Pulsar
TRANSPORT PLANNING

Client:

Henry Boot Developments Ltd

Project:

Tewin Road
Welwyn Garden City

Transport Assessment

May 2022

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1 INTRODUCTION

1.1 HBD has commissioned Pulsar to prepare a Transport Statement in support of a redevelopment scheme on Tewin Road in Welwyn Garden City, to provide three industrial units with associated parking and landscaping.

Background

1.2 The Local Planning Authority is Welwyn Hatfield Borough Council (WHBC) and the Local Highway Authority is Hertfordshire County Council (HCC).

1.3 The site is currently occupied with a car dealership in the southern corner and is otherwise unused land. However, the majority of the site was a former gasholder site, which has been decommissioned and demolished.

Proposed Development

1.4 The Applicant seeks to submit an application for the demolition of the existing car dealership and the construction of three high quality industrial units totalling 6,394sqm (Gross Internal Area). The units would be flexible land use classes B2, B8 and E(g)(iii) (the latter was previously B1(c)).

1.5 Each unit will be provided with at least one loading bay, with four provided across the site, and an individual servicing area with sufficient space for HGVs. The proposed development will incorporate 70 car parking spaces and 36 cycle parking spaces. The proposed layout is shown on the architect's plans in **Appendix A**.

1.6 A pre-application was submitted to HCC's highways team and comments received (refer to **Appendix B**). This Transport Assessment takes on board HCC's comments.

1.7 The Transport Assessment is structured as follows:

- **Section 2: Existing Conditions** – A review of travel and transport conditions at the site and surrounding area.
- **Section 3: Policy Review** – A review of relevant national, regional and local transport and land use planning policy.
- **Section 4: The Proposed Development** – A description of the proposed development with an emphasis on proposed transport infrastructure.
- **Section 5: Trip Assessment** – A review of the likely number of trips to be generated by the proposed development.
- **Section 6: Summary & Conclusions** – A review of key issues and conclusions raised in the report.

2 EXISTING CONDITIONS

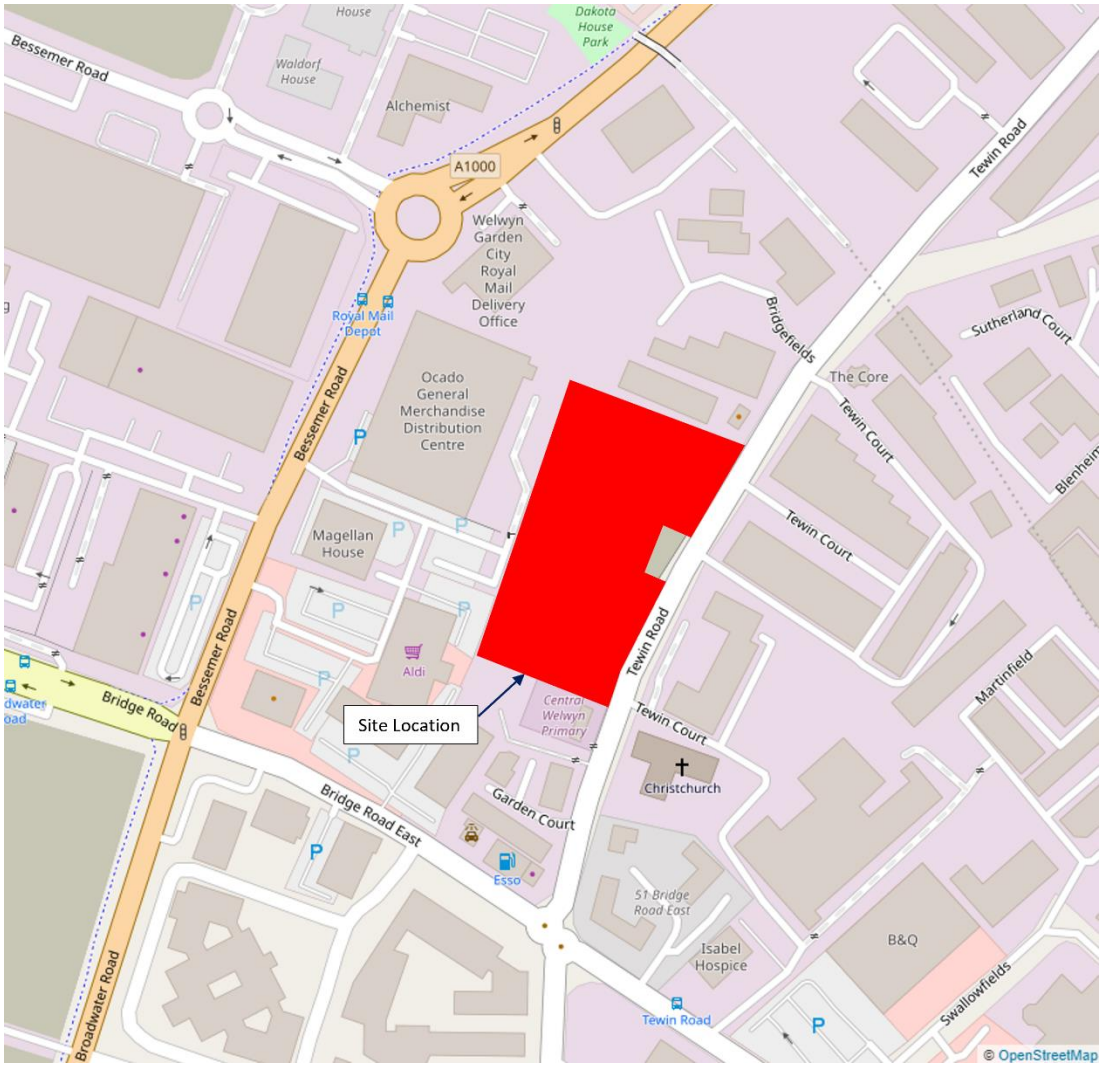
2.1 This section describes existing conditions at the site in relation to transport.

Site Location

2.2 The site is located to the west of Tewin Road, in Welwyn Garden City. Tewin Road connects to Bridge Road East to the south, which leads to the centre of Welwyn Garden City to the west. Tewin Road leads to the A1000 to the north.

2.3 **Figure 1** shows the site location within the local context.

Figure 1 Site Location Plan



2.4 Whilst much of the site is currently unoccupied, it had previously been intensively used. The southern corner currently includes a car dealership. The site currently has two minor accesses into the car dealership.

2.5 The site immediately to the south of the proposed development is occupied by ATS Euromaster, which is a car servicing operator. The ATS site currently incorporates two access points directly on to Tewin Road. Part of the ATS site immediately adjacent to the car dealership is a strip of hardstanding used for parking, which is under the control of the applicant and has been leased to ATS (the lease is shortly due to end). This strip of land will form part of the application site, however, the ATS site will still retain use of two site accesses.

Accessibility

2.6 This section provides information on access to and from the site by sustainable modes of transport.

Walking & Cycling

2.7 The topography in the area is generally flat which is good for walking and cycling activity.

2.8 The site is highly accessible to pedestrians, with footways provided along all surrounding roads. The footways on Tewin Road are separated from the carriageway by a grass verge. There is a pedestrian crossing island provided to the south of the site, adjacent to the junction with Bridge Road East.

2.9 Footways and street lighting along this area are generally of a good standard. The site is within walking distance of a range of local facilities, as well as multiple residential areas to the south. Furthermore, Welwyn Garden City centre is only approximately 800m from the site.

2.10 There are also numerous cycle facilities in the immediate area. These include National Cycle Network Route 57 located 700m to the west that connects Cricksdale with Welwyn Garden City and Cycle Network Route 61 located 800m east of the site, that connects Maidenhead to Hatfield.

2.11 There are also local cycle routes along sections of Bridge Road East, Bessemer Road and Broadwater Road. It should be noted that the proposed Former Shredded Wheat Factory redevelopment includes a series of cycle infrastructure improvements along Broadwater Road, at the Bridge Road / Hunters Bridge junction, along Hydeway west and on Peartree Lane.

2.12 It is also understood that HCC is proposing a new two-way cycle route on Bridge Road (to replace the temporary facility). This proposal was identified as a key opportunity to provide a cycling facility linking the town centre with the existing cycle network along Broadwater Road and Bessemer Road which provides onward connections to route 12 of the National Cycle Network.

2.13 The scheme also links in with existing town centre improvements which are due to be completed in November 2021 by providing onward cycle connections from Bridge Road through Stonehills into the heart of the town centre.

2.14 This scheme is included in pre-existing Hertfordshire County Council strategies and is the first stage of longer-term aspirations to provide a high-quality sustainable transport route along Bridge Road. The proposal would connect into the ongoing and planned development at the Wheat Quarter site, just south of Bridge Road. It would provide safe cycle and pedestrian links across the railway to the town centre.

2.15 Given the above, the existing and proposed cycle network in the area is considered to be very good. Areas within Welwyn, Tewin, Lemsford and Hatfield can be reached within a 5km cycle ride.

Local Amenities

2.16 **Table 3.1** shows a list of select local amenities and facilities that are located within a walking or cycling distance.

Table 3.1 Local Amenities

Local Facility / Amenity	Walking / Cycling Distance
Esso Garage & ATM	130m
B&Q DIY Store	400m
The Bakehouse Public House	400m
Aldi Supermarket	600m
Peartree Pharmacy	700m
Peartree Post Office	750m
Waitrose Supermarket	800m
Welwyn Garden City Station	950m
The Howard Centre Shopping Centre	1km
NatWest Bank	1km
Nationwide Building Society	1km
Greggs	1km

Public Transport

2.17 The site is well served by buses, with the nearest stops located on Bridge Road East and Peartree Lane. Further services can be accessed from bus stops approximately 400 metres from the site, on Bridge Road just past the junction with Broadwater Road.

2.18 A summary of the regular services that call at these stops is included below in **Table 3.2 below**.

Table 3.2 Accessible Bus Services

Route Number	Route Description	Approximate Frequencies		
		Mon-Fri	Sat	Sun
301	Cory's Mill Stevenage – Welwyn Garden City – St Albans - Hemel Hempstead	30 minutes	60 minutes	60 minutes
366	Luton/Dunstable – Harpenden -Welwyn Garden City – Hatfield – South Hatfield	60 minutes	60 minutes	-
653	New Greens-Bus Station – St Albans – Hatfield, Welwyn Garden City	20 minutes	30 minutes	60 minutes
403	Welwyn Garden City, Great Ganett – Haldens	30 minutes	30 minutes	-
404	Welwyn Garden City – Hatfield – South Hatfield	-	-	120 minutes
331 School Day only	Oaklands-Panshanger	1 service per day in each direction	-	-

2.19 The site is located within walking distance of Welwyn Garden City railway station, approximately 950m from the site. The station is served by Great Northern with regular services to London Kings Cross/Moorgate, Peterborough and Cambridge.

2.20 Given the excellent access to the railway station and numerous bus services, the site is considered to have a high level of accessibility.

Local Highway Network

2.21 The site is located to the west of Tewin Road. Tewin Road primarily serves a series of commercial properties located on either side of the carriageway.

2.22 Tewin Road is a two-way single carriageway road that links with Bridge Road East and Peartree Lane to the south via a double three-arm roundabout and with Mundells (A1000) to the north in the form of a simple priority junction. The A1000 then continues further northwest to connect with the A1(M).

2.23 Bridge Road East leads to the centre of Welwyn Garden City to the west and to the areas ofHall Grove and Hatfield Hyde to the east.

3 POLICY REVIEW

Introduction

3.1 This section of the report considers the current and emerging planning policy guidance at national, regional and local level.

National Policy

National Planning Policy Framework (NPPF)

3.2 The revised NPPF was published in July 2018 (and recently updated in July 2021) and sets out the Government's planning policies for England and how these are expected to be applied. It replaces the previous document published in March 2012.

3.3 The NPPF reiterates that "*the purpose of the planning system is to contribute to the achievement of sustainable development*" and "*at the heart of the Framework is a* ***presumption in favour of sustainable development***".

3.4 Section 9 deals with promoting sustainable transport. Paragraph 104 sets out the reasons transport issues should be considered from the earliest stages of plan-making and development proposals, i.e. so that:

a) the potential impacts of development on transport networks can be addressed;

b) opportunities from existing or proposed transport infrastructure, and changing transport technology and usage, are realised – for example in relation to the scale, location or density of development that can be accommodated;

c) opportunities to promote walking, cycling and public transport use are identified and pursued;

d) the environmental impacts of traffic and transport infrastructure can be identified, assessed and taken into account – including appropriate opportunities for avoiding and mitigating any adverse effects, and for net environmental gains; and

e) patterns of movement, streets, parking and other transport considerations are integral to the design of schemes, and contribute to making high quality places.

3.5 Paragraph 105 states that the planning system should actively manage patterns of growth in support of the above objectives.

3.6 Paragraph 110 states that in assessing specific applications for development, the following should be ensured:

"appropriate opportunities to promote sustainable transport modes can be – or have been - taken up given the type of development and its location;

Safe and suitable access to the site can be achieved for all users;

The design of streets, parking areas, other transport elements and the content of associated standards reflects current national guidance, including the National Design Guide and the National Mode Design Code; and

Any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree.

3.7 Paragraph 111 goes on to state:

Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe."

3.8 NPPF states that all developments that will generate significant amounts of movement should be required to provide a travel plan, and the application should be supported by a transport statement or transport assessment.

National Planning Practice Guidance (NPPG), 2014

3.9 On 6 March 2014 the Department for Communities and Local Government (DCLG) launched the National Planning Practice Guidance web-based resource. One section relates specifically to Transport and is titled 'Travel Plans, Transport Assessments and Statements in decision-taking' and this provides the overarching principles of Travel Plans, Transport Assessments and Statements.

