TRANSPORT NOTE

To:	**London Borough of Hillingdon (LBH)**
From:	**Iceni Projects (Transportation)**
Date:	**1st June 2021**
Title:	**Hayes Business Park, Hayes End Road, Hayes, UB4 8EE**

a) Introduction

1. Iceni Projects Ltd has been instructed by Universities Superannuation Scheme Limited (the 'Applicant') to advise on the highways and transport matters relating to a change of use application from B1 office to C3 residential for the Hayes Park North building of Hayes Business Park, Hayes End Road, Hayes ('The Site'), under permitted development rights.

2. The proposal seeks to create 64 apartments with associated car and cycle parking.

3. The business park comprises three office buildings, a basement and ground level car park, various areas of car parking around the site and roads connecting the buildings. Hayes Park North ('HPN'), the subject of this application, is situated at the north of the Site and is currently occupied by Pladis Global. HPN is three storeys in height, with a basement level used for servicing and deliveries.

4. This Transport Note has been prepared to support a permitted development submission in accordance with *The Town and Country Planning (Permitted Development and Miscellaneous Amendments) (England) (Coronavirus) Regulations 2020) - Schedule 2, Part 3, Class O.*

b) Existing Site

Site Description and Surrounding Highway Network

5. Hayes Business Park is located just off Hayes End Road within the London Borough of Hillingdon ('LBH'). The Site is generally rectangular in shape and is bound to the east by the open parkland of Hayes Park, and to the north and west by the agricultural land and buildings of Home Farm. The entirety of the Site and the surrounding land is located within the Green Belt.

6. The business park comprises three office buildings, a basement and ground level car park, various areas of car parking around the site and roads connecting the buildings. A plan showing the wider site and the application are site are included at **Appendix A1**.

7. Hayes Park North ('HPN') is situated at the north of the Site and is currently occupied by Pladis Global. HPN is three storeys in height, with a basement level used for servicing and deliveries. This building and the surrounding surface level car parking and adjacent landscaping are the subject of this application.

8. Hayes Park Central ('HPC') is a Grade II* listed three-storey building located in the centre of the Site and Hayes Park South ('HPS') is located at the south of the Site and is a Grade II* listed three-storey rectangular building with central courtyard, previously occupied by Kraft Heinz. HPC and HPS were linked at basement level by a subterranean corridor, which remains but has now been blocked up.

9. The wider area surrounding the Site comprises predominantly of open space and residential dwellings. There is a wide selection of parks and leisure facilities, including the Hayes End Recreation Ground, Park Road Green and the Belmore Playing Fields. The nearest town centres are located at Hillingdon Heath Local Centre, 1.6km to the south west (19-minutes' walk'), and at Uxbridge Road Hayes Minor Centre, 3.3km to the south east (43-minutes' walk).

Access Arrangements

10. The Site currently benefits from two vehicle points. One in the form of a priority junction with Park Lane to the east and a second via mead house lane to the south, which forms a mini roundabout junction with Hayes Park Road. Mead House Lane is a private road for its majority and the access to the east is a gated and barrier-controlled site access road.

11. Hayes Park Road links with Uxbridge Road via a signalised junction to the south and a residential are to the north west. Uxbridge Road is a principal route through the area providing a route to the M4.

12. Park Lane also links with Uxbridge Road to the south and to the predominantly residential area to the north east, eventually linking to the A40.

13. A footway is provided on the southern side of the eastern Site access road and while a footway is provided on the first section of Mead House Lane, this terminates at the residential properties at the southern end. Cycle access can also be achieved from both roads, but no specific facilities are provided. External to the site both access points link to a wide network of pedestrian and cycle routes providing safe links to the surrounding area.

Public Transport Accessibility

14. In terms of sustainable travel access to the Site, the formal Public Transport Accessibility Level (PTAL) rating as shown on the TfL PTAL website is considered to be zero for the majority of the site with some parts being considered to have a PTAL rating of 1a or 1b; on this basis, the site is considered to have 'very poor' access to public transport. The formal PTAL calculations are included at **Appendix A2**.

15. With sites such as this, where access is via private roads, the actual PTAL of the site is often under-estimated by the formal calculations so consideration has been given to the public transport provision close to the site. It should be noted that the PTAL methodology only includes bus stops within 640m of the Site and rail stations within 960m. In reality, people, commuters in particular, will walk further than this to access services if it is their best option for commuting.

16. Hayes & Harlington rail station is the nearest train service and is located c.4km walking distance from the Site and the nearest underground station is Hillingdon, located c.5km walking distance from the Site. As such, these could not be included in the PTAL assessment for any part of the Site.

17. The nearest bus services are located on A4020 Uxbridge Road close to its junction with Hayes End Road and on Adelphi Crescent and Kingshill Avenue to the east of the Site.

18. Considering these stops in more detail, the Adelphi Crescent stop is located 550m from the site's eastern access and the Kingshill Avenue stop is located 650m from the same access, which is just outside the maximum PTAL walking distance of 640m. In reality people will walk an additional 10m to access these services which are different to those accessible from Adelphi Crescent.

19. The stops on A4020 Uxbridge Road are located 350m from the Site's southern end on Mead House Lane and 640m (an additional 290m) extends quite far into the Site. This is shown in **Figure 1**, which highlights that only the northern part of the site does not fall within the PTAL walking threshold from the stop. In reality, people accessing any buildings to the north of the site would walk this additional distance to the bus stop.

