



45 Tilehurst Road, Reading

Transport Statement

Client: Aman Gupta

i-Transport Ref: SJ/GT/ITB16348-001D

Date: 20 January 2022

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i-Transport LLP

The Square
Basing View
Basingstoke
Hampshire
RG21 4EB

Tel: 01256 637940

www.i-transport.co.uk

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Quality Management

Report No.	Comments	Date	Author	Authorised
ITB16348-001	Issue	20/11/2020	GT	SJ
ITB16348-001A	Issue	11/12/2020	GT	SJ
ITB16348-001B	Issue	17/12/2020	GT	SJ
ITB16348-001C	Issue	18/10/2021	GT/MC	SJ
ITB16348-001D	Issue	20/01/2022	GT	SJ

File Ref: T:\Projects\16000 Series\16348ITB - 45 Tilehurst Road, Reading\Admin\Report and Tech Notes\ITB16348-001D.docx

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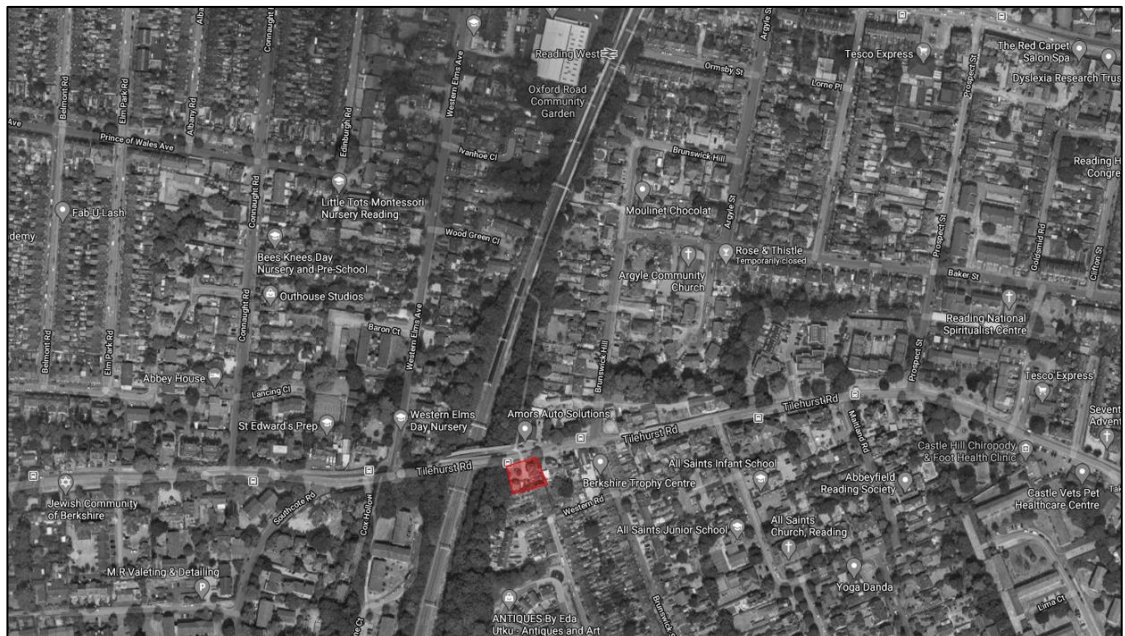
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SECTION 1 INTRODUCTION

1.1.1 i-Transport LLP has been appointed by Aman Gupta to provide highways and transport advice in relation to a forthcoming planning application for the redevelopment of the existing residential dwelling at 45 Tilehurst Road for 8 residential flats consisting of 1 x one-bedroom and 7 x two-bedroom flats. The site is located south of Tilehurst Road in Reading.

1.1.2 The site is located within the planning and highway authority of Reading Borough Council (RBC). The site location is shown in **Image 1.1**.

Image 1.1: Site Location Plan Extract



Source: i-Transport / Google

1.2 Pre-application engagement

1.2.1 Previous pre-application engagement has been completed with RBC in respect of a scheme for 6 two-bedroom flats and highways comments have been provided, these raise the need for:

- A 4.8m wide access;
- Suitable visibility splays of access to a 'Main Transport Corridor' with a desire for 2.4m x 90m identified;
- 7 car parking spaces (1 per flat plus 1 visitor space);
- Provision for EV charging;

- 3 cycle parking spaces; and
- A bin store with 10m of the highway.

1.3 Structure of Report and Planning Policy Requirements

1.3.1 In line with the above pre-application comments and the requirements of the National Planning Policy Framework (NPPF) and the National Planning Practice Guidance (NPPG), this Transport Statement (TS) has been prepared

1.3.2 Specifically, this TS has been prepared to consider the key transport tests outlined in paragraphs 110 of the NPPF, namely:

- Will the opportunities for sustainable travel be appropriately taken up given the type of development and its location?
- Will safe and acceptable access be provided for all users?
- Will the internal movement network be designed appropriately?
- Will the transport impacts of the site be adequately mitigated, such that the residual cumulative impact will be acceptable (i.e. not severe), and not result in unacceptable safety impacts?

1.3.3 RBC's Local Plan covers the period up to 2036 and within Policy TR1 for Achieving the Transport Strategy states:

"All development proposals should make appropriate provision for works and contributions to ensure an adequate level of accessibility and safety by all modes of transport from all parts of a development, particularly by public transport, walking and cycling, in accordance with any agreed transport assessment submitted as part of the application."

1.3.4 Policy TR3 for Access, Traffic and Highway-Related Matters outlines development will only be permitted where:

- ***Accesses and works to the highway comply with the adopted standards of the Transport Authority;***
- ***The development would not have a material detrimental impact on the functioning of the transport network;***
- ***The proposals would not be detrimental to the safety of users of the transport network, including pedestrians and cyclists;***

- ***The proposals would not generate regular movement of heavy good vehicles (HGVs) on unsuitable roads, or on roads without easy access to the classified highway network; and***
- ***For non-residential uses, or new dwellings on classified roads, off-street servicing would be provided.***

1.3.5 Policy TR3 then goes on to state:

“Proposals involving either the construction of a new site access, or a material increase in the use of an existing site access, directly onto the Classified Highway Network will not be acceptable if they would be likely to result in the encouragement of the use of the network for short local trips or compromise the safe movement and free flow of traffic on the network of the safe use of the road.”

1.3.6 Within Policy TR4 for Cycle Routes and Facilities it is outlined:

“Developments will be expected to make full use of opportunities to improve access for cyclists to, from and within the development and to integrate cycling through the provision of new facilities. Development of new facilities for cycling, such as cycle hire points and cycle parking, will be acceptable.”

1.3.7 Policy TR5 for Car and Cycle Parking and Electric Vehicle Charging states:

“Development should provide car parking and cycle parking that is appropriate to the accessibility of locations within the Borough to sustainable transport facilities, particularly public transport.

Development should make the following provision for electric vehicle charging points:

- ***All new houses with dedicated off-street parking should provide charging points;***
- ***Within communal car parks for residential or non-residential developments of at least 10 spaces, 10% of spaces should provide an active charging point.”***

1.4 Summary

1.4.1 The remainder of this report demonstrates how the development proposals responds to the pre-application comments and national and local transport planning policy.

SECTION 2 EXISTING CONDITIONS

2.1 Public Transport

Bus

- 2.1.1 The closest bus stop to the site is located along the site frontage on Tilehurst Road. This bus stop is in the form of a flag and pole and is served by westbound 33 bus route. For the eastbound 33 route the nearest bus stop is located approximately 50m east of the site and is in the form of a bus shelter. **Table 2.1** summarises the details of the No.33 bus route.

Table 2.1: Bus Route and Frequency

Service	Route	Service Frequency (Each Direction)		
		Mon-Fri	Saturdays	Sundays
33	Central Reading to Turnham's Farm	4-5 services per hour	2-4 services per hour	1-2 services per hour

Source: Reading Buses (last accessed: January 2022)

Rail

- 2.1.2 The closest railway station to the site is Reading West which is directly opposite the site. **Table 2.2** identifies the rail services available from Reading West rail station along with the approximate journey time to reach each destination. Overall, there are good rail connections to Newbury and Basingstoke. There are also frequent services to Reading rail station, with an average journey time of 3 minutes, which provides further connectivity to wider destinations including Bracknell, Swindon, London Paddington and London Waterloo.