3.10 The guidance explains the role of Transport Assessments and Statements as:

"ways of assessing the potential transport impacts of developments (and they may propose mitigation measures to promote sustainable development. Where that mitigation relates to matters that can be addressed by management measures, the mitigation may inform the preparation of Travel Plans)".

3.11 The guidance demonstrates that Transport Assessments and Statements and Travel Plans can positively contribute in the following ways:

- *"encouraging sustainable travel;*
- *lessening traffic generation and its detrimental impacts;*
- *reducing carbon emissions and climate impacts;*
- *creating accessible, connected, inclusive communities;*
- *improving health outcomes and quality of life;*
- *improving road safety; and*
- *reducing the need for new development to increase existing road capacity or provide new roads."*

Regional Policy

Hertfordshire County Council Local Transport Plan 4 (2018-2031)

3.12 LTP4 sets out how transport can help deliver a future vision of Hertfordshire. It states that "as well as providing for safe and efficient travel, transport has a major input into wider policies such as economic growth, meeting housing needs, improving public health and reducing environmental damage". The plan covers the period up to 2031, which is the timescale for most of the housing proposals being set out in the ten Hertfordshire district Local Plans.

3.13 The plan seeks to "accelerate the transition from a previous transport strategy that was largely car based to a more balanced approach which caters for all forms of transport and seeks to encourage a switch from the private car to sustainable transport (e.g. walking, cycling and passenger transport) wherever possible".

3.14 Key themes of LTP4 are "Prosperity, People and Place" and the Plan sets out a number of key objectives for each of these themes. These include:

- Improve accessibility between employers and their labour market;
- Enhance journey reliability and network resilience across Hertfordshire;
- Preserve the character and quality of the Hertfordshire environment; and
- Make journeys and their impact safer and healthier.

3.15 LTP4 places emphasis on achieving travel demand reduction and modal shift. The Plan also sets out a transport user hierarchy in the following order of priority:

- Opportunities to reduce travel demand and the need to travel
- Vulnerable road user needs (such as pedestrians and cyclists)
- Passenger transport user needs
- Powered two wheeler (mopeds and motorbikes) user needs
- Other motor vehicle user needs

3.16 Policy 1 outlines the Transport User Hierarchy. It states the following:

'to support the creation of built environments that encourage greater and safer use of sustainable transport modes, the county council will in the design of any scheme and development of any transport strategy consider in the following order:

- *Opportunities to reduce travel demand and the need to travel;*
- *Vulnerable road users (such as pedestrians and cyclists);*
- *Passenger transport user needs;*
- *Powered two wheeler (mopeds and motorbikes) user needs; and*
- *Other motor vehicle user needs.*

3.17 It goes on to state with reference to the application of the hierarchy:

'The needs of the motor vehicle are not ignored, but the policy ensures they do not take precedence over considerations higher up the hierarchy. Where there is a good opportunity to reduce the demand of travel, or to better serve the needs of walkers or cyclists, there needs to be good justification for it not being taken.

Secondly in the design of a transport scheme, the application of the hierarchy should be a feature of the design process, and the final scheme should be able to demonstrate how the hierarchy is reflected in it. Clearly where the needs of certain groups in the hierarchy are low, or the opportunities to reduce travel demand are limited, the design would be primarily driven by the needs of motor vehicles. This could be the case in non-urban areas, not served by passenger transport and with potential for vulnerable user demand. Vulnerable road users primarily include pedestrians and cyclists (including those on electric bikes), but also equestrians. The policy does not mean every road scheme will include a cycle path, or that pedestrians and cyclists will have priority at every location, but where there is considered to be a valid and practical need for this it should be included in the design, and evident in the final scheme.'

Local Policy

The Welwyn Hatfield District Plan (2005)

3.18 This document is the current Local Plan for the Borough and contains the local planning framework, policies and proposals which will guide the development and use of land in the Borough.

3.19 Chapter 6 of the District Plan outlines the policies relating to movement and sustainable travel. To achieve the overall aim of a more sustainable pattern of movement, the policies outlined relating to transport seek to fulfil the following objectives:

a) To reduce the overall need to travel by integrating land uses with transport;

b) To support the development of integrated transport policy;

c) To reduce dependency on the car and encourage modes of travel which have less adverse environmental impact;

d) To give priority to walking and cycling;

e) To encourage effective traffic management and the improvement of road safety for all sectors of the community;

f) To encourage greater use of passenger transport and improvements to services and facilities; and

g) To facilitate the accessibility needs of all in a safe and sustainable manner.

3.20 Policy M1 mentions: *'development proposals will be permitted only in locations with accessibility to pedestrian and cycle routes and passenger transport services, and where the environment and infrastructure can accommodate the amount and type of transport movement likely to be generated.'*

3.21 Policy M6 refers to cycle routes and facilities and states: *'the Council will require proposals for new development to encourage cycling through the inclusion of safe cycle routes and parking for cycles'*.

3.22 Policy M14 states: *'the Council will require parking provision for new development to be made in accordance with the standards set out in the Council's Supplementary Planning Guidance on parking'*. This SPD is outlined below.

The Draft Welwyn Hatfield Borough Council Local Plan Proposed Submission (August 2016)

3.23 This Draft Local Plan was submitted for examination in May 2017, and an independent examination has recently been taking place. It is expected that the Plan will be adopted in Spring/early Summer 2022.

3.24 The submission document set out the challenges that the Borough will face over the coming years and sets out how the Council will respond by setting out a vision and policies to address them.

3.25 Policy SADM 2 relates to the highway network and safety. It states:

Development proposals will be permitted provided:

i. There would be no unacceptable impacts on the local and /or strategic transport network. Development proposals which generate a significant amount of traffic movements must be accompanied by either a Transport Assessment or Transport Statement as appropriate in accordance with the criteria in the Hertfordshire County Council Highway Design Guidance;

ii. There would be no negative impacts on highway safety;

iii. They are designed to allow safe and suitable means of access and site operation; and

iv. They provide satisfactory and suitable levels of parking.

3.26 Policy SADM 3 also refers to sustainable travel. It mentions the need to ensure all new development should be designed to make provision for cyclists and pedestrians, and ensure that public transport is supported and facilities for charging plug-in and other ultra-low emission vehicles is provided.

3.27 Policy SADM 12 refers to parking, servicing and refuse. It states the following:

Parking

i. The type and quantum of vehicle and cycle parking provided within development proposals will be informed by the standards set out in the Council's parking standards taking account of:

a. The site's location and accessibility to public transport, services and facilities;

b. The nature and degree of parking demand likely to be associated with the development and opportunities for shared parking; and

c. The need to promote more sustainable forms of travel within the borough.

ii. The siting, layout and design of vehicle and cycle parking, including detached garage blocks, within development proposals will be required to ensure an attractive and coherent street scene is maintained, not prejudice the wider functionality of public and private space, and create an effective functional link and relationship with the buildings and areas they will serve.

iii. Electric vehicle charging points will be incorporated into parking areas for new neighbourhood centres and the necessary infrastructure provided for major residential schemes.

Servicing and Refuse

i. Appropriate provision of service areas and refuse storage and collection areas should be made according to the nature of the development. Such areas and access to them should be appropriately sited and designed to ensure they can:

a. Perform their role effectively without prejudicing or being prejudiced by other functions and users;

b. Maintain an attractive and coherent street scene and protect visual amenity; and

c. Avoid creating risk to human health or an environmental nuisance.

Welwyn Hatfield District Plan Supplementary Planning Guidance Parking Standards (January 2004)

3.28 This SPD sets out the parking standards for new developments in the Borough.

3.29 The SPD includes zones of the urban areas in Welwyn Hatfield based on the access to sustainable transport in the areas. The development site is within zone 3, indicated

within the SPD. This allows for car parking provision to b within 50-75% of the maximum demand-based standard.

3.30 The maximum demand-based parking standards for the different employment uses are outlined in **Table 3.1**.

Table 3.1 Welwyn Hatfield Parking Standards

Use Class	Maximum Car Parking Standards	Minimum Cycle Parking Standards
B1 (b) / (c)	1 space per 35sqm GFA	1 short stay space per 500sqm GFA; plus 1 long stay space per 10 full time staff
B2	1 space per 50sqm GFA (lorry provision against benchmark standards)	
B8	1 space per 75sqm GFA (lorry provision against benchmark standards)	1 long stay space per 10 full time staff

3.31 It is noted that WHBC's parking requirements for B1(c) or E(g)(iii) are higher compared with B2 development. However, employment densities (as set out in the Homes & Communities Agency 'Employment Density Guide' 3rd Edition) are broadly similar for these two land uses (slightly lower for B1(c)). This suggests that the B1(c) parking requirement should be lower.

Welwyn Hatfield Borough Council Interim Policy for Car Parking Standards and garage Sizes (August 2014)

3.32 This Note was prepared by the Council to address the government guidance that no longer requires councils to set maximum car parking standards. It therefore provides an update on the previous parking standards outlined by the Council in 2004 (see above).

3.33 The Interim Policy for Car Parking Standards therefore states:

The council will treat all car parking standards set out in the Welwyn Hatfield Parking Standards Supplementary Parking Guidance as guidelines rather than maximums.

Planning applications will be determined on a case-by-case basis to achieve a sensible level of provision taking into account of existing SPG standards, NPPF guidance, the relevant circumstances of the proposal, its site context and its wider surroundings.

Summary

3.34 The focus of transport and land use planning policy is on the development of sustainable travel measures and the encouragement of development proposals which widen the accessibility of sustainable travel to site attendees and the wider community. The site is situated in an accessible location and further information is

provided later in this report which details the transport infrastructure proposed for the site.

4 THE PROPOSED DEVELOPMENT

4.1 This section of the report provides a description of the proposed development with a focus on transport infrastructure. **Appendix A** contains the architect's layout.

4.2 The proposed development would involve the demolition of the existing car dealership in the southern corner of the site and the construction of three industrial units on the wider site, totalling approximately 6,394 sqm floor area (Gross Internal Area).

Pedestrian Access

4.3 Pedestrian access will be provided adjacent to the vehicular access points as outlined below. Footways will be provided between the site access points and the unit entrances. These will be routed around the edge of the development to promote a safe route away from the HGV loading areas.

4.4 This pedestrian access will be at grade to enable mobility by all users including those with impaired mobility.

Vehicular Access

4.5 Two vehicular access points will be provided from Tewin Road, one to the north to provide access to Unit 1 and one to the south to provide access to Units 2 and 3. Both of these are located in approximately the same locations as existing accesses on the western side of Tewin Road. These accesses will be upgraded/widened to ensure that delivery vehicles can manoeuvre into/out of the site satisfactorily.

4.6 The existing minor access at the northern edge of the existing car dealership will be closed and converted into footway / verge. A new street tree is also proposed in this location to complement the existing line of street trees along Tewin Road.

4.7 The proposed layout of the northern site access and the associated swept path analysis is shown in **Appendix C**. The works would also involve a short section of double yellow lining directly opposite the access on Tewin Road.

4.8 The proposed layout of the southern site access and the associated swept path analysis is shown in **Appendix D**. The widening of this access will result in the loss of an existing street tree, that will be replaced with a new tree as noted above.

4.9 Visibility splays of 2.4m x 43m are achieved in both directions for both accesses and shown on the drawings. It is acknowledged that there are street trees within the visibility splay, however, these do not significantly affect driver visibility.

4.10 Manual for Streets (paragraph 10.7.2) states, in relation to obstacles to driver visibility:

The impact of other obstacles, such as street trees and street lighting columns, should be assessed in terms of their impact on the overall envelope of visibility. In general, occasional obstacles to visibility that are not large enough to fully obscure a whole vehicle or a pedestrian, including a child or wheelchair user, will not have a significant impact on road safety.

4.11 The street trees on Tewin Road are established but have relatively narrow tree trunks (they do not fully obscure a whole vehicle or a pedestrian). There are street trees at regular intervals along Tewin Road close to the kerbline, so it is inevitable that there will be street trees within the visibility splays at numerous accesses along Tewin Road. As noted, the proposed accesses are at the same location as existing accesses, therefore, any changes to the existing visibility splays will be very minor.

4.12 HCC has provided comments on the pedestrian crossing points at the two new accesses. It is acknowledged that the crossing width are slightly wider to enable safe vehicular movement into and out of the site. For both accesses, the crossing points incorporate dropped kerbs and tactile paving. The crossing points are both approximately 10 metres wide.

Servicing

4.13 Servicing is proposed within the curtilage of the site and vehicles will access the site from the accesses on Tewin Road as outlined above. Each individual unit is proposed to have their own servicing area adjacent to the building. A total of 5 loading bays are proposed - Unit 1 is proposed with three loading bays and units 2 and 3 would have one each.

4.14 Swept path analysis has been undertaken for all the servicing areas to ensure sufficient space is provided to allow HGVs to access and egress the site in a forward gear. The swept path analysis is included in **Appendices C and D**. Each occupier will be expected to manage their own deliveries to reduce conflicts and the overall number of delivery vehicle movements.

4.15 Waste / refuse collection will also be undertaken within the site and will be combined for all units where possible to reduce refuse vehicle movements.

Vehicle Parking

4.16 The proposed development would provide 70 parking spaces within the site, with 40 spaces provided to Unit 1 and 30 spaces provided to Units 2 and 3. The parking provision will be clearly marked out, with separate parking areas allocated to each unit. 7 of the spaces provided across the site will be accessible bays, including 3 electric vehicle charging accessible bays. In total across the three units, a total of 15 electric vehicle charging bays will be provided.