Figure 1 640m Walking Distance to Bus Stop

20. **Table 1** provides details of the services serving each stop. As shown, there are seven bus routes running close to the Site providing a combined 37 services per hour in each direction covering a variety of different routes. On this basis, bus travel could be an attractive alternative to private car travel. It should also be noted that routes 90, 195, 278 and H98 all serve Hayes & Harlington railway station, providing a combined 21 journeys per hour to the station and providing an option for accessing the station as part of a multimodal journey by bus and train.

Table 1 Bus Services

Stop	Service	Route	Frequency (buses per hour)
Adelphi Crescent	195	Charville Lane – Wood End – Hayes – Southall – Hanwell – Brentford	4
Adelphi Crescent	U7	Hayes Sainsbury's – Charville Lane Estate – Hayes End – Hillingdon Hospital – Uxbridge	2
The Brook House	90	Northolt – Yeading – Wood End – Hayes – Harlington – Hatton Cross – Feltham	6
Hayes End	278	Ruislip – Ickenham – Hillingdon – Wood End – Hayes – Harlington – Heathrow	4
Hayes End	427	Uxbridge – Hayes End – Southall – Hanwell – West Ealing – Ealing – Acton	8
Hayes End	607	Uxbridge – Hayes End – Southall – Hanwell – Ealing – Acton – Shepherd's Bush – White City	6
Hayes End	H98	Hayes End – Wood End – Hayes – Harlington – Cranford – Hounslow West – Hounslow	7

21. In order to consider this further, a manual PTAL calculation has been undertaken based on the services in **Table 1** and the walking distances to the stop from the site access junctions and this shows that the site could be considered to have a PTAL rating of 2, which is still considered by TfL to be 'poor' but an improvement on the formal rating of 0 to 1b across the Site. A copy of the calculations is included at **Appendix A3**. The manual calculation has been submitted to TfL to ensure they agree that the Site can be considered as a PTAL 2 rating.

22. TfL confirmed that the southern section of the site (including the southern building), within 640m of the bus services on Uxbridge Road, could be considered to be PTAL 2, with the remainder being PTAL 0. Given that the closest and most frequent services are in Uxbridge Road it is considered that people would be willing to walk the additional short distance to the North Building and would not deem this to be a reason not to travel by bus to and from the site.

23. PTAL is also only one measure of accessibility as it only takes account of public transport, whereas accessibility also needs to consider pedestrian and cycle access as well as proximity to local facilities and amenities. There are footways connecting both accesses to the wider area and there is a shared footway/cycleway running along Uxbridge Road to the south which links to other cycle routes in the area which are a mixture of on and off-road routes.

24. In terms of facilities and amenities, due to the Site being located in a predominantly residential area it benefits from the existing wide range of amenities available nearby, including education, leisure, healthcare, retail and employment opportunities within a reasonable walking or cycling distance.

25. On balance, while the PTAL rating taken in isolation suggests that the site is poorly located to benefit from sustainable transport, the actual accessibility by all sustainable modes and access to essential facilities and amenities is considered to be good, with frequent bus services located close to the Site some of which also serve Hayes & Harlington Station.

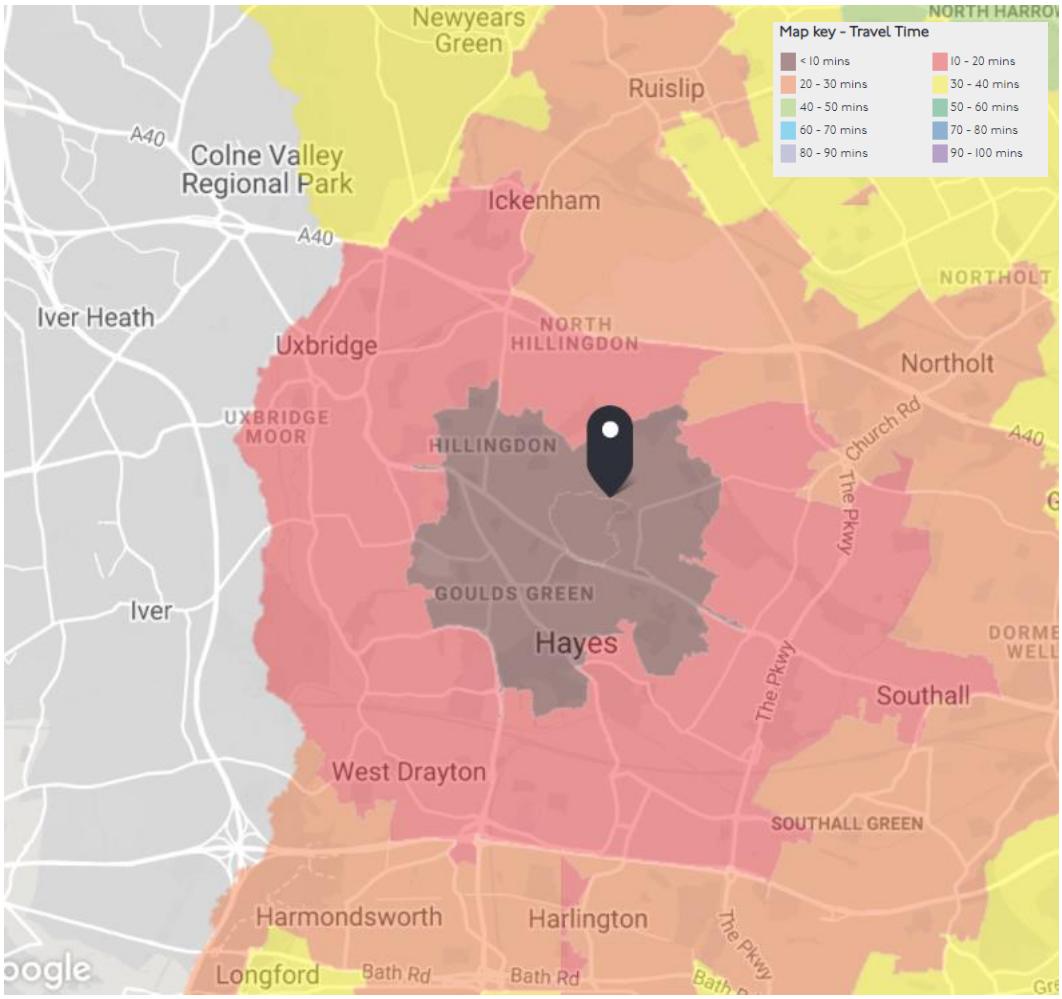
26. Consideration of the 2011 Census method of travel to work data for people living within this area shows that 23% commute by bus, train or underground, which shows that despite the low level of access to public transport people do still travel by these modes.