Table 2.2: Key Rail Destinations

Station	Destination	Typical Weekday Frequency		Average Journey Duration
		Peak	Off-Peak	
Reading West	Basingstoke	2-3 services per hour*	2-3 services per hour*	26 mins
	Newbury	2 services per hour*	2-3 services per hour*	28 mins
	Bracknell	2 services per hour*	2 services per hour*	38 mins
	London Paddington	4 services per hour*	2-3 services per hour*	38 mins

Station	Destination	Typical Weekday Frequency		Average Journey Duration
		Peak	Off-Peak	
	Swindon	3 services per hour*	3 services per hour*	40 mins
	London Waterloo	4-5 services per hour*	2 service per hour*	1 hour 14 mins

Source: National Rail Enquiries (last accessed: January 2022)

*Some services will require at least one change

- 2.1.3** Reading station (accessible by bus and via a three minute journey from Reading West station) will in the future be served by the Elizabeth Line (Crossrail) services which will serve up to four trains per hour from Reading towards Essex, via Central London, without the need to interchange.
- 2.1.4** Reading West station can be accessed comfortably on foot. The most direct route to access the station is via ramp adjacent to the railway line on the northern side of Tilehurst Road.
- 2.1.5** Pedestrians can also travel via Western Elms Avenue which is a slightly longer walking route (750m) with continuous, street lit footways provided along the entire route.

2.2 Walking and Cycling

- 2.2.1** The site is well connected to the existing pedestrian network along Tilehurst Road with wide, street lit footways provided on either side of the carriageway. Approximately 30m east of the site, a signalised pedestrian crossing is provided which facilitates safe pedestrian movements across Tilehurst Road to connect with the footways on the northern side of the carriageway, along with the existing bus stop.
- 2.2.2** Due to the residential nature of the surrounding area, continuous street lit footways are provided offering routes towards the A4155 Bath Road to the south and the A329 Oxford Road to the north. Both the A4155 Bath Road and the A329 Oxford Road provide a safe pedestrian environment with wide footways and crossing facilities in the form of signalised crossings and dropped kerb crossings towards the centre of Reading to the east.
- 2.2.3** To the west of the site, the footway on the southern side of the carriageway connects with the existing bus stop for westbound services. On the northern side of Tilehurst Road, a pedestrian

ramp is provided adjacent to the railway line which provides a safe pedestrian route towards Reading West rail station.

- 2.2.4 Footways are provided on either side of the carriageway over the railway bridge towards Western Elms Avenue. Again, due to the residential nature of the surrounding area, continuous footways are provided along the carriageways which offer a safe pedestrian environment. Western Elms Avenue provides continuous footways north towards the A329 Oxford Road and offers an alternate route towards Reading West Station. To the west of Western Elms Avenue, continuous street lit footways are provided with crossing facilities in the form of dropped kerbs and a Zebra crossing towards the services and facilities within West Reading.
- 2.2.5 There are no designated cycling facilities within the vicinity of the site along Tilehurst Road, however due to the slow speed traffic environment of Tilehurst Road and the surrounding residential roads, it is an attractive environment for on carriageway cycling.

SECTION 3 DEVELOPMENT PROPOSALS

- 3.1.1 The development proposal would see the redevelopment of the existing dwelling located on 45 Tilehurst Road, Reading to provide eight flats (1x 1 bed flats and 7x 2 bed flats) as part of a 'car light' development. The indicative site layout is provided in **Appendix A**.

3.2 Site Access Arrangements

- 3.2.1 The proposed development will be accessed via the existing access location onto Tilehurst Road. The site access will take the form of a simple crossover with a 3.5m wide private drive access.
- 3.2.2 Pre-application engagement has been held between the applicant and RBC during August 2020 and the comments received from RBC are provided in **Appendix B**. Within the pre-application comments from RBC, the following was stated relating to the site access arrangement:

"Given that the Tilehurst Road is on a main transport corridor within the borough, the vehicular access should be 4.8m wide with visibility splays of 2.4m x 90m. Based on the preliminary site layout plan, I am concerned that the visibility requirements cannot be met resulting in intensification of a substandard access."

- 3.2.3 The 2.4m x 90m visibility splays required by RBC comes from their document titled "Geometric Design Guidance for Residential Accesses on to Classified Roads" and suggests:

"With regards to visibility splays on main transport corridors, the requirements of DMRB will still apply for 30mph roads."

- 3.2.4 Tilehurst Road is subject to a 30mph speed limit, and usually this would require Manual for Streets (MfS) visibility standards to be applied which equate to 2.4m x 43m in each direction of the proposed site access. Whilst RBC's request for 2.4m x 90m visibility splays are in accordance with their published design guidance, it is out of step with relevant national highways design guidance. The application of standards within the Design Manual for Roads and Bridges (DMRB) is relevant design guidance for Motorways and Trunk Roads, which Tilehurst Road is neither.

- 3.2.5 The Manual for Streets, states:

DMRB is the design standard for Trunk Roads and Motorways in England, Scotland, Wales and Northern Ireland. The strict application of DMRB for non-trunk routes is rarely appropriate for highway design in built up areas regardless of traffic volumes

3.2.6 However, the ability to provide DMRB splays has been investigated and whilst a 2.4m x 90m visibility splay is achievable to the west of the site access, it is not achievable to the east of the access within the publicly maintainable highway.

3.2.7 To address RBC's request to provide a 90m visibility splay in each direction of the access, a weeklong Automatic Traffic Count (ATC) survey was undertaken along Tilehurst Road within the vicinity of the site between 2nd November 2020 and 10th November 2020. The purpose of this survey was to capture vehicle speed data for westbound vehicles approaching the site. The vehicle speed data is provided in **Appendix C** and a summary of the 85th percentile wet weather speeds are provided in **Table 3.1**.

Table 3.1: Tilehurst Road

Road	Direction	Average Speed (mph)	85 th Percentile Speeds (mph)
Tilehurst Road	Eastbound	21.9	26.3
	Westbound	21.0	26.1

Source: Traffic Surveys, November 2020

3.2.8 To justify the application of DMRB design standards, and the 90m visibility splays, 85th percentile wet weather speeds would have to be in excess of 37.5 mph. It is evident from **Table 3.1** that the 85th percentile wet weather speeds are in fact 26.3 mph (eastbound vehicles) and 26.1 mph (westbound vehicles) which suggests MfS standards should apply to the access design. These vehicles speeds require 35.3m visibility splays to the east of the site and 35.7m to the west of the site.

3.2.9 However, as RBC require DMRB standards to apply, despite the 30mph speed limit, the 85th percentile wet weather speeds will require 45m visibility splays to the west and 44m visibility splays to the east (**Appendix D** presents the visibility splay calculations). This has been calculated using the relevant DMRB reaction times and deceleration rates¹. The visibility splays have been

¹ $SSD = vt + v^2 / 2(d + 0.1a)$

t = Driver perception-reaction time (2 seconds)

d = deceleration rate (3.679 m/s)

illustrated on **Drawing ITB16348-GA-001** and demonstrate the visibility splays in each direction of the site access can be safely achieved within the publicly maintained highway in accordance with the observed vehicle speeds. It should be noted, to provide a robust assessment, the visibility splay to the west of the site access has been shown as 2.4m x 90m despite the observed vehicle speeds requiring a much lower visibility splay.

3.3 Site Access Comparison

3.3.1 To further demonstrate the suitability of the proposed site access, an exercise has been undertaken of other vehicular accesses onto Tilehurst Road within the vicinity of the proposed site to understand the level of visibility achievable at each of the accesses. The following accesses have been included within the assessment:

- Amors Auto Solutions garage (directly opposite the proposed site);
- Residential dwellings 43-43B Tilehurst Road (circa 20m east of the proposed site); and
- Local Express Reading convenience store (circa 35m east of the proposed site).

3.3.2 The summary of the achievable visibility splays is summarised in **Table 3.2** and this is illustrated on **Drawing ITB16348-GA-002**.