4.17 Based on the parking standards outlined in Section 4, the recommended parking provision for this scheme is outlined in **Table 5.1**. This takes into account the zoning methodology applied depending on the accessibility of the area. In this case, the site is located in Zone 3 and the parking standards suggest that the provision should be 50-75% of the maximum standards. Given the application is for flexible permission between E(g)(iii), B2 and B8, all three parking standards have been considered in the parking provision.

Table 5.1 Guideline Parking Provision

Use Class	Guideline Parking Provision Range
B1 (b/c) / E(g)(iii)	91-137 spaces
B2	64-96 spaces
B8	43-64 spaces

4.18 The provision of 70 parking spaces would fall within the "middle" category. As noted previously, the B1(c) parking standard does not reflect the relative employment densities of the above land uses.

4.19 The nature of the eventual occupiers is unknown (and could vary between the 3 units), however given that the proposed car parking provision is close to the middle category, the provision is considered to be appropriate. The site is also considered to be located within a highly sustainable location and it is understood that further cycle routes are being considered in the area. Furthermore, a Travel Plan for the site is also proposed to discourage single occupancy car trips.

4.20 It is also noted that the current proposed layout for the sites include generous servicing areas. In the event that an E(g)(iii) tenant seeks to occupy one of the units there is scope for additional parking to be provided instead of the HGV manoeuvring areas shown.

4.21 Furthermore, HCC has acknowledged that there are parking controls surrounding the site, which would limit the potential for any overspill parking. As such, the proposed car parking provision is considered to be appropriate for the proposed uses in this location.

Cycle Parking

4.22 Based on the parking standards outlined in Section 4, the minimum cycle parking provision for this scheme is outlined in **Table 5.2**. Given the application is for flexible permission between E(g)(iii), B2 and B8, all three cycle parking standards have been considered in the parking provision.

4.23 The number of employees has been estimated using the Employment Density Guide (Homes & Communities Agency, 2015), which suggests a rate of 1 employee per 47sqm for B1(b/c), 1 employee per 36sqm for B2 and 1 employee per 70sqm for B8.

Table 5.2 Minimum Cycle Parking Provision

Use Class	Minimum Cycle Parking Provision
B1 (b/c) / E(g)(iii)	Short stay: 13 spaces Long stay: 14 spaces
B2	Short stay: 13 spaces Long stay: 18 spaces
B8	Long stay: 10 spaces

4.24 A total of 36 cycle spaces are proposed. These include 24 spaces within three separate sets of shelters directly outside the building entrances. These stores will be covered, secure and conveniently located. Within this provision, 3 spaces for larger bikes are proposed, which equates to 8% of the total number of bike spaces. This is in accordance with Cycle Infrastructure Design' Local Transport Note 1/20 (July 2020). A further 12 cycle spaces are provided at Sheffield stands (2 stands per unit).

Travel Plan

4.25 A Framework Travel Plan has been prepared alongside this Transport Assessment to support sustainable travel patterns for the site. This sets out a series of measures to discourage single occupancy car trips, as well as targets and a review / monitoring regime.

5 TRIP ASSESSMENT

5.1 This section considers the likely number of trips that the development is forecast to generate. It also considers the existing trips likely to be generated by the car dealership (with a site area of approximately 1,040 sqm) and estimates the net impact of the proposed development against this.

Existing Trip Rates & Trip Generation

5.2 In order to understand the number of trips likely to be generated by the existing car dealership development, reference has been made to the TRICS database for car show room trip rates. The following criteria was applied when selecting sites:

- Category 14 – Car Show Rooms, A – Car Show Rooms;
- All regions in England except Greater London;
- Site areas between 0.06 and 0.4 hectares;
- January 2013 to June 2019 (most recent);
- Monday to Friday; and
- Edge of Town Centre / Suburban area / Edge of town / Neighbourhood Centre areas.

5.3 Whilst there may also have been a few vehicle trips associated with the gasholder site, for robustness, these have been ignored.

5.4 The vehicle trip rates and corresponding estimated vehicle trip generation for the existing car dealership are set out in **Table 5.1**. The TRICS output is attached to this report as **Appendix E**.

Table 5.1 Existing Vehicle Trip Rates & Trip Generation

Period	Vehicle Trip Rates (per hectare)			Existing Vehicle Trip Generation (0.104 hectares)		
	In	Out	Total	In	Out	Total
08:00 – 09:00	52.857	22.857	75.714	6	2	8
17:00 – 18:00	2.857	14.286	17.143	0	1	2
07:00 – 19:00	284.762	273.259	558.021	30	29	58

5.5 The existing car dealership generates approximately 8 two-way vehicle trips during 08:00 to 09:00 and 2 two-way vehicle trips during 17:00 to 18:00. Across the twelve-hour period, 07:00 to 19:00, the car dealership generates 58 two-way vehicle trips.

Industrial Estate Trip Rates & Trip Generation

5.6 In order to understand the number of trips likely to be generated by the proposed development, reference has been made to the TRICS database for industrial estate trip rates. The following criteria was applied when selecting sites:

- 02 – Employment, D – Industrial Estate;
- All areas in England except Greater London;
- Sites between 1,138 and 16,000sqm;
- January 2013 to September 2019 (most recent);
- Monday to Friday; and
- Edge of Town Centre / Suburban area / Edge of town.

5.7 The trip rates are set out in **Table 5.2** and number of trips for the development are set out in **Table 5.3**. The TRICS output is also attached to this report as **Appendix F**.

Table 5.2 Vehicle and Person Trip Rates (per 100sqm)

Period	Vehicle Trip Rates			Person Trip Rates		
	In	Out	Total	In	Out	Total
08:00 – 09:00	0.557	0.292	0.849	0.789	0.375	1.164
17:00 – 18:00	0.260	0.512	0.772	0.399	0.833	1.232
07:00 – 19:00	4.697	4.663	9.360	6.681	6.623	13.304

Table 5.3 Development Trip Generation (6,394sqm)

Period	Vehicle Trip Generation			Person Trip Generation		
	In	Out	Total	In	Out	Total
08:00 – 09:00	36	19	54	50	24	74
17:00 – 18:00	17	33	49	26	53	79
07:00 – 19:00	300	298	598	427	423	851

5.8 **Table 5.2** above shows that there will be approximately 54 two-way vehicle trips in the AM peak hour and 49 two-way vehicle trips in the PM peak hour, associated with the proposed development.

Net Trip Generation

5.9 **Table 5.4** below sets out the net vehicle trip generation for the proposed development.

Table 5.4 Net Trip Generation: Vehicles

Period	Net Trip Generation		
	In	Out	Total
08:00 – 09:00	+30	+16	+46
17:00 – 18:00	+16	+31	+48
07:00 – 19:00	+270	+269	+540

5.10 **Table 5.4** above shows that there will be an increase in trips generated by the proposed development.

Trip Distribution

5.11 An assessment has been undertaken to estimate the distribution of the net vehicle trips generated by the development. **Table 5.5** outlines the distribution of the net vehicle trips up to the junctions at the northern and southern extents of Tewin Road. The basis of this distribution assessment has been calculated from Census journey to work data for the Welwyn Hatfield 007 MSOA.

Table 5.5 Net Development Traffic Distribution

Direction / Junction Arm	Two-Way Development Traffic Distribution		
	%	AM Two-Way Traffic	PM Two-Way Traffic
Site Access Junction			
Site Access	100.0%	46	48
North / Tewin Road	45.8%	21	22
South / Tewin Road	54.2%	25	26
Tewin Road / Mundells			
South / Tewin Road	45.8%	21	22
West / Mundells	45.8%	21	22
East / Mundells	0.0%	0	0
Tewin Road / Bridge Road East / Peartree Lane			
North / Tewin Road	54.2%	25	26
West / Bridge Road East	24.7%	11	12
East / Bridge Road East	19.6%	9	9
South / Peartree Lane	9.8%	5	5

5.12 As outlined in **Table 5.5**, it is estimated that approximately 46% of traffic will arrive and depart from the development to the north, and 54% to the south. This demonstrates that vehicle trips will be evenly distributed through the network. As a result, the impact of the development on nearby junctions is likely to be insignificant.

Delivery and Servicing Trips

5.13 Following pre-application feedback from HCC, the number of servicing/delivery trips to the site has been estimated. The vehicle trips indicated in **Table 5.3** are based on TRICS data and already incorporate the OGV ("Other Goods Vehicles") trips for the development, which has been analysed in order to estimate the number of servicing trips for the scheme. This includes delivery and refuse vehicles accessing the units. Five loading bays are proposed for the development, allocated to each unit (Unit 1 will be provided with three loading bays while Units 2 and 3 will be provided with one loading bay each).

5.14 **Table 5.6** outlines the OGV trip rates and the corresponding OGV trip generation for the proposed scheme. The full TRICS output is attached to this report as **Appendix F**.

Table 5.6 Delivery & Servicing Vehicle Trip Rates & Trip Generation

Period	Vehicle Trip Rates (per 100sqm)			Existing Vehicle Trip Generation (6,394sqm)		
	In	Out	Total	In	Out	Total
08:00 – 09:00	0.028	0.023	0.051	2	1	3
17:00 – 18:00	0.014	0.012	0.026	1	1	2
07:00 – 19:00	0.287	0.277	0.564	18	18	36

5.15 As outlined above, approximately 3 two-way delivery and servicing trips would be anticipated in the AM peak and approximately 2 in the PM peak. The peak hour for delivery and servicing trips is estimated to be 09:00 to 10:00 when 5 two-way delivery and servicing trips will be anticipated (an even split entering and exiting) across the five loading bays.

5.16 Given the estimated delivery and servicing trip generation set out above, the provision of five loading bays is considered to be sufficient to cater for the anticipated demand.

6 SUMMARY & CONCLUSIONS

6.1 HBD have commissioned Pulsar to provide transport advice on the potential redevelopment of a former gasholder and car dealership site on Tewin Road, Welwyn Garden City. The Local Planning Authority for the area is Welwyn Hatfield Borough Council and the Local Highway Authority is Hertfordshire County Council.

6.2 The proposed development would involve the removal of the car dealership in the southern corner of the site and the construction of three industrial units on the wider site with a total floor area of 6,394sqm (GIA). The three industrial units would be provided within flexible E(g)(iii)/B2/B8 use classes.

6.3 The site is considered to be accessible given the close proximity to bus and rail services which, in combination, provides access to major destinations such as St Albans, Hatfield and London Kings Cross. There are also good cycle links in the area and further cycle improvements are currently being implemented in the vicinity of the site. Cycle parking would be provided to Welwyn Hatfield standards.

6.4 A total of 70 parking spaces are proposed across the three units, including 7 disabled person bays. A total of 15 electric vehicle parking spaces are also proposed. This is considered an appropriate level of parking taking into account the sustainable location of the site.

6.5 The proposals would include two vehicle accesses provided from Tewin Road with parking and servicing areas provided on site. Both accesses would be designed with adequate visibility splays (in accordance with Manual for Streets standards) and would incorporate pedestrian crossings with dropped kerbs and tactile paving.

6.6 An existing access would be removed and converted to footway/verge and could also accommodate a new street tree to replace one that will need to be removed as a result of widening the southern access.

6.7 A trip generation assessment was undertaken, which suggests approximately 48 two-way net vehicle trips are anticipated between 08:00 and 09:00 and 49 vehicle net trips between 17:00 and 18:00. A traffic distribution exercise has been undertaken and demonstrates that traffic is likely to be evenly distributed across the network, i.e. a relatively small amount of additional traffic will be experienced at local junctions.

6.8 The site is expected to have a minimal impact on the local highway network and from a transport perspective meets the tests of the NPPF, namely to ensure:

- Opportunities for sustainable transport modes have been taken up;
- Safe and suitable access to the site can be achieved by all people; and
- The impact of the development is not severe.

6.9 In conclusion, and on the basis of the above, the cumulative residual transport impacts of the proposal would not be severe.