Cycling and Walking

Cycling

27. Cycling has the potential to substitute for short car trips, especially those less than 5km. A wide range of amenities / services including bus stops, train stations, educational facilities, religious centres, restaurants, supermarkets and numerous employment, retail and leisure opportunities are therefore located within an acceptable cycling distance of the Site and there is ample opportunity for users of the Site to utilise this mode of transport. From undertaking a TIM Mapping review of the Site, it can be seen from the screenshot in **Figure 2**, that a large area can be covered within a 20-minute cycle journey, which is the generally accepted reasonable cycling distance, especially for commuting to a place of employment. It should be noted that the mapping only covers Greater London so while some of the area to the west is grey.

Figure 2 TIM Cycle Map



28. There are on and off-road cycle lanes provided along Uxbridge Road which provide a link to the surrounding area as well as linking with other cycle routes.

Walking

29. As stated previously, pedestrian access is provided via both site access junctions. External to the site, footways are provided on both sides of both Hayes End Road and Park Lane and signalised

crossings are provided across Uxbridge Road to provide safe access to the bus stops in both directions.

30. On Park Lane, a dropped kerb with tactile paving and central refuge is provided to the north and south of the site access providing safe crossings in both directions close to the site access.

c) Census Data (2011)

31. The Site is located in the Hillingdon 018 Middle Super Output Area of the London Borough of Enfield. Population statistics have been obtained from the 2011 Census Data for the ward, borough of Enfield, London and England.

32. The 'Method of Journeys to Work' Census Data which has been obtained for residents living within *Hillingdon 018 MSOA* (within which the Application Site is located) has been obtained and excluded other methods of travel and not in employment in the census data outputs. The results are summarised in **Table 2**.

Table 2 'Travel to Work' Modal Share (2011 Census Data)

Method of Travel to Work	MSOA Hillingdon 018	
Underground, Light Rail, etc.	278	6.4%
Train	115	2.6%
Bus, Minibus or Coach	647	14.8%
Taxi	12	0.3%
Motorcycle, Scooter or Moped	39	0.9%
Driving a Car or Van	2862	65.4%
Passenger in a Car or Van	163	3.7%
Bicycle	65	1.5%
On Foot	195	4.5%

NOTE: 2011 Census Data taken from Office for National Statistics Website

33. It is evident from **Table 2** that driving a car or van accounts for 65% of commuting trips within the area and sustainable travel accounts for 24% of trips comprising underground (6%), train (3%) and bus (15%). This reflects the PTAL considerations which outline that the PTAL rating of 0 to 1b underestimates the likely proportion of people travelling by public transport, with almost a quarter travelling by these modes.

d) Proposed Development

34. The proposals are seeking to change the use of the existing B1 office building to C3 to enable the internal layout to be amended to facilitate the provision of 64 apartments, comprising:

- 6 x studio apartments;
- 33 x 1 bed apartments;
- 19 x 2 bed apartments; and
- 6 x 3 bed apartments.

Vehicular Access

35. The existing site accesses and internal road network will continue to be used to access the site.

Refuse & Service Collection

36. Servicing and refuse collection will take place from the rear of the building as per the existing arrangements at the site. Given the site's commercial use the routes in and through the site are suitable for accommodating refuse and delivery vehicles.

37. A development of this scale is likely to generate circa 6 delivery vehicles daily (Monday to Saturday). These would be from the following type of companies who would all use different types of vehicles which service residential developments and therefore need to be catered for within the site:

- Food Supermarkets;
- Royal Mail / Parcelforce;
- DPD / Amazon / UK Mail / TNT Express Post / UPS / Hermes / DHL / FedEx;
- Ikea / Argos / John Lewis / Next etc;
- Laundry Republic / Laundrapp / etc; and
- Numerous take-away companies.

38. It is considered that the most common types of vehicles that will be used for deliveries are:

- Long Wheelbase van;
- Box body van; and
- 3.5 tonne Truck.

39. Whilst the majority of deliveries are expected to have a quick turnaround (5 minutes or less), some of them have the potential to stay on Site slightly longer, depending on the number of parcels they deliver.

e) Car Parking Provision

40. The LB Hillingdon Development Management Plan (DMP) was adopted January 2020 and is part of the Borough's Local Development Framework. The document sets out the policies and standards used in the consideration of applications for new developments.