Table 3.2: Tilehurst Road Achievable Visibility Splays

Road	Direction	Visibility Splay
Amors Auto Solutions Garage	East	83.7m
	West	55.3m
43-43B Tilehurst Road	East	24.2m
	West	21.8m
Local Express Convenience store	East	11.2m
	West	23.5m
Proposed Development	East	44m
	West	90m (45m)

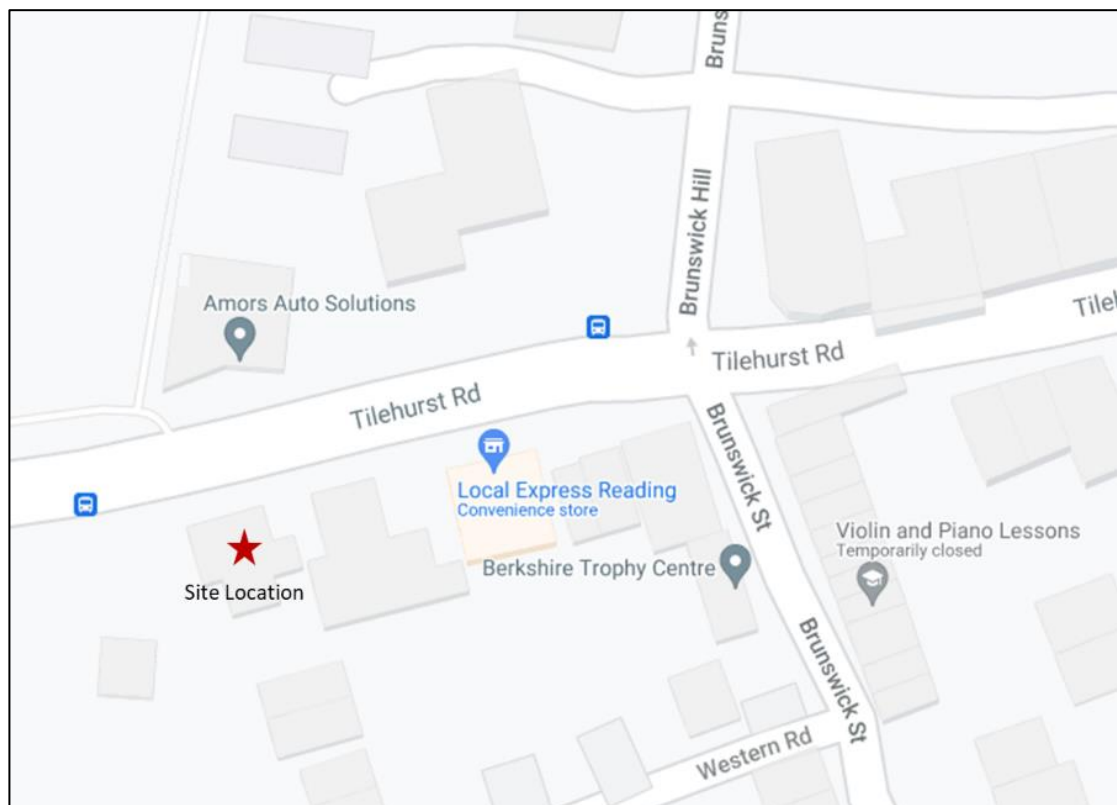
Source: Consultant's Assessment

	Achieves requested 90m visibility splay
	Achieves visibility splay in accordance with DMRB 85 th percentile speed requirement
	Visibility splay is below the 85 th percentile speed requirement

3.3.3 **Table 3.2** demonstrates the other vehicular accesses onto Tilehurst Road within the vicinity of the site do not achieve the 90m visibility splays in each direction of the site access required by RBC. This is particularly evident at the convenience store and 43-43B Tilehurst Road directly to the east of the site which do not provide visibility splays in accordance with the observed 85th percentile vehicle speeds in either direction on Tilehurst Road.

3.3.4 The online resource CrashMap has been consulted to understand if there is a highway safety issue present within the vicinity of the site and an extract from the website is provided in **Image 3.1**.

Image 3.1: CrashMap Extract – Tilehurst Road



Source: CrashMap

3.3.5 **Image 3.1** highlights there is not an existing highway safety issue within the vicinity of the site access. It should also be noted there are no highway safety issues located at the car garage access opposite the site, residential dwellings 43-43B or the convenience store which all have

reduced visibility splays compared to the observed vehicle speeds along Tilehurst Road. On this basis, the proposed visibility splays are in line with the observed vehicle speeds (DMRB standards applied) and are appropriate to provide a safe and suitable access to the proposed site.

- 3.3.6 In addition to this, the proposed site access will be located in the same location as the existing access which serves the site. As there are no highway collisions recorded within the most recent five-year period along the site frontage, this further demonstrates the proposed access arrangements provide safe and suitable access.

3.4 Parking

- 3.4.1 The proposed development site falls within Zone 2 of RBC's car parking standards document. The car parking standards for Zone 2 are summarised in **Table 3.3**.

Table 3.3: RBC Car Parking Standards – Zone 2

Residential	Zone 2 Car Parking Standards
Flats (1-2 bed)	1
Visitor	1 space per 10 dwellings (flats only)

Source: RBC Revised Car Parking SPD October 2011

- 3.4.2 Based on the standards set out in **Table 3.3**, the proposed development would be required to provide a total of 9 car parking spaces (8 allocated and one visitor space) on the site. The indicative layout provided in **Appendix A** shows there will be a total of two car parking spaces provided on the site which is below the car parking standards for Zone 2.

- 3.4.3 Within RBC's car parking SPD, it is stated:

"Should a developer require fewer spaces than are set out here then there would need to be demonstration, to the Highway Authority's satisfaction, that there would be no detriment to highway safety as a result."

Highly Accessible Location

- 3.4.4 As set out in Section 2, the nearest bus stop to the site is located along the site frontage for westbound services, whilst eastbound services can be accessed from the bus stop located circa 50m east of the site. Both of these stops are served by bus route 33 which offers frequent services to Reading.

3.4.5 In addition to this, Reading West rail station is located opposite the site from which future residents will be able to access frequent services to destinations further afield such as Basingstoke, Newbury, Bracknell, Swindon and London (Paddington and Waterloo). Reading station (accessible by bus and via a three-minute journey from Reading West station) will in the future be served by the Elizabeth Line (Crossrail) services which will serve up to four trains per hour from Reading towards Essex, via Central London, without the need to interchange.

3.4.6 On this basis, despite the proposed site providing less spaces than the RBC requirements, it has been demonstrated the site is located within a highly accessible location. This offers the greatest potential to replace trips by the private car with sustainable travel modes and therefore reduces the need to own a car. In addition, visitors to the site can also access it without the use of a car.

Occupant Choice

3.4.7 The choice of prospective occupants is often an overlooked aspect of parking provision. **Table 3.4** provides a summary of the total percentage of privately owned flats within the Minster, Battle and Abbey Wards which own a vehicle.

Table 3.4: Number of Flats which own a vehicle (Minster, Battle and Abbey Wards)

	Total	No Vehicles	One Vehicle	Two Vehicles	Three Vehicles
1 Bed Apartment	4,969	2,707	2,002	242	18
2 Bed Apartment	2,945	1,042	1,521	355	27
Total	7,914	3,749	3,523	597	45
%	100%	47.4%	44.5%	7.5%	0.6%

Source: Census 2011

3.4.8 **Table 3.4** demonstrates the majority of flats (circa 47%) in the local area successfully live car free and therefore the proposal of a car light development is consistent with local car ownership levels.

3.4.9 The parking arrangement will be made clear to all prospective residents and the arrangements for car parking will be clear upon viewing the property. Future occupiers will be able to make an informed choice as to whether the arrangements are appropriate for their needs. For those where car ownership or multiple car ownership is essential, it is unlikely that the proposed

development would prove to be attractive to them and would actively seek out property where such provision could be assured.

3.4.10 However, for those where car ownership is not essential (e.g. young professionals who primarily utilise public transport and / or active modes of travel) then the proposed development would prove to be a more attractive option. This would again reduce the level of car ownership observed in such a development.

3.4.11 The statistics presented in **Table 3.4** will also be enforced by the recent shift in working habits because of the COVID-19 pandemic. This has resulted in a larger proportion of working adults either working from home full time or as part of a 'hybrid' set up where being in an office is not compulsory every day. This offers a more flexible approach to commuting and when future residents would be required to travel to their place of work, they will be able to utilise the well-established public transport links within close proximity of the site rather than using a private vehicle.

3.4.12 It should also be noted that car parking restrictions in the form of double yellow lines are in place along Tilehurst Road. This will ensure parking will not overspill from the proposed site onto the local highway network and therefore will not cause a highway safety risk.

3.4.13 Some local residential streets also operate with a combination of double yellow lines and a permit holder system such as:

- Brunswick Hill;
- Western Elms Avenue; and
- Connaught Road

3.4.14 The presence of these car parking restrictions will limit the ability for off-site car parking and further enforce the occupant choice factor when potential occupants view the property.

3.4.15 Limited on-street car parking is available at the following locations:

- Brunswick Street (circa 200m south-east from the site);
- Western Road (circa 200m south from the site);
- Southcote Road (circa 250m west from the site);
- Parkhouse Lane (circa 350m south-west from the site); and

- Westcote Road (circa 400m south-west from the site).

3.4.16 It is unlikely future residents will require on-street car parking due to the uncertain nature of where they will be able to park their vehicle each day away from the site, but the on-street car parking is suitable to accommodate the short term nature of visitor parking when it is required.

3.4.17 In addition to this, a public car park is located on Kensington Road circa 750m north-west from the site (9-minutes' walk). This offers an annual car parking ticket at a cost of £150 if future residents require a car parking space in a safe location at a relatively low cost. Whilst it is unlikely a future resident will require an off-site car parking space; this does offer an alternative in a safe location for residents and also for visitors to park their vehicles at a cost of up to £3.00 for up to 7 hours stay.