APPENDIX A – ARCHITECT'S LAYOUT

0m 10m 20m 30m 40m 50m

VISUAL SCALE 1:500 @ A1

N

AREA SCHEDULE : GEA

	GEA							
	UNIT 01		UNIT 02		UNIT 03			
	Sqm	Sqft	Sqm	Sqft	Sqm	Sqft		
Ground Floor	3,296.10	35,479	1,080.39	11,629	1,467.96	15,801	Total GEA	
First Floor	408.45	4,397	164.11	1,766	202.04	2,175	Sqm	Sqft
Total	**3,704.55**	39,876	**1,244.50**	13,396	**1,670.00**	17,976	**6,619.05**	**71,247**

APPLICATION BOUNDARY

ELECTRIC CAR CHARGING BAYS

ELECTRIC VEHICLE CHARGING STATIONS

CYCLE SHELTER WITH SHEFFIELD STANDS

LITTER BIN

BIRD BOX - AS PER ECOLOGY REPORT RECOMMENDATIONS

ANTI RAM-RAID BOLLARD STAINLESS STEEL FINISH WITH REFLECTIVE BAND

HARD LANDSCAPE KEY

SERVICE YARD FINISH TO BE CAST CONCRETE - TO ENGINEER'S SPECIFICATIONS

BITUMEN MACADAM TO FOOTPATH, ROAD, AND CAR PARKING AREAS AS INDICATED. ALL TO ENGINEERS SPECIFICATION

PEDESTRIAN PAVING TO BE LAID WITH STACK COURSE OF FLAGS, COLOUR TO BE A MIX OF LIGHT AND MEDIUM GREY PAVERS LAID AT RANDOM PATTERN

RETAINING STRUCTURE TO STRUCTURAL/CIVIL ENGINEER'S DETAILS

The contractor is to check all dimensions on site and report any discrepancies to the architect
All rights described in chapter IV of the copyright, designs and patents act 1988 have been generally asserted

Notes

Rev	Description	Date	By	Chk
P11	Building moved to allow for HV easement along rear boundary, associated site layout changes. No change to building areas. Redline boundary adjusted to ownership extents	11/05/21	CC	JD
P10	Planning Submission	05/10/21	CC	JD
P9	Planning Submission	17/09/21	CC	JD
P8	Planning Submission	10/09/21	CC	JD
P7	Planning Submission	27/08/21	CC	JD
P6	Substation added. General layout updates.	19/08/21	CC	JD
P5	Unit 03 Loading dock position updated	26/07/21	CC	JD
P4	Site Plan Updates based on latest Topo Survey	15/07/21	CC	JD
P3	General Updates	18/06/21	CC	JD
P2	Indicative Site plan - General Updates	04/06/21	CC	JD
P1	Initial Issue	21/05/21	CC	JD

First Floor
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Greville Street. London EC1R 4SP

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Website www.jeffersonsheard.com

Jefferson Sheard Architects

Project
Twin Road
Welwyn Garden City

Drawing
Site Block Plan

Scale	Drawn	Date
1:500	CC	MAY 21

Drawing Purpose	Status
PLANNING SUBMISSION	S5

Ref	Rev.
1734-JSA-WY-XX-DR-A-01201	P11
Job No. Origin. Zone Level Type Dis. Number	

A1

APPENDIX B – HCC PRE-APPLICATION COMMENTS

Mark Youngman
Development Management Group Manager
Hertfordshire County Council
Postal Point CHO242
County Hall
Pegs Lane
Hertford
SG13 8DE

Pre-Application Response from Hertfordshire County Council: Former Gasholder Site, Tewin Road

Mr Kamran Haider
Pulser Transport Planning
4 Underwood Row
London
N1 7LQ

Location
Former Gasholder Site, Tewin Road, Welwyn Garden City, AL7

Description
The following is for pre-application advice only and relates to an enquiry over the redevelopment of the existing car showroom and former gasholder site to provide three units of flexible E(g)(iii) / B2 / B8 employment space with a total gross floor area of c. 6,619sqm. The development proposals include the retention and improvement of the two existing vehicular accesses, the removal of one existing vehicular access and the provision of 71 car parking spaces.

A Transport Scoping Document has been submitted and this document has been assessed within these observations. The structure of the Scoping Document is acceptable to form the basis of a Full Transport Statement.

Site and Accessibility
The site is located off Tewin Road, an unclassified road which links to Bridge Road East to the south and Mundells (A1000) to the north. The vehicle speeds in the vicinity of the site are limited to 30pmh.

The site is c. 850m from Welwyn Garden City Train station and well serviced by numerous bus routes. The site is therefore deemed relatively accessible. The site benefits from pedestrian links to the town centre and other local facilities. Hertfordshire County Councils Local Transport Plan (LTP) 4 policy 5, is to '*ensure the location and design of proposals reflect the LTP Transport User Hierarchy and encourage movement by sustainable transport modes*', and the proposals should reflect this within the site design.

Vehicular Access
The site currently benefits from three vehicular accesses from Tewin Road. The Transport Scoping Document advises that it is proposed to retain two of the three vehicular accesses (one to the north of the site to provide access to Unit 1 and one to the south to provide access to Units 2 and 3) and close the existing minor access at the northern edge of the existing car dealership and covert this access into a footway/verge.

The two proposed vehicular accesses are proposed to be upgraded and widened. The principle of retaining two vehicular accesses into the site is acceptable given the size and nature of the site. However, the submitted drawings show both vehicular accesses to measure c. 8.0m with an 8.0m kerb radii and c. 24.0 bellmouth. Whilst swept path analysis drawings have been submitted illustrating that delivery and servicing vehicles can safely access the site, very little consideration has been given to the impact widening the accesses will have on the pedestrian environment along Tewin Road. Whilst tactile pavings are proposed either side of each access, a c. 24.0m wide bellmouth is excessive in this location and will detrimentally impact pedestrian permeability for those travelling along Tewin Road, contrary to policy 1 of the LTP. Future submissions must consider the transport user hierarchy and ensure the

accesses are reduced in size to accommodate the needs of vulnerable road users, especially pedestrians.

Furthermore, in line with Manual for Streets, visibility of 2.4m x 43 must be achievable from both vehicular accesses. The submitted drawings show the visibility splays encroaching into the street trees along Tewin Road. A more detailed visibility splay plan must be provided, ensuring that 2.4m x 43m of visibility can be achieved. The new street tree in replacement of the third vehicular access may not be appropriate.

The closure of the third vehicular access and replacement with a pedestrian access is welcomed. Drawing 1734-JS1-WY-XX-DR-A-01201 P6 shows the pedestrian access to measure c. 4.4m. This access will therefore safely accommodate pedestrian movements into the site and full details of the pedestrian access must be provided with future submissions.

Trip Generation
A TRICS assessment has been submitted for the development proposals within the Transport Scoping Document. It is noted that no assessment has been made for the trip generation associated with the existing development. Paragraph 5.6 solely states that '*whilst there would inevitably be an increase in vehicle trips to the site, this would be relatively modest.'* No further justification for this statement has been provided. A detailed assessment of the existing trip generation must be submitted to ensure a comparison between the existing site and proposed development proposals can be undertaken. This will also inform as to whether further junction assessments will be required.

With regards to the submitted TRICS assessment for the development proposals, I have assessed the site selection and associated parameters and I am satisfied that a robust assessment has been undertaken. The TRICS assessment anticipates that the proposed development will generate 56 two-way vehicle trips in the AM peak hour and 51 two-way vehicle trips in the PM peak hour. I have no reason to disagree with this assessment however an assessment of the existing trip rates must be provided to assess whether this new development will result in a material impact on the operation of the highway and junctions in the vicinity of the site. It is noted that no predicted trip distribution assessment has been undertaken and this should also be included as part of any future submission.

I also advise that you familiarise yourself with HCC's latest planning obligation guidance. The link to the HCC Toolkit can be found here: Planning obligations and developer infrastructure contributions | Hertfordshire County Council.

Parking
Welwyn Hatfield Borough Council are the Parking Authority for the borough and their regulations must be followed when laying out the parking scheme. The guidance sets maximum car parking standards and requires B1(b)(c) developments to provide one space per 35m^2, B2 developments to provide one space per 50m^2 and B8 developments to provide one space per 75m^2. It is noted that the pre-application is proposing flexible permission and it is proposed that 71 spaces, split between three parking areas, will be provided. This proposed quantum of car parking will be assessed by Welwyn Hatfield Borough Council.

However, from a highways perspective, I note that Tewin Road benefits from double yellow lines in the vicinity of the site. There are therefore limited locations which could accommodate displaced on-street parking and the proposed car parking associated with the development is unlikely to materially impact the operation of the highway.

With regards to the proposed 71 car parking spaces, the dimensions are shown to be in accordance with Manual for Streets 8.3.58, which states '*the recommended dimensions of off-street parking bays are that they are laid out as a rectangle at least 4.8 m long by 2.4 m wide for the vehicle'*. Furthermore, the seven disabled spaces are in accordance with DfT's Inclusive Mobility guidance. The proposed layout is deemed acceptable and all the proposed spaces are independently accessible with at least 6.0m of manoeuvring space.

It is also noted that drawing 1734-JSA-WY-XX-DR-A-0121 shows the pedestrian paths within the site to vary in width, between c. 1.85m and c. 2.0m. This design is deemed in accordance with the standards set out in Manual for Streets and will ensure pedestrians can safely avoid manoeuvring vehicle impact.

Hertfordshire County Council issued a climate emergency in 2019 and the HCC Local Transport Plan Policy 5 requires all new developments to provide EV infrastructure. A total of 15 of the 71 car parking spaces are shown to benefit from active EV charging facilities and this is deemed acceptable.

Cycle parking provision is also proposed within the site. Similarly to the car parking, Welwyn Hatfield Borough Council will assess the quantum of cycle parking provided and B1 and B2 developments are required to provide one short stay space per 500sqm and one long stay space per 10 full time staff, B8 developments are required to provide one long stay space per 10 full time staff. It is noted that no details of staff numbers have yet been provided, However, a total of 30 cycle parking spaces are proposed in three stores within the site and the Transport Scoping Document advises that '*these stores will be covered, secure and conveniently located'* and this is welcomed.

There are a number of cycle improvement schemes underway in the vicinity of the site, including the new two-way cycle route on Bridge Road and all three of the cycle parking stores are shown in relatively close proximity to the highway to further promote sustainable travel to/from the site. However, the applicant is advised that the 'Cycle Infrastructure Design' Local Transport Note 1/20 July 2020 states that '*as with car parking, a proportion of the cycle parking (typically 5%) should be provided for non-standard cycles to accommodate people with mobility impairments*'. It is vital that the cycle parking is updated to comply with this guidance.

Servicing
Servicing for all three units is proposed within the site, with vehicles accessing the development site through the two accesses from Tewin Road. Each unit is shown to benefit from its own servicing area in relatively close proximity to the building entrances. Swept path analysis drawings have been submitted showing that HGVs can safely enter the site and park within the dedicated loading/unloading servicing areas.

It is however noted that no assessment of the predicted number of delivery/servicing vehicles for the site has been provided. Given the size and nature of the site, these details must be provided to ensure the proposed servicing areas are fit for purpose and to avoid on-street servicing.

Refuse and Recycling
Two refuse and recycling stores have been shown within the site (one for unit 1 and a shared store for units 2 and 3). Whilst the store for units 2 and 3 is located in relatively close proximity to the highway, the store for unit 1 is proposed to the north of the site, a significant distance from the highway. The location of this store must be reconsidered and justification for the amount of refuse and recycling storage space provided.

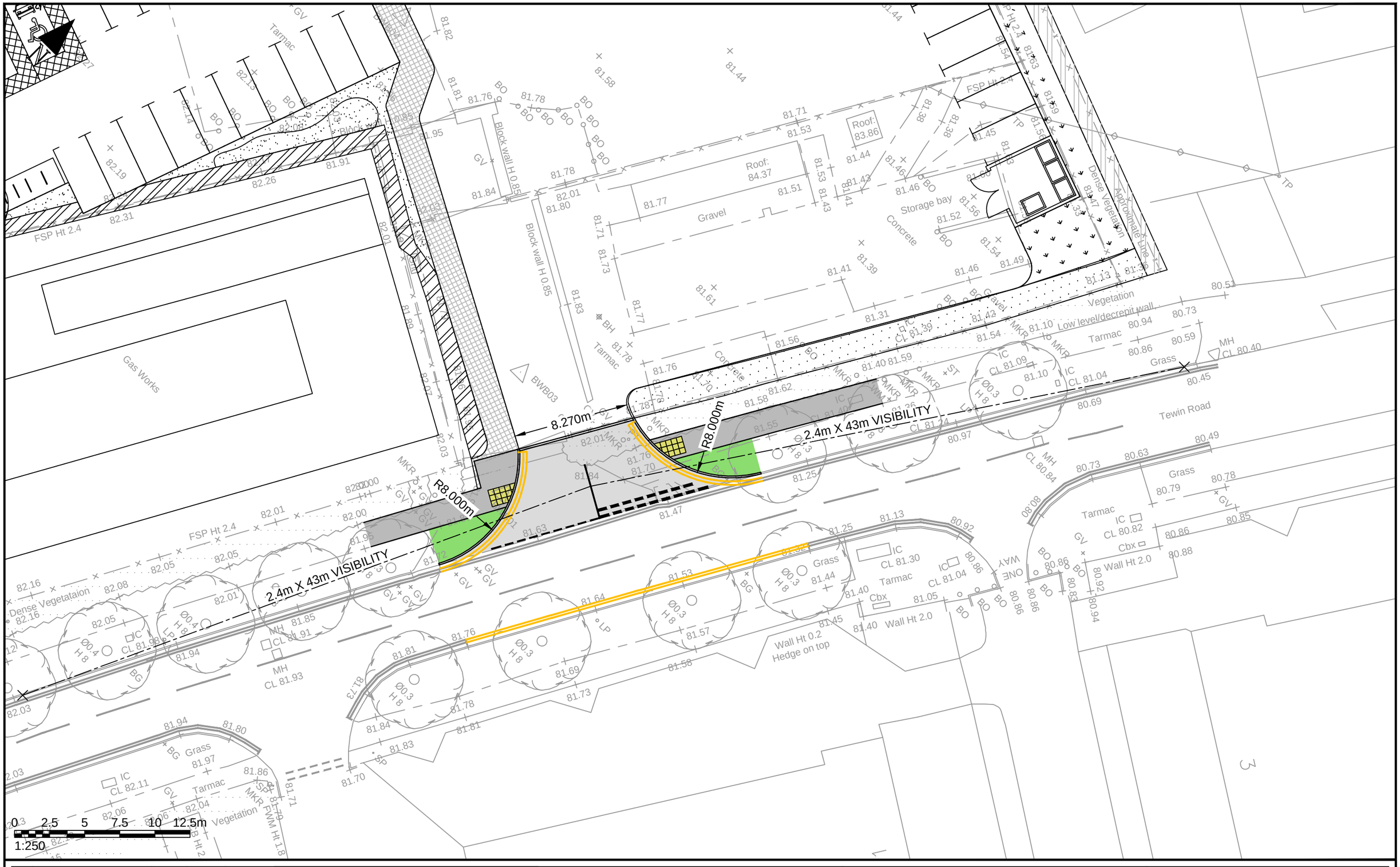
Travel Plan
The Transport Scoping Documents advises that a '*Framework Travel Plan will be prepared to support sustainable travel patterns for the site.'* This is in line with the Hertfordshire Travel Plan Guidance and a draft Travel Plan must be submitted with any planning application to encourage the uptake of sustainable travel to/from the site.