41. *Policy DMT 6: Vehicle Parking* covers the parking standards for Hillingdon, which are different to those contained within the London Plan 2021. The policy states:

A) Development proposals must comply with the parking standards outlined in Appendix C Table 1 in order to facilitate sustainable development and address issues relating to congestion and amenity. The Council may agree to vary these requirements when:

i) the variance would not lead to a deleterious impact on street parking provision, congestion or local amenity; and/or

ii) a transport appraisal and travel plan has been approved and parking provision is in accordance with its recommendations.

B) All car parks provided for new development will be required to contain conveniently located reserved spaces for wheelchair users and those with restricted mobility in accordance with the Council's Accessible Hillingdon SPD.

42. The car parking standards outlined in Appendix C Table 1, require a maximum of 0.5 spaces per studio, 1.5 to 1 space per unit for one and two bedroom flats and 2 spaces per 3+ bedroom flats.

Table 3 Proposed Residential Car Parking Requirements

Dwelling Type	No. of Dwellings	No. of Parking spaces (Maximum)
Studio	6	3
1 bed	33	33-50
2 bed	19	19-29
3 bed	6	12
Total	**64**	**67-94**

43. There are a large number of spaces at the site, however, a total of 76 spaces are shown to be located within the red line boundary of the site. This includes all surface parking to the west of the site. Due to the high number of spaces across the site, it is important that the number of spaces associated with this application is defined to ensure that policies to promote sustainable transport are not unduly impacted by an over-provision of parking.

44. Given that the majority of units are smaller units it is considered that an average of 1.2 spaces per unit is appropriate.

45. While it is accepted that LBH has their own parking standards, consideration has also been given to the London Plan standards, which for residential use are directly related to the PTAL rating. The site is considered to have a PTAL rating of 2 which based on London Plan standards would permit a maximum of 0.75 spaces per 1-2 bed dwelling and 1 space per 3+ bed. This would equate to a maximum of 50 spaces for the proposed development mix.

46. Given the lower London Plan requirements for lower PTAL locations it is considered that a maximum of 76 spaces is sufficient.

47. The existing spaces included within the red line include 20 disabled bays, while this level of provision equates to 26% of spaces, it is clear that a sufficient level of disabled parking can be provided. Some spaces would likely be remarked for use as standard bays, but left as wider spaces for potential future conversion back to disabled bays if required.

48. In addition, while no electric charging points are currently provided, 20% of spaces would be provided with one to accord with London Plan requirements for residential developments.

Cycle Parking Provision

49. Hillingdon's DMP contains cycle parking standards which require a minimum of 1 space per studio, 1 and 2 bed unit and 2 spaces per 3+ bed unit. For the proposed mix this equates to a minimum of 70 spaces. These will be provided within the existing basement and accessed via the existing ramp provided.

f) Existing Office/Residential Trip Generation

50. The Site currently benefits from extant permission for c.6,500m² of B1a office use. To estimate the number of vehicle trips associated with the extant permission, trip rates have been calculated based on similar sites available on the TRICS database. There are no relevant sites of a similar size with those in London in suburban areas having a PTAL of 6 and the trips were not reflective of the site. Instead, sites with a lower PTAL were selected. These sites provide trip rates for a typical weekday for the extant permission and allow us to understand and determine the peak hours for the AM and PM periods. The trip rates and resulting vehicle trips estimated are summarised in **Table 4** and the TRICS output is included at **Appendix A4**.

Table 4 Extant Vehicle Trip Generation (Office Use)

Trip Rate per 100 sqm				Number of trips		
Time Period	**Arrive**	**Depart**	**Total**	**Arrive**	**Depart**	**Total**
AM 08:00-09:00	0.625	0.092	0.717	41	6	47
PM 17:00-18:00	0.078	0.684	0.762	5	44	50

Notes: Estimated number of trips based on 6,500m² of Office space

51. It can be seen from **Table 4** that the extant office uses could generate 47 two-way trips in the AM peak and 50 in the PM peak.

52. In order to estimate the total number of trips associated with the proposed residential floorspace reference has been made to the TRICS database based on the following criteria:

- Residential – Flats Privately Owned;
- Greater London Only;
- Surveyed since 2008;
- Manually deselect sites with PTAL higher than 3; and
- Manually deselect sites with parking ratio less than 1 per unit.

53. **Table 5** provides a summary of the trip rates and resultant flows and the TRICS output is included at **Appendix A4**.

Table 5 Proposed Vehicle Trip Generation (C3 Residential Use)

Trip Rate per 100 sqm				Number of trips		
Time Period	**Arrive**	**Depart**	**Total**	**Arrive**	**Depart**	**Total**
AM 08:00-09:00	0.073	0.240	0.313	5	15	20
PM 17:00-18:00	0.154	0.092	0.246	10	6	16

Notes: Estimated number of vehicle trips based on 64 Units

54. It can be seen from the above table that the proposed use could generate 27 fewer vehicle trips in the AM peak and 34 fewer in the PM peak.

55. To estimate the multimodal trips associated with the proposed development consideration will be given to the 2011 Census method of travel to work data for the local area. The Site falls within the *MSOA 010 Enfield* so this has been used to calculate the likely mode share.

56. It should be noted that the data for the existing and proposed Site has been utilised as per the Census data. Details are shown in **Tables 6 and 7**.