3.4.18 On this basis, the provision of a car light development with two allocated car parking spaces at the site will safely accommodate the car parking demand of future residents at the site.

Access to Car Clubs

3.4.19 Whilst it has been demonstrated the site is located within an accessible location with good access to existing public transport links, should occasional access to a car be required by future residents, then this can be met through the use of a car club.

3.4.20 Co Wheels is located circa 1km north from the site (12 minutes walk or 3 minutes cycle) on Oxford Road. As such, future residents would have access to a car on a 'pay as you go basis'.

3.5 Cycle Parking

3.5.1 For parking zones 1-4, RBC cycle parking standards require one and two bedroom flats to be provided with 0.5 cycle parking spaces per dwelling. The proposed development will provide a total of five cycle parking spaces which is in excess of the required amount outlined in RBC standards and this will be provided in the form of a cycle store in the north-western corner of the site.

3.5.2 During pre-application discussions, RBC requested:

"...the cycle storage should be separate from the bin storage segregated by a wall to prevent odours within the cycle store."

3.5.3 The bike store is now located to the rear of the development away from the bin store, allowing easy access for residents and visitors.

3.6 Servicing

- 3.6.1 Servicing of the site will take place from Tilehurst Road which was agreed with RBC during the pre-application discussions as the bin store will be located within 10m of the public highway in the north-western corner of the site.

3.7 Summary

- 3.7.1 The speed survey undertaken along Tilehurst Road has demonstrated vehicles travel along the site frontage below the posted 30mph speed limit. This in turn requires a lower level of visibility to be provided in each direction of the site access to comply with the observed vehicle speeds. Whilst the proposed site access provides visibility in accordance with the vehicle speeds, this is not the case with other vehicular accesses immediately east of the site which provide visibility well below the vehicle speed requirement. However, despite this, there has not been a highway safety issue recorded along this section of Tilehurst Road in the last five-year period and therefore the visibility splays provided lower than the 90m visibility splays (requested by RBC) will not cause a future safety risk.
- 3.7.2 The site proposes to provide car parking below the RBC standards, however the local car ownership levels derived from the 2011 Census has demonstrated the proposed provision will broadly be in accordance with the local ownership levels. However, it has been demonstrated that many flats in the local area currently live successfully car free. On this basis, the site is not expected to cause parking to overspill onto the local highway network and will not cause a highway safety risk.
- 3.7.3 Cycle parking will be provided in excess of RBC cycle parking standards and the cycle store will be segregated from the bin store by a wall to prevent odours spreading.

SECTION 4 TRAFFIC IMPACT

4.1 Trip Generation

4.1.1 To understand the trip generation of the proposed development, trip rates have been obtained from the TRICS trip generation database.

4.1.2 The residential trip rates have been derived using the following parameters:

- Regions – all of England (except Greater London);
- Range – 6 to 30 dwellings;
- Time Period – surveys since January 2012;
- Location – Edge of Town Centre and Suburban Area; and
- Date relevance – surveys undertaken during a week-day.

4.1.3 The residential trip rates for the proposed flats have been derived assuming they will all be privately owned flats and a summary of the derived trip rates is in **Table 4.1** along with the associated trip generation and the TRICS output report is provided in **Appendix E**.

Table 4.1: Residential Trip Rates (8 Privately Owned Flats)

	Morning Peak Period			Evening Peak Period		
	In	Out	Total	In	Out	Total
Privately Owned Flats	0.043	0.164	0.207	0.198	0.095	0.293
Trip Generation	0	1	1	2	1	3

Source: TRICS

4.1.4 The proposed development will generate one to three two-way vehicle movements in each peak period. This equates to circa one vehicle movement per hour during the morning peak hour and one vehicle movements every 20 minutes during the evening peak hour. This is likely to prove to be an over-estimate given the proposed level of car parking.

Net Traffic Impact Analysis

4.1.5 To determine the net impact of the proposed development at the site, the likely vehicular trips associated with the proposed development have been compared to those associated with the existing dwelling on the site. A summary of the assessment is presented in **Table 4.2**.

Table 4.2: Net Traffic Impact Analysis

	Morning Peak Period			Evening Peak Period		
	In	Out	Total	In	Out	Total
Existing Dwelling Trip Rate	0.100	0.500	0.600	0.500	0.100	0.600
Trip Generation (Existing Dwelling)	0	1	1	1	0	1
Proposed Development (8 Flats)	0	1	1	2	1	3
Net Impact	0	0	0	+1	+1	+2

Source: TRICS and Consultant's Calculations

- 4.1.6 It should be noted, for the purpose of this robust assessment, a generic trip rate of 0.6 for the two-way peak movements of the existing dwelling have been used as the TRICS database does not include sites small enough to get a representative trip rate.
- 4.1.7 To summarise, **Table 4.2** demonstrates the proposed development will only add two additional vehicle movements to the local highway network during the evening peak hour compared to the existing dwelling on the site. This only equates to an additional vehicle every 30 minutes during the evening peak hour. On this basis, the proposed site will not cause any noticeable intensification of use of the site access as stated by RBC.

SECTION 5 SUMMARY AND CONCLUSIONS

5.1 Summary

- 5.1.1 i-Transport LLP has been appointed by Aman Gupta to provide highways and transport advice in relation to the redevelopment of 45 Tilehurst Road, Reading to provide eight flats.
- 5.1.2 The site is located in an accessible location with an established, high quality pedestrian network within the vicinity of the site which will facilitate safe pedestrian movements to the local bus stops and Reading West rail station (all of which are located within a comfortable walking distance). Future residents will have access to frequent bus services into Reading along with frequent rail services routing to destinations such as Bracknell, Newbury, Swindon and London.
- 5.1.3 During the pre-application engagement, RBC raised highway safety concerns relating to the site access despite the proposed site access being located in the same location as the existing access to the site. RBC requested 90m visibility splays should be achieved from the site access to comply with RBC's design guidance (DMRB standards) despite the posted 30mph speed on Tilehurst Road, which would usually require MfS design standards.
- 5.1.4 The observed (recorded) vehicle speeds along Tilehurst Road demonstrate that vehicles currently travel below the 30mph speed limit and therefore the MfS guidance is suitable to be applied to the proposed site access. However, to provide a robust assessment, DMRB standards have still been applied to the observed vehicle speeds. The proposed visibility has been compared to existing accesses located on Tilehurst Road and this has highlighted that the proposed site access provides greater visibility compared to the residential dwellings located immediately to the east of the site. Therefore, the site access provides safe and suitable access for all users and will not cause a safety risk on the local highway network.
- 5.1.5 The proposed development is a car light development and will provide car parking below the requirement set within RBC's car parking standards as the site is located in a highly accessible location by means of public transport or active travel options. Despite this, it has been demonstrated that many flats in the local area currently live successfully car free. Whilst this is below RBC's standards, the level of proposed car parking is appropriate to serve the 8 flats.
- 5.1.6 The proposed development is expected to generate very low peak period vehicle movements on the local highway network. When the peak period vehicle movements are compared to the

existing dwelling on the site, there will be no material change in traffic use of the access in either peak period. This will not cause a highway safety risk on Tilehurst Road.