Conclusion
Subject to the above advice being followed, the principle of development is generally acceptable from a transport perspective.

Signed

Sarah Hearn
15 September 2021

APPENDIX C – NORTHERN ACCESS PROPOSED LAYOUT & SWEPT PATHS



REV	DETAILS	DRAWN	CHECKED	DATE
D	Internal layout updated to JSA drawing No. 1734-JSA-WY-XX-DR-A-01201_P11	DW	KH	12.05.2022
C	Notes revised.	DW	KH	07.10.2021
B	Internal layout updated (JSA file ref. 1734-JSA-WY-XX-M2-A-90201).	DW	KH	20.09.2021
A	Internal layout updated and site access relocated.	DW	KH	29.07.2021

NOTES:

1. This drawing to be read & printed in colour.
2. This drawing is for illustrative purposes only, and not for construction.

PROJECT: Tewin Road, Welwyn Garden City

DRAWING TITLE: Proposed Northern Service Yard Access (Sheet 1 of 3)

CLIENT: HBD

SCALE	SIZE	DRAWN BY	CHECKED BY	DATE
1:250	A3	DW	KH	05.07.2021

PROJECT REF	DWG NO	REV
21055	003(1)	D

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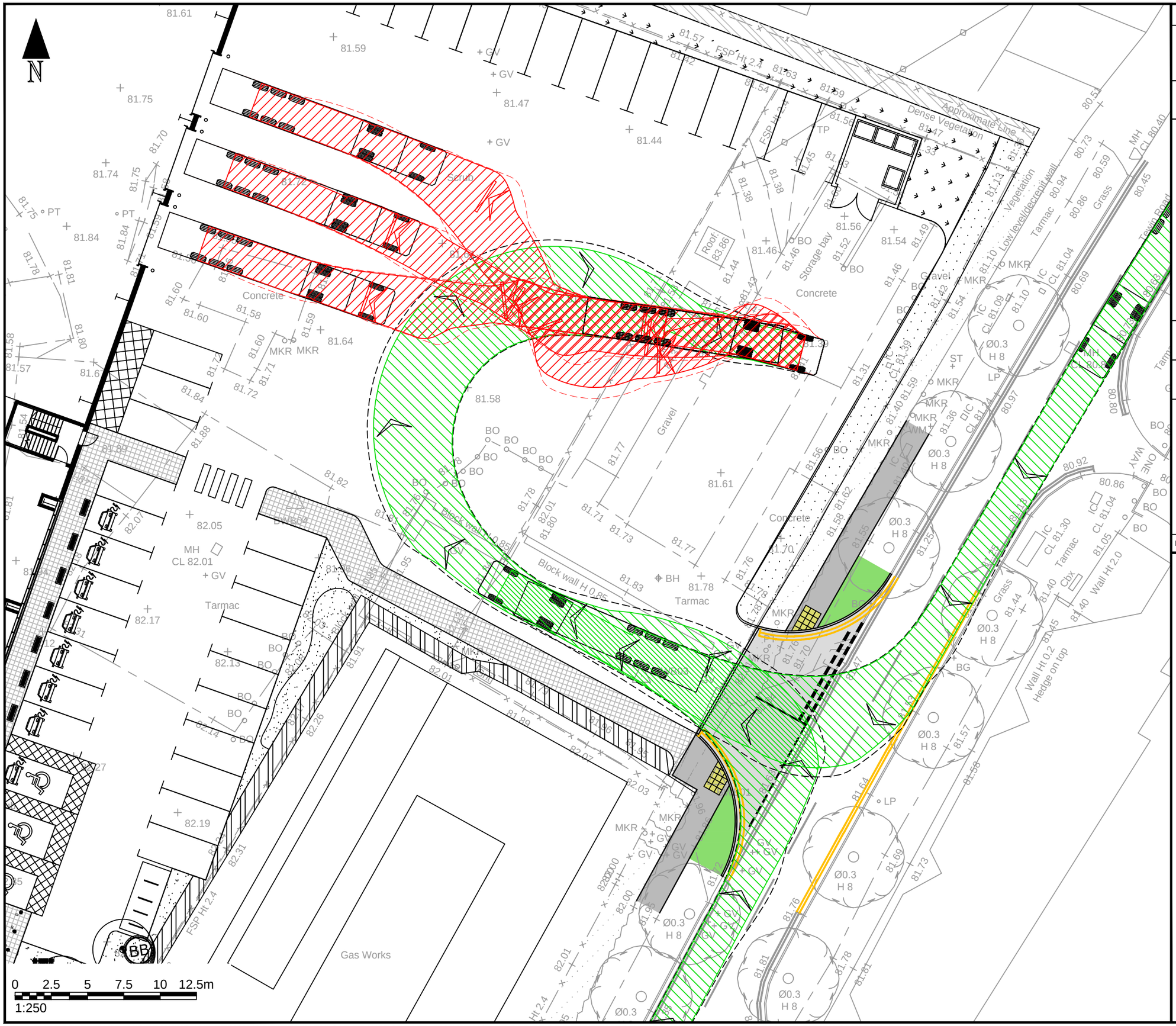

NOTES:

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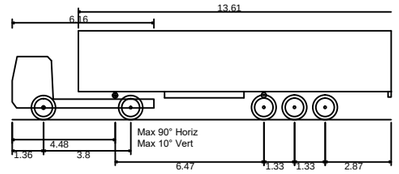
FTA DESIGN ARTICULATED VEHICLE (1998)



Overall Length	16.480m
Overall Width	2.550m
Overall Body Height	3.870m
Min Body Ground Clearance	0.515m
Max Track Width	2.470m
Lock to Lock Time	3.00s
Kerb to Kerb Turning Radius	6.550m

FORWARD MOVEMENTS *(design speed - 5kph)*

REVERSE MOVEMENTS *(design speed - 2.5kph)*

REV	DETAILS	DRAWN	CHECKED	DATE
D	Internal layout updated to JSA drawing No. 1734-JSA-WY-XX-DR-A-01201_P11	DW	KH	12.05.2022
C	Notes revised.	DW	KH	07.10.2021
B	Internal layout updated (JSA file ref. 1734-JSA-WY-XX-M2-A-90201).	DW	KH	20.09.2021
A	Internal layout updated and site access relocated.	DW	KH	29.07.2021

CLIENT

HBD

PROJECT

Tewin Road, Welwyn Garden City

DRAWING TITLE

Proposed Northern Service Yard Access (Sheet 2 of 3)

SCALE	SIZE
1:250	A3

DRAWN BY	CHECKED BY	DATE
DW	KH	05.07.2021

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21055	003(2)	D

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N

0 2.5 5 7.5 10 12.5m
1:250

NOTES:

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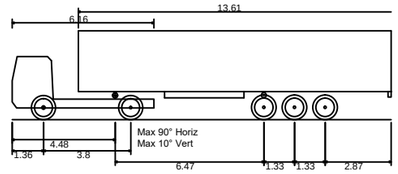
FTA DESIGN ARTICULATED VEHICLE (1998)



Overall Length	16.480m
Overall Width	2.550m
Overall Body Height	3.870m
Min Body Ground Clearance	0.515m
Max Track Width	2.470m
Lock to Lock Time	3.00s
Kerb to Kerb Turning Radius	6.550m

FORWARD MOVEMENTS *(design speed - 5kph)*

REVERSE MOVEMENTS *(design speed - 2.5kph)*

REV	DETAILS	DRAWN	CHECKED	DATE
D	Internal layout updated to JSA drawing No. 1734-JSA-WY-XX-DR-A-01201_P11	DW	KH	12.05.2022
C	Notes revised.	DW	KH	07.10.2021
B	Internal layout updated (JSA file ref. 1734-JSA-WY-XX-M2-A-90201).	DW	KH	20.09.2021
A	Internal layout updated and site access relocated.	DW	KH	29.07.2021

CLIENT
HBD

PROJECT
Tewin Road,
Welwyn Garden City

DRAWING TITLE
Proposed Northern Service Yard Access
(Sheet 3 of 3)

SCALE	SIZE
1:250	A3

DRAWN BY	CHECKED BY	DATE
DW	KH	05.07.2021

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APPENDIX D – SOUTHERN ACCESS PROPOSED LAYOUT & SWEPT PATHS

REV	DETAILS	DRAWN	CHECKED	DATE
D	Internal layout updated to JSA drawing No. 1734-JSA-WY-XX-DR-A-01201_P11.	DW	KH	12.05.2022
C	Notes revised.	DW	KH	07.10.2021
B	Internal layout updated (JSA file ref. 1734-JSA-WY-XX-M2-A-90201).	DW	KH	20.09.2021
A	Internal layout updated and site access relocated.	DW	KH	29.07.2021

NOTES:

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2. This drawing is for illustrative purposes only, and not for construction.

PROJECT: Tewin Road, Welwyn Garden City

DRAWING TITLE: Proposed Southern Service Yard Access (Sheet 1 of 5)

CLIENT: HBD

SCALE	SIZE	DRAWN BY	CHECKED BY	DATE
1:250	A3	DW	KH	05.07.2021

PROJECT REF	DWG NO	REV
21055	004(1)	D

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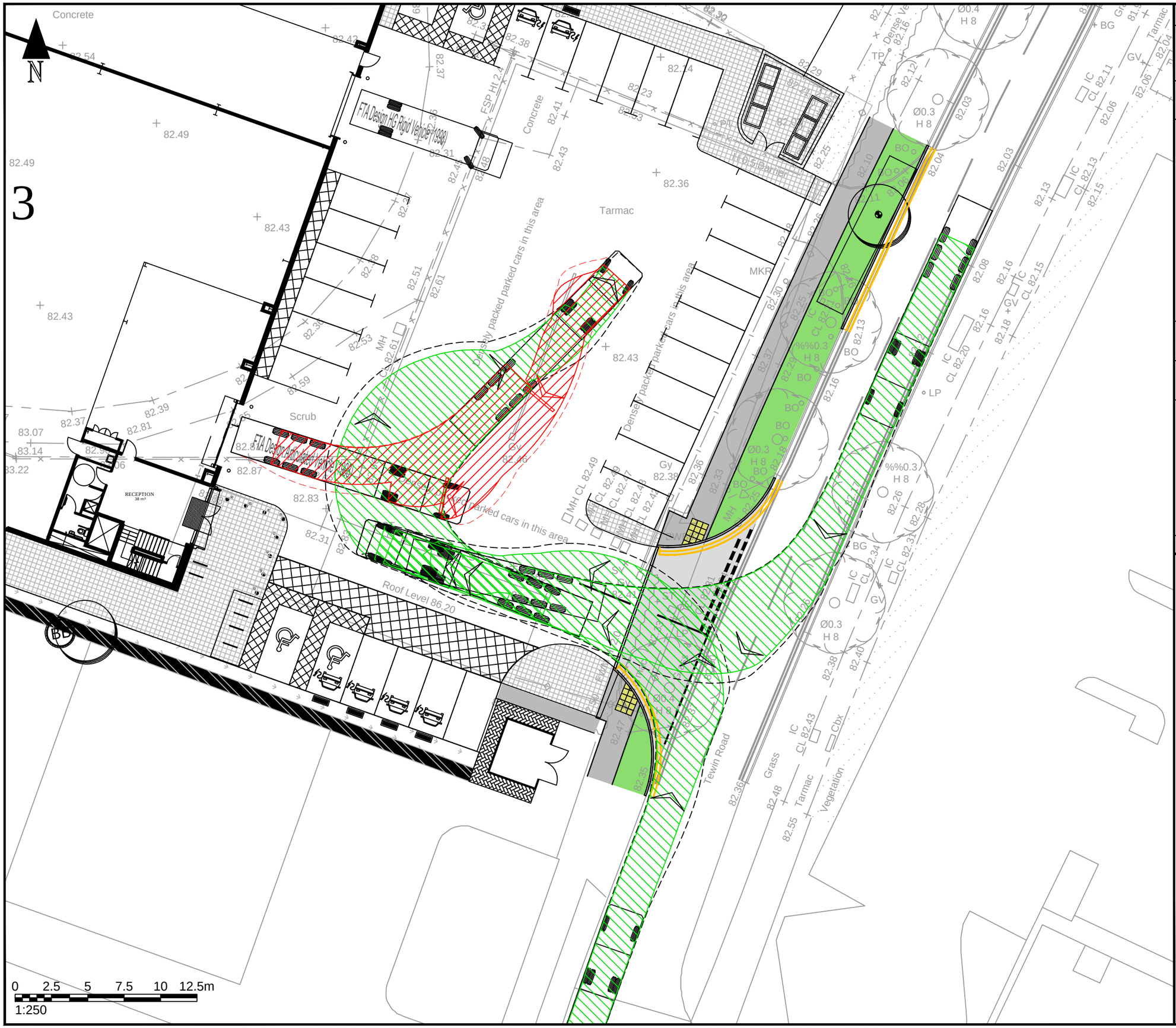

NOTES:

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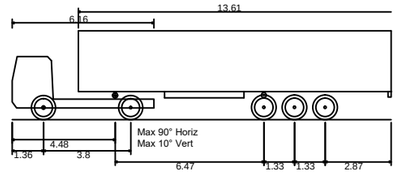
FTA DESIGN ARTICULATED VEHICLE (1998)



Overall Length	16.480m
Overall Width	2.550m
Overall Body Height	3.870m
Min Body Ground Clearance	0.515m
Max Track Width	2.470m
Lock to Lock Time	3.00s
Kerb to Kerb Turning Radius	6.550m