Table 6 Existing Development (office)

Mode	Share	AM			PM		
		Arrive	Depart	Two-Way	Arrive	Depart	Two-Way
Underground	3.1%	2	0	2	0	2	2
Train	2.3%	1	0	1	0	1	2
Bus	8.6%	5	1	5	1	5	6
Taxi	0.3%	0	0	0	0	0	0
Motorbike	0.2%	0	0	0	0	0	0
Driving	74.5%	41	6	47	5	44	50
Car passenger	3.3%	2	0	2	0	2	2
Cycling	1.2%	1	0	1	0	1	1
Walking	6.4%	3	1	4	0	4	4
Total	**100%**	**55**	**8**	**63**	**7**	**60**	**66**

Table 7 Proposed Development (Residential)

Mode	Share	AM			PM		
		Arrive	Depart	Two-Way	Arrive	Depart	Two-Way
Underground	6.4%	0	1	2	1	1	2
Train	2.6%	0	1	1	0	0	1
Bus	14.8%	1	3	5	2	1	4
Taxi	0.3%	0	0	0	0	0	0
Motorbike	0.9%	0	0	0	0	0	0
Driving	65.4%	5	15	20	10	6	16
Car passenger	3.7%	0	1	1	1	0	1
Cycling	1.5%	0	0	0	0	0	0
Walking	4.5%	0	1	1	1	0	1
Total	**100%**	**7**	**23**	**31**	**15**	**9**	**24**

57. It can be seen from **Table 7** that the proposed residential uses would generate a similar level of non-car trips as the existing use and, a such, while vehicle trips will reduce the number of trips made by all other modes will be fairly similar.

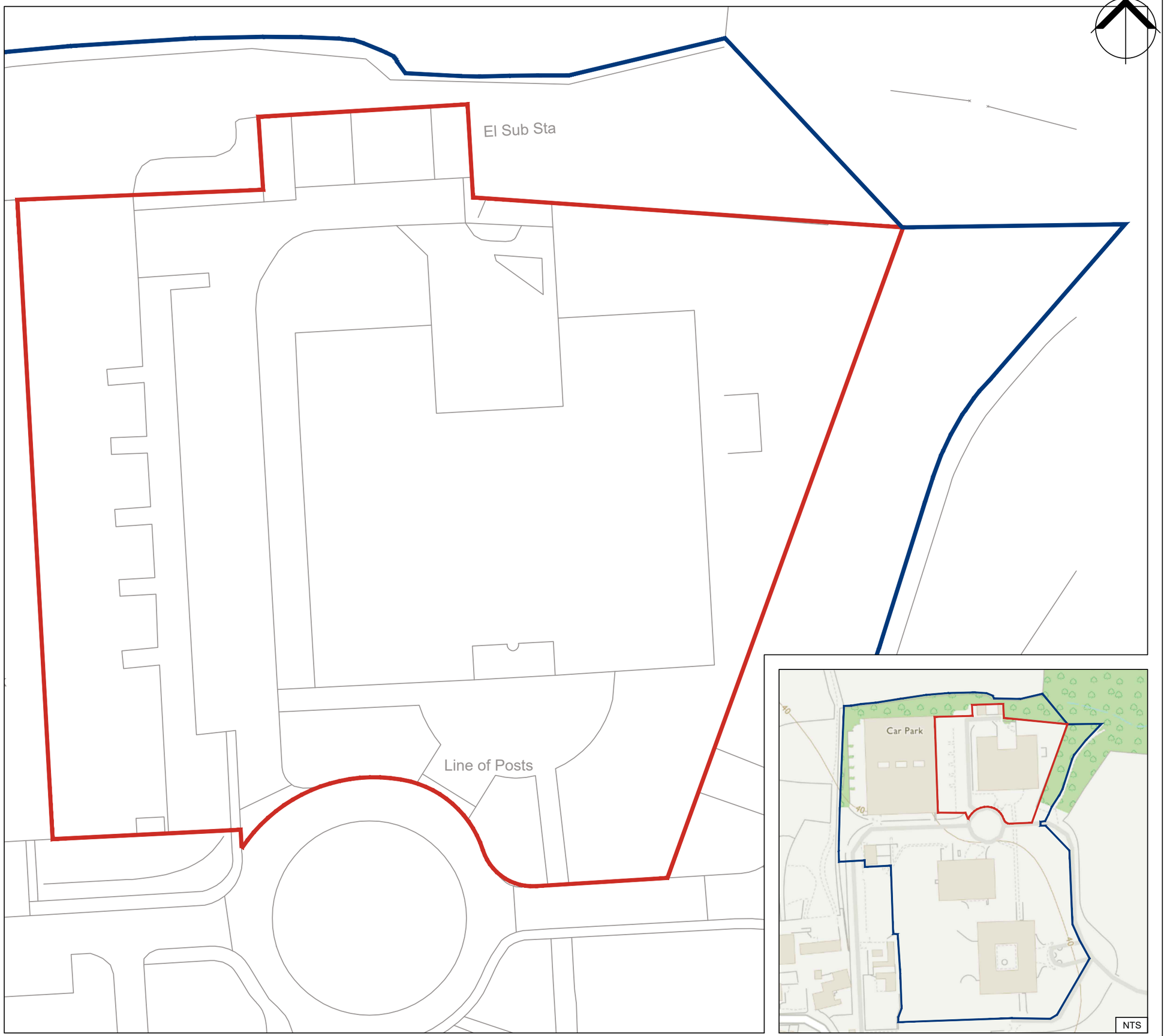
Conclusion

58. Therefore, in consideration of the above, the proposed residential use would generate a lower number of vehicle trips than the existing office use. Consequently, the proposed development would have a lower impact than the extant use of the Site on the surrounding transport infrastructure and existing highway network.