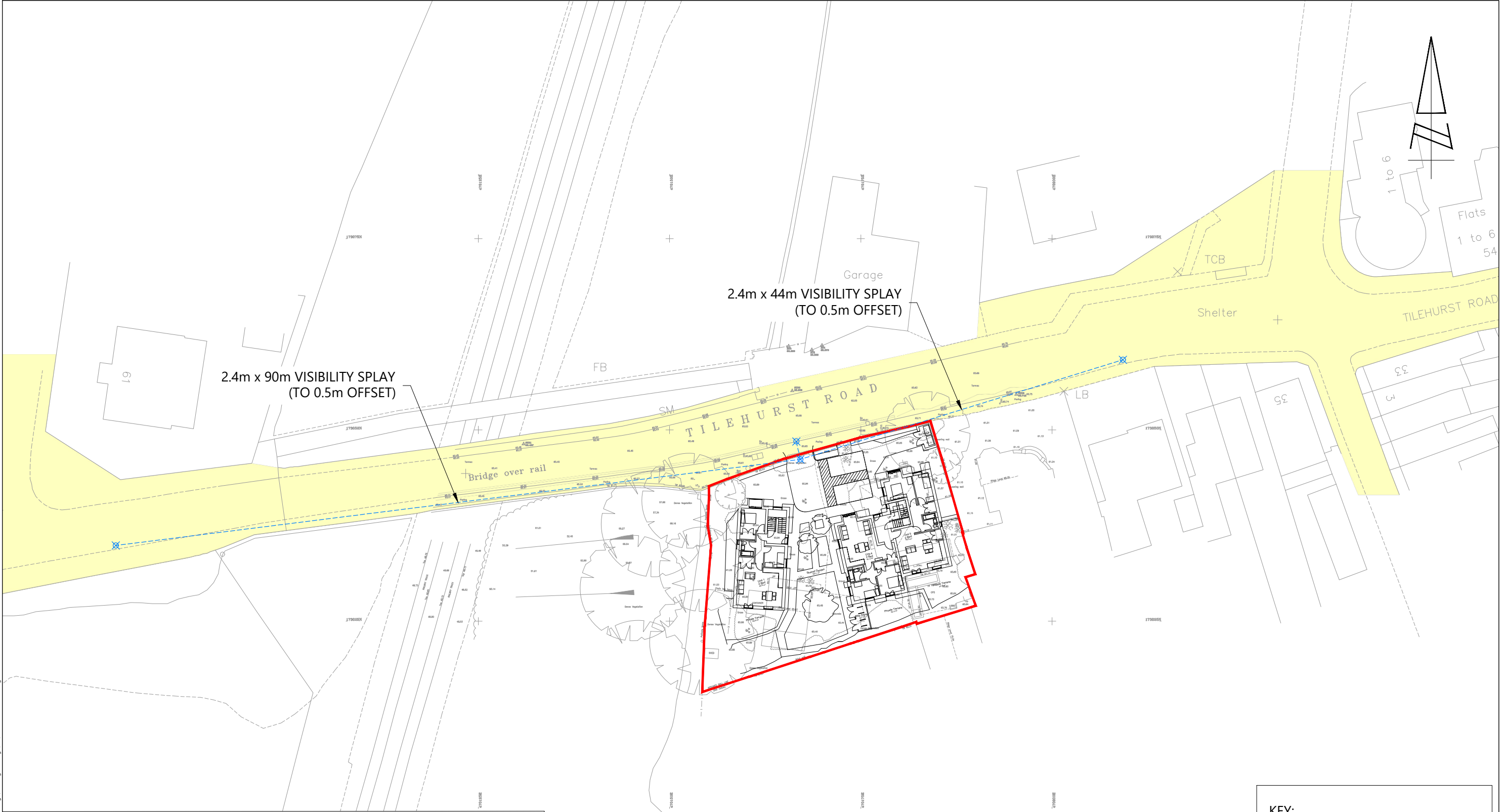
5.2 Conclusions

5.2.1 Against this background it is demonstrated that:

- There are genuine opportunities for future residents to travel from the site using sustainable modes of transport, and that the proposals will ensure opportunities for sustainable travel are taken up;
- The proposed site access arrangements will be safe and suitable to serve the development and is compliant with the relevant design standards;
- The internal layout of the site is designed appropriately; and
- The local highway network can accommodate the traffic generated by the development during the peak periods and will fall well short of a 'severe' impact on the network operation. Therefore, the site is in full accordance with the policies set out in the NPPF.

5.2.2 Therefore, based on the above, it is concluded that the development proposal fully satisfies local and national transport policies and should be considered fully acceptable in transport and highways terms.

DRAWINGS



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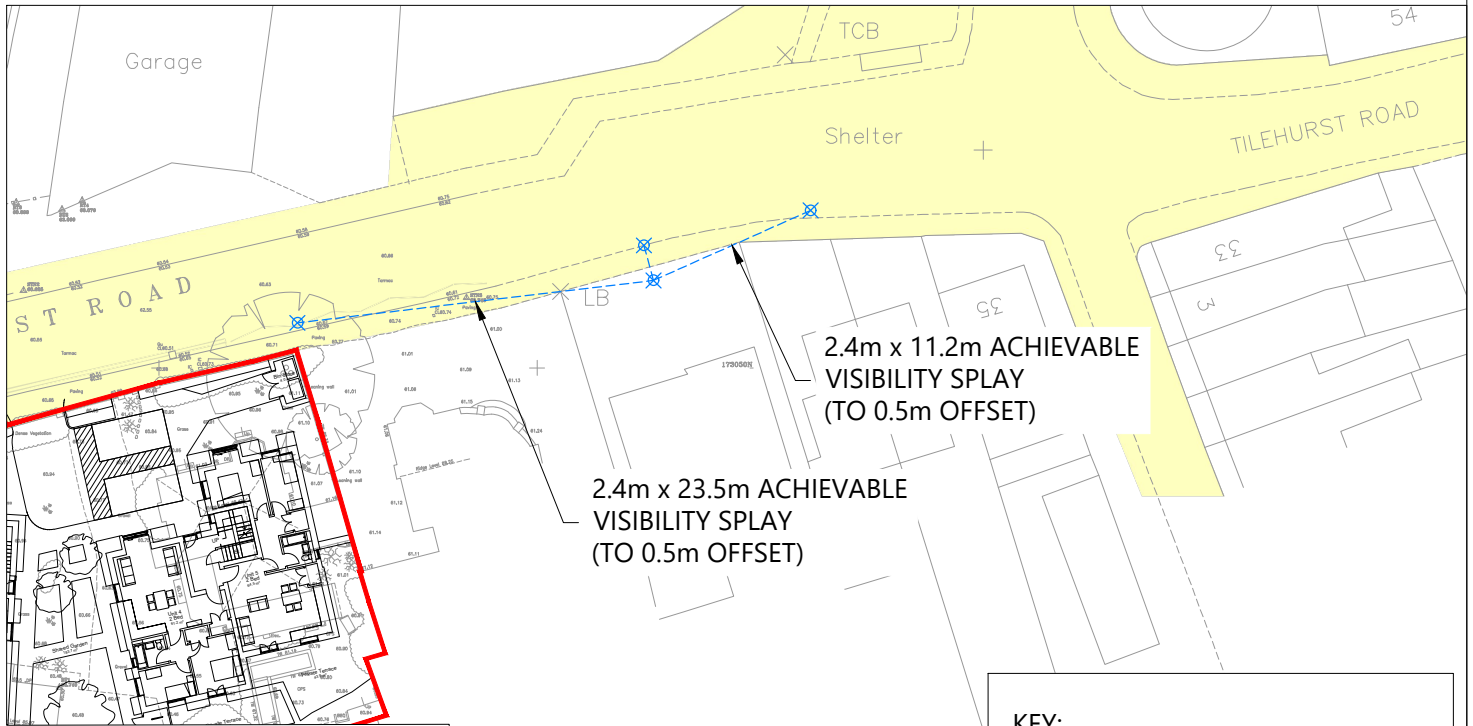
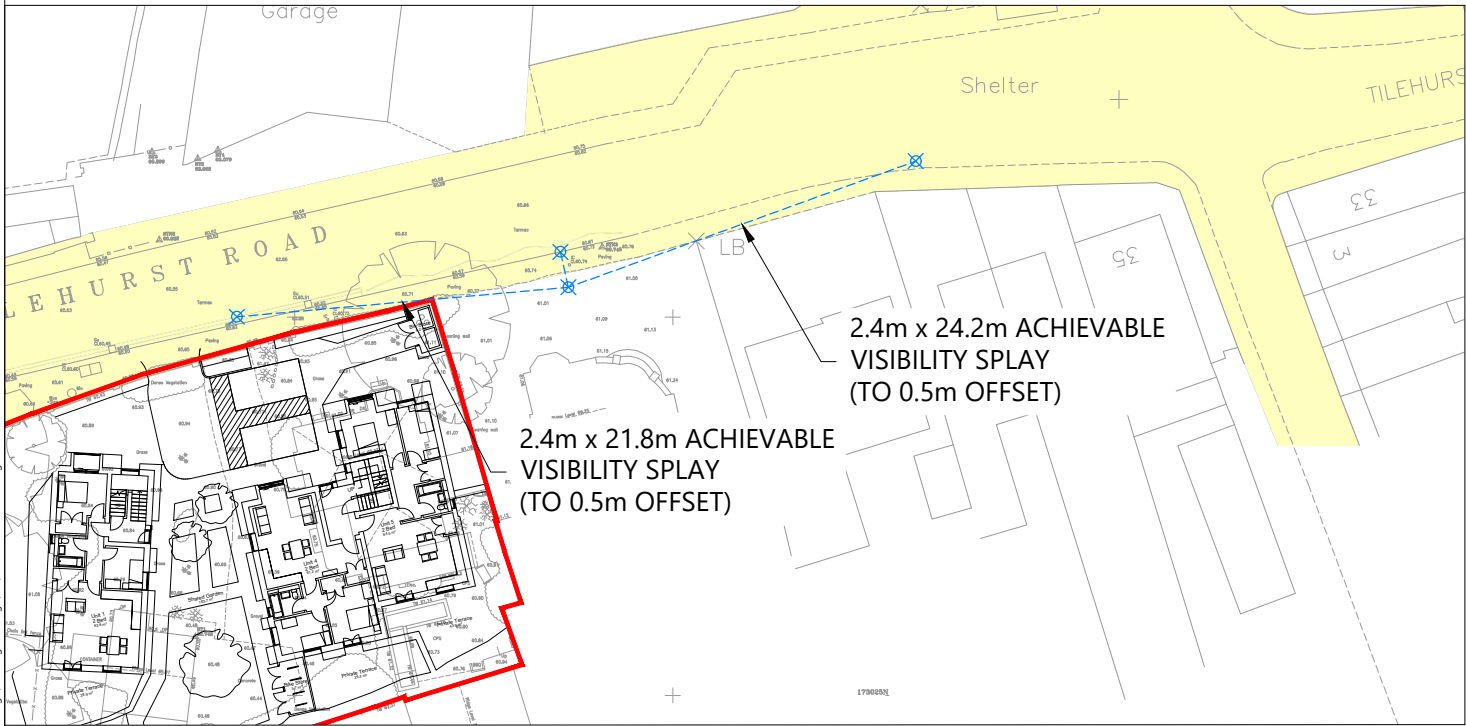
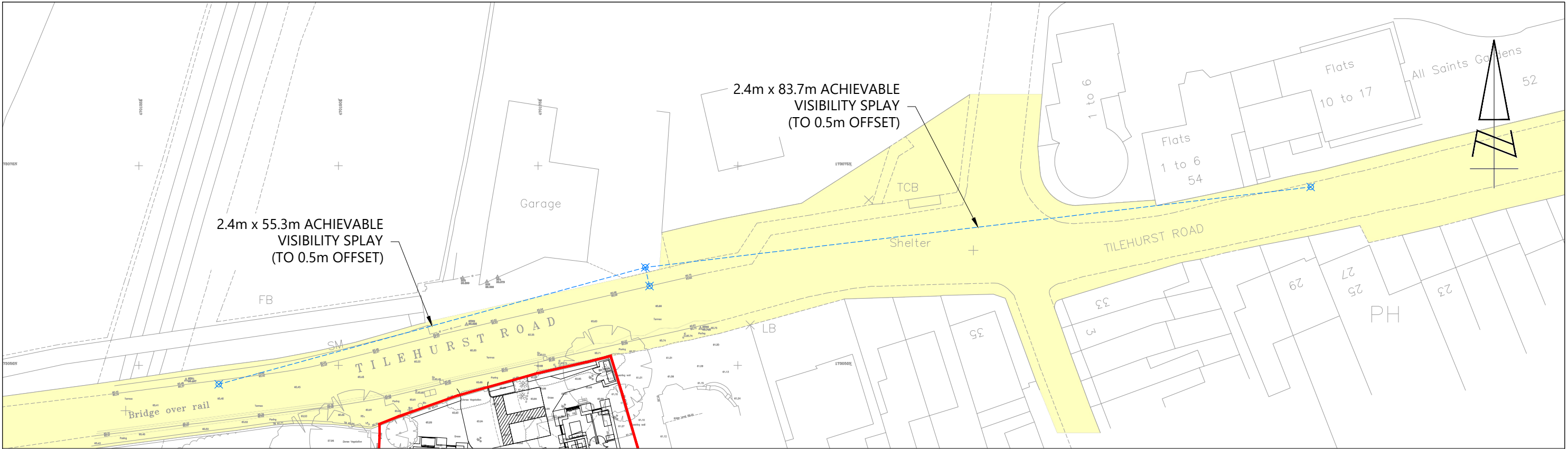
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KEY:

HIGHWAY BOUNDARY

 The Square, Basing View, Basingstoke, Hampshire, RG21 4EB www.i-transport.co.uk		Tel: 01256 637940						TITLE: SITE ACCESS - VISIBILITY SPLAYS		DRAWN: JD	CHECKED: GT	APPROVED: SJ
		REV	DATE	BY	DESCRIPTION	CHK	APD	PROJECT: 45 TILEHURST ROAD, READING	CLIENT: COLONY ARCHITECTS	PROJECT No: ITB16348	SCALE @ A3: 1:500	DATE: 09.10.20
		STATUS: FOR INFORMATION								DRAWING No: ITB16348-GA-001	REV: C	



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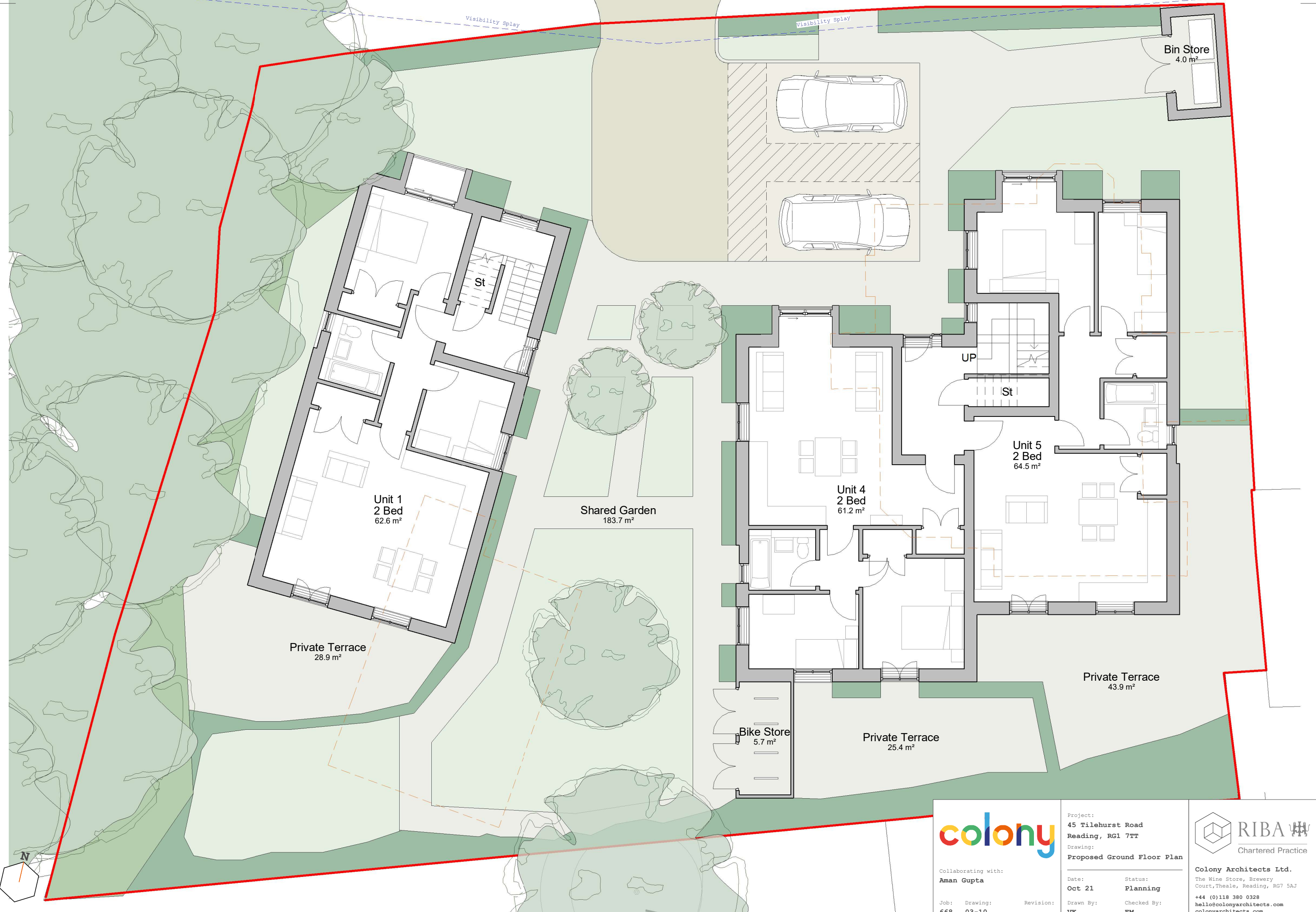
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SCALE BAR @ 1:500
0 5 10 25 50

KEY:
HIGHWAY BOUNDARY

 The Square, Basing View, Basingstoke, Hampshire, RG21 4EB www.i-transport.co.uk				TITLE: EXISTING ACCESSES - VISIBILITY SPLAYS				DRAWN: JD		CHECKED: GT		APPROVED: SJ	
REV A				DATE 18.10.21				PROJECT No: ITB16348		SCALE @ A3: 1:500		DATE: 18.10.20	
BY JD				DESCRIPTION SITE LAYOUT UPDATED SITE LAYOUT UPDATED				CLIENT: COLONY ARCHITECTS		DRAWING No: ITB16348-GA-002		REV: B	
STATUS: FOR INFORMATION				PROJECT: 45 TILEHURST ROAD, READING									

APPENDIX A. Indicative Site Layout



Collaborating with:
Aman Gupta

Job: 668 Drawing: 03-10 Revision:

Project:
**45 Tilehurst Road
Reading, RG1 7TT**
Drawing:
Proposed Ground Floor Plan

Date:
Oct 21
Status:
Planning
Drawn By:
VK
Checked By:
EM



Colony Architects Ltd.
The Wine Store, Brewery
Court, Theale, Reading, RG7 5AJ
+44 (0)118 380 0328
hello@colonyarchitects.com
colonyarchitects.com

APPENDIX B. RBC Pre-Application Engagement

Memo

From: (e)Transport Development Control Floor 1 North Rear Civic Offices Bridge Street Reading RG1 2LU
To: Claire Ringwood 0118 9374545 claire.ringwood@reading.gov.uk
Date: 18 August 2020
Re: Consultation on Planning Application

Application Number: 200741

Application Type: Pre Application Enquiry

Address: 45 Tilehurst Road Reading RG1 7TT

Proposal: Pre-application advice for conversion of the existing property to include a 3-storey extension to the side and alterations to the roof space to create 6 two bed flats with associated parking and amenity space.