FORWARD MOVEMENTS *(design speed - 5kph)*

REVERSE MOVEMENTS *(design speed - 2.5kph)*

REV	DETAILS	DRAWN	CHECKED	DATE
D	Internal layout updated to JSA drawing No. 1734-JSA-WY-XX-DR-A-01201_P11.	DW	KH	12.05.2022
C	Notes revised.	DW	KH	07.10.2021
B	Internal layout updated (JSA file ref. 1734-JSA-WY-XX-M2-A-90201).	DW	KH	20.09.2021
A	Internal layout updated and site access relocated.	DW	KH	29.07.2021

CLIENT
HBD

PROJECT
Tewin Road,
Welwyn Garden City

DRAWING TITLE
Proposed Southern Service Yard Access (Sheet 2 of 5)

SCALE	SIZE
1:250	A3

DRAWN BY	CHECKED BY	DATE
DW	KH	05.07.2021

Pulsar TRANSPORT PLANNING
4 Underwood Row, London, N1 7LQ
Tel: 020 7324 2677
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PROJECT REF	DWG NO	REV
21055	004(2)	D

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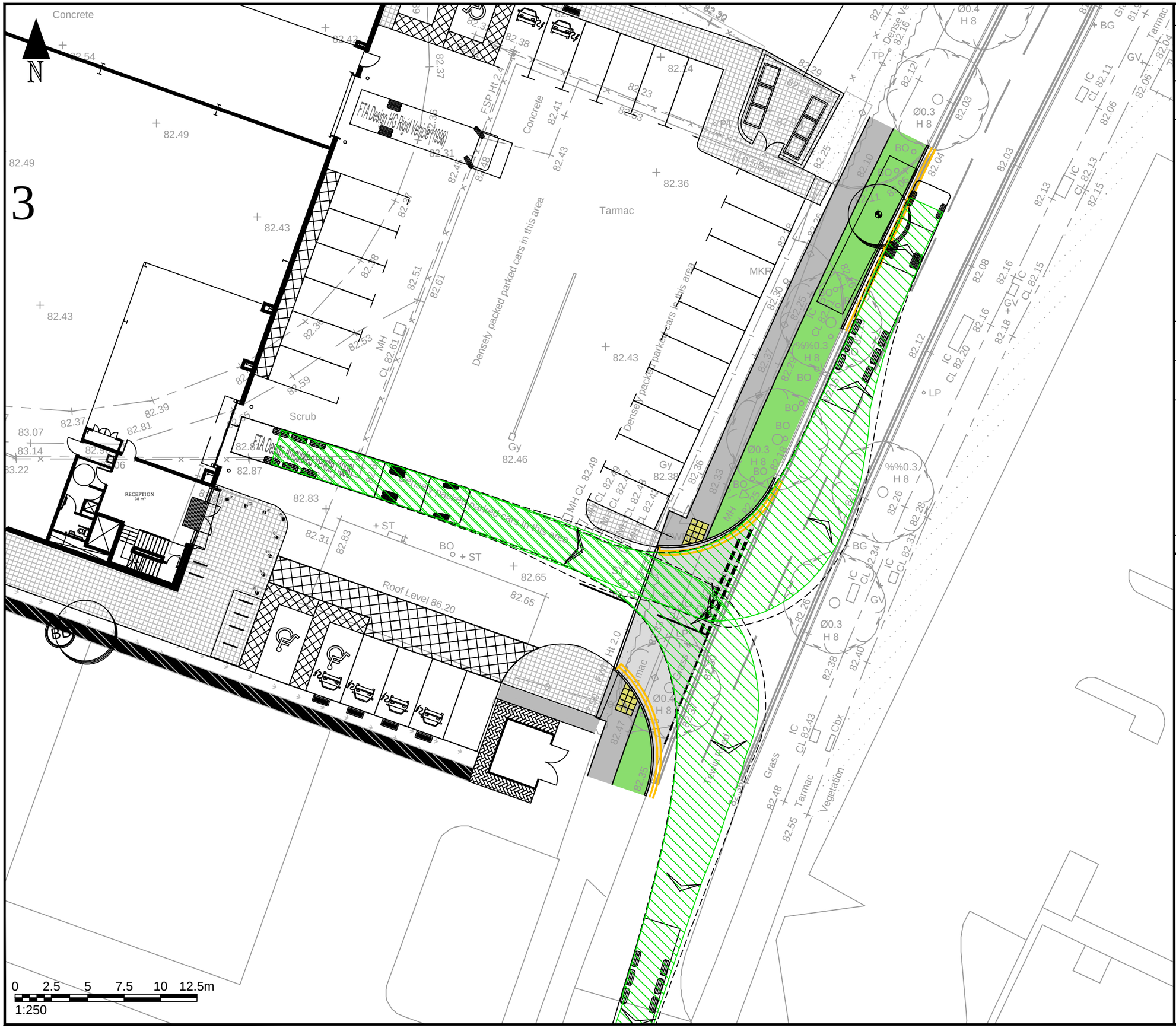
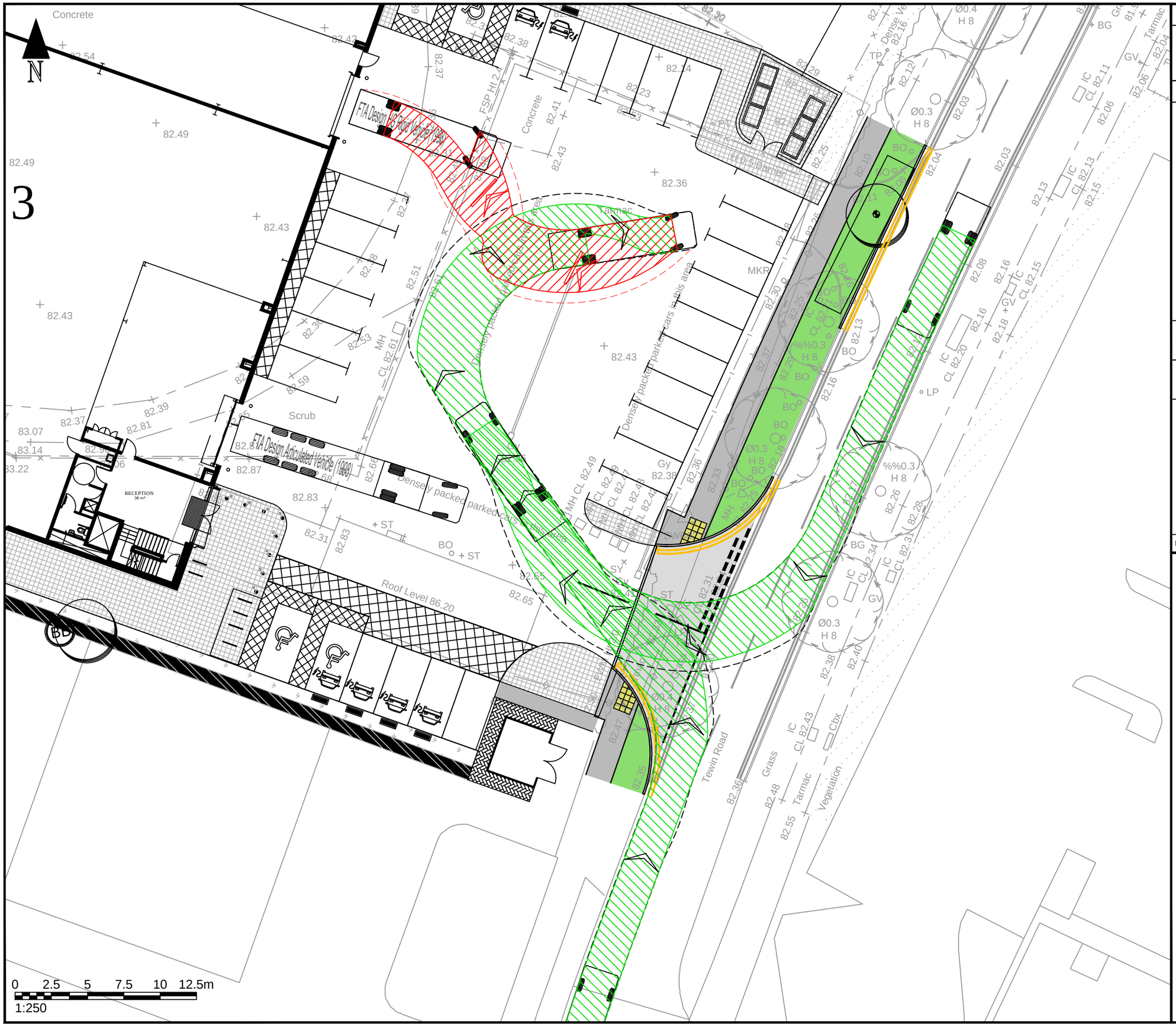

N
3
Concrete
Tarmac
Scrub
Grass
Vegetation
Gy
MKR
MH
IC
LP
BG
GV
BO
TP
Cbx
RECEPTION
38 m²
FTA Design HG Rigid Vehicle (1998)
FTA Design Articulated Vehicle (1998)
Densely packed parked cars in this area
Densely packed parked cars in this area
Tarmac Ramp
Roof Level 86.20
FSP Ht 2.0
Tarmac
Tarmac
Tarmac



NOTES:

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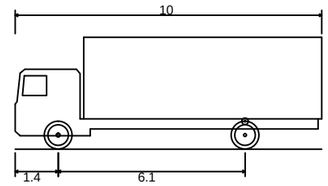
FTA DESIGN HG RIGID VEHICLE (1998)



Overall Length	10.000m
Overall Width	2.500m
Overall Body Height	3.645m
Min Body Ground Clearance	0.440m
Track Width	2.470m
Lock to Lock Time	3.00s
Kerb to Kerb Turning Radius	11.000m

FORWARD MOVEMENTS *(design speed - 5kph)*

REVERSE MOVEMENTS *(design speed - 2.5kph)*

REV	DETAILS	DRAWN	CHECKED	DATE
D	Internal layout updated to JSA drawing No. 1734-JSA-WY-XX-DR-A-01201_P11.	DW	KH	12.05.2022
C	Notes revised.	DW	KH	07.10.2021
B	Internal layout updated (JSA file ref. 1734-JSA-WY-XX-M2-A-90201).	DW	KH	20.09.2021
A	Internal layout updated and site access relocated.	DW	KH	29.07.2021

CLIENT: HBD

PROJECT: Tewin Road, Welwyn Garden City

DRAWING TITLE: Proposed Southern Service Yard Access (Sheet 4 of 5)

SCALE	SIZE
1:250	A3

DRAWN BY	CHECKED BY	DATE
DW	KH	05.07.2021

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4 Underwood Row, London, N1 7LQ
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PROJECT REF	DWG NO	REV
21055	004(4)	D

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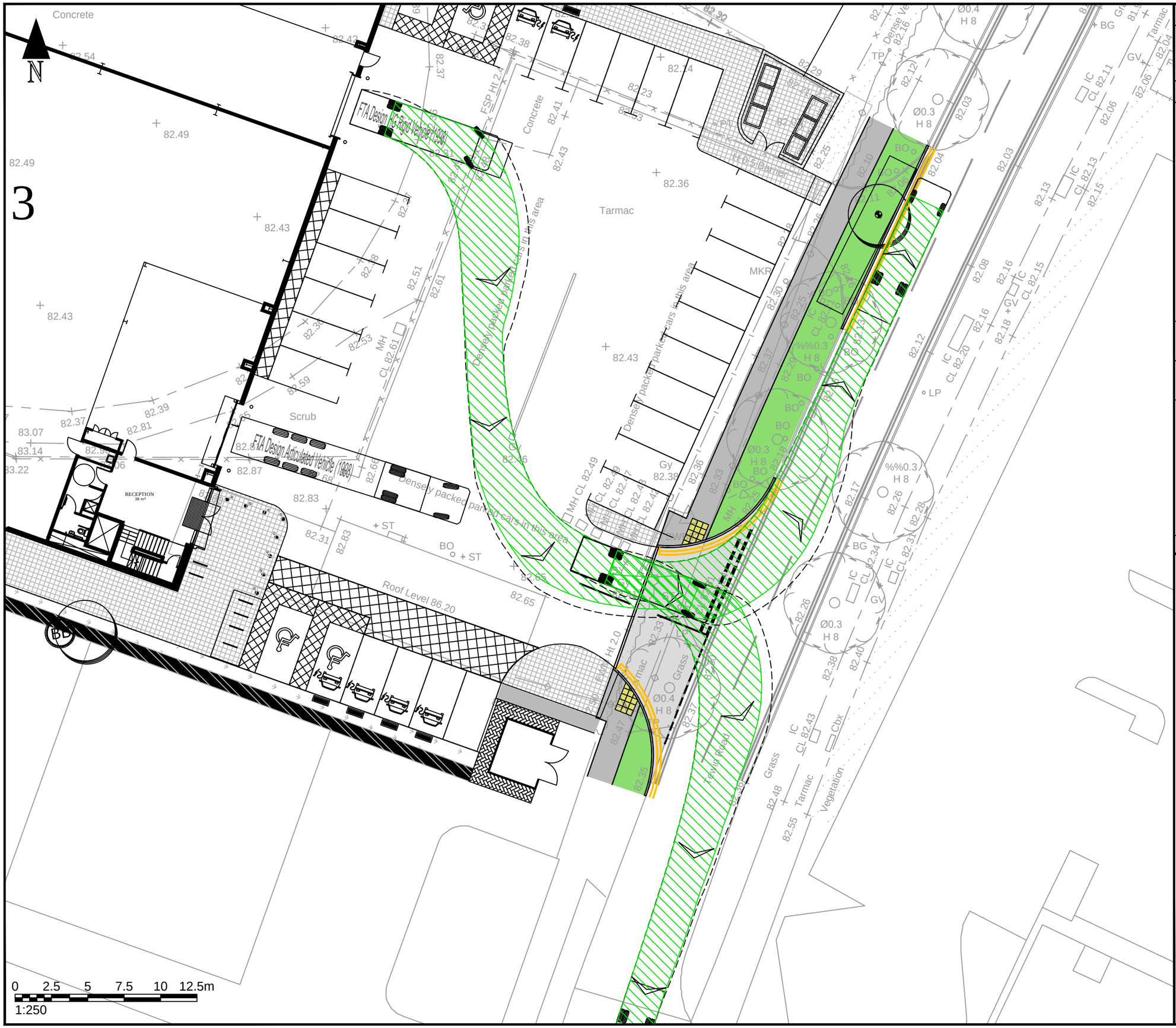
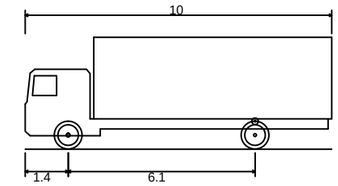


NOTES:

1. This drawing to be read & printed in colour.
2. This drawing is for illustrative purposes only, and not for construction.