59. The Site is conveniently located for residents of the proposed scheme to take advantage of public transport facilities and local amenities, whilst providing an appropriate level of car parking, cycle parking and EVCPs, relative to Hillingdon standards.

60. In conclusion, the change of use from B1 to C3 under permitted development rights is compatible with and supports regional and local transport policies and would not give rise to any adverse transport impact. It is therefore considered that there is no highway related reason why the development proposal should not be granted in line with *Schedule 2, Part 3, Class O* of the GDPO for a residential use on a detached building in commercial use.

A1. SITE LOCATION PLAN



NOTES:
1. THIS DRAWING IS INDICATIVE AND SUBJECT TO DISCUSSIONS WITH LOCAL & NATIONAL HIGHWAY AUTHORITIES. THIS DESIGN IS ALSO SUBJECT TO CONFIRMATION OF LAND OWNERSHIP, TOPOGRAPHY, LOCATION OF STATUTORY SERVICES, DETAILED DESIGN AND TRAFFIC MODELLING.
2. THIS DRAWING IS BASED UPON THE ORDNANCE SURVEY'S (1:1250) MAP WITH PERMISSION OF THE CONTROLLER OF HER MAJESTY'S STATIONERY OFFICE, CROWN COPYRIGHT RESERVED.

KEY:

RED LINE BOUNDARY

LAND OWNERSHIP BOUNDARY

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44 SAFFRON HILL
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EC1N 8FH

T 020 3640 8508
mail@iceniprojects.com

CLIENT

UNIVERSITIES SUPERANNUATION SCHEME LIMITED

PROJECT

HAYES BUSINESS PARK

TITLE

SITE LOCATION PLAN

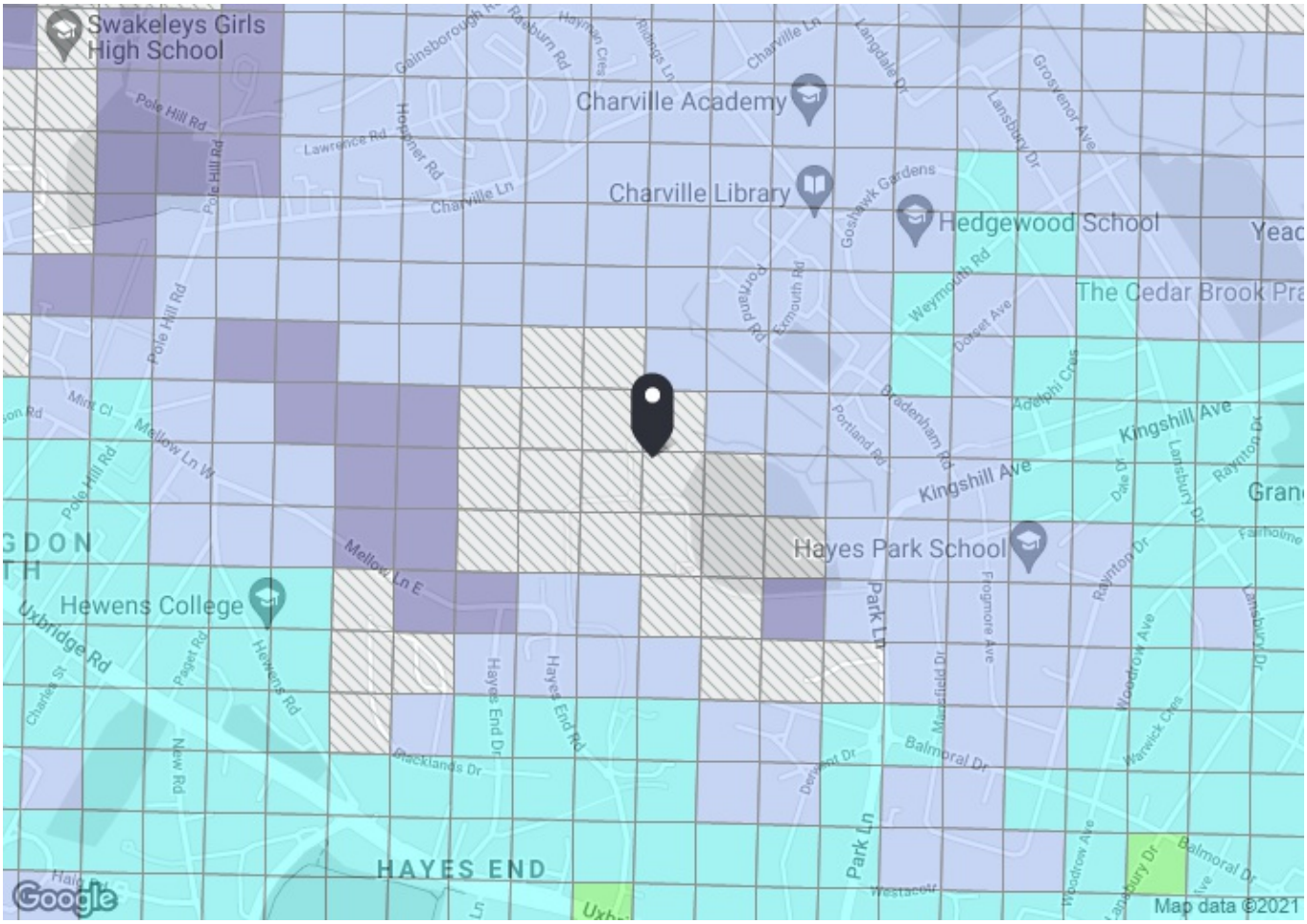
DRAWN BY	CHECKED BY	APPROVED BY
NM	SP 28/05/2021	SP 28/05/2021