The pre-application proposal consists of the conversion of the existing property to include a 3-storey extension to the side and alterations to the roof space to create 6 two bed flats with associated parking and amenity space.



The site is located on the C400 Tilehurst Road and currently benefits from a vehicular access directly onto the Tilehurst Road. Given that the Tilehurst Road is a main transport corridor within the borough, the vehicular access should be 4.8m wide with visibility splays of 2.4m x 90m. Based on the preliminary site layout plan, I am concerned that the visibility requirements cannot be met resulting in intensification of a substandard access.

The site is located in Zone 2, Primary Core Area, of the Revised Parking Standards and Design SPD. This zone directly surrounds the Central Core and extends to walking distances of 2 kilometres from the centre of Reading. This zone is well served by public transport, with buses continuing either into or out of the Central Core Area via this zone. In accordance with the adopted Parking SPD, the development would be required to provide 1no. on-site parking space per 1-2 bedroom dwelling plus 1no. visitor parking space.

The Preliminary Site Layout Scheme A drawing indicates that 7 parking spaces will be provided which complies with the Council's adopted standards. All parking spaces should be provided to the required dimensions of 2.4m wide by 4.8m long. I have not checked the

dimensions of the parking spaces or turning areas, however, all parking spaces must be able to enter and exit the site in forward gear. Tracking diagrams may be requested if a full application is submitted. The parking areas should be constructed in permeable materials so not to increase the surface water run-off from the site.

The Council's Local Plan was adopted in November 2019 and this includes a requirement at Policy TR5 for each new house to be provided with an electric charging point. As the proposed flats will be provided with dedicated off-street parking, provision should be made for electric charging points.

In accordance with the Borough's Parking Standards and Design SPD, a minimum provision 0.5 cycle storage spaces should be provided per flat. A secure cycle store is indicated towards the back of the site, adjacent to the amenity area. The proposed cycle store should be equipped with 'Sheffield' type stands. However, the cycle storage should be separate from bin storage segregated by a wall to prevent odors within the cycle store.

A bin store or collection point should be located within 10m of the public highway. I would prefer to see the bin store and cycle store located closer the access point, which would enable the parking spaces to be moved further into the site. This would reduce conflict between vehicles entering the site and vehicles parking in the bays closest to the entrance. The applicant should ensure that the refuse storage provisions comply with the Council's Waste Management Guidance which is available to view online.

Regards

Natalie Lucas ext 74703

Transport Development Control Officer

Transport | Environment & Neighbourhood Services

APPENDIX C. Tilehurst Road Vehicle Speed Data

Intelligent Data Collection Limited

Client: i-Transport
Project Number: ID05541
Site Number: Site 1



Mean and 85%ile Speed Summary

Direction A-B (Mph)							
Date	03/11	04/11	05/11	06/11	09/11		
Day	Tue	Wed	Thu	Fri	Mon		
Mean Speed (mph)	21.3	21.5	22.4	22.3	21.8	21.9	Eastbound
85%ile Speed (mph)	25.7	26.1	26.7	26.7	26.4	26.3	
85%ile Speed (kph)	41.1	41.8	42.7	42.7	42.24	42.1	

Direction B-A (Mph)							
Date	03/11	04/11	05/11	06/11	09/11		
Day	Tue	Wed	Thu	Fri	Mon		
Mean Speed (mph)	19.7	20.0	22.5	22.2	20.4	21.0	Westbound
85%ile Speed (mph)	25.4	25.6	26.8	26.5	26.0	26.1	
85%ile Speed (kph)	40.6	41.0	42.9	42.4	41.6	41.7	

APPENDIX D. Visibility Splay Calculations

Stopping Sight Distance Calculator

Formula for calculating SSD (from Manual for Streets 2): $SSD = vt + v^2/2(d+0.1a)$
v = Speed of vehicle (m/s)
t = driver perception-reaction time (seconds)
d = deceleration rate (m/s)
a = longitudinal gradient (%)

Fill in the white boxes only

Enter the vehicle 85%ile speed below (see also the note)

26.1 mph

11.668 m/s

v = 11.668 m/s

t = 2 taken from MfS2 table 10.1

d = 3.679 Vehicle type All vehicles 1

a = +ve for upgrades and -ve for downgrades

SSD = 42 m

SSD adjusted for bonnet
length (MfS only) = 44 m (SSD + 2.4m)

Table 10.1 MfS2

Design speed	Vehicle Type	Reaction Time t (s)	Deceleration rate d (m/s) (ie factor x 9.81)	Standard
60kph and below	Light vehicles	1.5	0.450 g	MfS2
	HGV's	1.5	0.375 g	MfS2
	Buses	1.5	0.375 g	MfS2
Above 60kph	All vehicles 1	2	0.375 g (Absolute minimum)	TD9/93
	All vehicles 2	2	0.250 g (Desirable minimum)	TD9/93

Stopping Sight Distance Calculator

Formula for calculating SSD (from Manual for Streets 2): $SSD = vt + v^2/2(d+0.1a)$
v = Speed of vehicle (m/s)
t = driver perception-reaction time (seconds)
d = deceleration rate (m/s)
a = longitudinal gradient (%)

Fill in the white boxes only

Enter the vehicle 85%ile speed below (see also the note)

26.3 mph

11.757 m/s

v = 11.757 m/s

t = 2 taken from MfS2 table 10.1

d = 3.679 Vehicle type All vehicles 1

a = +ve for upgrades and -ve for downgrades

SSD = 42 m

SSD adjusted for bonnet
length (MfS only) = 45 m (SSD + 2.4m)

Table 10.1 MfS2

Design speed	Vehicle Type	Reaction Time t (s)	Deceleration rate d (m/s) (ie factor x 9.81)	Standard
60kph and below	Light vehicles	1.5	0.450 g	MfS2
	HGV's	1.5	0.375 g	MfS2
	Buses	1.5	0.375 g	MfS2
Above 60kph	All vehicles 1	2	0.375 g (Absolute minimum)	TD9/93
	All vehicles 2	2	0.250 g (Desirable minimum)	TD9/93

APPENDIX E. TRICS Output Report

Calculation Reference: AUDIT-236601-201102-1122

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
 Category : C - FLATS PRIVATELY OWNED
TOTAL VEHICLES

Selected regions and areas:

02	SOUTH EAST	
	EX ESSEX	1 days
03	SOUTH WEST	
	DC DORSET	1 days
	DV DEVON	1 days
04	EAST ANGLIA	
	SF SUFFOLK	1 days
05	EAST MIDLANDS	
	DS DERBYSHIRE	1 days
08	NORTH WEST	
	MS MERSEYSIDE	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: No of Dwellings
 Actual Range: 6 to 30 (units:)
 Range Selected by User: 6 to 30 (units:)

Parking Spaces Range: All Surveys Included

Parking Spaces per Dwelling Range: All Surveys Included

Bedrooms per Dwelling Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/12 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	1 days
Tuesday	2 days
Wednesday	2 days
Friday	1 days

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

Selected survey types:

Manual count	6 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 undertaken using machines.