FTA DESIGN HG RIGID VEHICLE (1998)



Overall Length	10.000m
Overall Width	2.500m
Overall Body Height	3.645m
Min Body Ground Clearance	0.440m
Track Width	2.470m
Lock to Lock Time	3.00s
Kerb to Kerb Turning Radius	11.000m

FORWARD MOVEMENTS *(design speed - 5kph)*

REVERSE MOVEMENTS *(design speed - 2.5kph)*

REV	DETAILS	DRAWN	CHECKED	DATE
D	Internal layout updated to JSA drawing No. 1734-JSA-WY-XX-DR-A-01201_P11.	DW	KH	12.05.2022
C	Notes revised.	DW	KH	07.10.2021
B	Internal layout updated (JSA file ref. 1734-JSA-WY-XX-M2-A-90201).	DW	KH	20.09.2021
A	Internal layout updated and site access relocated.	DW	KH	29.07.2021

CLIENT: HBD

PROJECT: Tewin Road, Welwyn Garden City

DRAWING TITLE: Proposed Southern Service Yard Access (Sheet 5 of 5)

SCALE	SIZE
1:250	A3

DRAWN BY	CHECKED BY	DATE
DW	KH	05.07.2021

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4 Underwood Row, London, N1 7LQ
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PROJECT REF	DWG NO	REV
21055	004(5)	D

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APPENDIX E – CAR DEALERSHIP TRICS DATA

Pulsar Transport Planning Underwood Row London Licence No: 805401

Filtering Summary

Land Use	14/A	CAR SHOW ROOMS/CAR SHOW ROOMS
Selected Trip Rate Calculation Parameter Range	0.06-0.2 hect AREA	
Actual Trip Rate Calculation Parameter Range	0.06-0.20 hect AREA	
Date Range	Minimum: 01/01/13	Maximum: 28/06/19
Parking Spaces Range	All Surveys Included	
Days of the week selected	Tuesday	1
	Wednesday	2
	Friday	2
Main Location Types selected	Edge of Town Centre	2
	Suburban Area (PPS6 Out of Centre)	1
	Edge of Town	1
	Neighbourhood Centre (PPS6 Local Centre)	1
Population within 500m	All Surveys Included	
Population <1 Mile ranges selected	15,001 to 20,000	1
	20,001 to 25,000	2
	25,001 to 50,000	2
Population <5 Mile ranges selected	100,001 to 125,000	1
	125,001 to 250,000	4
Car Ownership <5 Mile ranges selected	0.5 or Less	1
	0.6 to 1.0	2
	1.1 to 1.5	2
PTAL Rating	No PTAL Present	5

Calculation Reference: AUDIT-805401-210917-0903

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 14 - CAR SHOW ROOMS
Category : A - CAR SHOW ROOMS
TOTAL VEHICLES

Selected regions and areas:

02	SOUTH EAST		
	EX	ESSEX	1 days
05	EAST MIDLANDS		
	LN	LINCOLNSHIRE	2 days
06	WEST MIDLANDS		
	WO	WORCESTERSHIRE	1 days
09	NORTH		
	TW	TYNE & WEAR	1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Primary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: Site area
Actual Range: 0.06 to 0.20 (units: hect)
Range Selected by User: 0.06 to 0.2 (units: hect)

Parking Spaces Range: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/13 to 28/06/19

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Tuesday	1 days
Wednesday	2 days
Friday	2 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	5 days
Directional ATC Count	0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaking using machines.

Selected Locations:

Edge of Town Centre	2
Suburban Area (PPS6 Out of Centre)	1
Edge of Town	1
Neighbourhood Centre (PPS6 Local Centre)	1

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Industrial Zone	1
Development Zone	1
Residential Zone	2
No Sub Category	1

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Secondary Filtering selection:

Use Class:

Sui Generis	5 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 500m Range:

All Surveys Included

Population within 1 mile:

15,001 to 20,000	1 days
20,001 to 25,000	2 days
25,001 to 50,000	2 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

100,001 to 125,000	1 days
125,001 to 250,000	4 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.5 or Less	1 days
0.6 to 1.0	2 days
1.1 to 1.5	2 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

No	5 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present	5 days

This data displays the number of selected surveys with PTAL Ratings.

LIST OF SITES relevant to selection parameters

Site(1):	EX-14-A-01	Site area:	0.19 hect
Development Name:	FORD	Gross floor area:	825 sqm
Location:	CHELMSFORD		
Postcode:	CM1 2PF		
Main Location Type:	Edge of Town Centre	Survey Date:	15/10/13
Sub-Location Type:	Residential Zone	Survey Day:	Tuesday
PTAL:	n/a	Parking Spaces:	31
Site(2):	LN-14-A-02	Site area:	0.07 hect
Development Name:	CAR SHOWROOM	Gross floor area:	45 sqm
Location:	LINCOLN		
Postcode:	LN5 8HN		
Main Location Type:	Edge of Town Centre	Survey Date:	04/10/17
Sub-Location Type:	Industrial Zone	Survey Day:	Wednesday
PTAL:	n/a	Parking Spaces:	
Site(3):	LN-14-A-03	Site area:	0.06 hect
Development Name:	CAR SHOW ROOM	Gross floor area:	143 sqm
Location:	LINCOLN		
Postcode:	LN5 8EU		
Main Location Type:	Edge of Town	Survey Date:	28/06/19
Sub-Location Type:	Residential Zone	Survey Day:	Friday
PTAL:	n/a	Parking Spaces:	5
Site(4):	TW-14-A-03	Site area:	0.18 hect
Development Name:	CAR SHOW ROOM	Gross floor area:	282 sqm
Location:	SUNDERLAND		
Postcode:	SR5 1HF		
Main Location Type:	Suburban Area (PPS6 Out of Centre)	Survey Date:	05/04/17
Sub-Location Type:	Development Zone	Survey Day:	Wednesday
PTAL:	n/a	Parking Spaces:	
Site(5):	WO-14-A-01	Site area:	0.20 hect
Development Name:	HONDA	Gross floor area:	655 sqm
Location:	WORCESTER		
Postcode:	WR2 5YJ		
Main Location Type:	Neighbourhood Centre (PPS6 Local Centre)	Survey Date:	23/05/14
Sub-Location Type:	No Sub Category	Survey Day:	Friday
PTAL:	n/a	Parking Spaces:	66

TRIP RATE for Land Use 14 - CAR SHOW ROOMS/A - CAR SHOW ROOMS
TOTAL VEHICLES
Calculation factor: 1 hect
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. AREA	Trip Rate	No. Days	Ave. AREA	Trip Rate	No. Days	Ave. AREA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	2	0.14	33.333	2	0.14	0.000	2	0.14	33.333
08:00 - 09:00	5	0.14	52.857	5	0.14	22.857	5	0.14	75.714
09:00 - 10:00	5	0.14	31.429	5	0.14	27.143	5	0.14	58.572
10:00 - 11:00	5	0.14	40.000	5	0.14	40.000	5	0.14	80.000
11:00 - 12:00	5	0.14	18.571	5	0.14	27.143	5	0.14	45.714
12:00 - 13:00	5	0.14	25.714	5	0.14	28.571	5	0.14	54.285
13:00 - 14:00	5	0.14	31.429	5	0.14	28.571	5	0.14	60.000
14:00 - 15:00	5	0.14	11.429	5	0.14	21.429	5	0.14	32.858
15:00 - 16:00	5	0.14	25.714	5	0.14	40.000	5	0.14	65.714
16:00 - 17:00	5	0.14	11.429	5	0.14	18.571	5	0.14	30.000
17:00 - 18:00	5	0.14	2.857	5	0.14	14.286	5	0.14	17.143
18:00 - 19:00	4	0.16	0.000	4	0.16	4.688	4	0.16	4.688
19:00 - 20:00	1	0.19	0.000	1	0.19	0.000	1	0.19	0.000
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			284.762			273.259			558.021

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

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Parameter summary

Trip rate parameter range selected:	0.06 to 0.20 (units: hect)
Survey date date range:	01/01/13 - 28/06/19
Number of weekdays (Monday-Friday):	5
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

APPENDIX F – INDUSTRIAL ESTATE TRICS DATA

Pulsar Transport Planning Underwood Row London Licence No: 805401

Filtering Summary

Land Use	02/D	EMPLOYMENT/INDUSTRIAL ESTATE
Selected Trip Rate Calculation Parameter Range	1138-16000 sqm GFA	
Actual Trip Rate Calculation Parameter Range	1138-11305 sqm GFA	
Date Range	Minimum: 01/01/13	Maximum: 25/09/19
Parking Spaces Range	All Surveys Included	
Days of the week selected	Monday	4
	Tuesday	7
	Wednesday	2
	Thursday	1
	Friday	2
Main Location Types selected	Edge of Town Centre	1
	Suburban Area (PPS6 Out of Centre)	7
	Edge of Town	8
Population within 500m	All Surveys Included	
Population <1 Mile ranges selected	1,001 to 5,000	1
	5,001 to 10,000	3
	10,001 to 15,000	2
	15,001 to 20,000	1
	20,001 to 25,000	1
	25,001 to 50,000	7
	50,001 to 100,000	1
Population <5 Mile ranges selected	25,001 to 50,000	1
	125,001 to 250,000	12
	250,001 to 500,000	3
Car Ownership <5 Mile ranges selected	0.6 to 1.0	5
	1.1 to 1.5	10
	1.6 to 2.0	1
PTAL Rating	No PTAL Present	16
Filter by Site Operations Breakdown	All Surveys Included	

Calculation Reference: AUDIT-805401-210624-0650

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 02 - EMPLOYMENT
Category : D - INDUSTRIAL ESTATE
MULTI-MODAL TOTAL VEHICLES

Selected regions and areas:

02	SOUTH EAST		
	ES	EAST SUSSEX	2 days
	EX	ESSEX	2 days
03	SOUTH WEST		
	DV	DEVON	1 days
	WL	WILTSHIRE	1 days
04	EAST ANGLIA		
	CA	CAMBRIDGESHIRE	1 days
05	EAST MIDLANDS		
	DS	DERBYSHIRE	1 days
06	WEST MIDLANDS		
	HE	HEREFORDSHIRE	1 days
	WM	WEST MIDLANDS	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE		
	WY	WEST YORKSHIRE	4 days
08	NORTH WEST		
	LC	LANCASHIRE	1 days
09	NORTH		
	TW	TYNE & WEAR	1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Primary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: Gross floor area
Actual Range: 1138 to 11305 (units: sqm)
Range Selected by User: 1138 to 16000 (units: sqm)

Parking Spaces Range: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/13 to 25/09/19

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Monday	4 days
Tuesday	7 days
Wednesday	2 days
Thursday	1 days
Friday	2 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	16 days
Directional ATC Count	0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaking using machines.

Selected Locations:

Edge of Town Centre	1
Suburban Area (PPS6 Out of Centre)	7
Edge of Town	8

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Industrial Zone	7
Development Zone	2
Residential Zone	3
No Sub Category	4

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Secondary Filtering selection:

Use Class:

Not Known	16 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS®.

Filter by Site Operations Breakdown:
All Surveys Included

Population within 500m Range:
All Surveys Included

Population within 1 mile:

1,001 to 5,000	1 days
5,001 to 10,000	3 days
10,001 to 15,000	2 days
15,001 to 20,000	1 days
20,001 to 25,000	1 days
25,001 to 50,000	7 days
50,001 to 100,000	1 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

25,001 to 50,000	1 days
125,001 to 250,000	12 days
250,001 to 500,000	3 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.6 to 1.0	5 days
1.1 to 1.5	10 days
1.6 to 2.0	1 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

No	16 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present	16 days

This data displays the number of selected surveys with PTAL Ratings.