SCALE @ A3	DATE
1:500	28/05/2021

PROJECT NO.	DRAWING NO.	REV.
21-T066	01	-

A2. FORMAL PTAL CALCULATION

TRANSPORT FOR LONDON



PTAL output for Base Year
0

UB4 8EE
Hayes UB4 8EE, UK
Easting: 508913, Northing: 182579

Grid Cell: 90717

Report generated: 12/05/2021

Map key - PTAL

0 (Worst)	1a
1b	2
3	4
5	6a
6b (Best)	

Map layers

PTAL (cell size: 100m)

Calculation Parameters

Day of Week	M-F
Time Period	AM Peak
Walk Speed	4.8 kph
Bus Node Max. Walk Access Time (mins)	8
Bus Reliability Factor	2.0
LU Station Max. Walk Access Time (mins)	12
LU Reliability Factor	0.75
National Rail Station Max. Walk Access Time (mins)	12
National Rail Reliability Factor	0.75

Calculation data

A3. MANUAL PTAL CALCULATION

PTAL REPORT

Site Details

Description:	**Standard PTAL calculation**
Coordinates	500000
	180000
Date:	26/05/2021

Calculation Parameters

Day of Week:	M-F
Time Period:	AM Peak
Walk Speed:	4.8
Bus Walk Access Time (mins):	8
BUS Reliability Factor:	2
LU Max. Walk Access Time (mins):	12
LU Reliability Factor:	0.75
Rail Walk Access Time (mins):	12
Rail Reliability Factor:	0.75

Standard calculation

This is a standard PTAL calcualtion for a sample location.

Data | **Calculations**

A	B	C	D	E	F	G	H	I	J	K
Mode	Stop	Route	Distance (meters)	Frequency (vph)	Walk Time (mins)	SWT (mins)	TAT (mins)	EDF	Weight	AI
Bus	Hays End	278	350	4	4.38	9.50	13.88	2.16	0.5	1.08
Bus	Hays End	427	350	8	4.38	5.75	10.13	2.96	1	2.96
Bus	Hays End	607	350	6	4.38	7.00	11.38	2.64	0.5	1.32
Bus	Hays End	H98	350	7	4.38	6.29	10.66	2.81	0.5	1.41
Bus	Adelphi Crescent	195	550	4	6.88	9.50	16.38	1.83	0.5	0.92
Bus	Adelphi Crescent	U7	550	2	6.88	17.00	23.88	1.26	0.5	0.63
Bus	The Brook House	90	650	6	8.13	7.00	15.13	1.98	0.5	0.99
LU										
LU										
LU										
LU										
LU										
LU										
Rail										
Rail										
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Rail										
Rail										
Rail										

PTAL	Access Index range	Map colour
0 (worst)	0	
1a	0.01 – 2.50	
1b	2.51 – 5.0	
2	5.01 – 10.0	
3	10.01 – 15.0	
4	15.01 – 20.0	
5	20.01 – 25.0	
6a	25.01 – 40.0	
6b (best)	40.01+	

Sum of AI's	**9.31**
PTAL	**2**

A4. TRICS OUTPUT

Calculation Reference: AUDIT-751001-210528-0516

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 02 - EMPLOYMENT
Category : A - OFFICE
TOTAL VEHICLES

Selected regions and areas:

01	GREATER LONDON		
	HO	HOUNSLOW	1 days
	WH	WANDSWORTH	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:	1400 to 120000 (units: sqm)
Range Selected by User:	408 to 120000 (units: sqm)

Parking Spaces Range: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/13 to 05/11/19

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
Wednesday	1 days

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

Selected survey types:

Manual count	2 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:

Suburban Area (PPS6 Out of Centre)	2

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:

Built-Up Zone	1
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:

Not Known	2 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

Secondary Filtering selection (Cont.):

Population within 1 mile:

25,001 to 50,000	1 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:

500,001 or More	2 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	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:

Yes	1 days
No	1 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:

1b Very poor	1 days
4 Good	1 days

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

LIST OF SITES relevant to selection parameters

1 HO-02-A-01 SKY HEADQUARTERS HOUNSLOW
SYON LANE
ISLEWORTH

Suburban Area (PPS6 Out of Centre)
No Sub Category
Total Gross floor area: 120000 sqm
Survey date: WEDNESDAY *05/07/17* *Survey Type: MANUAL*