Selected Locations:

Edge of Town Centre	2
Suburban Area (PPS6 Out of Centre)	4

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:

Development Zone	1
Residential Zone	5

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:

C3

6 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:

10,001 to 15,000

2 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:

50,001 to 75,000

2 days

125,001 to 250,000

2 days

250,001 to 500,000

1 days

500,001 or More

1 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

1 days

1.1 to 1.5

5 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

6 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

6 days

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

LIST OF SITES relevant to selection parameters

1	DC-03-C-02 PALM COURT WEYMOUTH SPA ROAD Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 14 Survey date: FRIDAY 28/03/14	FLATS IN BLOCKS DORSET	Survey Type: MANUAL
2	DS-03-C-03 CAESAR STREET DERBY Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 30 Survey date: WEDNESDAY 25/09/19	BLOCKS OF FLATS DERBYSHIRE	Survey Type: MANUAL
3	DV-03-C-01 BONHAY ROAD EXETER Edge of Town Centre Residential Zone Total No of Dwellings: 27 Survey date: MONDAY 10/07/17	BLOCK OF FLATS DEVON	Survey Type: MANUAL
4	EX-03-C-01 WESTCLIFF PARADE SOUTHEND-ON-SEA WESTCLIFF Edge of Town Centre Residential Zone Total No of Dwellings: 6 Survey date: TUESDAY 22/10/13	FLATS ESSEX	Survey Type: MANUAL
5	MS-03-C-03 MARINERS WHARF LIVERPOOL QUEENS DOCK Suburban Area (PPS6 Out of Centre) Development Zone Total No of Dwellings: 9 Survey date: TUESDAY 13/11/18	BLOCK OF FLATS MERSEYSIDE	Survey Type: MANUAL
6	SF-03-C-03 TOLLGATE LANE BURY ST EDMUNDS Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 30 Survey date: WEDNESDAY 03/12/14	BLOCKS OF FLATS SUFFOLK	Survey Type: MANUAL

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED

TOTAL VEHICLES

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	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	6	19	0.086	6	19	0.138	6	19	0.224
08:00 - 09:00	6	19	0.043	6	19	0.164	6	19	0.207
09:00 - 10:00	6	19	0.086	6	19	0.129	6	19	0.215
10:00 - 11:00	6	19	0.034	6	19	0.095	6	19	0.129
11:00 - 12:00	6	19	0.078	6	19	0.060	6	19	0.138
12:00 - 13:00	6	19	0.069	6	19	0.052	6	19	0.121
13:00 - 14:00	6	19	0.069	6	19	0.086	6	19	0.155
14:00 - 15:00	6	19	0.095	6	19	0.086	6	19	0.181
15:00 - 16:00	6	19	0.112	6	19	0.078	6	19	0.190
16:00 - 17:00	6	19	0.129	6	19	0.103	6	19	0.232
17:00 - 18:00	6	19	0.198	6	19	0.095	6	19	0.293
18:00 - 19:00	6	19	0.138	6	19	0.078	6	19	0.216
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.137			1.164			2.301

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:	6 - 30 (units:)
Survey date range:	01/01/12 - 25/09/19
Number of weekdays (Monday-Friday):	6
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 shown. 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 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED

TAXIS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	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	6	19	0.009	6	19	0.009	6	19	0.018
08:00 - 09:00	6	19	0.000	6	19	0.000	6	19	0.000
09:00 - 10:00	6	19	0.000	6	19	0.000	6	19	0.000
10:00 - 11:00	6	19	0.000	6	19	0.000	6	19	0.000
11:00 - 12:00	6	19	0.000	6	19	0.000	6	19	0.000
12:00 - 13:00	6	19	0.000	6	19	0.000	6	19	0.000
13:00 - 14:00	6	19	0.000	6	19	0.000	6	19	0.000
14:00 - 15:00	6	19	0.000	6	19	0.000	6	19	0.000
15:00 - 16:00	6	19	0.000	6	19	0.000	6	19	0.000
16:00 - 17:00	6	19	0.009	6	19	0.009	6	19	0.018
17:00 - 18:00	6	19	0.000	6	19	0.000	6	19	0.000
18:00 - 19:00	6	19	0.009	6	19	0.009	6	19	0.018
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.027			0.027			0.054

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.

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED

OGVS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	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	6	19	0.000	6	19	0.009	6	19	0.009
08:00 - 09:00	6	19	0.000	6	19	0.000	6	19	0.000
09:00 - 10:00	6	19	0.009	6	19	0.009	6	19	0.018
10:00 - 11:00	6	19	0.000	6	19	0.000	6	19	0.000
11:00 - 12:00	6	19	0.000	6	19	0.000	6	19	0.000
12:00 - 13:00	6	19	0.000	6	19	0.000	6	19	0.000
13:00 - 14:00	6	19	0.000	6	19	0.000	6	19	0.000
14:00 - 15:00	6	19	0.009	6	19	0.009	6	19	0.018
15:00 - 16:00	6	19	0.000	6	19	0.000	6	19	0.000
16:00 - 17:00	6	19	0.000	6	19	0.000	6	19	0.000
17:00 - 18:00	6	19	0.000	6	19	0.000	6	19	0.000
18:00 - 19:00	6	19	0.000	6	19	0.000	6	19	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.018			0.027			0.045

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.

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED
CYCLISTS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	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	6	19	0.009	6	19	0.017	6	19	0.026
08:00 - 09:00	6	19	0.009	6	19	0.017	6	19	0.026
09:00 - 10:00	6	19	0.000	6	19	0.000	6	19	0.000
10:00 - 11:00	6	19	0.000	6	19	0.000	6	19	0.000
11:00 - 12:00	6	19	0.000	6	19	0.000	6	19	0.000
12:00 - 13:00	6	19	0.000	6	19	0.000	6	19	0.000
13:00 - 14:00	6	19	0.000	6	19	0.009	6	19	0.009
14:00 - 15:00	6	19	0.000	6	19	0.000	6	19	0.000
15:00 - 16:00	6	19	0.000	6	19	0.000	6	19	0.000
16:00 - 17:00	6	19	0.000	6	19	0.000	6	19	0.000
17:00 - 18:00	6	19	0.043	6	19	0.017	6	19	0.060
18:00 - 19:00	6	19	0.009	6	19	0.009	6	19	0.018
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.070			0.069			0.139

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.

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED

CARS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	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	6	19	0.043	6	19	0.095	6	19	0.138
08:00 - 09:00	6	19	0.017	6	19	0.112	6	19	0.129
09:00 - 10:00	6	19	0.034	6	19	0.060	6	19	0.094
10:00 - 11:00	6	19	0.026	6	19	0.060	6	19	0.086
11:00 - 12:00	6	19	0.017	6	19	0.034	6	19	0.051
12:00 - 13:00	6	19	0.043	6	19	0.009	6	19	0.052
13:00 - 14:00	6	19	0.052	6	19	0.086	6	19	0.138
14:00 - 15:00	6	19	0.060	6	19	0.052	6	19	0.112
15:00 - 16:00	6	19	0.060	6	19	0.034	6	19	0.094
16:00 - 17:00	6	19	0.086	6	19	0.060	6	19	0.146
17:00 - 18:00	6	19	0.155	6	19	0.060	6	19	0.215
18:00 - 19:00	6	19	0.103	6	19	0.026	6	19	0.129
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.696			0.688			1.384

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.

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED

LGVS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	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	6	19	0.009	6	19	0.000	6	19	0.009
08:00 - 09:00	6	19	0.009	6	19	0.009	6	19	0.018
09:00 - 10:00	6	19	0.043	6	19	0.026	6	19	0.069
10:00 - 11:00	6	19	0.000	6	19	0.026	6	19	0.026
11:00 - 12:00	6	19	0.034	6	19	0.026	6	19	0.060
12:00 - 13:00	6	19	0.000	6	19	0.000	6	19	0.000
13:00 - 14:00	6	19	0.000	6	19	0.000	6	19	0.000
14:00 - 15:00	6	19	0.000	6	19	0.000	6	19	0.000
15:00 - 16:00	6	19	0.017	6	19	0.017	6	19	0.034
16:00 - 17:00	6	19	0.017	6	19	0.017	6	19	0.034
17:00 - 18:00	6	19	0.017	6	19	0.026	6	19	0.043
18:00 - 19:00	6	19	0.017	6	19	0.017	6	19	0.034
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.163			0.164			0.327

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.

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED

MOTOR CYCLES

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	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	6	19	0.000	6	19	0.000	6	19	0.000
08:00 - 09:00	6	19	0.000	6	19	0.000	6	19	0.000
09:00 - 10:00	6	19	0.000	6	19	0.000	6	19	0.000
10:00 - 11:00	6	19	0.000	6	19	0.000	6	19	0.000
11:00 - 12:00	6	19	0.000	6	19	0.000	6	19	0.000
12:00 - 13:00	6	19	0.000	6	19	0.000	6	19	0.000
13:00 - 14:00	6	19	0.000	6	19	0.000	6	19	0.000
14:00 - 15:00	6	19	0.000	6	19	0.000	6	19	0.000
15:00 - 16:00	6	19	0.000	6	19	0.000	6	19	0.000
16:00 - 17:00	6	19	0.000	6	19	0.000	6	19	0.000
17:00 - 18:00	6	19	0.000	6	19	0.009	6	19	0.009
18:00 - 19:00	6	19	0.000	6	19	0.000	6	19	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.000			0.009			0.009

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.