LIST OF SITES relevant to selection parameters

Site(1):	CA-02-D-04	Site area:	0.89 hect
Development Name:	INDUSTRIAL ESTATE	Gross floor area:	4133 sqm
Location:	PETERBOROUGH	Parking spaces:	45
Postcode:	PE1 2AZ	No of Employees:	40
Main Location Type:	Suburban Area (PPS6 Out of Centre)	Survey Date:	02/12/14
Sub-Location Type:	No Sub Category	Survey Day:	Tuesday
PTAL:	n/a		

Site(2):	DS-02-D-02	Site area:	1.11 hect
Development Name:	INDUSTRIAL ESTATE	Gross floor area:	5686 sqm
Location:	DERBY	Parking spaces:	110
Postcode:	DE23 8NL	No of Employees:	113
Main Location Type:	Suburban Area (PPS6 Out of Centre)	Survey Date:	25/09/19
Sub-Location Type:	No Sub Category	Survey Day:	Wednesday
PTAL:	n/a		

Site(3):	DV-02-D-07	Site area:	0.95 hect
Development Name:	INDUSTRIAL ESTATE	Gross floor area:	3600 sqm
Location:	EXETER	Parking spaces:	44
Postcode:	EX2 7LW	No of Employees:	77
Main Location Type:	Edge of Town	Survey Date:	03/07/17
Sub-Location Type:	Industrial Zone	Survey Day:	Monday
PTAL:	n/a		

Site(4):	ES-02-D-06	Site area:	2.30 hect
Development Name:	INDUSTRIAL ESTATE	Gross floor area:	7525 sqm
Location:	EASTBOURNE	Parking spaces:	243
Postcode:	BN22 8UY	No of Employees:	330
Main Location Type:	Edge of Town	Survey Date:	21/10/13
Sub-Location Type:	Residential Zone	Survey Day:	Monday
PTAL:	n/a		

Site(5):	ES-02-D-07	Site area:	1.10 hect
Development Name:	INDUSTRIAL ESTATE	Gross floor area:	6625 sqm
Location:	BRIGHTON	Parking spaces:	125
Postcode:	BN2 4AW	No of Employees:	130
Main Location Type:	Suburban Area (PPS6 Out of Centre)	Survey Date:	16/10/14
Sub-Location Type:	Industrial Zone	Survey Day:	Thursday
PTAL:	n/a		

Site(6):	EX-02-D-03	Site area:	1.36 hect
Development Name:	INDUSTRIAL ESTATE	Gross floor area:	4876 sqm
Location:	COLCHESTER	Parking spaces:	145
Postcode:	CO4 9HZ	No of Employees:	150
Main Location Type:	Edge of Town	Survey Date:	18/05/18
Sub-Location Type:	Industrial Zone	Survey Day:	Friday
PTAL:	n/a		

Site(7):	EX-02-D-05	Site area:	1.63 hect
Development Name:	INDUSTRIAL ESTATE	Gross floor area:	7280 sqm
Location:	COLCHESTER	Parking spaces:	179
Postcode:	CO4 9TB	No of Employees:	160
Main Location Type:	Edge of Town	Survey Date:	18/05/18
Sub-Location Type:	Industrial Zone	Survey Day:	Friday
PTAL:	n/a		

Site(8):	HE-02-D-02	Site area:	0.50 hect
Development Name:	BUSINESS PARK	Gross floor area:	5214 sqm
Location:	HEREFORD	Parking spaces:	68
Postcode:	HR4 9JQ	No of Employees:	67
Main Location Type:	Suburban Area (PPS6 Out of Centre)	Survey Date:	22/10/13
Sub-Location Type:	Industrial Zone	Survey Day:	Tuesday
PTAL:	n/a		

Site(9):	LC-02-D-05	Site area:	0.70 hect
Development Name:	INDUSTRIAL ESTATE	Gross floor area:	7020 sqm
Location:	BLACKBURN	Parking spaces:	117
Postcode:	BB1 3BL	No of Employees:	63
Main Location Type:	Edge of Town Centre	Survey Date:	04/06/13
Sub-Location Type:	Industrial Zone	Survey Day:	Tuesday
PTAL:	n/a		

Site(10):	TW-02-D-08	Site area:	2.70 hect
Development Name:	INDUSTRIAL ESTATE	Gross floor area:	8310 sqm
Location:	SUNDERLAND	Parking spaces:	212
Postcode:	SR5 3TX	No of Employees:	180
Main Location Type:	Suburban Area (PPS6 Out of Centre)	Survey Date:	04/04/17
Sub-Location Type:	Development Zone	Survey Day:	Tuesday
PTAL:	n/a		

LIST OF SITES relevant to selection parameters (Cont.)

Site(11):	WL-02-D-02	Site area:	2.55 hect
Development Name:	INDUSTRIAL ESTATE	Gross floor area:	10000 sqm
Location:	SWINDON	Parking spaces:	152
Postcode:	SN2 7JQ	No of Employees:	118
Main Location Type:	Suburban Area (PPS6 Out of Centre)	Survey Date:	20/09/16
Sub-Location Type:	Residential Zone	Survey Day:	Tuesday
PTAL:	n/a		

Site(12):	WM-02-D-03	Site area:	0.27 hect
Development Name:	INDUSTRIAL ESTATE	Gross floor area:	1138 sqm
Location:	STOURBRIDGE	Parking spaces:	18
Postcode:	DY8 4YJ	No of Employees:	35
Main Location Type:	Suburban Area (PPS6 Out of Centre)	Survey Date:	28/11/17
Sub-Location Type:	Residential Zone	Survey Day:	Tuesday
PTAL:	n/a		

Site(13):	WY-02-D-05	Site area:	0.50 hect
Development Name:	INDUSTRIAL ESTATE	Gross floor area:	1776 sqm
Location:	CASTLEFORD	Parking spaces:	50
Postcode:	WF10 4SR	No of Employees:	20
Main Location Type:	Edge of Town	Survey Date:	22/05/17
Sub-Location Type:	Development Zone	Survey Day:	Monday
PTAL:	n/a		

Site(14):	WY-02-D-06	Site area:	2.20 hect
Development Name:	INDUSTRIAL ESTATE (PART)	Gross floor area:	4328 sqm
Location:	CASTLEFORD	Parking spaces:	95
Postcode:	WF10 5QU	No of Employees:	23
Main Location Type:	Edge of Town	Survey Date:	23/05/17
Sub-Location Type:	Industrial Zone	Survey Day:	Tuesday
PTAL:	n/a		

Site(15):	WY-02-D-07	Site area:	0.70 hect
Development Name:	INDUSTRIAL ESTATE	Gross floor area:	3191 sqm
Location:	CASTLEFORD	Parking spaces:	58
Postcode:	WF10 4UA	No of Employees:	61
Main Location Type:	Edge of Town	Survey Date:	15/05/17
Sub-Location Type:	No Sub Category	Survey Day:	Monday
PTAL:	n/a		

Site(16):	WY-02-D-08	Site area:	1.80 hect
Development Name:	INDUSTRIAL ESTATE	Gross floor area:	11305 sqm
Location:	HALIFAX	Parking spaces:	106
Postcode:	HX3 5QN	No of Employees:	93
Main Location Type:	Edge of Town	Survey Date:	17/10/18
Sub-Location Type:	No Sub Category	Survey Day:	Wednesday
PTAL:	n/a		

TRIP RATE for Land Use 02 - EMPLOYMENT/D - INDUSTRIAL ESTATE
MULTI-MODAL TOTAL VEHICLES
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 00:30									
00:30 - 01:00									
01:00 - 01:30									
01:30 - 02:00									
02:00 - 02:30									
02:30 - 03:00									
03:00 - 03:30									
03:30 - 04:00									
04:00 - 04:30									
04:30 - 05:00									
05:00 - 05:30	1	5686	0.000	1	5686	0.000	1	5686	0.000
05:30 - 06:00	1	5686	0.018	1	5686	0.000	1	5686	0.018
06:00 - 06:30	1	5686	0.018	1	5686	0.000	1	5686	0.018
06:30 - 07:00	1	5686	0.000	1	5686	0.018	1	5686	0.018
07:00 - 07:30	16	5750	0.133	16	5750	0.033	16	5750	0.166
07:30 - 08:00	16	5750	0.228	16	5750	0.083	16	5750	0.311
08:00 - 08:30	16	5750	0.286	16	5750	0.126	16	5750	0.412
08:30 - 09:00	16	5750	0.271	16	5750	0.166	16	5750	0.437
09:00 - 09:30	16	5750	0.259	16	5750	0.197	16	5750	0.456
09:30 - 10:00	16	5750	0.229	16	5750	0.188	16	5750	0.417
10:00 - 10:30	16	5750	0.236	16	5750	0.222	16	5750	0.458
10:30 - 11:00	16	5750	0.238	16	5750	0.216	16	5750	0.454
11:00 - 11:30	16	5750	0.208	16	5750	0.215	16	5750	0.423
11:30 - 12:00	16	5750	0.225	16	5750	0.249	16	5750	0.474
12:00 - 12:30	16	5750	0.218	16	5750	0.222	16	5750	0.440
12:30 - 13:00	16	5750	0.200	16	5750	0.230	16	5750	0.430
13:00 - 13:30	16	5750	0.223	16	5750	0.204	16	5750	0.427
13:30 - 14:00	16	5750	0.190	16	5750	0.200	16	5750	0.390
14:00 - 14:30	16	5750	0.204	16	5750	0.207	16	5750	0.411
14:30 - 15:00	16	5750	0.201	16	5750	0.208	16	5750	0.409
15:00 - 15:30	16	5750	0.155	16	5750	0.224	16	5750	0.379
15:30 - 16:00	16	5750	0.196	16	5750	0.208	16	5750	0.404
16:00 - 16:30	16	5750	0.238	16	5750	0.229	16	5750	0.467
16:30 - 17:00	16	5750	0.197	16	5750	0.305	16	5750	0.502
17:00 - 17:30	16	5750	0.135	16	5750	0.291	16	5750	0.426
17:30 - 18:00	16	5750	0.125	16	5750	0.221	16	5750	0.346
18:00 - 18:30	16	5750	0.051	16	5750	0.127	16	5750	0.178
18:30 - 19:00	16	5750	0.051	16	5750	0.092	16	5750	0.143
19:00 - 19:30	1	5686	0.053	1	5686	0.035	1	5686	0.088
19:30 - 20:00	1	5686	0.000	1	5686	0.000	1	5686	0.000
20:00 - 20:30	1	5686	0.000	1	5686	0.000	1	5686	0.000
20:30 - 21:00	1	5686	0.000	1	5686	0.018	1	5686	0.018
21:00 - 21:30									
21:30 - 22:00									
22:00 - 22:30									
22:30 - 23:00									
23:00 - 23:30									
23:30 - 24:00									
Total Rates:			4.786			4.734			9.520

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

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Parameter summary

Trip rate parameter range selected:	1138 - 11305 (units: sqm)
Survey date date range:	01/01/13 - 25/09/19
Number of weekdays (Monday-Friday):	16
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 02 - EMPLOYMENT/D - INDUSTRIAL ESTATE
MULTI-MODAL TOTAL PEOPLE
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 00:30									
00:30 - 01:00									
01:00 - 01:30									
01:30 - 02:00									
02:00 - 02:30									
02:30 - 03:00									
03:00 - 03:30									
03:30 - 04:00									
04:00 - 04:30									
04:30 - 05:00									
05:00 - 05:30	1	5686	0.000	1	5686	0.000	1	5686	0.000
05:30 - 06:00	1	5686	0.018	1	5686	0.000	1	5686	0.018
06:00 - 06:30	1	5686	0.018	1	5686	0.000	1	5686	0.018
06:30 - 07:00	1	5686	0.000	1	5686	0.018	1	5686	0.018
07:00 - 07:30	16	5750	0.165	16	5750	0.037	16	5750	0.202
07:30 - 08:00	16	5750	0.323	16	5750	0.111	16	5750	0.434
08:00 - 08:30	16	5750	0.403	16	5750	0.166	16	5750	0.569
08:30 - 09:00	16	5750	0.386	16	5750	0.209	16	5750	0.595
09:00 - 09:30	16	5750	0.374	16	5750	0.253	16	5750	0.627
09:30 - 10:00	16	5750	0.329	16	5750	0.241	16	5750	0.570
10:00 - 10:30	16	5750	0.314	16	5750	0.284	16	5750	0.598
10:30 - 11:00	16	5750	0.340	16	5750	0.277	16	5750	0.617
11:00 - 11:30	16	5750	0.279	16	5750	0.303	16	5750	0.582
11:30 - 12:00	16	5750	0.318	16	5750	0.346	16	5750	0.664
12:00 - 12:30	16	5750	0.314	16	5750	0.304	16	5750	0.618
12:30 - 13:00	16	5750	0.271	16	5750	0.316	16	5750	0.587
13:00 - 13:30	16	5750	0.302	16	5750	0.288	16	5750	0.590
13:30 - 14:00	16	5750	0.265	16	5750	0.286	16	5750	0.551
14:00 - 14:30	16	5750	0.275	16	5750	0.302	16	5750	0.577
14:30 - 15:00	16	5750	0.289	16	5750	0.292	16	5750	0.581
15:00 - 15:30	16	5750	0.208	16	5750	0.335	16	5750	0.543
15:30 - 16:00	16	5750	0.288	16	5750	0.293	16	5750	0.581
16:00 - 16:30	16	5750	0.377	16	5750	0.352	16	5750	0.729
16:30 - 17:00	16	5750	0.316	16	5750	0.431	16	5750	0.747
17:00 - 17:30	16	5750	0.204	16	5750	0.449	16	5750	0.653
17:30 - 18:00	16	5750	0.195	16	5750	0.384	16	5750	0.579
18:00 - 18:30	16	5750	0.083	16	5750	0.203	16	5750	0.286
18:30 - 19:00	16	5750	0.063	16	5750	0.161	16	5750	0.224
19:00 - 19:30	1	5686	0.053	1	5686	0.035	1	5686	0.088
19:30 - 20:00	1	5686	0.000	1	5686	0.000	1	5686	0.000
20:00 - 20:30	1	5686	0.000	1	5686	0.000	1	5686	0.000
20:30 - 21:00	1	5686	0.000	1	5686	0.035	1	5686	0.035
21:00 - 21:30									
21:30 - 22:00									
22:00 - 22:30									
22:30 - 23:00									
23:00 - 23:30									
23:30 - 24:00									
Total Rates:			6.770			6.711			13.481

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

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