2 WH-02-A-03 OFFICE WANDSWORTH
BROUGHTON STREET
NINE ELMS

Suburban Area (PPS6 Out of Centre)
Built-Up Zone
Total Gross floor area: 1400 sqm
Survey date: MONDAY *16/11/15* *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 02 - EMPLOYMENT/A - OFFICE
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 - 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	1	120000	0.343	1	120000	0.052	1	120000	0.395
07:00 - 08:00	2	60700	0.484	2	60700	0.068	2	60700	0.552
08:00 - 09:00	2	60700	0.625	2	60700	0.092	2	60700	0.717
09:00 - 10:00	2	60700	0.501	2	60700	0.105	2	60700	0.606
10:00 - 11:00	2	60700	0.166	2	60700	0.085	2	60700	0.251
11:00 - 12:00	2	60700	0.100	2	60700	0.063	2	60700	0.163
12:00 - 13:00	2	60700	0.114	2	60700	0.100	2	60700	0.214
13:00 - 14:00	2	60700	0.082	2	60700	0.108	2	60700	0.190
14:00 - 15:00	2	60700	0.079	2	60700	0.100	2	60700	0.179
15:00 - 16:00	2	60700	0.063	2	60700	0.184	2	60700	0.247
16:00 - 17:00	2	60700	0.076	2	60700	0.441	2	60700	0.517
17:00 - 18:00	2	60700	0.078	2	60700	0.684	2	60700	0.762
18:00 - 19:00	2	60700	0.072	2	60700	0.383	2	60700	0.455
19:00 - 20:00	1	120000	0.047	1	120000	0.227	1	120000	0.274
20:00 - 21:00	1	120000	0.036	1	120000	0.089	1	120000	0.125
21:00 - 22:00	1	120000	0.048	1	120000	0.072	1	120000	0.120
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.914			2.853			5.767

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.*

Parameter summary

Trip rate parameter range selected:	1400 - 120000 (units: sqm)
Survey date date range:	01/01/13 - 05/11/19
Number of weekdays (Monday-Friday):	2
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.

Calculation Reference: AUDIT-751001-210528-0546

TRIP RATE CALCULATION SELECTION PARAMETERS:

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

Selected regions and areas:

01	GREATER LONDON		
	BE	BEXLEY	1 days
	EN	ENFIELD	3 days
	HO	HOUNSLOW	1 days
	RD	RICHMOND	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: 14 to 402 (units:)
Range Selected by User: 9 to 493 (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: 01/01/13 to 10/09/20

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
Wednesday	3 days
Friday	2 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 undertaking using machines.

Selected Locations:

Suburban Area (PPS6 Out of Centre)	3
Edge of Town	3

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
Residential Zone	4
Built-Up Zone	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:

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:

15,001 to 20,000	1 days
20,001 to 25,000	1 days
25,001 to 50,000	3 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:

500,001 or More	6 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	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:

Yes	2 days
No	4 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	1 days
1a (Low) Very poor	2 days
2 Poor	3 days

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

LIST OF SITES relevant to selection parameters

1 BE-03-C-02 BLOCKS OF FLATS BEXLEY
CLYDESDALE WAY
BELVEDERE

Edge of Town
Industrial Zone
Total No of Dwellings: 402
Survey date: WEDNESDAY *19/09/18* *Survey Type: MANUAL*

2 EN-03-C-01 BLOCK OF FLATS ENFIELD
SOUTH STREET
ENFIELD

Suburban Area (PPS6 Out of Centre)
Built-Up Zone
Total No of Dwellings: 16
Survey date: MONDAY *16/11/15* *Survey Type: MANUAL*

3 EN-03-C-02 BLOCKS OF FLATS ENFIELD
CARTERHATCH LANE
ENFIELD
FORTY HILL
Edge of Town
Residential Zone
Total No of Dwellings: 76
Survey date: FRIDAY *10/11/17* *Survey Type: MANUAL*

4 EN-03-C-03 BLOCKS OF FLATS ENFIELD
NORTH CIRCULAR ROAD
PALMERS GREEN

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 18
Survey date: WEDNESDAY *08/11/17* *Survey Type: MANUAL*

5 HO-03-C-05 BLOCK OF FLATS HOUNSLOW
PARK LANE
HOUNSLOW
CRANFORD
Edge of Town
Residential Zone
Total No of Dwellings: 14
Survey date: FRIDAY *06/03/20* *Survey Type: MANUAL*

6 RD-03-C-04 BLOCKS OF FLATS RICHMOND
BESSANT DRIVE
KEW

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 170
Survey date: WEDNESDAY *15/05/19* *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.

MANUALLY DESELECTED SITES

Site Ref	Reason for Deselection
HV-03-C-02	Parking too low
TH-03-C-04	Parking too low

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED
TOTAL VEHICLES
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	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	116	0.040	6	116	0.185	6	116	0.225
08:00 - 09:00	6	116	0.073	6	116	0.240	6	116	0.313
09:00 - 10:00	6	116	0.093	6	116	0.096	6	116	0.189
10:00 - 11:00	6	116	0.076	6	116	0.080	6	116	0.156
11:00 - 12:00	6	116	0.060	6	116	0.093	6	116	0.153
12:00 - 13:00	6	116	0.091	6	116	0.092	6	116	0.183
13:00 - 14:00	6	116	0.072	6	116	0.091	6	116	0.163
14:00 - 15:00	6	116	0.076	6	116	0.065	6	116	0.141
15:00 - 16:00	6	116	0.092	6	116	0.070	6	116	0.162
16:00 - 17:00	6	116	0.118	6	116	0.062	6	116	0.180
17:00 - 18:00	6	116	0.154	6	116	0.092	6	116	0.246
18:00 - 19:00	6	116	0.188	6	116	0.089	6	116	0.277
19:00 - 20:00	5	136	0.187	5	136	0.097	5	136	0.284
20:00 - 21:00	5	136	0.141	5	136	0.056	5	136	0.197
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.461			1.408			2.869

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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Parameter summary

Trip rate parameter range selected:	14 - 402 (units:)
Survey date date range:	01/01/13 - 10/09/20
Number of weekdays (Monday-Friday):	6
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	2
Surveys manually removed from selection:	2

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.