrees from the centre of the lanes. This has been achieved in-part by modifying the proposed design to include a larger splitter island, as detailed below.

The proposed splitter island on the roundabout does not appear to be large enough to mount any street furniture and is anyway at risk of becoming an obstruction that vehicles could hit. Without the island, the hatched area could be a large area of the carriageway with lower skid resistance that could be hazardous for motorcycles. In the

existing layout, the left lane on the roundabout was separated by a solid white line and the road legend said "works access only". Therefore the hatching was less of an issue.

If the layout could be altered to either remove the island and hatching, or bring it forward to the stop line where a signal could be mounted on it (subject to sufficient width) the Highways Agency would be happier.

In light of the above comments, we have increased the size of the proposed splitter island and this now provides better separation and guidance to drivers as well as being of sufficient size to mount signals. This modification has also allowed the stop line for M25 south and A127 west lanes to be pushed further forward, providing a capacity benefit. The enlargement of the splitter island is achieved by local realignment of the offside kerb line to widen the circulatory carriageway.

From a NMU perspective, the existing cycle route that goes around the outside of the roundabout is pretty poor, and the NMU context report will need to identify any increased use resulting from the development. There may need to be some upgrading of the route. The unsignalled crossing of the M25 on slips may be an issue if the numbers of NMUs are likely to increase.

The TA identifies the forecast numbers of non-motorised users (NMUs) attracted by the proposed development, which are circa 30 two-way in both weekday peak hours.

It is agreed that the foot/cycleway around the roundabout is in poor condition. It is anticipated that the section around the southern part of the roundabout (connecting the A127 west with the development site) would be re-surfaced as part of the package of highway improvements. As identified in the TA, the M25 northbound off-slip is to be signalised and a toucan crossing could be provided in conjunction to facilitate safe crossing of this arm.

We have given consideration to a potential crossing facility on the M25 southbound on-slip and show a possible arrangement on the attached drawing no. M401-007. This comprises a standalone toucan crossing linked to the adjacent (east side) signalised node to ensure minimal delay to vehicles and queues at the stop line.

In terms of going forward, we would very much welcome a meeting with you and representative(s) from ECC to discuss the proposals and to reach a suitable level of agreement over the proposed site access and associated highway improvements to enable allocation of the site in the LDP. I would therefore be grateful if you could identify potential meeting dates, ideally in early February 2014, by letter or email (to sfield@ardent-ce.co.uk) at your earliest convenience.

Please do not hesitate to contact me should you require any further information or wish to discuss.

Yours faithfully

Steve Field
Associate

Encl. Drawing no. M401-007

Cc: Philip Drane – Brentwood Borough Council
Kevin Fraser – Essex County Council
Hilary Gore – Essex County Council
Steve Charman – Essex County Council
James Firth – Strutt & Parker

Steve Field

Subject: RE: Brentwood LDP: M25 J29 proposed employment use

From: Whittingham, Thomas [<mailto:thomas.whittingham@highways.gsi.gov.uk>]

Sent: 09 April 2014 14:03

To: Steve Field

Subject: RE: Brentwood LDP: M25 J29 proposed employment use

Steve

Apologies for the delay in responding to you.

I have spoken to the HA consultant and can confirm the following:

I agree that the proposed splitter island is now probably just large enough to accommodate signal equipment and, with such equipment mounted on it, would be more visible to circulatory traffic and, in particular, powered two wheelers. Although splitter islands within the circulatory carriageway are unusual (they are not specifically mentioned in TD 50/04) they are in use elsewhere on the SRN, notably at M4 Junction 4. Motorcyclists might still want to weave across and through slower moving traffic on all sections of the circulatory carriageway, so I would recommend that the hazard markings between the Brentwood Enterprise Park approach lane and the M25 south approach lane be extended back on the circulatory carriageway to a point just downstream of the A127 eastbound exit from the roundabout.

I note the location of the proposed Toucan crossing on the M25 south on-slip but would query whether there is enough stacking space between it and the circulatory carriageway. I would advise getting the developer to check this.

The NMU route through the southern section of the junction will need improving beyond just resurfacing. The boundary treatment of the route requires it to be physically segregated from the carriageway wherever possible (see paragraph 7.22 of TA 90/05). There is some scope at this junction to do this.

Please feel free to contact me.

Thanks

Tommy

Thomas Whittingham, Asset Manager - M25 SE Quadrant

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